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CITY GROWTH, HEALTH PROBLEMS, AND COLONIAL GOVERNMENT RESPONSE: SAINT-LOUIS (SENEGAL), FROM MID-NINETEENTH CENTURY TO THE FIRST WORLD WAR

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Kalala J. Ngalamulume

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CITY GROWTH, HEALTH PROBLEMS, AND COLONIAL GOVERNMENT RESPONSE: SAINT-LOUIS (SENEGAL), FROM MID-NINETEENTH CENTURY TO THE FIRST WORLD WAR

By

Kalala J. Ngalamulume

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ABSTRACT

CITY GROWTH, HEALTH PROBLEMS, AND COLONIAL GOVERNMENT RESPONSE: SAINT-LOUIS (SENEGAL), FROM MID-NINETEENTH CENTURY TO THE FIRST WORLD WAR

By

Kalala J. Ngalamulume

The origin of Saint-Louis in 1659 and its growth are inseparable from the history of the development of the French commercial empire in the framework of the newly-created world economy. This study argues that city's health problems were due to two sets of factors, external and internal. The external factors related to the importation of diseases (epidemic and others) in the context of international trade. Yellow fever, imported from tropical America, struck the city in a spectacular way in 1867, 1878, 1880-1, and 1900. Cholera ravaged the city in 1868-9 and 1893. Both diseases made many victims. The internal factors had to do with the inadequacies of public health policies, especially concerning housing, waste removal and water supply.

The evidence from Saint-Louis shows that the French medical authorities poorly understood the etiology of diseases and attributed the diseases to "miasmas," cemeteries, *hivernage* (rainy season), the "evil" wind, city market, to the colonial minorities (Moors, Moroccans, Syrians), and to the *indigènes*, especially their living conditions and activities (e.g., drying of fish and skins, and healing practices). Unmarried women, who were in contact with the soldiers, provided convenient

scapegoats. Sanitary measures such as the imposition of health passports and the forced removal of the poor from the city center, expressed the "sanitation syndrome" that characterized the colonial mentality until as late as 1913. The Catholic missionaries emphasized divine vengeance against the sinners and the heathen.

The study underscores the fact disease revealed the urban society to itself: unequal development, prejudices, diversity and tensions across *quartiers*, social classes, religions, races and ethnic groups, but also, to some extent, homogeneity and forms of solidarity within them. The most lasting tension appeared between the colonial government and the European merchants, on the one hand, and between the colonial authorities and the city government, controlled by the mulattos, on the other hand. The reactions of the *indigènes* to biomedicine were situational, depending on the nature of the disease or illness.

By 1900 the bacteriological revolution provided a better understanding of the etiology of diseases and to effective solutions to city's health problems in the areas of vector control, water supply, and sewage disposal.

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KALALA NGALAMULUME

1996

DEDICATION

To my parents, aunts, and uncles

To my brothers, sisters, and cousins

To my children, nieces, and nephews

for all the support throughout the years

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Chapter I. Introduction: Theoretical Considerations

The study of the history of Saint-Louis' experience with disease and sanitation addresses broader issues that are treated in the fields of urban history, medical and social history, and anthropology. This chapter explores the dominant themes and conceptual perspectives in these fields which inform this study and provide a framework for the interpretation of its findings.

A. Urban History and Colonial Cities

The interest of the study does not lie in the choice made of the city *per se* as object of analysis, but in its relation with its hinterland and the outside world. The process of city formation and growth as well as the incidence of some diseases in the city cannot be understood nor explained if one does not place the city in the context of international commerce.

In their book, Paul M. Hohenberg and Lynn H. Lees (1985) have provided a framework for analyzing the link between wider economic and social processes and the microcosm of the cities. They proposed two models for approaching the study of the city: the Central Place System and the Network System. The Central Place System, first formulated by the German geographer W. Christaller,[1] focuses on the role that the city plays in relation to its region, that is

> "a central place, supplying its surrounding with special services - economic, administrative, or cultural - that call for concentration at a point in space."[2]

In this perspective, the city is the principal center controlling secondary centers included within the region. But the authors reject the assumption underlying the central place theory, that the "central place" is located at the geographical center of a region and is surrounded by secondary cities situated at equal distance. Some cities they have studied operate as gateways into their regions.[3]

The Network System views the city as a trading link between the region and the outside world. Far from being isolated within the region, the city's origin, growth, stagnation or decline are closely associated with "networks of trade, information, and influence" that go beyond its region.[4] As they put it, "Cities form the centers, nodes, junctions, outposts, and relays of the network."[5]

The two models provided insights into the history of Saint-Louis. Other scholars have also explained the importance of treating cities as part of a larger world system. For example, de Vries (1984) developed the theoretical concept of "urban system," which includes cities that are linked by economic interactions.[6] David Simon (1992) also emphasized the necessity

> "to link cities explicitly to the wider political economies within which they function and to the socio-cultural realms of which they form part."[7]

The evidence from Saint-Louis shows that the origin of the city and its growth are inseparable from the history of the development of the French commercial empire in the framework of the newly-created world economy.[8] Indeed, built around Ndar, an

island at the mouth of the Senegal River, Saint-Louis was founded in 1659 as a fortified trading-station for the French monopoly companies. It became an important trading link in an Atlantic trading network which extended north to Bordeaux, Marseilles, and other European ports, west to the Caribbean, Brazil and Argentina, south to the Gabon and Congo, and east to upper Senegal. Its commercial hinterland included a certain number of marketplaces (called *escales*) along the Senegal River. Besides being the capital of "Senegal and dependencies" and capital of Mauritania (1901-1946), Saint-Louis also served as the headquarters of the naval station and the point of departure of missions of exploration and military expeditions sent to conquer the hinterland and transform it into a French territory. For a while (1895-1902) it even served as the capital of French West Africa. Very often, it was referred to as "the Senegal." In this context it naturally became the pioneer center in providing French instruction in Africa. Most post-independent West African leaders, who played a key role during the period of decolonization, received their education there.

The place that Saint-Louis occupied in the French commercial empire was that of a "colonial city" that was part of France's urban system. The concept of "colonial city" as a valid analytical construct was highlighted in G. J. Telkamp's (1978) pioneering work. His literature review, using evidence mostly from Africa and Asia, discussed the strengths and weaknesses of various existing definitions, characteristics, physical and morphological elements of colonial cities, and the typologies of and approaches to colonial cities used in the 1960s and 1970s. Telkamp urged historians to include the study of colonial cities in the history of European expansion as well as in urban history, and geographers and

anthropologists to include the past of colonial cities into urban studies. He also underscored the importance of situating the colonial cities in the context of broad historical processes (colonialism, capitalism, and industrialization).[9]

Seven years later, Ross and Telkamp (1985) argued in favor of the study of a city's life as a way of gaining insight into the history of a colony. They proposed an analysis of the city at three levels: a) the function of the study from a political economy approach emphasizing the complex interpenetration of the city, the countryside and the world economy; b) the organization of the city, the way it was controlled; c) and the spatial lay-out of the city, including its social stratification.[10]

In the meantime, Fred Cooper's sophisticated analysis (1983) addressed "the questions of who shapes the city, in what image, by what means, and against what resistance."[11] He contended that a colonial city was neither fully capitalist nor fully colonial and that it created a (dangerous) class of underemployed instead of fully employed (respectable working classes) on the one hand, and unemployed on the other, as it was the case with industrial capitalism. F. Cooper also underlined the differences between the colonial cities themselves, ranging from mining towns in Central and Southern Africa to commercial centers in West Africa. As far as the similarities are concerned, the colonial cities had in common the city planning and urban architecture that symbolized European hegemony. The similarities could be observed in the hierarchy of dwelling units, the architectural vocabulary, the barriers to separate neighborhoods and the distinctions in density, building design, and the amenities.[12] These divisions were related to the criteria of class, race, and space (workplace and residence, private and public). The result was the

development of a "white" city surrounded by "slums," "squatter settlements" and self-built houses, or the development of a "legal city" and a "real city." In other words, the colonial city became "the wrong kind of city" because of the type of culture that irregular settlements generated (prostitution, brewing, theft, and criminality).[13] In this context of struggle, metaphors of disease and contamination were used to rationalize racial segregation.

Recent scholarship has shed some light on other dimensions of colonial cities that are not found in studies dealing with individual towns. Peter Reeves (1989) underlined the importance of the colonial port cities as dynamic forces of social change.[14] David Prochaska (1990) emphasized the "power of colonialism to transform, to create, and to destroy: on the *dureté* of colonialism in an urban context."[15] He also provided a useful framework for the study of a colonial urban economy and society. He argued that the most important characteristic feature of the colonial city was related to the fact that it was a plural society, segregated and stratified along the lines of race, ethnicity and class. This was visible in the areas of urban morphology, spatial layout, land use patterns, occupational specialization, and the cultural division of labor.

Anthony D. King (1900) developed a framework for the analysis of a colonial city. His themes and perspectives related to urban sociology, economics, anthropology, geography, and political science as well as to urban history. The basic assumption underlying his framework was that the study of a colonial city also involves the analysis of its links with both metropolis and the countryside. The reason for this was related to the function of a colonial city as a tool for colonialism and the locus of power. The aspect of

his framework which dealt with the city *per se* included the study of the function(s) of the city, its (re-)organization, and its spatial lay-out.[16]

C. Coquery-Vidrovitch (1991) posited that the city reflected the global, social and economic context.[17] David Simon (1992) used the political economy approach and focused also on the wider economic, political, social and cultural processes and forces which contributed to the origin and growth of African cities and left their imprint on the physical urban fabric. He adopted Anthony O'Connor's (1983) division of African cities into six categories: a) the indigenous city such as the Yoruba cities (Ife, Ibadan, Benin, etc.) and Addis Ababa; b) the Islamic city (Tombouctou, Sokoto, Katsina, etc.); c) the colonial city built by and for the Europeans (Nairobi, Lusaka, Johannesburg, etc); d) the European city (Nairobi, Lusaka, Johannesburg, etc.); e) the dual city combining two or three of these categories; f) and the hybrid city which is more integrated than the dual city (Accra, Kumasi, Lagos, etc.).[18]

After this brief review of the literature on approaches to the study of cities in general and colonial cities in particular, one question comes to mind: what type of colonial city was Saint-Louis? The evidence shows that Saint-Louis was not a "typical" colonial city. It is true that, as a port city, Saint-Louis served the function of gateway for the export of colonial wares and the import of goods from Europe. It functioned as the headquarters of firms involved in trade and the services associated with it. Like in all colonial cities, the essential of the economic, social and political power was concentrated in the hands of the French elite who was racially, culturally, and religiously different from

the indigenous population. Also Saint-Louis's tertiary sector was important because of the focus on trade.

However, unlike the typical colonial cities, Saint-Louis's municipal government during the period under investigation was controlled by the mulattos, the "true children of colonialism," to use David Simon's expression.[19] In addition, Saint-Louis did not have perhaps the most important distinctive characteristic of the colonial city in the sense that it was not a "dual city," including an European town and an indigenous town separated by a "cordon sanitaire." Indeed, its social stratification was not characterized by a systematic urban spatial segregation between the French, the minorities (Mulattos, Moors, Moroccans, and Syrians), and the indigenous population based on race. The social distance was maintained on the basis of wealth, as we will see in chapter three.

B. Medical and Social History

There was a link between the process of growth of Saint-Louis in the framework of international trade and disease because ships which carried merchandise also brought the infectious agents. Crowding conditions in the city provided an opportunity for infectious agents to multiply and perpetuate. Indeed, Saint-Louis attracted companies, firms, merchants, religious organizations and thousands of people in search of fortune, work, relief, education, or simply a place to hide. They were potential hosts for infectious agents. But the city was not equipped to meet their needs because of the status of the medical knowledge and medical infrastructure, and the inadequacies of public health policies, especially concerning water supply, waste removal, and housing. A certain

number of deadly diseases, some imported and others locally-induced, killed or disabled thousands of Europeans and Africans, rich and poor, old and young. The study will analyze the impact of diseases on the city's life and the responses to them.

The literature on the medical and social history contains a certain number of themes and perspectives which address the issues related to disease, medicine and power. Scholars such as Martin F. Shapiro (1983), Nancy Elizabeth Gallagher (1983), Roy MacLeod (1988), and Marynez Lyons (1992) have identified in the existing literature a certain number of themes, perspectives or approaches to disease, medicine and power. Six of these themes provided meaning to the evidence analyzed here. The first theme deals with disease as causative agent in history in the sense that it has determined the fate of armies, empires, cities, and family-life. William B. Cohen (1983) contended that, rather than the resistance of the local population, malaria presented a serious challenge to French imperialism in West Africa. It was the main killer of Europeans and its conquest facilitated the subjugation of Africa.[20] Oliver Ransford (1983) characterized the period between 1885 and 1930 as an "epidemiological disaster for Africa" because of the effects of the diseases imported by the Europeans on local population (tuberculosis, measles, whooping cough, cold, plague) and the dissemination of diseases following the conquest.[21] In a dissertation focusing on the colonial medicine in Portuguese Africa, Martin Shapiro (1983) posited that this "traditional" approach focused on the contribution of medicine and medical science to the "progress" of humankind, on the lives and careers of notable colonial health officials, and on the triumph of European civilizing mission. According to Roy MacLeod (1988), most studies done during the colonial period, and especially during

the 1950s and early 1960s, fell under this category. They were characterized by an emphasis on the effects of the "tropical diseases" on the health of Europeans living and working in the colonies and on the conquest of disease through medicine. They neglected the role of political or cultural processes in the etiology of disease.[22]

But it should be emphasized that this approach did not lose its attraction in the early 1960s. As late as 1973, J.J. McKelvey's work focused on the struggle against the tsetse fly and trypanosomiasis by some of the leading explorers (and colonial administrators) such as David Livingstone, H.M. Stanley, Casement, Emin Pacha and David Bruce. His story

> has many heroes, many men groping for truth, making mistakes, finding support and obstacles in bureaucracies, but always building on what other men had found and each contributing in his own way to an arsenal of weapons against a common foe.[23]

However, McKelvey's work represented an exception rather than a rule. Indeed, as a consequence of the rise, in the early 1960s, of nationalist history, characterized by its anti-colonialism, historians began to take a second look at the Europeans' experience with disease overseas and focused on the political and cultural environment of disease, although they did not explicitly criticize western medicine. P. Curtin (1961) attempted to unravel the reality behind the image of "the white man's grave."[24] Ann Beck (1970) came to the realization that

> The story of the medical administration cannot be told without reference to political, social, economic, and cultural problems in the colonies. Such an approach will enable the historian to analyze the substance of colonial history, apart from the ideological framework of imperial history.[25]

In 1974 K. David Patterson observed that African medical history was still an untouched

field and urged historians to address important issues such as the attitudes, objectives, and priorities of colonial officials, the availability of health services and medical personnel, and the African attitudes and actions.[26] These issues and others were dealt with in the subsequent years, as we shall see.

The second theme relates to western medicine or biomedicine and public health as an agency of European expansion, a facet of colonialism or a "tool of Empire," an expression popularized by Daniel R. Headrick (1981).[27] Recent scholarship has enhanced our understanding of the relationship between colonial conquest and the spread of epidemic diseases, on the one hand, and between disease, medicine and colonial social engineering, on the other. For example, David Arnold (1993) underscored the role of medicine as a critical colonizing process and the significance of "the body as a site of colonizing power and of contestation between the colonized the colonizers."[28] He argued that medicine "remained integral to colonialism's political concerns, its economic interests, and its cultural preoccupations."[29]

In reference with studies on colonial Africa, Roy MacLeod (1988) indicated that Marxist analysts using dependency theory in the 1970s were instrumental in the renewed interest in the connections between medical practice and colonial rule.[30] Historians began to analyze the ways in which biomedicine was used as means of social control and a channel for the extension of the colonial influence. The expression "social control" refers to medical practices as well as administrative measures ordering people to behave or to get things done according to official guidelines for the good functioning of the social order. Colonization was understood and explained as a "Civilizing Mission" aimed at

transforming the environment as well as people's lives. In medical terms, the process involved the subjection of more and more areas of everyday life to medical jurisdiction for the creation and maintenance of the colonial order.[31] The theme of biomedicine as a facet of colonialism is widely treated in the existing literature. I will give here specific examples without being exhaustive.

In her study of Tunisia under French colonial rule, Nancy E. Gallagher (1983) analyzed the shift from Arabic to European medicine. She found that the epidemics that struck Tunisia between 1780 and 1900 led to a struggle between Arabic and European medicine and the collapse of Arab medical institutions. Gallagher argued that

> The government hoped that French medicine would be an effective substitute for the missionary work which failed to gain many religious or cultural converts in Muslim North Africa.[32]

The collapse of Arab medical institutions provided an opportunity for biomedicine to become

> an integral part of the French *mission civilisatrice* as it had earlier been a part of foreign policy, facilitating political influence and economic expansion.[33]

The ascendancy of French medicine was done through medical practice as well as sanitary and public health measures.

The fact that health care was delivered by military medical personnel until the First World War, especially in French colonies, gave to medical practice the character of a military operation and alienated the indigenous population, as David Arnold (1988) correctly stated.[34] In a study undertaken in northern Zaire, Maryinez Lyons (1992) found that the campaigns led by the Belgians against sleeping sickness between 1903 and 1914

required massive state intervention and control over peoples' lives through the establishment of cordon sanitaires and lazarets or segregation camps and the introduction of medical passports. All these measures were taken in the name of public health.[35] The spread of sleeping sickness also provided the French administration an opportunity to control peoples' lives in Equatorial Africa. Indeed, Rita Headrick (1994) noted that the phases of exploration, conquest and establishment of colonial rule were characterized by the diffusion of sleeping sickness and the spread of venereal diseases, especially gonorrhea and syphilis. In order to combat the disease, medical legislation made the examination for sleeping sickness compulsory for certain categories of people and gave doctors the right to arrest and treat the sick and suspect against their wishes. Travelers were required to carry health passports.[36]

The outbreak of cholera epidemic in Egypt in 1947-8 prompted the British authorities to use the army in order to prevent the spread of the disease. Isolation camps, cordons sanitaires, suspected villages and towns were under the control of the army. Nancy E. Gallagher (1990) established a link between the campaigns against malaria, relapsing fever, and cholera and the growth of nationalistic anti-British sentiment.[37]

Elsewhere, tuberculosis was the focal point of medical discourse and practice. Indeed, doctors explained away the spread of tuberculosis among the black population in South Africa in terms of biological inferiority and the inability of the "natives" to cope with the challenges of urban life and European modes of dress. They failed to understand that tuberculosis was associated with the early industrialization, which drew African workers to gold mines where the living conditions were extremely difficult in terms of

wages, housing, diets, and sanitation. In his analysis of the South Africa's experience with tuberculosis, Randall Packard (1989) found that the biological argument used by government officials contributed to the institutionalization of the migrant labor policy and the creation of separate "Homelands" and "Bantustans." The government did not have to invest in the health of black workers. In addition, the practice of "slum clearance" was based on the association of Africans with disease.[38] This "sanitation syndrome" helped shape the policy of urban segregation in the Cape Colony, as Maynard W. Swanson (1977)'s study on bubonic plague showed.[39] In the 1890s the government attempted to segregate the Asians in Durban in the name of public health.[40] Thus, in most of tropical Africa diseases such as malaria, smallpox, plague, cholera, or bubonic plague contributed to the establishment of what P. Curtin called "sanitary segregation," that is, the creation of a "dual city" through urban planning.[41]

Saint-Louis's experience with yellow fever, cholera, smallpox, dengue fever, malaria and venereal diseases provided insights into the colonial discourse and medical practice. In the name of public health the colonial government took a certain number of measures which violated people's freedom and rights; they included the forced removal of the poor from the city center, the transfer of the market and the cemeteries outside the city, the cordon sanitaires and quarantines, and the imposition of health passports. However, the government fell short of introducing "sanitary segregation" based on race because of the particular nature of the urban society.

The French colonial administration also attempted to exercise social control through the expansion of what could be included in the category of health and "disease"

and through the appropriation of the body, including the "taboo" areas. The arrest, detention and transfer of mental patients to France can be understood in this context. Women's preference to deliver at home instead of the hospital as well as the reluctance of women suffering from syphilis and other venereal diseases to request hospital-based medical care can also be considered as a form of resistance to biomedicine.

The third theme concerns disease as a "mirror of society." Asa Briggs (1961) found that a severe cholera epidemic provided a test for existing political, social, economic, and religious systems.[42] Nancy E. Gallagher (1983) also argued that epidemics could be considered as

> "magnifying glasses reflecting and revealing underlying social forces and conflicts and changes in values and attitudes that might normally escape the historian's eye.[43]

Her description of the reactions to cholera in Egypt and the measures to contain it helped understand something about the colonial society. She depicted an amazing example of solidarity between the people in the town of al-Qurayn that was surrounded by the army: people smuggled other people out of town through the canal, hid others in car trunks, or helped them cross the fields at nights.[44] Most studies of individual epidemic diseases have shown that the official reactions to the outbreaks of epidemic diseases (panic, flight, rumor, search for scapegoats) as well as the measures taken by the authorities highlighted the nature of the relationship between various races, classes, ethnic groups, and religions.[45]

Another aspect of this theme focuses on changes in medical theories and practices brought about by the new developments in the areas of bacteriology and epidemiology.

Nancy E. Gallagher (1983) tested this issue in the case of the French experience with diseases in Tunisia.[46]

In Saint-Louis, given the fact that the medical authorities poorly understood the etiology of diseases, the outbreaks of epidemic diseases provided the government with an opportunity to single out certain categories of people it considered as responsible for the spread of the diseases in the city. These official enemies were the *filles soumises* or registered prostitutes, the *marabouts* (Muslim clerics), *guérisseurs* (healers) and indigenous midwives, and the foreign minorities (Moors, Moroccans, and Syrians). The government also held the indigenous population at large responsible for diseases.[47] The French experience with disease in Saint-Louis revealed that the conceptions of disease were not static. They changed over the course of years as medical knowledge was transformed.

The fourth theme in the medical literature is about the conflict between prevention and cure in public health planning, and Maryinez Lyons (1992) linked it to the "political economy" of disease, health, and medicine.[48] Bruno Latour (1988) noted that Louis Pasteur's contribution to the combat against diseases was the focus he placed on the prevention of disease instead of the recourse to curative medicine. Prevention was to take various forms such as the architecture style and the interruption of the life cycle of the parasites by drying the areas of stagnant waters.[49] The defenders of the preventive approach based their argument on a correlation observed between mortality and the changes in the environment. As Samuel H. Preston (1978) indicated, the decline in mortality due to water- and food-borne diseases in French cities during the nineteenth

century was associated with improved water supply and sewage disposal as well as improved nutrition.[50] The data from U.S. cities corroborated the idea that it was not the provision of central water systems but the supply of filtered water that contributed to the reduction of the incidence of disease.[51]

The evidence from Saint-Louis will show that medical interventions and advances and the expansion of medical services were not the cause of the decline in mortality for different segments of the urban population. Instead, the most important factors at work in the city were a) the sanitation and improvement of the urban environment (draining of swamps, bogs, moats, and other sites of standing water; construction of docks, streets and sidewalks, and public toilets; disinfection of garrisons, houses, public buildings, and ships), b) the provision of clean drinking water and safe food, c) improved housing and sewage disposal, d) and change in personal behavior. Physicians, surgeons, and nurses were few in number. The intervention of biomedicine, with its limited medical techniques, cured some diseases while other diseases defied diagnosis or treatments, and the immunization for smallpox had limited effect. In the areas where drugs were available and effective, patients who received treatments went back to live in the same damaged environment and to drink the same dirty water. Until the 1890s the two hospitals were not equipped to admit women for delivery and for a long time a significant number of *indigènes* did not trust doctors in the areas of health care and education. Thus, public health measures were instrumental in reducing the incidence of diseases among the urban-dwellers.

The fifth and last theme relates to the ecology of disease, that is, the relationship between the environment, the infectious agents, the vectors (flies, fleas, mosquitoes, etc.),

and the hosts (men or animals). The changes in the natural environment can contribute to the emergence or spread of infectious agents into a new host population. In his study of trypanosomiasis in Nigeria, Zimbabwe, Tanzania and Uganda, John Ford (1971), an entomologist, attempted to determine the factors which were instrumental in the outbreaks of sleeping sickness in these regions. He found that the British conquest was accompanied by a series of epidemics, epizootics, and famines. The introduction of the jigger flea from Latin America and rinderpest from Europe destroyed domestic and wild animals and the ancient equilibrium between various natural frontier zones. The sleeping sickness then spread from animals to humans. Ford also concluded that the inability of colonial entomologists to understand the natural history of the disease and to identify the factors responsible for its spread led to the adoption of inefficient control measures.[52]

The need to take into account "the total cultural and environmental setting" of the disease was underscored by G.W. Hartwig and K.D. Patterson (1978). They identified some of the factors that were associated with the outbreaks of major epidemics, that is, ecological change, migrations, international trade, the establishment of colonial rule (conquest, economic policies, urbanization), and psychological stress. All these factors created new disease environments that the researcher had to take into account.[53]

Another scholar, Elizabeth A. Eldredge (1987), has examined the links between drought, famine, and epidemics in nineteenth-century Lesotho. She argued that population disruptions caused by wars and famine were instrumental in the spread of the epidemics of smallpox, measles, dysentery, yellow fever, typhus, typhoid fever and influenza among the Basotho. Eldredge showed that changes in the environment

contributed to the emergence of these diseases, and she underlined the fact that a critical factor in the spread of the diseases was the ability of the infectious agents to spread into a new host population.[54] This approach is useful for analyzing the link between drought, famine and war in Cayor and Saloum, the migration of people to Saint-Louis and the spread of diseases in 1864-5. But there is no evidence to link these events to the 1867 yellow fever epidemic. Lyons Marynez (1992) and Rita Headrick (1995) have also explored the links between the changes in the environment brought about by colonial conquest and rule and the spread of sleeping sickness respectively in Zaire and Congo.

C. Medical Anthropology

Besides historians, medical anthropologists have contributed to our understanding of the African theories of health and disease causation, the African therapeutic system, the white doctor-black patient clinical encounter, the issues of medical pluralism in a colonial/postcolonial setting, Western medical discourse on Africa and of African responses to Western medicine and to colonial administration and missionary health efforts. I will briefly mention here three themes that are relevant to this study.

First, studies on African therapeutic systems explored various issues among which the theories of disease and illness and the therapeutic choices form an integral part of Saint-Louis' experience with health problems. John Janzen (1978)'s study of the Kongo healing system underscored the fact that the decision to consult a local healer or a

western-trained doctor was made by the patients and/or the "therapy managing group," including kinsmen and neighbors, according to their definitions of the nature of the problem.[55] Steven Feierman (1985) looked at the changes brought about by the spread of competing popular therapies, and the introduction of biomedicine, Christian healing, and Muslim healing in Africa and he observed that the African healing system was a dynamic system that was open to new ideas and adapted to new circumstances. He concluded that the African healing system survived the competition because of its holistic nature.[56] This argument is important to an understanding of the competition between the French doctors and the *guérisseurs* and *marabouts* in Saint-Louis.

Second, medical anthropologists have analyzed the doctor-patient encounter in a colonial context and shed some light on the issues of cultural miscommunication and resistance. M. Taussig (1980) argued against scholars who considered the clinical arena as a doctor-controlled territory where the patients played a passive role. He defined it instead as a "combat zone of disputes over power and over definitions."[57] Each party in the encounter had a different conception of health and disease: the doctor considered disease as an "entity" and focused on the individual, while the patient understood illness as one form of misfortune that needed to be viewed in a global perspective.[58] So, instead of a dialogue, what took place in a clinical setting was a double monologue. Nevertheless, the clinical encounter provided the doctor with the material to draw a profile of his patient. Megan Vaughan (1991) analyzed the ways in which biomedicine - including western medical ideas, practices, and discourse produced through the colonial relationship - as a cultural system constructed "the African" as an object of knowledge. The physician

dismissed the patient's perspective on disease causation and therapy and promoted his own theories of health and disease. Vaughan contended that

> The power of the biomedical discourse on colonial Africa lay in exactly this ability to describe poverty, subordination and exploitation in terms of the "sickness" of African peoples who were subjected to these processes, a "sickness" for which they could then be held largely responsible.[59]

As we will see, the hospitals and dispensaries in Saint-Louis were also considered as "combat zones" for the bodies as well as for the souls. The missionaries' records contain statistics of "conversions" that took place in the hospitals and dispensaries *in catimini*, without the knowledge of the patients. There were also cases of patients resisting all attempts to convert them. Doctors dismissed countless illnesses as simply superstition.

As chapters 2 and 3 will show, the French colonial (medical) discourse elaborated a classification system which emphasized the differences between various segments of the colonial society based on citizenship (French citizens and "*sujets*") and socio-economic status (the "*assimilé(e)s*" and *indigènes*). Given the fact that the "sanitary segregation" could not operate in the city because of its particular history, the hospital became the site where these differences were highlighted. The three floors of the main hospital represented the boundaries of difference between groups. However, there were a few instances when some individuals could overnight cross the boundaries, if they were likely to promote French interests. For example, an African chief or a Muslim cleric of the interior, who made the trip to Saint-Louis for medical reasons on the recommendation of a colonial administrator, was hospitalized on the second floor and, thus, underwent a

transformation of his social status from *indigène* (with "primitive" qualities) to *"assimilé"* (versed into the French culture). The logic behind this localized "sanitary segregation" was that the Africans were responsible for the spread of the diseases for which they had already acquired a certain immunity. They needed to be separated from the Europeans.

Finally, medical anthropologists have underscored the importance of using the "political economy" approach to health and disease in colonial Africa. Steven Feierman (1985) has explained that there was a link between the production of disease and the colonial conquest, the colonial rule, and the penetration of capitalism.[60] This is the reason why, according to A. Kleinman (1986), the patient and his/her illness experience must be understood in the context of macrolevel relations and processes.[61] Vaughan's approach located the origins of disease

> not just in `nature', but crucially, in the organization of society, and its constructions and manipulations of `nature'. They lie in systems of production and of social reproduction and in exploitation; they lie in poverty and in the exercise of political power.[62]

By creating a link between specific disease episodes and wider patterns of political and economic change, the political economy approach reveals the racial and class inequalities in a society, the differential availability of health care to different segments of the population, the causes of ill health in a society, and the forces that perpetuate their existence. According to S. Feierman (1992),

> The evolution of inequalities is the result of the contest among all the major players in colonial political and economic competition.[63]

The issues of social production of disease and illness and of structural inequities in health care delivery are relevant to the analysis of the factors involved in the emergence or

reemergence of diseases in Saint-Louis as well as the therapeutic choices the patients had to make, as we will see.

One of the issues that the analysis and presentation of the data on Saint-Louis have identified relates to change. I have adopted a topical or thematic organization instead of the `traditional' chronological approach for a certain number of reasons. First, the sources raised questions that needed to be fully addressed. Second, the emergence of diseases in the city had external and internal dimensions I had to take into account. Finally, the colonial authorities and health officials did not coordinate various projects for resolving city's problems: for example, the organization of medical services and the creation of medical infrastructure took decades to complete; the water supply system started in the 1850s and, by 1914, all the technical problems were not completely resolved, while the sewage system was tried and abandoned more than once. For all these reasons, I have instead used a thematic division, thus incorporating different levels of changes inside each theme: changes in the generation of sources and in emphasis in colonial concerns, in the conceptions of diseases and health care, in the incidence of diseases, and in the public health measures. The choice of the time period for this study is justified by the fact that it was during the second half of nineteenth century that Saint-Louis was transformed from a small trading post into a port-city and that process of city growth provoked serious health problems. Now, it is time to look at the sources and the methodology used for this study.

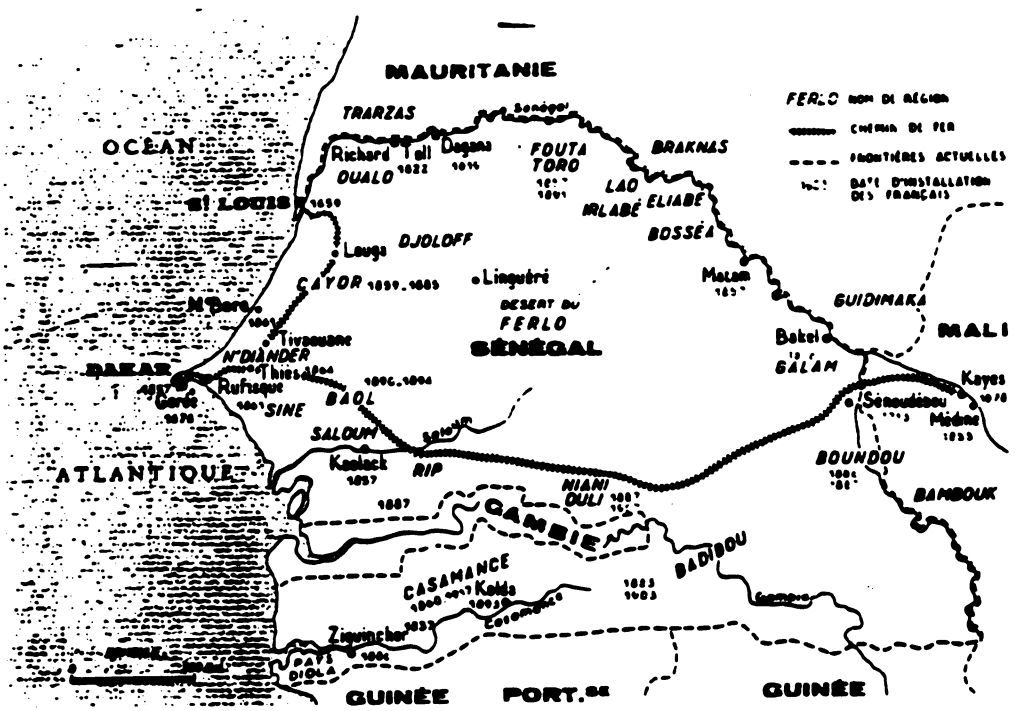


Figure 1. (Source: Niane and Suret/Canal,1961 P. 109)

NOTES

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18. David Simon, *Cities, Capital and Development. African Cities in the World-Economy* (London: Belhaven Press, 1992). See also Anthony O'Connor, *The African City* (London: Hutchinson U. Library for Africa, 1983), pp. 28-41.

19. David Simon, *Cities, Capital and Development. African Cities in the World Economy* (London: Belhaven Press, 1992), p. 26.

20. William B. Cohen, "Malaria and French Imperialism," *Journal of African History*, 24 (1983), pp. 23-36.

21. Oliver Ransford, *"Bid the Sickness Cease." Disease in the History of Black Africa* (London: Oliver Ransford, 1983), p. 1. See also William McNeill's *Plagues and Peoples* (1976) which discussed the contribution of smallpox to the Spanish conquest.

22. Roy MacLeod, "Introduction," in Roy MacLeod and Milton Lewis (eds.), *Disease, Medicine, and Empire. Perspectives on Western Medicine and the Experience of European Expansion* (New York: Routledge, 1988), p. 5

23. John J. McKelvey, JR., *Man Against Tsetse. Struggle For Africa* (London: Cornell University Press, 1973), p. vii.

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epidemics in US cities revealed deep-seated feelings people had toward the poor and the new immigrants, especially the Irish.

43. Nancy E. Gallagher, *Medicine and Power in Tunisia, 1780-1900, op. cit.*, p. 2.

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45. See, for example, Peter Curson and Kevin McCracken, *Plague in Sydney. The Anatomy of An Epidemic* (Kensington, Australia, 1989): plague highlighted the inadequacies of a municipal system and the bad living conditions of Sydney's poor. Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago: University of Chicago Press, 1962), for the examples of "dissipation of piety."

46. Nancy E. Gallagher, *op. cit.*, pp. 11-13.

47. For more information of the social definition of enemies, see Jerry D. Rose, *Outbreaks. The Sociology of Collective Behavior* (New York: The Free Press, 1982), pp. 148-51.

48. Maryinez Lyons, *The Colonial Disease, op. cit.*, p. 5.

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62. Megan Vaughan, *Curing their Ills...*, *op. cit.*, p. 5.

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CHAPTER 2

SOURCES

Reflecting on the obligation of the scholar to his/her evidence, Edward Hallet Carr, a leading historian of the 1960s, argued that history is a process of interaction between the historian and his/her evidence, a continuous dialogue between the present and the past.[1] The evidence comes from a variety of sources, including official records, private documents, newspapers and magazines, visual materials (photographs, maps, postcards), artefacts (buildings, tools), and personal evidence (e.g., letters, oral history). Each category of sources has its advantages and problems or deficiencies that the historian needs to identify in order to make good use of different sources. This section seeks to investigate the usefulness and reliability of the evidence from the archives (official as well as missionary records), informants collected during my field work in Senegal and France in 1994-5, as well as from the published sources.

The official archival documentation for this study comes from various places: a) the *Archives Nationales du Sénégal* in Dakar, especially the *Séries Santé* (H), *Politique et Administration* (G), and *Travaux Publics* (L and P); b) the *Archives Municipales* in Saint-Louis (*Hôtel de Ville*), especially the general correspondence; c) the *Archives Nationales de France, dépôt d'Outre-Mer* in Aix-en-Provence, in particular the *Séries Géographiques* (Sénégal VII, XI, XII), the *Dépôt des*

fortifications, and the *Agence F.O.M.*; c) and the *Service Historique de la Marine* in Chateaux de Vincennes (France; especially the *Séries* CC7).

Archives

The organization of the health service, under the control of the military health officers, has affected the production of official archival records. In 1850, when the health duties were the responsibility of a small desk within the office of the *Ordonnateur*, the early archival materials were few and of poor quality. The letters and various reports were handwritten and were included in a few notebooks. A first inventory of the available archival materials was done on Governor Protet's request and more inventories were made available in the 1880s.[2] With the passing of time, the number of letters and reports increased and most of them were typed. By 1890, when a colonial health service, accountable to the Governor, was created, more and diversified information was available. During the years following the creation of the federation of the *Afrique Occidentale Française* (June 1895), a new organization of the bureaucracy took place, which introduced more centralization and control by creating the *Inspection des Services Sanitaires Civils de l'A.O.F.* in January 1903.

At the turn of the century, the Colonial Ministry became aware of the importance of the archives. In a letter to the governor of Senegal on 8 December 1905 the Minister of the Colonies, Clémentel, highlighted the importance of the archives for his administration. He requested information on: a) the existence or absence of historical archives; b) the content of the archives, the system of classification and inventories, the date of the oldest

document, the conservation of the documents (bound or in boxes, in good or bad shape, catalogued, etc.); c) and the location of the archives (in the city and in the small localities).[3] The enquiry would lead to the organization of the archives.

The analysis of the data collected shows that between 1850 and 1895 the official records emphasized the epidemic diseases that struck Saint-Louis, the colony and most of West Africa (especially yellow fever, smallpox, cholera, and plague). The health authorities were mainly concerned with the health of the troops, officials and bureaucrats, and merchants who had access to the military hospital.

Between 1896 and 1914 new colonial concerns emerged and emphasis moved from military concerns to the general welfare of all the segments of the population. As chapter 5 will show, the military hospital opened its doors to all the categories of patients, while the civilian hospital became fully operational by 1897. The shift in emphasis can be evidenced in the process of production of the archival materials. Indeed, the generation of monthly and annual reports started in 1896. The public bureaucracy was enlarged with the creation in 1905 of the *Assistance Médicale Indigène* - a form of public charity -, and of the *Service d'Hygiène* in order to promote the idea of health for all. Thus, the focus of the medical authorities moved from the epidemics to the routine health care and more emphasis was put on prevention rather than on cure. The new policy implemented by the *Service d'Hygiène* was consistent with the progress made in the area of bacteriology, which indicated that prevention contributed to the decline in disease mortality.

The amount of information related to health issues increased at the same time. More statistics concerning the diseases treated in both the Colonial Hospital (called

Military Hospital before) and the Civilian Hospital became available after 1895. But these statistics are problematic because many disease categories are vague and ambiguous, and definitions change over time. The same was true concerning the diagnosis, prognosis and treatment. In addition, the classifications of patients are not stable. Early on, the distinction was made between the Europeans, the *indigènes* and the *hommes de couleur*. In later reports, the category of *hommes de couleur* was replaced by the term *assimilés*. In both cases, it was not clear who was included in this category. Mortality statistics during the time of epidemic diseases were not adequate because they recorded only the deaths that occurred in the hospitals.

The information does not equally cover all the segments of the urban population. The data provided more details about the Europeans (and *assimilés*) than about the "*indigènes*." Before the influx of the Europeans into Senegal in the 1890s, most of the medical records were silent about women (wives of military and civilian government employees, mothers, daughters and relatives, and prisoners). There were few European women in Saint-Louis, and, therefore, the needs of local women were simply ignored. As chapter 5 will show, the two hospitals were not equipped to admit women, and even when it occurred, their admission was considered a "favor". Thus, until the late 1890s, the only group of women who appeared in the medical and police reports were the *filles soumises* ("submissive girls"), an euphemism for sexual workers or prostitutes who were in contact with the soldiers and had an impact on their health. Thus, the available medical reports related to a small percentage of the urban population.

The most important official documents used in this study included a) the Sanitary

Commissions (Committees, Councils) minutes or records; b) the Annual Reports since 1896; c) and the general correspondence and reports between the *médecin en chef* and Governor and his collaborators (*ordonnateur*, *commandant d'infanterie*, *directeur de l'intérieur*), between the Governor and Governor General, UnderSecretary and various Ministries dealing with colonial matters,[4] and between the Governor General and *Commandant Supérieur des Troupes*, on the one hand, and the *Inspecteur des Services Sanitaires Civils*, on the other. These letters and reports addressed various issues, including among others, the outbreak of the epidemic diseases, the causes of ill-health, the sanitary measures, the search for safe drinking water, and the construction of docks. They also help illuminate the decision-making process within the bureaucracy.

The official documents provide the researcher with interesting insights into health care delivery and various aspects of urban life. The documents contained, nevertheless, rather moral judgements about the indigenous people. Indeed, the majority of health officers viewed Western medicine as an integral part of the "Civilizing Mission", which sustained the official ideology. They perceived themselves as agents of "progress" engaged in a struggle against the forces of darkness and barbarity and in a mission to "eradicate" diseases. Few surgeons and physicians[5] really tried to understand the local culture, lifestyle and medical systems not only for ideological reasons, but also for other reasons that have to do with their training and time constraints.

For example, of the fifteen courses that were taught in the Navy surgery schools at Brest, Rochefort, and Toulon in the 1870s, not one was devoted to the study of the diseases of Africa or Asia or to non-Western medical systems. When the expression

"exotic pathology" appears twice in the course description, it is only one chapter in a course dealing with other issues.[6] Thus, from their very training, health officials knew very little about "other" peoples' diseases, and surgeons, in particular, did not have enough skills to deal with such diseases. The creation in April 1890 of the *Ecole du Service de Santé de la Marine* affiliated with the *Faculté de Bordeaux* was motivated, in part, by the felt need to remedy the situation.

Moreover, surgeons and medical doctors did not stay long enough in their positions to gain the necessary experience and increase their knowledge about the local realities. They were appointed for two or three years, and they left before becoming familiarized with the local environment. It was only after the creation of the *Assistance Médicale Indigène*, in 1905, that a few medical doctors extended their stay by transferring into the new bureaucracy.

The archives also contain the letters and petitions written by the Senegalese. They reveal how some groups or individuals reacted to different situations, such as the sanitary measures imposed upon them by the government during the epidemic crisis, the incarceration of loved ones suffering from mental illness, perceived mistreatment in a clinical setting, natural disasters (flood, famine) and the high cost of living during World War I, to mention only a few examples.

The official archives also contain government and semi-official publications that provide additional information which may not be included in the official records. The *Annuaire du Sénégal et dépendances*, an annual publication founded by governor Louis Faidherbe in 1855, provided the reader with a chronology of events related to France's

progressive occupation of the hinterland of Saint-Louis and beyond. It presents the information that helps understand the evolution of the bureaucratic organization - - including the changing lists of its personnel and occupational diversity - - peace treaties with local chiefs, reports of the economic situation, decrees and various laws.

The *Moniteur du Sénégal et dépendances* was another official journal, initiated by Faidherbe in 1856, which was later called the *Journal officiel du Sénégal et dépendances*. It deals with various issues such as the current events, the military campaigns, decrees and ordinances, public notices, and offers advertisements for real estate and new products (drugs, soaps), new technologies (icemakers, typewriters, *couscous*-mixers), and new coffee places and clubs in Saint-Louis. From this perspective, the *Moniteur* is valuable for the study of social and cultural change, as Saint-Louis was transformed from a fortified trading-center to a colonial port-city/capital in the framework of the expansion of international commerce.

The *Moniteur* also provided a forum for the discussion of colonial issues, ethnography, natural history and hygiene; most surgeons and medical doctors published lengthy articles. Dr. Berenger-Féraud, Navy *médecin en chef* in Sénégal, and Dr. A. Corre are good cases in point. In a series of articles published in the *Moniteur* in 1873, Berenger-Féraud presented a vivid description of Saint-Louis' spatial lay-out, housing conditions, public buildings; and his perception of the causes of ill-health in the city, and on the critical issue of the provision of safe drinking water. His articles made a big impact on the policy-makers.[7] In other pieces, Dr. A. Corre described indigenous drugs sold on the marketplace in Saint-Louis and urged his colleagues to study the indigenous systems

of medicine.[8] Such open-mindedness is an exceptional quality for the age.

Other publications of interest include the *Revue Coloniale* which became the *Revue Algérienne et Coloniale* and, after 1862, the *Revue Maritime et Coloniale*, the *Bulletin du Comité d'Etudes Historiques et Scientifique de l'Afrique Occidentale Française* (1917), later replaced by the *Bulletin de l'I.F.A.N.* Some issues related to the medical situation in the colonies were discussed in these publications.

But the surgeons and physicians used mainly the medical press, which flourished in France in the context of the public health movement - the *Parti d'Hygiène Publique*[9] - to publish the results of their research on epidemics, endemics, epizootics, sanitation police, vaccination, water supply, secret remedies and food-related problems, public hygiene, and official medicine. Doctors considered Saint-Louis as their terrain for experimentation. Their scholarship appeared in the *Archives de Médecine Navale et Coloniale* (1864; superseded by the *Revue Maritime et Coloniale* in 1945), the *Annales de l'Institut Pasteur*, the *Annales d'Hygiène et de Médecine Coloniale*, the *Bulletin de la Société de Pathologie Exotique*, the *Bulletin de la Société de Géographie de Marseille*, the *Bulletin de l'Académie de Médecine*, and the *Revue des Sociétés Savantes*. The following list includes the names of the main contributors of relevance to this study to the knowledge of health issues. They published their main findings in various journals listed above.

Figure 1. List of the leading surgeons and medical doctors and areas of interest.

year	name	topic
1873-77	Berenger-Féraud	yellow fever, typhoid, larvae
1882	Borius, A.	environment and disease
1895	Navarre, J.P.	hygiene (guide)
1896-1910	Marchoux, E.	paludism, meningitis, dysentery, pneumonia
1901	Astrie, M.	sleeping sickness
1901-07	Kermorgant, A.	yellow fever, epidemics, venereal diseases
1904	Massiou	vaccine
1905	Houillon	smallpox
1905	Peyrot	Bambara medicine
1906-09	Merveilleux	demography
1906	Moal	mosquitos
1907-12	Thiroux, A.	sleeping sickness, cholera, paludism
1909	Gallay, H.	health care
1910	Abbatucci	morbidity
1912	Pelletier, J.	elephantiasis
1912	d'Anfreville, L.	mosquitos
1912	Dufougere, W.	cholera
1912-13	Bourret, G.	tuberculosis, paludism, disinfection
1914	Collomb	yellow fever, plague, smallpox
1914	Commeleran	mental illness
1914	Delrieu	health service
1919	Thoulon	influenza
1920	Roubaud	tse-tse fly

sources: see bibliography.

Doctors also published monographs discussing medical and environmental issues as well as hygiene. They argued against those who, through their writings or speeches, tried to scare people away from visiting or moving to Senegal, considered as the most dangerous colony after the Caribbean (especially Guadeloupe and Maritinique) because of

its insalubrious climate. In their works, they explained that it was possible for Europeans to live a productive life in Senegal. This is the reason why the most representative among them focused on the environment,[10] hygiene[11] and on the two main killers of Europeans, that is, yellow fever and malaria.[12] Other doctors emphasized the effort made by the colonial administration in order to promote the public health in the colony, in particular the health of the indigenous people.[13]

Missionary archives also shed light in the social and medical history of Saint-Louis. Saint-Louis early attracted three religious orders, that is, the *Soeurs de Saint-Joseph de Cluny* (1819 on), the *Frères de Ploermel* (1841-1904), and the *Pères du Saint-Esprit* (1847 on). They played a major role in the areas of education and health care.

The *Soeurs* of Cluny worked in the hospitals and dispensaries in Saint-Louis as *Soeurs hospitalières* or nurses until 1904, when the principle of separation of the state and the church was applied to Senegal. They sent back letters to their headquarters in which they described the situation in the city and in the clinical setting. Their archives are housed in Paris XIV (21, Rue Mechain). The most important documents for this study are the *Bulletin de la Congrégation de Saint-Joseph de Cluny* (1885-1904) and the correspondence exchanged between the administration and the *Soeur Supérieure* who supervised the nurses at the hospitals in Saint-Louis. They provide information about the organization of the military hospital, general atmosphere during the epidemic crisis, the profile of its patients and their expectations and reactions to various situations, the treatments prescribed by the doctors and the problems the nun-nurses faced in the accomplishment of their duty.

The Sisters' archives need to be approached as a particular discourse. Indeed, the *Soeurs hospitalières* did not consider themselves to be government employees but as instruments in the hands of God to set people free from the evil that diminished their life. From their perspective, disease was a tangible manifestation of the evil, and healing was just the first step in the long process of conversion. Their model was Jesus, whose answer to John the Baptist's messengers was used as the corner stone of missionary activity:

> Go and tell John what you have seen and heard: the blind can see, the lame can walk, the lepers are made clean, the deaf can hear, the dead are raised to life, and the Good News is preached to the poor.[14]

It goes without saying that, in practice, there was a gap between the ideal and the practices. The evidence presented in chapter 6 shows that the Sisters' response to sudden epidemic crisis was not different from the rest of Europeans: shock, justification (and processions), fight or flight.

The Sisters' outlook on life, stemming from their faith, helps explain the stereotypes and religious biases contained in their evidence, their attitude toward the Muslim majority among their patients as well as non-Muslim Senegalese, the dual statistics of patients cured and converted, and their evaluation of medical events, such as the epidemics, as stemming from supernatural agency at the exclusion of natural or human causes. Their faith is the reason why their judgement had a moral tone. They considered belief systems other than Christianity as superstition.

The Sisters' archives are nevertheless valuable in the sense that they provide important details about their patients, mostly ordinary poor people powerless in the face of serious health problems; they described their ailments, their poverty, and their slums (Guet

NDar, NDar Toute, Sor, Gokhoumbaye). They also relate the visits made to the military hospital by such distinguished individuals as governors, ministers, bishops, and African chiefs.

The archives of the *Pères du Saint-Esprit* are housed in Saint-Louis in Senegal (Rue Duret) and in Chevilly-Larue in France (12, Rue du Père Mazurié). The most relevant documents in Saint-Louis are the *Journal de la Communauté de Saint-Louis (1852-1890)* and the *Echo de Saint-Louis* (1906-1920). The *Journal* was a diary kept by the priests in which they recorded all the major events that took place in Saint-Louis, with the exception of the war years (1914-1919). A great deal can be learned from it concerning the epidemics, in particular the 1880-81 yellow fever, and the reactions of the urban dwellers to the outbreak of diseases (ordinary people, health officers, political and commercial elite, and religious authorities). The *Journal* also provides insights into the functioning of the urban society, that is, the prejudices, heterogeneity and tensions across *quartiers*, classes, religions, races and ethnic groups, but also, to some extent, homogeneity and solidarity within them.

The *Pères* were not directly involved in the health care system; but one low-ranked priest who worked as a chaplain at the hospital provided first-hand information regarding the medical events. His main duty, however, was to convert the mostly Muslim patients to Christianity. Thus, the *Pères* could get the information related to medical events from three different sources: the Sisters, the chaplain, and the health service. They knew what they were talking about in the diary, especially when they were reporting on diseases. But

their views of indigenous cultures, religions, and lifestyles were dominated by value judgements.

Thus, the *Journal* contains not only the facts but also people's reactions to events, and the priests' opinions and judgments about city life and events. The researcher needs to sort out what is important and what is trivial. Such a task can be accomplished by comparing the *Journal* with other sources.

The *Echo de Saint-Louis*, founded in 1906 by Father Brottier, was conceived of as a journal or periodical in which the *Pères* would give general information concerning current events, the activities of the parishes, the history of Catholicism in Senegal and the history of Saint-Louis. Sometimes, scholars published their preliminary findings in the *Journal*.[15] Thus, the *Echo* can be considered as a mixture of both primary and secondary sources.

The missionary archives in Chevilly-Larue contain a copy of the *Journal de la Communauté* described above and additional materials, such as the *Bulletin de la Congrégation* (1856-1902) and general correspondence (*Affaires diverses*), in particular the files (*boîtes*) no. 157-B on Senegambia, no. 158-B concerning Senegal, and no. 159-B also about Senegal. The letters shed some light on certain issues not mentioned elsewhere because the missionaries did not have the political constraints imposed upon government officials for whom even the announcement of the outbreak of a disease, for example, was a political act. In addition, they had the advantage of staying longer in Saint-Louis and having more contacts with the urban dwellers than did the officials. But their religious bias prevented them from describing everything they saw and heard with objectivity, since

they perceived Muslims and non-Muslims as fanatics, superstitious, and ignorant. In short, the missionary archives are of great value to historian if submitted to a critical analysis, and they can be used to supplement the official archives.

The Published Sources

In the second half of the nineteenth century some individuals wrote historical/ethnographical accounts that have constituted important sources of information for researchers. Some of these sources address health issues while others clarify the priorities of the colonial administration at different junctures, the class and race variables which affected the disease outcomes, as well as some aspects of the urban geography of diseases. The historian needs to understand that most of these sources were written to fulfill important ideological functions, to justify policy and praxis, or to influence the decision-makers in Paris and Saint-Louis.

Ethnographical/historical works clarify urban social stratification and Saint-Louis' spatial arrangement. The first two works, *Esquisses Sénégalaises* (1853) and *De la Sénégambie Française* (1855), were written at a crucial time in the history of Saint-Louis, when a slave society was being dismantled and a new social order was being established. They wrote for the French ruling class engaged in a path leading to the constitution of a new class. They reminded the new leaders that they had the responsibility to find a new *modus vivendi* for those who had lived off slavery and the slave trade. The authors emphasized the fact that the *habitans* (mostly mulattos) were Christians and cultural

brokers, working for the spread of *l'idée française*.

The most famous work is the much-quoted *Esquisses Sénégalaises* (1853) by Abbé Boilat, a Catholic *métis* priest who first organized the secondary school system in Senegal. The *Esquisses* dealt with Senegalese ethnography and history. In long paragraphs, it described the villages and islands in the immediate hinterland of Saint-Louis, the city's neighborhoods (Guet N'Dar, N'Dar Toute and Sor), the monuments, and some aspects of city's life in the middle of the nineteenth century.

Some of Boilat's biographers argued that he was "one of the great Senegalese of the nineteenth century"[16] and that his work comprised a cultural, social and economic program aimed at promoting the supporting institutions of the "civilizing mission," that is, the church, the school system, and the economic institutions.[17] Thus, Boilat needs to be understood as one of the promoters of the cause of colonial expansion because he believed that "progress" could be brought about by the colonial rule. His educational background, his career as a priest, and the influence of his mentors affected his perception of the colonial enterprise. Another description of Saint-Louis can be found in Frederic Carrère and Paul Holle's *De la Sénégambie Française* (1855). F. Carrère, chief of the judiciary service in Saint-Louis, and Paul Holle, mulatto, post commander at Bakel, Sennoudebou and Medine, presented a general picture of an urban society which was in the process of re-structuring. They described the spatial lay-out of the city and the different social/occupational categories. But their depiction of the indigenous people was very negative. They referred to them as "fanatics" and "victims of a mysterious malediction"; according to them, the only remedy to the situation was the promotion of commerce and

Catholicism with the help of the mulatto community.[18]

Thus, the information that Boilat, Carrère and Holle presented needs to be used with the understanding of the purpose their authors had in mind and the circumstances under which they were written. They played an important role as powerful propaganda tools for the defense of the colonial enterprise, when the public opinion in France was indifferent or anti-colonial.

In 1864 another description of Saint-Louis's occupational categories appeared in *Les Colonies et la Politique Coloniale de la France* written by another advocate of French colonial expansion, Jules Duval. Although believing in religion (Catholicism) and education as the instruments of the civilizing mission, Duval, nonetheless, argued in favor of the use of Muslims as collaborators of the French administration in the implementation of the colonization schemes.

Dr. Berenger-Feraud's description of Saint-Louis in 1873 can be mentioned here. Graduated from the Navy medical school at Toulon in 1852, the young surgeon spent 19 of his 35 career-years on board ships or in the colonies. He worked in Senegal between 1871 and 1873 successively as *Chef de Service de Santé* in Gorée (1871), *Médecin en Chef de la Marine* (1872), and *Directeur du Service de Santé de la colonie du Sénégal et Dépendances* (1872-3). While in Senegal, he published a prize-winning book entitled *Epidémies de Fièvre Jaune au Sénégal* in 1872 and a series of articles in the *Moniteur du Sénégal et Dépendances* in 1873. His articles provided a broad picture of the evolution of Saint-Louis's spatial arrangement and a description of the public buildings, monuments and places in the city. He also gave insights into the *hivernage*-related ailments and the

problems of water supply. After he left Senegal, he published *De la Fièvre Jaune au Sénégal* in 1874 and his *Traité Clinique des Maladies des Européens au Sénégal* in 1878. These works dealt with yellow fever and other diseases that had an incidence on the lives of Europeans.

Another important work in this category of published sources comes from a privileged eye-witness, L. Faidherbe, who played a major role in Saint-Louis's development and in French expansion in Senegal. Indeed, as governor (1854-61; 1863-65), Faidherbe contributed to the organization of the bureaucracy, the diffusion of the French language and culture, and the generation of sources. After he left Senegal, he became a senator and continued to defend expansionist policies. In *Le Sénégal: la France dans l'Afrique Occidentale* (1889), Faidherbe wrote intelligently about Saint-Louis's urban society and environment. Indeed, he rejected the stereotype that Senegal was a dangerous and unhealthy place. He argued that between 1855 and 1865 he undertook public works which transformed Saint-Louis into a safe city. He also gave a short summary of the history of the provision of water to the city. However, Faidherbe judged that Senegalese lacked personality, the power of the will, anticipation, and perseverance which justified their subjugation by other people.

Thus, all these sources need to be used critically because they not only contain evidence, but also value judgements and stereotypes. They give the point of view of outsiders: colonial administrators, physicians and surgeons, and missionaries. They must be supplemented by the internal sources generated by the Senegalese themselves, who

have to provide answers to some of the questions left unanswered by the sources presented so far.

Oral sources

Research based on oral sources done by historians in Africa since the sixties shows that the questions of utility and reliability that historians usually demand of written sources also apply to oral sources. J. Vansina defines oral history as including:

> reminiscences, hearsay, or eyewitness accounts about events and situations which are contemporary, that is, which occurred during the lifetime of the informants.[19]

Oral tradition, on the other hand, comprises memorized speech, historical gossip, personal tradition, group accounts, traditions of origin and genesis, epics, tales, proverbs and sayings.[20]

During my field work in Saint-Louis and Dakar in 1994-5, oral history revealed very little concerning such medical events epidemics or endemics. I found only two informants who could provide eye-witness accounts of the plague of 1917-1920.[21] The most important eye-witness informant was Omar Sarr, born in Saint-Louis in 1897 from a "good family". His father, Ndiaye Sarr, replaced Bou-el-Moghdad as the chief of the Muslim tribunal (1880-1903); his father was wealthy enough to buy his home from the Carpot family in 1886. His brother became deputy-chief of the same tribunal (1903-1933). From his own account, Omar Sarr received an Islamic education in 1907 from *Serigne* Ahmadou Bamba, the founder of the Mourides brotherhood, before attending the French school at the age of twenty-one. But there is no independent evidence to

corroborate this assertion. What is certain is that he later worked for two years as an accountant at the Devès & Chaumet company, two years at a local bank, and twenty-three years at the Lacoste company (1930-1953). He lost his brother to the plague which struck Dakar in 1914, and he was twenty years old in 1917 when he witnessed the outbreak of plague in Saint-Louis. As an eye-witness, Omar Sarr was able to talk about the epidemic with competence and sincerity. He explained the reactions of different segments of the Senegalese population to the sanitary measures taken by the government in order to contain and control the spread of the disease. However, he did not have the chronology of events in mind but that can be corrected by the archival material. Also his attitude toward the Guet-NDarians was characterized by a class bias, which was in conformity with the general attitude of people on the island who consider(ed) the fishermen as uneducated, ignorant and irrational.



Figure 2. Omar Sarr

The other important eye-witness informant, Moctar Diagne, was born in 1895. His father was a Muslim cleric who was a pilot working at the mouth of the Senegal river. Diagne learned good French although he never attended the French school. He exercised several professions: fisherman, soldier, and peddler specializing in the millet and salt trade between Saint-Louis and Kayes. In 1917 he was in Saint-Louis, when the plague struck the city and killed, among others, his sister and his aunt. His first-account of the plague corroborated in many points the version of events contained in Omar Sarr's testimony. The testimonies from Omar Sarr and Moctar Diagne provided insight into the reactions of the Senegalese to the outbreaks.

Some informants were able to provide some insights about historic indigenous conceptions of health, ill-health, and health care practices, which they regarded as static and unchanging. Healers were particularly concerned with demonstrating their legitimacy. They were eager to demonstrate their credentials and credibility: they talked more about their reputation as healers of great fame and their income than about the indigenous theories of disease. Two healers exhibited the pictures of and gave long explanations about their meetings with foreign visitors, mostly Europeans, who came to interview them. For them, it was a way of demonstrating their credentials and their credibility.[22] Thus, the healers had personal interests to defend and promote, which affected their testimonies in terms of coherence.

The informants from Guet NDar were very defensive when they answered the questions related to the reactions of their parents and grand-parents to sanitary measures taken by the government during the 1917 plague epidemic. They rejected the very notion



Pape Cey and Moctar Diagne (Saint-Louis 1994)

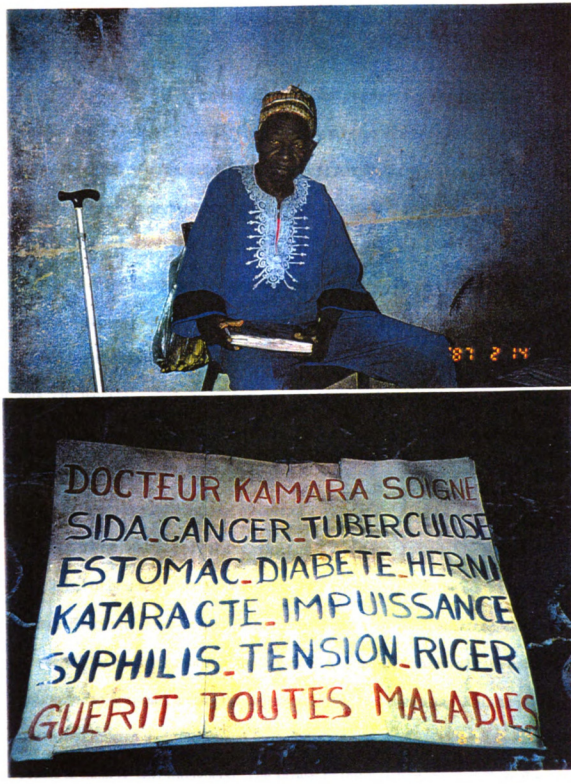


Figure 3. Kissi Kamara

of resistance to sanitary measures. According to their version of events, the fishermen complied with the instructions given to them by the authorities and they went to the lazaretto.

This denial of some aspects of the medical events that occurred during the colonial period must be understood in the context of the process of fabrication of history (from below) undertaken by the urban poor in order to remake the character of their culture and identity. My informants's interpretation of the past medical events had something to do with their present-day reputation as "rebels." Indeed, the interviews took place a few months after the Senegalese leading newspaper, *Le Soleil*, reported on the riot that occurred in Guet-Ndar on July 12, 1993 following a dispute about competing views of organizing a Muslim baptism, especially the expenses and festivities. The calm returned to this "city within the city" - to borrow an expression used in the newspaper -, only after the police intervened with the tear-gas. Thus, history is part of the fishermen's daily struggle in order to reshape their identity and culture.

The explanation about the identity of a water spirit, Mama Coumba Bang, raises the issue of the influence of cultural values on oral history. Indeed, Mama Coumba Bang is believed to be a water spirit living inside the Senegal river near the northern part of the island. Every year, near the rainy season, one specialist in occult affairs collects the "presents" for her among most of the city-dwellers and offers them to her in order to avoid deaths due to drowning among the swimmers during the hot season. But, curiously, informants insisted that "foreigners" formed the majority of the victims. The question that comes to mind is: why foreigners? The answer to this question seems to lie in the

unconscious prejudice (contempt?) that the Saint-Louisians have towards other Senegalese as well as non-Senegalese ("*niakh*" or "bush people"), that must go back to the time when Saint-Louis was the capital of Senegal, Mauritania and French West Africa. That attitude explains in part the stereotypes that other Senegalese exhibit toward the Saint-Louisians. One needs only to look at the ways in which Ousmane Socé Diop, a Lebou from Rufisque, depicted the hero of his novel, *Karim*, and the caricature of women from Saint-Louis presented in the Abdoulaye Sadji's novel, *Nini, Mûlatresse du Sénégal* (1965).

This issue will be discussed later. Suffice it here to say that the fact that one first-class hotel at the entrance of Saint-Louis is named Hotel Mama Coumba Bang shows that this water spirit is a metaphor which stands for something deeper because it appears that death due to drowning has nothing to do with one's swimming ability. Instead, one's origin makes one an easy target for the evil spirit.

The only available work based on oral histories which deals with indigenous perspectives on health issues in Saint-Louis is a short article written by Robert Arnaud (alias Randau), a colonial administrator who served in French Soudan, Mauritania, Senegal and Upper Volta. While in Senegal in the early 1930s, he interviewed some mulatto families in Saint-Louis about "magic" and "sorcery". In 1934 his article, entitled "Notes sur la magie et la sorcellerie à Saint-Louis", appeared as an appendix to Dim Delobsom's *Les Secrets des Sorciers Noirs*, a book that won the *grand prix A.O.F.* in 1934.

R. Arnaud dealt with African healing techniques and the mysteries on which they were based, and explained that angry spirits caused some diseases and other cases of misfortune. According to Randau's informants, spirits were responsible for phenomena such as repeated floods in Guet NDar, deaths due to drowning in the Senegal river, haunted houses, streets and trees, and fatal encounters during the "evil hour" (noon and midnight) when evil spirits metamorphosed into white horses, bread sticks fought in the middle of a street, "evil wind", and a cursed barrel attacked people. Some of his informants told him an interesting story of a man who was hastily buried shortly after his death, but, who then rose up from his tomb and returned to the city. This case obliged the municipality to make a medical examination compulsory for all corpses who died in the city before their burial.

During my field work in 1994-95 a certain number of informants, including university teachers, mentioned some of these stories, which shows that they are widespread not only among the ordinary people but also among the middle class. These fear-inspiring stories, which present "history as sorcery" - if I can borrow Taussig's expression[23] -, actually contain coded messages that, if correctly decoded, can give the key to an understanding of important aspects of the local history of insertion of Saint-Louis into the world system, such as the process of social stratification and its consequences in terms of inequality and envy, the levelling mechanisms at work in the urban society, the troubled relationships created in a slave society, and the ongoing process of medicalization of the urban society, that is, the process by which more and more areas of life were being incorporated under medical jurisdiction.[24] The latter indicates that, at a certain point in

time, either Western medicine had gained prestige among some social groups in the city or that the enforcement of sanitary measures was felt by all the city-dwellers.

Literary Evidence

So far, this chapter has focused on the provenance, usefulness and reliability of the archival materials, the published sources, and oral sources. But to the majority of those who generated these different types of evidence, Senegal was in a way a "strange" land, a myth. It is important to understand the colonialist discourse, through their descriptions of the local people and environment, and their relationship with both.

There are many ways of getting access to the life of the second half of the nineteenth century, through the newspapers, poems, novels, films, cartoons, and paintings. But time does not allow a thorough study of all these sources. A choice is made here of one novel which is representative of the period. The novel is useful to the historian in the sense that it helps explain the life of the time. It can be critically used to supplement the information contained in the archival materials, the secondary literature and the oral sources.

A novel which has profoundly affected French imagination concerning the climate and people of Senegal (and Africa) is Pierre Loti's novel entitled *Le Roman d'un Spahi* (1881).[25] Pierre Loti was actually the nickname used by the *enseigne de vaisseau* Louis-Marie-Julien Viaud, who spent two years of his long career as Navy officer in Senegal between 1873 and 1875.[26] He lived in Saint-Louis and visited Dakar and some of the marketplaces along the Senegal river, such as Dagana, Podor, and Matam. During his

stay, he learned about the epidemic diseases which struck Saint-Louis a few years before his arrival and made many victims, that is, smallpox (1864), yellow fever (1867), and cholera (1868-9) epidemics. Between the time he left Senegal in 1875 and the publication of his novel in 1881, yellow fever struck Saint-Louis twice, in 1878 and 1880-81. Between 1869 and 1880 Pierre Loti travelled widely on board Navy ships. He visited Algiers, Senegal, Brazil, Newport, Halifax, and Tahiti as well as the West coast of Africa. He read widely about foreign lands and their riches and dreamed of becoming wealthy some day, but his dream never materialized. He then became a writer, a kind of reporter-ethnologist, in order to make his name known. He succeeded and his works had a great impact on the imagination of the subsequent generations.[27]

The *Roman d'un Spahi* is an autobiographical account in which the main character, Jean Peyral, was unhappy with his assignment and was bored to death. He considered his stay in Senegal as a forced exile, which gave him a good excuse to fall in love with three women: one mulatto (Cora N'Diaye), one European (married to a French merchant), and one black from Galam (Fatou-Gaye).

Despite the fictional aspect and exaggerations inherent to all fictions, P. Loti's novel provides insight into the myths that then occupied the French thought: the myths of the insalubrious African climate and environment and of savage and superstitious people. Indeed, in the *Roman d'un Spahi*,[28] Pierre Loti described the natural environment in negative terms. Senegal is presented as a hot place, a land of curse and exile and forgotten by God. The heat of the sun burns everything, makes people feel sleepy, and

paralyzes them. This theme is omnipresent in the novel. There were swamps everywhere. The desert (an invention) was associated with terror and death due to thirst. The rainy season brings deadly fevers. The novel's animals are associated with filth, death and putrefaction, that is, hyenas, jackals, and vultures.

The novel describes the precarious and unhealthy social conditions in Guet-NDar, one of Saint-Louis' neighborhoods and the misery of the beggars who visit the marketplace there. They are sick people, that is, leprous old women in an advanced stage of disease and people suffering from elephantiasis with flies and worms coming out of their wounds. The children are presented as having "big stomachs." The hospital was depicted as a big place with a silence of death, where the doctor, the nurse and the priest fought disease.

Another important theme of the novel is the indigenous conception of disease and misfortune. Indeed, noon is portrayed as the "evil hour," the hour of death. Fatou-Gaye, one of Jean Peyral's mistresses, believes herself to be bewitched by an old woman well-known for her "evil eye." The couple decide to consult a local healer, Samba Latir, who is specialized in curing the evil eye, among other diseases. The novel also describes all types of fetishes, talismans, and spells on sale in the marketplace in Guet-NDar.

The novel also provides insight into European sexual proclivities. Racism is prevalent in the novel. Africans are considered as inferior to the Europeans. Fatou is portrayed as being inferior, a liar, sneaky, and incapable of loving; her devotion for her man is comparable to that of a dog for its master. Senegal is presented as a colony in decline, a land of exile for the French. Now let us turn to the scholarly literature.

The Secondary Literature

During the colonial period, political and military history dominated the research done under the supervision of the *Comité d'Etudes historiques et scientifiques* created in 1915 by governor general Clozel. A few works stand as an exception to the general trend, for example, R. Rousseau's articles (1925) devoted to the study of Saint-Louis' site and origins and J.-P. Nicolas's work (1959) on the human bioclimatology of Saint-Louis, that is, the relationship between the city-dwellers and their natural environment.[29]

The early attempts at critical writing on health issues affecting Senegal, in general, and Saint-Louis, in particular, go back to the nineteenth century, when French medical students, preeminently from the Navy and based in Montpelier, but also those from Paris, chose to focus their theses on Senegal, which they had visited during their training. They concentrated on fevers, including yellow fever, dysentery and cholera, and on general medical considerations. But they dealt mainly with the pathological, epidemiological and etiological aspects of disease, and there is little medical and social history in their works.[30] In addition, these studies did not take the city as their frame of reference even when "Senegal" referred to Saint-Louis.

In the 1960s, as the field of African history emerged, scholars became aware of the importance of African cities as both the cause and the motor of change in Modern Africa. They have situated the process of urban formation and growth in the general framework of the world economy, arguing that cities reflected the global social, political and economic context in which they are situated.[31] They have examined the colonial city in terms of the struggle of capital, the state, and workers to define and transform the structure of time,

space and class relations.[32] Some scholars have analyzed the health problems that the growth of African cities provoked.[33]

Since the 1960s studies related to Saint-Louis can be divided into three categories: geography, sociology and history. Urban geography is represented by two major works. C. Camara's much-quoted book (1968)[34] is an interesting description of Saint-Louis' internal structure, including the geographic patterning of activities and social groups within the city. He argues that the French chose a bad site for the construction of the port-city. As an "amphibious city", on a "false delta" of the Senegal river, Saint-Louis has periodical floods, swamps and mud.

However, his study ignores the issue of political will and the technology that was available in order to overcome the constraints of geography, as was the case for Lagos. The latter was built on a small, swampy and infertile island in a lagoon, but the British colonial administration fully valued its strategic location along the coast to make it a viable port-city.

R. Bonnardel's book (1992), based on secondary literature, is essentially an economic geography of Saint-Louis from its foundation until the 1990s.[35] It deals with the rise, expansion, loss of importance and decline of Saint-Louis' economy. The first three chapters (out of twelve) discuss the pre-independence period based largely on the work of J.B. Durand (1803), A. Boilat (1853), A. Villard (1943), G. Hardy (1921), and C. Camara (1968). Bornnadel did not bring new sources nor a new interpretation for the Saint-Louis' colonial history. The rest of the book presents the post-independent economic situation of the city in the areas of urban agriculture, fishing, crafts, and trade. The book ends with

the evaluation of the possibilities of Saint-Louis's renaissance. It is the repetition of what is said elsewhere in the existing literature.

The most important work done on urban sociology is A. Sinou's published dissertation (1993),[36] focusing on the urbanism of Saint-Louis, Goree and Dakar, especially the interaction between the knowledge and practices related to the spatial lay-out of these cities. Using archival materials, mostly maps of cities and buildings, the author discussed the evolution of urban forms as the three urban places were transformed from trading-posts to cities. He emphasized the influence that particular commodities (the slave trade, trade in gum and peanut) had on urbanism in Senegal. He underscored the role that state officials and city planners played in accommodating successive economic systems and the subsequent improvement of the environmental sanitary conditions.

But historians will be disappointed by the lack of logical order in which various topics are discussed. In addition, his reference to the diseases that struck Saint-Louis is almost anecdotal; he mentioned in passing only the 1881 yellow fever epidemic and did not seem to be aware of the other diseases or even different outbreaks of yellow fever. He tended to generalize about racial segregation, which was not really practiced in Saint-Louis and could not have worked there. In this perspective, his book is only useful for the sociology and ideology of map-making and spatial lay-out, but it has a weak historical basis.

Most studies on urban history evince an elite approach focusing on important individuals and groups. Two scholars, G.W. Johnson (1971) and F. Zuccarrelli (1981),[37] have provided two of the most comprehensive studies on the dominant class at the

political level: its composition (mulattos and Bordelais between 1871 and 1914; black elite afterwards) and the struggle for civil equality for white (and assimilated) and black citizens.

Using official as well as private archives, L.C. Barrows' dissertation (1974)[38] examined the role played by the Maurel & Prom Company and other wholesalers in the appointment of General Faidherbe as governor of Senegal (1854-61; 1863-65) and his accomplishments, such as the development of certain institutions of colonial administration, public works projects, the *Banque du Sénégal*, new schools, and the printing press. He analyzed also the intermediate governorship of Jean Jaureguiberry (1861-63). Barrows showed that the state represented one class or a fraction of that class.

M. Marcson's dissertation (1976)[39] focused on the evolution of the relationship between the French, the *habitans* (mostly mulattos), and the indigenous (slaves and free people). He emphasized the role played by the mulattos who, by the late eighteenth century, constituted an important fraction of the ruling class and affected political, economic, and cultural change in Senegal.

J.-P. Biondi, a journalist and former advisor to President Senghor, published work on urban politics (1987)[40] in which he dealt with the successive ruling groups, that is, Companies' directors, mulattos, whites, and blacks. But it is a hastily done work. The same year Felix Brigaud and Jean Vast[41] published a book that can be considered in the category of traveler's guide to or handbook on the city. It is useful for a large audience as well as for scholars who need quick reference. An important work about the economic and social history of Saint-Louis in the mid-nineteenth century is R. Pasquier's dissertation

(1987),[42] in which he analyzed the economic crisis and its effects on the process of re-structuring. Yves-Jean Saint-Martin's book, published in 1989, explored the crucial period for the constitution of contemporary Senegal, that is, the period between 1850 and 1871 during which the foundations of Senegal were laid down under the leadership of governors Faidherbe (1854-61, 1863-5), Pinet-Laprade (1865-9), and Valière (1869-76). He also analyzed the role played by the merchants in the appointment and dismissal of different governors and the tension between traders and politicians. As chapter 3 will show, this tension extended to other important issues, especially the application of sanitary measures which had negative effects on the economic activities.

Little research has focused on health issues in Senegal in general and in Saint-Louis in particular. Nathalie Reyss' dissertation (1981),[43] based on travelers' accounts and novels, studied pre-colonial Saint-Louis in the areas of nutrition and hygiene and approached the issue of the proliferation of interracial unions (called *marriage à la mode du pays*) as a survival strategy used by the French in a "dangerous" environment.

For the period under investigation, little research has focused on Saint-Louis in the area of disease, health care, and medicine. Only one scholarly article by Claude Pulvenis (1968) discussed the impact on the city of the 1881 yellow fever epidemic, which struck both Saint-Louis and among the troops involved in the conquest of the Upper Sudan. But his study is limited in scope to one epidemic crisis and does not provide a global picture of the incidence of the diseases in the city.[44] In a recent bibliography on health and population in Senegambia published by René Collignon and Charles Becker (1989), one can find studies related to Saint-Louis written by colonial officials, physicians, and

missionaries. But they are primarily descriptive and emphasize epidemiology and health efforts of the colonial administration. They do not study the epidemics in relation of the political, social, and economic realities of the time.

Thus, the production of scholarly literature on Saint-Louis parallels its history. The system of cities that emerged in Senegal and the transfer of the capital of A.O.F. and, later on, of Senegal, to Dakar led to the decline of Saint-Louis. Researchers lost interest in the city despite its historical importance not only as the major economic center but also as the capital of Senegal, French West Africa, and Mauritania.

Besides historians, medical anthropologists have contributed to our understanding of the Western medical discourse on Africa and of African responses to Western medicine and to the colonial administration and missionary health efforts.[45] But few historical and anthropological works deal with disease and medicine in Senegalese colonial cities.[46]

Conclusion

The available evidence that I used to write the medical and social history of Saint-Louis, like all evidence in general, has strengths as well as deficiencies and gaps. Some pieces of evidence provide more details on specific aspects of the study than others. Only the careful reading of the archives (official and from the missionaries) and the comparison with other sources (government and semi-government publications, secondary literature, oral data) can provide a global picture of the medical events, processes and structures analyzed here.

One needs to keep in mind the context in which these various written documents were produced. Their authors were influenced in one way or another by the evolutionary theory, which argued that all societies evolved from Savagery to Barbarity to Civilization, from irrationality to rationality, and from superstition to enlightenment. The final stage of evolution was believed to be the Western society. This conviction underlines all the value judgements they made about "other" people. In addition, the authors of the letters and reports in the archives were undergoing a process of culture-shock and their opinions about other societies were often characterized by ethnocentrism. This is the reason why their reports are full of racial, class, religious, ideological, and cultural biases. Written during the colonial period, they are characterized by the "civilizing mission" *mentalité* and describe the changes that occurred in terms of transformation from barbarism to civilization.

Although the official records contain the deficiencies and gaps described above, they are, however, of great value to this study. They present detailed information on various aspects of city life, which, if carefully analyzed and compared with other sources, can provide some elements of answers to the research questions raised in the introduction of this study.

With the available evidence, it is possible to build up an overall picture of the process of city growth. The data collected also allow a good discussion of the competing conceptions of health, ill-health and health care. Some pieces of evidence allow only a partial reconstruction of the history of Saint-Louis' medical infrastructure. The data on the clinical research undertaken by the physicians since 1896 at the bacteriological

laboratory in Saint-Louis (Sor) are missing, as so are the patients' personal medical files in the hospitals and dispensaries. The main research findings of selective pathologies are available from the medical journals of the time. There is enough evidence to provide an interpretation of the medical events taking place during the epidemic crises (and in-between) and to explain the factors of disease causation, people's reactions to the outbreaks of disease, and the relationship between public health measures and city development from different viewpoints.

NOTES

1. Edward Hallet Carr, *What is History?* (New York: Vantage Books, 1961), pp. 7, 10, 35.

2.. Cloud Fear, "Notice sur les archives du Sénégal," *Revue de l'Histoire des Colonies*, 1914 , pp. 353-374, esp. p. 357.

3.. A.N.S., Serie H Sénégal, dossier 8: Minister of Colonies to Governor, 8 December 1905.

4. Colonial affairs were the responsibility of various ministries: Navy and Colonies (1830-60); Algeria and Colonies (1860); Navy (1860-68); Navy and Colonies (1868-1881); Commerce and Colonies (1881-82); Navy (1882-83; 89?); Commerce, Industry, and Colonies (1889-92); Navy and Colonies (1892-94); Colonies (1894-60).

5. For the distinction between surgeons and physicians or doctors, see chapter 4 (p. 17?).

6. See *Annuaire de la Marine et des Colonies* (Paris: Imprimerie Impériale, 1871).

7. Berenger-Féraud (Dr.), "Etudes sur la Sénégambie," *Moniteur du Sénégal et Dépendances*, 1873, pp. 9-10, 19-20, 22-24, 109-112, 126-28.

8. A. Corre, "La matière médicale des noirs au Sénégal," *Moniteur du Sénégal et Dépendances*, nos. 1060 of 6 June 1876, pp. 91-92; no. 1061 of 13 June 1876, pp. 95-96; and no. 1062 of 20 June 1876, pp. 99-100.

9. Concerning the *Parti d'Hygiène Publique*, see William Coleman, *Death is a Social Disease. Public Health and Political Economy in Early Industrial France* (Madison: The University of Wisconsin Press, 1982), p. 279.

10. Dr. Borius, *Recherches sur le Climat du Sénégal* (Paris, 1875); *Nouvelles Recherches sur le Climat du Sénégal* (Paris: Annales du Bureau Central Météorologique, 1879); *Topographie Médicale du Sénégal* (Paris: Archives de Médecine Navale, 1880-9).

11.. E. Nicolas, *Manuel d'Hygiène Coloniale* (1894); J.P. Navarre, *Manuel d'Hygiène Coloniale. Guide de l'Européen dans les Pays Chauds* (Paris: Octave Doin, 1895); G. Reynaud, *Hygiène des Colons* (Paris, 1903); *Hygiène des Etablissements Coloniaux* (Paris, 1903); E. Marchoux, *Traité de Pathologie Exotique, Chimique et Thérapeutique.* (sous la direction de C. Grall, A. Clarac (Paris: Baillère & Fils, 1910); H. Maurice, *Notions d'Hygiène et de Médecine à l'Usage des Colonies* (Paris, 1920).

12. Berenger-Féraut, *De la Fièvre Jaune au Sénégal* (Paris, 1874); *Traité Clinique des Maladies des Européens au Sénégal* (Paris-La-Haye, 1875-8), 2 vols.; C. Carpot, *La Fièvre Jaune. Epidémie de l'année 1900 à Saint-Louis. Observations - Traitement* (Saint-Louis: Imprimerie O. Lesgourgues, 1912); A. Thiroux et L. d'Anfreville, *Le Paludisme au Senegal pendant les Années 1905-1906* (Paris: Libr. J.-B. Bailliere et Fils, 1908).

13. H. Gallay, *Trois Années d'Assistance Médicale aux Indigènes et de Lutte contre la Variole. 1905. 1906. 1907* (Paris: Emile Larose, 1909); Provost, *Assistance Indigène* (Paris, 1909).

14. Luke 7:22.

15. In 1977 the journal reproduced the now "classic" ethnographic/historical account of Senegal, the *Esquisses Sénégalaises*, written by the Senegalese catholic priest Pierre Boilat in 1853. We shall come back to him later.

16. Y. Bouquillon and R. Cornevin, *David Boilat (1814-1901). Le Precurseur* (Dakar: Nouvelles Editions Africaines, 1981), p. 105

17.. Abdoulaye-Bara Diop, "Introduction," in *Esquisses Sénégalaises*. reimpression (Paris: Ed. Karthala, 1984), pp. 11, 18-19, 21-22.

18. For more information see pp. 372-4.

19. J. Vansina, *Oral Tradition as History* (Madison: The University of Wisconsin Press, 1985), p. 12.

20. *Ibid.*, pp. 13-32. For more information on oral sources, see D. Henige, *Oral Historiography* (London, 1982); J.C. Miller (ed.), *The African Past Speaks: Essays on Oral Tradition and History* (Folkestone, 1980); S. Humphries, *The Handbook of Oral History. Recording Life Stories* (London, 1984).

21.. Other people interviewed gave only second-hand accounts of what they have heard from their parents or grands-parents. Those who mentioned the medical events that took place in the nineteenth century (yellow fever, cholera, smallpox) admitted that they had read about them somewhere in books or articles dealing with other matters.

22. In the middle of an interview, one healer, Masamba, was eager to show his letter to the Minister of Health in Dakar promising to cure any cases of A.I.D.S. that the latter would send to him. Masamba had lost half of his forearm to a motorcycle accident and walked in a funny

way due to that accident. His apartment in Sor (Saint-Louis) was full of bags of plants and medicines that he said came from the forests of Futa Jallon. He said that he could even protect his patients from the devil's attacks and he prided himself for having healed so many patients, each disease being cured only in a matter of minutes. The Masamba case shows a pattern common among all the healers interviewed during the field work.

Ibrahima Tabane, a healer specialist of mental illness who worked for many years with Prof. Coulon in the Fann hospital in Dakar, talked more about his reputation and his income than about indigenous theories of disease. Yet, he prided himself about being a
healer with great fame. He pointed to his wife as a "gift" given to him after he cured her fatal sickness and to many patients in his compound that university-trained doctors could not cure.

23. For more information on the images which reflect and condense the experiential appropriation of the history of conquest, read Taussig, *Shamanism, Colonialism and the Wild Man*, especially pp. 367-392.

24. See Clive Seale and Stephen Pattison (eds.), *Medical Knowledge: Doubt and Certainty* (The Open University House, 1994), p. 113.

25. Spahi refers to a military unit organized by Edouard Bouet Willaumez when he was Acting Governor of Senegal in 1843. The novel was published from the notes that survived the destruction by the author following the scandal caused by an affair he had with the wife of a French merchant in Saint-Louis. See R. Mauny, "Pierre Loti au Sénégal (1873-1874)," *Notes Africaines*, no. 74, April 1957, pp. 55-61.

26. The nickname Loti was given to him by five women from Tahiti. For more details, see Pierre Loti, *Correspondence Inédite, 1865-1904* (Paris: Calman-Lévy, 1929), especially his letter to his sister in May 1872, p. 130.

27. See Allain Quella-Villéger, *Pierre Loti l'Incompris* (Paris: Presses de la Renaissance, 1986), pp. 44-48.

28. The edition analyzed here was published in 1949 (Paris: Calmann-Levy).

29. J.-P. Nicolas, *Bioclimatologie Humaine de Saint-Louis du Sénégal (Essai de Méthodologie Bioclimatologique)* (Dakar: IFAN, 1959).

30. J.B. Bax, "Considerations hygiéniques médicales sur la colonie du Sénégal et sa garnison," Doctoral thesis in medicine, 1830;
Bancal, "Des fièvres au Senegal", Doctoral thesis in medicine, Montpelier, 1834; E. Cheve, "La fièvre jaune au Sénégal", Doctoral thesis in medicine, Paris, 1836; N. Berville, "Remarques sur les maladies du Sénégal," Doctoral thesis in medicine, Paris, 1857;
A. Borius, "Quelques considérations médicales sur le poste de Dagana, Sénégal", Doctoral thesis in medicine, Montpelier, 1864; A. Vauvray, "Des accidents cholériques

vulgairement appelés N'Diank au Sénégal", Doctoral thesis in medicine, Montpelier, 1866; C.-V. Berger, "Considérations hygiéniques sur le bataillon des tirailleurs sénégalais", Doctoral thesis in
medicine, Montpelier, 1868; C. Baril, "Souvenirs d'une expedition militaire au Sénégal pendant l'Epidémie de fièvre jaune de 1878", Doctoral thesis in medicine, Montpelier, 1883; J. Vincent, "La fièvre jaune (épidémie de 1878 et 1881 au Sénégal)", Doctoral thesis in medicine, Montpelier, 1886.

31. C. Coquery-Vidrovitch, *Processus d'Urbanisation en Afrique*. 2 vols. (Paris: L'Harmattan, 1988); "The process of urbanization in Africa (From the origins to the beginning of independence)," *African Studies Review*, Vol. 34.1 (April 1991), pp. 1-98. See also D. Simon, *Cities, Capital and Development. African Cities in the World Economy* (London: Belhaven Press, 1992).

32.. F. Cooper, *The Struggle for the City* (Beverly Hill, Sage Publications, 1983); D. Prochaska, *Making Algeria French. Colonialism in Bône, 1870-1920* (New York: Cambridge University Press, 1990).

33. R. Packard, *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa* (Berkeley: U.C.P., 1989); L.M. Zinyama, D.S. Tevera & al. (ed.), *Harare. The Growth and Problems of the City* (Harare: University of Zimbabwe P., 1993). See also C. Wondji, "La fièvre jaune à Grand-Bassam (1899-1903), *Revue fr. d'Hist. d'O.M.*, T. LIX, no. 215 (1972), pp. 205-239; M.W. Swanson, "The sanitation syndrome: bubonic plague and urban native policy in the Cape Colony, 1900-1901," *J.A.H.*, XVIII, 3 (1977), pp. 387-410; "The Asiatic Menace": creating segregation in Durban, 1870-1900," *Int. J. Afr. Hist. St.*, 16, 3 (1983), pp. 402-421.

34. C. Camara, *Saint-Louis-du-Senegal. Evolution d'une Ville en Milieu Africain* (Dakar: IFAN, 1968).

35. Régine Bornnadel, *Saint-Louis du Sénégal: Mort ou Naissance?* (Paris: L'Harmattan, 1992).

36. A. Sinou, *Comptoirs et Villes Coloniales du Sénégal: Saint-Louis, Gorée, Dakar* (Paris: Ed. Karthala, 1993).

37. G.W. Johnson, *The Emergence of Black Politics in Senegal, the Struggle* For Power in the Four Communes, 1900-1920 (Standford: Stanford U. P., 1971); F. Zuccarelli, *La Vie Politique Sénégalaise, 1789-1940* (C.H.E.A.M., 1988).

38. L.C. Barrows, "Général Faidherbe, the Maurel et Prom Company and French expansion in Senegal", Ph.D. thesis, U. of California, Los Angeles, 1974.

39. M. Marcson, "European-African Interaction in the Precolonial Period: Saint-Louis, Senegal, 1758-1854", Ph.D. thesis, Princeton U., 1976.

40. J.P. Biondi, *Saint-Louis du Sénégal, Mémoires d'un Métissage* (Paris: Denoel, 1987).

41. F. Brigaud and Jean Vast, *Saint-Louis du Sénégal. Ville aux Mille Visages* (Dakar: Ed. Clairafrique, 1987).

42. R. Pasquier, "Le Senegal au milieu du XIXe siècle: la crise économique et sociale", 5 Vols., Doctoral thesis in History, U. de Paris; Sorbonne, 1987.

43. Nathalie Reyss, "La Santé à Saint-Louis du Sénégal à l'Epoque Pré-Coloniale d'Après les Récits de Voyage et Romans: Alimentation, Hygiène, et Santé ou le Métissage Moyen de Survie", Doctoral thesis, U. de Paris I, 1981.

44. Claude Pulvenis, "Une Epidémie de Fièvre Jaune à Saint-Louis du Sénégal (1881)," *Bulletin de l'Institut Fondamental de l'Afrique Noire*, B, XXX (1968): 1353-73; see also Dr. Jean-Marc Clément, "Histoire Médicale de Saint-Louis," *Bulletin d'Epidémiologie*, no. 9 (September 1985), pp. 210-2; no. 10 (October 1985), pp. 241-3; no. 11 (November 1985), pp. 274-6; no. 12 (December 1985), pp. 301-4.

45. See, for example, S. Feierman and J.M. Janzen (eds.), *The Social Basis of Health and Healing in Africa* (Berkeley: U. of California Press, 1992).

46. For Dakar, see, among others, D. Fassin, *Pouvoir et Maladie en Afrique. Anthropologie Sociale dans la Banlieue de Dakar* (Paris: P.U.F., 1992); J.-F. Werner, *Marges, Sexe et Drogues à Dakar. Ethnographie Urbaine* (Paris: Karthala, 1993); E. M'Bokolo, "Peste et société urbaine à Dakar: l'épidémie de 1914," *C.E.A.*, XXII, 85-86, 1982, pp. 13-46.

The interest in health issues that affected Senegal during the colonial period has increased in recent years among undergraduate as well as graduate students in Senegal as well as abroad. But their studies are primarily descriptive and emphasize epidemiology and the sanitairy measures taken by the colonial administration. They do not study the epidemics in relation to the political, social, and economic realities of the time.

See Seydou Kouyaté (Dr.), "Les Traitants Africains de la Fièvre Jaune" Doctoral thesis in medicine, Université de Montpelier, 1955; Bernard Gille, "Les Services d'Hygiène du Sénégal de 1905 à 1920" Doctoral thesis, 3e cycle, Université de Provence, Institut d'Histoire des Pays d'Outre-Mer, Aix-en-Provence, 1974, 2 vols.; Aimée Grimaud (born Houémavo), "Les Médecins Africains en A.O.F.: Etude Socio-Historique sur la Formation d'une Elite Coloniale" Mémoire de Maîtrise, Université de Dakar, 1979; Angelique Diop, "Santé et Colonisation au Sénégal, 1895-1914" Doctoral thesis, 3e cycle, Paris I, UER 09 History, CRA, 1982; Bruno Salleras, "La Peste en 1914: Medina ou les Enjeux d'une Politique Sanitaire" Doctoral thesis, 3e cycle, EHESS, Paris, 1984; Moustapha Sene, "Epidémies et Politiques Sanitaires au Sénégal, 1920-1960. Examples de la Fièvre Jaune et de la Maladie du Sommeil

(Trypanosomiase)" Mémoire de Maîtrise, Université Cheikh Anta Diop de Dakar, 1991;
Kouyate Mamadou Moustapha Dieng, "Famines et Disettes et Epidémies dans la Basse et Moyenne Vallée du Fleuve Sénégal, 1854-1945"
Doctoral thesis, 3e cycle, Université Cheikh Anta Diop de Dakar, 1992.

CHAPTER 3

URBAN SOCIETY AND ITS HISTORY

This chapter examines the way in which the social structure of the urban society emerged and developed, thus providing useful information on the historical background of the patients. The focus is on the social history of St-Louis. Social history is used here in the way Géza Alfoldy, a German scholar, understood it, that is, a study of the enduring features which characterize the nature of urban society, and explain

> the division of society into particular parts, in its very system of organization with particular strata, orders or classes, and, finally, in the interrelationships between particular parts of society, embodied in social bonds, tensions and conflicts, and in mobility within the stratification as well as in a common political framework and system of reference.[1]

Social history is not synonymous with history without politics and economics. On the contrary, such an approach also takes into account the activities taking place in the political arena as well as the economic activities which determine the division of society and the nature of its particular strata.

The data on the demography of Saint-Louis are incomplete. Before the period under investigation, the data are provided for the years 1786, 1799, 1836 and 1849. The quality of information improved with the governship of Faidherbe. Since its foundation in 1855, the *Annuaire du Sénégal et Dépendances* annually provided the lists of the bureaucrats working for the colonial administration in Saint-Louis as well as for the municipality, including ecclesiastical personnel. The *Moniteur du Sénégal*

et Dépendances reported on births and deaths since 1856. The 1857 and 1877 censuses provided detailed information about the urban-dwellers, especially their repartition according to race, sex and residence. The 1877 census even went further by giving statistics related to the inhabitants' level of literacy, that is, the fluency in reading only, in reading and writing, and the number of illiterate in the city for males, females and children. It was not until 1916 that the data on local population were supplied by ethnicity (Bambara, Wolof, Pulaar or Peuls, Moors).

Two observations can be made here. First, census takers were not consistent in recording the main event histories, such as births, marital status, and deaths for all the segments of the population. Second, the data on migration flows are not available; the "fluctuating population" (*population flottante*) as a social category appeared in 1877 but there are no details about its internal structure.

The data collected suggest that the demography of Saint-Louis was characterized by the alternance between growth and decline; and that the size of the population was affected by the migrations from Waalo and Cayor, as well as by other factors such as epidemics, natural disasters (floods), and the crisis of subsistence that accompanied World War I. In the following lines, I will attempt to reconstruct the emergence and development of the social structure of the urban society. Table 2.1 provides the evolution of demography in Saint-Louis.

Table 2.1 Demography of Saint-Louis

Year	Population
1786	7,000
1799	9,000
1848	12,000
1853	10,358
1854	12,330
1857	12,081
1869	15,480
1878	16,000
1882	15,980
1895	20,000
1900	30,000
1907	24,679
1914	31,062

Sources: A.N.S. 22 G 6, Recensement de la Population du Senegal, 1847-1884; Archives Municipales de Saint-Louis, 1 Q 80, Recensement de la population, 1914.

The Fort of Saint-Louis was founded in 1659 by the *Compagnie Normande* or the *Association de Marchands de Dieppe et de Rouen* operating in the context of the emerging capitalist world-economy.[2] It started as a *comptoir* or fortified trading-station on Ndar island at the mouth of the Senegal river. Ndar, which became the local Wolof word for Saint-Louis, was on a sandy island destitute of running water, with stagnant waters in the northern part that contributed to the periodic outbreak of fevers. It was an advantageous position for the defense against an enemy, but the bar was an handicap from commercial standpoint because it limited the capacity of the port to shelter large numbers of ships.

St-Louis' spatial lay-out resembled other European trading-posts on the African coast and in the colonial Caribbean which comprised the following elements: a) the company's warehouses where merchandise was stored; b) a "fort" called the *Habitation*

which included the governor's residence, the church, and a room for meetings and court sessions; and c) several artisans' shops and taverns.[3]

Progressively, the Fort of St-Louis became a central place and a major entrepot of the international network which extended north to Bordeaux, Marseilles and Paris, west to Guadeloupe and Martinique, south to the *Rivières du Sud*, and east to upper Senegal; its driving force was trade in slaves, gum, and peanuts. The commercial hinterland initially included a certain number of marketplaces (called *escales*) along the Senegal river and its branches.[4] The successive monopoly companies were dealing mainly in slaves and gum and other products before the emergence of peanuts in the 1840s.[5] In the 18th century, Bordeaux firms began investing significantly in trade.[6]

Because the island on which the trading-post was built was sterile and unfit for agriculture, supply was the permanent concern of the inhabitants of Saint-Louis not only for commercial purposes, but also for their very survival. Their immediate neighborhood[7] supplied them with fish and other products; from the Canaries came vegetables and fruits; the Trarzas supplied them with milk and meat, and city-dwellers bought their cereal (millet) from the regions of Fouta Toro, Kayor, Galam and Saloum, and their rice from the *Rivières du Sud*.[8] Thus, despite its internal specialization, the whole business community in Saint-Louis acted as "middlemen" in the chain of demand and supply that connected producers and consumers in the Senegalo-Mauritanian zone and France. Most of the mid-nineteenth century travelers observed that some of the traders from Saint-Louis used to spend six or seven months per year outside the city.[9]

The development of trade and the effort to extend the hinterland attracted more people to the trading-post and transformed social structures. The available data indicate that in 1799 the trading-post had 9000 inhabitants, including 600 Europeans, 1200 mulattos, 3000 captives or freedmen, and 4000 free blacks and mulattos. The majority of mulattos were Christian; and the liberated slaves who became Christian were called *gourmets*.[10] The 1849 census list indicates that the total population of St-Louis was 9,967 inhabitants, including 1,106 people in Guet-Ndar.[11] By 1853, Ndar Toute had 46 people. In 1857 its population was 12,081 on the city-island, 394 in Guet-Ndar, 46 in Ndar-Toute and 308 in Sor or Bouetville; it included 185 Europeans.[12] St-Louis had attracted three religious orders which played a major role in the organization of the school system and the delivery of health care, that is, the *Soeurs de St. Joseph de Cluny* (1819), the *Frères de Ploermel* (1841), and the *Pères du Saint-Esprit* (1847).

The development of trade also strengthened the control of the business community over the town government. Indeed, the embryo of administration started in 1764 when the first Mayor, Charles Thevenot, was established. In 1782 a direct royal government was in place with the appointment of the first governor, Dumontel, and a colonial administration was set up to replace the authority of the directors of the monopoly companies. It is not until September 7, 1840 that the government of Senegal was organized like the other French colonies by an *Ordonnance royale organique*. Its bureaucratic structure developed according to the local needs and the governors' main preoccupations, which remained military until 1869.[13] But how did the structure of urban society evolve?

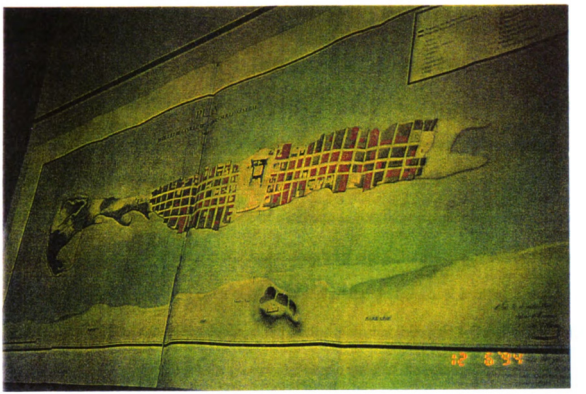


Figure 4. Map of Saint-Louis, 1820.
(Source: ANFSOM, DFCS P. 26 A181)

Early urban society

The early urban society included the Africans, in majority the Wolof Muslims from Waalo and Kajoor, who lived around the Fort of St-Louis and the Company agents who took local women as concubines. These temporary unions, called "*marriage à la mode du pays*" (meaning "marriages according to the custom of the land") promoted women to the status of *signares*, that is, wealthy entrepreneurs who owned slaves and boats and houses.[14] Later on, *signares* were chosen because of their status. In any case, the "marriages" resulted in the emergence of a mulatto community which was going to play a key role in trade and politics. From the marketplaces along the Senegal River came slaves who contributed to the development of trade and crafts. In her novel entitled *Signare Anna* (1991), Tita Mandeleau depicted the *cursus honorum* followed by local women in the difficult path leading from the position of simple maid to the prestigious status of *signare*; she described a world full of expectations, hopes, great joy, but also jealousies and backstabbing.

I wish now to turn to the ways in which the St-Louisians defined themselves, before suggesting an alternative approach to their social structure. Indeed, the terms used by the contemporaries to identify themselves are important because they help understand how different groups situated themselves in an accepted (or contested) hierarchy. According to Yves-Jean Saint-Martin, Saint-Louis was a "city of merchants" and a plural society, and consequently it defined and classified its population along the lines of "class" or occupational specialization rather than along the lines of race.[15] But there is no detailed study of Saint-Louis' occupational structure. The available data include two classifications

established in mid-nineteenth century. Tardieu's classification, made in 1847, took into account the racial variable as well as the status. It included the following groups: a) the Europeans; b) the free indigenous population; c) the *habitants* or mulattos; and d) the *engagés à temps.*[16]

Another classification, which also emphasizes occupations, was established by the Colonial Controller Costet in 1852. The main categories used in this scheme were the following: a) the *laptots*, or African sailors who worked for the French commercial and military fleet of the Senegal river, and the *traitants* or African traders who visited the seasonal marketplaces along the Senegal river and were engaged in personalized transactions involving gum trade; b) the *marigotiers* dealing in grain (millet), gum and other products; c) the *habitants* (or *habitans*), including people of mixed race and blacks who were free French subjects, and whose principal occupational activity was the trade in gum; d) the French merchants (or *negociants* and *marchands*), wholesalers, semi-wholesalers and retailers.[17]

These classifications pose a real problem related to the shifting meanings and occupations. Indeed, each social group in Saint-Louis was identified either with the occupational career of its members (*négociants*, *marchands*, *traitants*, *laptots*) or with their social status (such as *signares*, *habitans* and *gourmets*). Another problem is that some of these terms did not have a fixed, straightforward meaning. They were fluid. For instance, the term *habitants* or *habitans* did not mean inhabitant or resident; rather it had an occupational as well as a political meaning; it defined a social status, a nobility, and a political class. People who called themselves *habitans* defined themselves as *enfants du*

pays or *enfants de N'Dar* in the sense of "first class citizens;"[18] They included the mulattos and the blacks from "good families" (Christians as well as Muslims).[19] They did not see themselves as being *originaires* or "natives", associated with the quality of being "ordinary" Muslims and, often, "uncivilized". They were Christians and cultural brokers, working for the spread of *l'idée française*.[20] M. Marcson argued that there were "30 or 40 powerful *habitant* families between 1758 and 1854."[21]

Another example of the fluidity of the terms used concerns the terms *negociants* and *marchands*. At the beginning of Saint-Louis the term *marchand* was used in its large sense to mean any person involved in commercial activities. But with the diversification of the economy and the increase in the volume of trade and the capital invested the term was used only for the semi-wholesaler and retailer; the wholesaler became known as the *négociant*.

Thus these terms refer to people's activities as well as to their social status. They emphasize the type of interests that are expressed. For example, someone in the *habitans* community who fell into drunkenness and poverty automatically lost the status of *habitan*. By the same tokens any rich *habitan* was not permitted to pay the license fee of a *négociant* and establish direct contacts with France.[22] Everything was related to birth as well as wealth. These examples corroborate the fact that the production of meaning by means of special vocabulary is an essential part in the process of constitution of the social order. Following Bo Strath's suggestion I will look upon interests and class identity in

> not as something which pre-exist their expressions but as something produced and given existence through their very expressions.[23]

A group of merchants came to identify themselves as "*habitans*" in the process of the defense of their interests threatened by the trading companies or local governors. This is the reason why in order for the two official (or subjective) classifications of different groups in Saint-Louis to make some sense, one needs to take into account the political framework within which they developed: the city government, on the one hand, and the practices of the colonial administration, on the other.[24]

Thus, the two social and political classifications made by Tardieu and Costet are incomplete, because they took into account a single criterion - occupation or wealth -, and they excluded the other categories defined by the variables of race, birth, citizenship, ethnicity, religion or social origin. Nevertheless, they help clarify how people perceived themselves in the society. These perceptions have perpetuated and have influenced scholars in their choice of research designs.[25]

My own approach to social stratification in St-Louis is more inclusive and takes into account objective (power, wealth, prestige, citizenship) as well as subjective (life-style) criteria. There is evidence that early urban society evolved within a structure of dominance and dependence; and trade in slaves and gum was the dominant principle of domination. It is not exaggerated to argue that the early urban society was divided into two groups: a dominant commercial and political elite and the lower strata, including slaves, servants, and other ordinary people.

The elite dominated the political sector and the official economic sector. The colonial government, the public bureaucracy, and the army were run by the French, while the other institutions such as urban government, deputy-ship, and, later on, the General Council, were controlled by the mulattos.[26] Africans entered the elite through their participation in the public bureaucracy or the official economic sector.

The official economic sector was dominated by the socially and economically dominant traders, including the *négociants* and *marchands*. The *négociants* (or wholesalers) were French, mostly from Bordeaux and Marseilles. They carried stocks, delivered products, supplied the government with various commodities, and granted credit to their customers. This was the case for Maurel and Prom, Devès and Chaumet, Buhan and Teisseire, Delmas and Clastres, Peyrissac and Cie, among others, who made fortunes trading in gum and millet. The *marchands* were semi-wholesalers and retailers, largely French, who owned their stores. But some were the mulatto branches of the French families; the Devès, Carpot, Thévenot, Guillabert, d'Erneville, Descemet, Valantin, and Patterson families are good examples.[27] They invested in gum trade, and some even created their own firms.[28] Others became bankers. For instance, Durand Valantin's wife contributed to the constitution of the *Banque du Sénégal* in 1855.[29] Thus, selected aspects of the formation of Saint-Louis' merchant elite reveal that not only "marriage," as described above, but also commissions and credit contributed to the building of the traders' career, especially *marchands*, and *traitants*.

The elite formed an order founded upon birth and upon their functions and privileges in the economic, social, political and religious spheres. The steps made by the

habitans and the French merchants at different conjunctures indicate that they considered themselves as the "*Grands Hommes*" in the society, at the top of a hierarchy founded on wealth, power, and prestige or status, as well as on the participation in the functioning of the city government and of the colonial administration. Thus the elite owed its leading position to its political power, wealth, property, and legal status.

Beside the economic and social conditions that gave the elite a sense of "distinction", in the sense Pierre Bourdieu uses this term[30], was their life-style, including their eating habits, "culture", and presentation (clothing, beauty care, domestic servants, etc.). According to Bourdieu, the logic of economy

> demands a social world which judges people by their capacity for consumption, their "standard of living", their life-style, as much as by their capacity for production.[31]

In St-Louis, besides property ownership (including slaves) - which was an important social qualification -, the elite group distinguished itself from the commoners by a certain number of characteristics: a special hair style; clothing (long robes for the *signares*, suits and ties for men); expensive and week-long marriage ceremonies during which food was considered as a pleasure rather than a primary need; religion (Christianism, Catholicism), and a particular way of celebrating Christmas and New Year by organizing special processions (*Fanal*).[32] Probably the most meaningful "distinction" - stemming from property or capital ownership - was the residential pattern, which created a social and psychological as well as a physical distance. Indeed, the elite group or the "notable" class lived in the southern part of the city, called the *Kertian* (meaning Christian) *quartier* and around the governor's palace, while the Muslim population was concentrated in the

northern part of the island where the *Grande Mosquée* was built in 1847, and also in the extreme southern part of the city.[33]

Despite its diversity in income, origin, and political sensitivity[34], the elite reflected a certain degree of cohesion based on three factors. First, in many instances there were cases of marriage between the French and the mulattos. Within the mulatto group endogamy contributed to the sense of survival characterizing the members.[35] Second, the French, the mulattos, and the *gourmets* (African christians) were mainly Catholics. Finally, French and mulattos shared the same history, education and the sense of "where we came from". They prided themselves for having their ancestors' tombstones in the Catholic cemetery in Sor.[36]

Between the elite and the ordinary people, one could find a category of middlemen called *traitants* in the mid-century. Some were mulattos, others were blacks. They were retailers who did not own the products they sold. Some received credit in merchandises from the merchants in Saint-Louis - mostly the *guinées*, cotton cloth from India imported via France - that they promised to pay back at the end of the period of *traite* in July or August; others were managers on commission or employees on salary. They also acted as brokers providing information about what buyers needed in the hinterland and what supplies were available in Saint-Louis. There were also the *traitants indépendants* dealing in grain (millet and rice); they had low status compared to the *traitants* in gum.[37]

The main source of tension originated from the very nature of the urban society itself divided according to four criteria: wealth, power, legal status, and survival. Indeed, the spatial lay-out of the city in the mid-nineteenth century - between the north, the center,

and the south, on the one hand, and between the city-island and the urban villages on the other (see maps for 1820 and 1854), reflected the division of the society between the rich and the poor. Two contemporaries, Frederic Carrère, chief of judiciary service in Saint-Louis, and Paul Holle, mulatto, commander of the fort of Medine, observed that there was a tension between the "Southerners" and the "Northerners" city-dwellers.

> People from the south made a show of superiority over people from the north based on their claim of the right of the first inhabitants; frequent conflicts occurred between the two *quartiers* and the battles took place near the City Hall during which the adversaries, women in particular, did not hesitate to make loud outcries and use punches.[38]

The spatial lay-out of the St.-Louis reflected its historical evolution and the occupational structure. The center of the island was occupied by the government and administrative buildings. The southern part of the island was considered as "Christian" because of the presence of the cathedral and its Catholic population; it also included the military hospital, the civilian hospital, the residences of the notables, mostly mulattos, and the artillery. In the northern part one could find the employees and (liberated) slaves, the firms and banks, the chamber of commerce, the municipality, the court and the garrison.

The evidence shows that in the 1840s the built environment comprised 1569 dwellings, including 315 houses, 68 stores, and 1186 huts in bricks.[39] A decade later, the dwellings numbered at 3000, including 200 permanent houses made of bricks.[40] It (built environment) did not develop in a spontaneous way but according to a predesignated master plan established by the decree of March 31, 1829, reviewed and extended in 1843.[41] The division of the built environment between a "center", a "south" and a "north", on the one hand, and between the city and urban villages, on the other, had a symbolic

meaning. Politically, the center, with its government buildings, the governor's residence, and garrison symbolized power and authority. Socially, the spatial lay-out of St.-Louis expressed social divisions and status, with the notables in the south and the ordinary people in the north. Culturally, it "stored" sentiment and expressed identity: the south was perceived as "Christian" , while the north was considered as "Muslim." The urban villages were considered as an "uncivilized" world.[42] Yet, St.-Louis was still an isolated *comptoir* on an island without a direct contact with the continent. The only access to the island was by ferry-boat, canoes, or swimming, as revealed by the map drawn in 1854.

After the government undertook to drain swamps, bogs, moats, and other sites of standing water in the northern part of the island (1905-1912), the distinction between the south, center and north slowly subsided because some Christian families and businesses settled in the north as well as in the south of the city.

Another factor which contributed to the creation of tension within the dominant class was the membership of some of its members in Freemasonry, the *Grand Orient de France*. The latter created three masonic lodges in Saint-Louis. The lodges *Saint-Jacques de la Vertu* (1787) and *Parfaite Union* (1824), which were characterized by their anticlericalism. Little is known about the evolution of these two organizations. During the second half of the nineteenth century another lodge was created under the name of *Union Sénégalaise* (1874-1876, 1880); while the mulattos from Saint-Louis, whose names are not identified, created a lodge in Dakar in 1893, called *L'Etoile Occidentale*.

The lower strata included two categories: a) the ordinary people and b) the slaves. The first category included the fishermen from Guet-NDar as well as new migrants from

Waalo and Kajoor who came to St-Louis in search of employment and settled at the extreme south of the city and in new *quartiers*, including the north-west part of the Island of Saint-Louis (1843), Sor (St.-Philippe, founded in the 1830s, rebaptized Bouetville in 1849), and NDar Toute, where a *village de liberté* for freed slaves was built in 1849. Some found low-wage jobs in the administration, such as guardians and manual workers, while others (the majority) were involved in informal activities. Some performed menial tasks in the river-related occupational sector, such as stevedores and day laborers. Others were household servants and salaried construction workers. Before 1848 free Africans considered the occupations of bricklayers and carpenters as *honorables*; after the liberation of slaves, the *marabouts* oriented some children from low castes towards craftsmanship (blacksmiths, shoemakers) and trained others to become *griots* (singers).[43] Their number greatly increased in Saint-Louis after the wars of expansion.

Since the beginning of St-Louis, slaves who were not in transit were part of the family unit and, by the mid-eighteenth century, they formed the majority of city-dwellers. Some were bought in the *escales*; others were brought to St-Louis as prisoners of war. They worked as servants in the masters' houses and men were rented out to the French by the *signares* as *laptots* (sailors and warriors), guides, interpreters, and day workers, while women were rented out as pounders of millet (*pileuses*) and washers (*blanchisseuses*).[44] Slaves were among the specialized craftsmen in the city, such as weavers, cobblers, potters, smiths, locksmiths, and wheelwrights. According to J.F. Searing, some *laptots* became wealthy and obtained their liberty.[45]



Figure 5. Map of St. Louis 1852 (Source: ANFSOM, DFC Senegal P. 27 A544)

Structural Change

Two factors contributed to the reform of the social system: the progressive liberation of slaves that started in 1848 and was pursued in the following decades and the expansion of St-Louis' rule over Senegal and over what would become French West Africa following the wars of expansion. These two factors had important consequences on the urban society. First, the *habitans*' role as "middlemen" declined because of the suppression of the slave trade and of slavery, the decline in the gum trade, the development of the peanut production and the increasing number of competitors (firms, *traitants*, and individual merchants), and the accumulation of debt and subsequent bankruptcy.[46] Second, St-Louis' commercial hinterland drastically extended following the creation of new marketplaces along the Senegal River.[47] Third, more land, raw materials, and markets for products were made available in the Senegalo-Mauritanian zone and beyond. Finally, merchants seized new opportunities for investment, business and financial dealings and they enjoyed an unlimited supply of cheap labor.

The demand for goods and services increased. Merchants, companies and firms understood the importance of the location of St-Louis in the French expansionist schemes and exploited it. They got involved in the supply of troops and government employees with millet and rice, among other products, and made fortunes. They signed contracts with the city government for the supply of the building materials used to pave the streets of the city and build the sidewalks. They built houses that they rented to the government.[48] These were success stories. But not everyone succeeded in trade. That is another story.

All these economic activities were facilited by the new infrastructure put in place during Faidherbe's governorship. Indeed, the connection of the city with the continent was achieved through the construction of the bridges between St.-Louis and the Langue de Barbarie (1856, 1858) in order to link the city to the continent and enable a quick intervention of troops against the Maures, who attacked the local population, and between the city and Bouetville (1865) in order to increase trade relations between St.-Louis and the Waalo and Kajoor regions.[49] The connection of the city to the continent also included the construction of the means of telecommunication. In this perspective, the first telegraphic line between the city and Goree was established in 1862. In order to facilitate the movement of the ships, Faidherbe had built in 1865 a 680 meter-dock along the big arm of the river. The extension of the city limits also included the creation of Ndar-Toute as a new neighborhood in December 1861 and the enlargement of Bouetville - already erected in neighborhood since 1852 -, in 1864[50].

The population was now racially, ethnically, socially, and culturally heterogenous. The second half of the nineteenth century witnessed relative urban growth. The 1853 census indicated 10,358 city-dwellers. In 1869 around 15,480 people lived in Saint-Louis and its villages, including 1000 Europeans, 2000 mulattos, 600 troops, and 12,000 Africans from different ethnic groups.[51] This number increased to 15,980 in 1882, 20,171 in 1891, and 28,782 in 1914, including 2,280 whites.[52] According to eyewitnesses, in 1862 6Ndar Toute was a small village, but by 1879 it had become a big agglomeration.[53] In 1884 a new urban village, Gokhoumbaye, located on the north-eastern part of Ndar-Toute, was annexed to the city.[54]

A new social system emerged in which the social status of an individual depended upon the interplay of a variety of factors: privileges of birth, personal ability, property, money (profit from trade and finance), political influence gained through entry into office, legal status, and participation in the official private economy (trade, industry, services).

The new elite owed its leading position to its political (and administrative) power, wealth, property and legal status. Birth and wealth through the establishment of family connections were still the criteria of social stratification, as David Robinson argues in his book in preparation.[55] But the new elite was not as exclusively attached to St-Louis (or Gorée) as was the old. On the contrary, it spread into new towns that emerged in favor of new conditions created by the colonial state. St-Louis was now one of the four communes (St-Louis, Goree-Dakar (1872); Rufisque (1880), Dakar (1887). A certain number of factors affected people's activities and decisions: a) the economic depression between 1875 and 1880; b) the railroad St-Louis-Dakar and the opportunities that it created - especially for Tivaouane, Rufisque (1886), Diourbel and Kaolack (1910), Thies (1910) -; c) the extension of the telegraph and postal services; d) the transfer of the capital of French West Africa from St-Louis to Dakar in 1902; and e) the outbreak of World War I.[56] The same factors explain the decline in number of the *traitants indépendants*.[57] The domination of the economic as well as the political life by the French *négociants* was well underway. They controlled the deputy-ship between 1893 and 1902 and the city halls of Rufisque, Gorée, and Dakar.[58]

However, the mulattos did not lose their social and political status. Their names continued to appear on the annual list of "*notables*" and they held government office of

one sort or another, particularly in the municipality (as mayors of Saint-Louis) until 1916 and the *Conseil General* until 1920. Although they lost the deputy-ship to the Africans (Blacks) in 1914, they felt that they still had decisive political influence as "*grands hommes*" and great prestige. One of them held a high rank in the army: General Amadée Dodds, chief of the French expedition in Senegal and Dahomey, known as the "*vainqueur du Dahomey.*"

G.W. Johnson argued that the expansion provided the St-Louisians, in general, and the mulattos, in particular, a monopoly of jobs in the economic and administrative structures. They were middlemen between the peasants and the firms, school teachers in the interior, representatives of the firms, and civil servants for French West Africa in Dakar. He also contended that the mulatto community did not form a monolithic bloc. His evidence shows that toward the end of the century, there were within the mulatto community family rivalries (the Carpot/Descemet "clan" vs. the Devès "clan"), geographic rivalries (St-Louis vs Gorée/Dakar/Rufisque), occupational distrust (public vs private sectors, urban vs rural occupation), and political sensitivity.[59] By 1890 a new group of merchants, the Libano-Syrians, settled in St-Louis and engaged in competition with the mulattos. They became middlemen between *négociants* and Africans in rural areas.

In the late nineteenth century successful traders acceded to the status of "*notables*" or "good families".[60] The career of Hamet Gora Diop (1846-1910), analyzed by Mamadou Diouf, is a good case in point.[61] But it goes without saying that these cases represented few people who were succeeding in a field dominated by French traders.

But the division of the society between the elite and the lower strata, based on wealth, does not tell the whole story. There is evidence that the critical principle in the division of St-Louis' society, thus the main tension within the social system, was not the degree of freedom nor wealth, but citizenship or the division between citizens and *indigènes* or subjects. This applies to immigrants from towns and villages outside the four *communes*, who came to St.-Louis in search of work, refuge, or food and shelter. The 1914 census indicates that in St.-Louis there were 21,950 French citizens (including many Muslims), 6,766 French subjects (non citizens), and 66 foreign subjects.[62] During my field work in St.-Louis, I heard stories about pregnant women who went to St.-Louis for delivery so that their children could become French citizens. In any case, the tension within the social system erupted into serious social and political dispute during the campaign for parliamentary elections in 1914 when "new men," essentially blacks, aspiring to the privilege of political participation, rose in society through their personal ability and ambition, used the vote as an instrument of emancipation from the mulatto domination, and added new families to the list of "*notables*." Chief among them was Blaise Diagne, who was elected *deputé* in 1914. Pierre Chimère became the first black mayor in 1916 and other Muslims became members of the city council. Galandou Diouf and Ahmed Khoury Sene (Ameth Fall) became members of the General Council in 1914.[63] One needs to keep in mind that the "new men" did not emerge all at once. 1914 must be regarded as a symbol of the changes taking place. There is evidence that as early as 1892 a group of blacks created the "*Cercle des Bons Amis*" and organized regular meetings in a building located on St.-Joseph Street owned by Pèdre-Alassane. The founding members of the

Cercle were Abdoul-Karim, Amadou-Cissé, Ousmane-Sarr, and Auguste Lame.[64]

The poor formed the majority of the 12,000 Africans living in St-Louis in 1869 and their number doubled by 1914. Some of them were involved in the informal sector as small-scale traders, urban agriculturalists, fishermen, and daily workers. Others were specialized craftsmen. The poorest among the poor, including the children, were reduced to begging. A decision taken by Governor Faidherbe on November 28, 1856 prohibited begging in the city by "a great number of strangers" as well as by the students from the Koranic schools (*talibés*).[65]

The poor had little formal education. For a long time, they opposed sending their children to the French school because they feared that their children would become Christians and would loose their cultural (Muslim) identity. The 1877 census shows that 12,963 out of 14,798 city-dwellers were illiterate (in French?), including 5,846 women and 4,520 children.[66]

Poor people lived in huts that did not protect them from the cold weather following the cold season (*hivernage*) between December and May. During that period, there were regular reports of fire that destroyed hundred of huts. The presence of the huts in the city in the middle of nineteenth century very much preoccupied the authorities because of the risk of fire[67] and the outbreak of epidemics. The policy of public works, inaugurated by Faidherbe and pursued by other governors, resulted in the progressive elimination of the poor from the center of the city and high densities in urban villages, especially Guet-Ndar.[68]

A certain number of factors contributed to the increase of their number, such as the liberation of slaves (1848 and thereafter),[69] famine in Cayor and Saloum (1863-4), and the wars of expansion. Because of their number, the poor living in Guet- Ndar and Ndar-Toute formed the most important electoral bloc in St-Louis and the political base for the Devès family and associates.

Like the upper strata, the poor did not form a monolithic bloc either. They were ethnically diverse, but the Wolofs formed the predominant group, including 18,264 people out of 22,169 city-dwellers in 1916; they were followed by the Bambara (1986 people) and the Peuls or Toucouleurs (1,149). Their residential pattern suggests that they lacked an internal cohesion. The Wolof were concentrated in Guet-Ndar and on the city-island; they were mainly Muslims. The Bambara lived in Sor and practiced an African religion before being converted to Christianity (Protestantism). The Peuls lived in another village in Sor and were Muslims.[70] There is evidence that in 1881 there was tension and occasional outbreak of violence among the different African groups. Order was given to disarm all the ethnic groups.[71]

From various sources such as the general correspondence, medical reports, and police records, it appears that the general living conditions of the majority of the ordinary people were poor in terms of housing, health, and diet. Pierre Loti described the urban village of Guet-Ndar in 1873-4 as overcrowded, ill-ventilated, unprovided with privies, and with no social services. He also described the children in Guet-NDar as having "big bellies", which is a sign of malnourishment.

By 1882 begging was so widespread among the poor in the city that it alarmed the authorities. In a letter to the mayor on August 24, 1882, the Director of the Interior Service informed him that

> The governor gathered that a great number of vagrants were begging in the city and thus harassed the pedestrians ... he asked me to invite you to take the measures that the law gives you in order to prohibit begging in the city.[72]

Evidence from the late nineteenth century corroborates the idea that the cost of living in St.-Louis was relatively high. It relates to Dinah Salifou, chief of the Nalous from the Rio-Nunez, who had problems with the *Compagnie Française* and the *Blanchaud et Cie* agents doing business in the territory under his juridiction and was arrested during a visit in St.-Louis on November 21, 1890. Until January 1893, he continued to receive in St.-Louis the 5,000 francs per year, according to a treaty signed with the French on November 28, 1865 and revised on January 30, 1884. He lived in the northern part of the city where he rented a house owned by Ms. Anta Wade. But in January 1893 his pension was reduced to 1,200 francs per year, which was the senior (first class) interpreter's salary in 1857. His abundant correspondence with various authorities in St.-Louis as well as in Paris reveals that the 1,200 francs were insufficient to meet his living expenses, including those of his family. In a letter to General Dodds on May 21, 1894, he confessed that "I have nothing to live off with my family and pay my rents."[73] In another letter to the Governor General on December 20, 1895 he said: "I find myself in a miserable situation."[74] By then his overdue rent was 1,220 francs and his wife had to find a job as *blanchisseuse* (doing laundry). He died in St.-Louis two years later. His correspondence provides insights into the living conditions in the city: St.-Louis was an expensive place to

live. By 1912, the types of activities that some segments of the poor were engaged in alarmed the authorities. In a letter to the mayor of St.-Louis on April 13, 1912, the governor of Senegal urged him to pay close attention to the

> indigenous people called "Banda-Kat", (who) beat the drums in the city in praise of certain individuals, who paid them cash or in kind. Some indigenous poor would not hesitate to steal in order to satisfy these praise-singers who exploited public credulity.[75]

World War I rendered the situation of the poor even worse. In a petition sent to the Municipal Council in January 1915, the signatories wrote that

> We all are in a great anxiety. Employment has everywhere diminished. Most of us are doing nothing in the city and have nothing to eat. We would appreciate it if you could help us contact the higher authorities so as to lend us the corn in your possession, reimbursable in two or three years so that we could maintain our children during these sad times.[76]

The petition depicted a very critical situation: cessation of commercial activities, high unemployment affecting ordinary as well as casual workers, families going hungry, and, in short, "*la misère la plus noire*." (great misery)[77] In any case, the economic crisis following the outbreak of World War I resulted in the migration of people from St-Louis to Dakar, the towns along the railroad and the Senegal river.[78] It population decreased from 28,782 city-dwellers in 1914 to 22,169 people in 1916.[79]

Another evidence of the level of poverty is provided by the lists of reimbursements made to the fishermen whose huts were destroyed by floods or burnt down by the medical authorities during the outbreak of the plague epidemic of 1917-18. They contain valuable information on the size and quality of dwellings, their location, sometimes the number of persons living there, but definitely the value of the rudimentary furniture and other

personal property they possessed. They revealed that an average poor person's belongings, including property, were evaluated about 200 frs.[80]

Conclusion

The urban society emerged in the context of international trade. Located at the mouth of the Senegal river and benefitting from the activities of the merchants based in Bordeaux, Marseille and Paris, the trading-post attracted many people and organizations and provided a wide range of services. In addition, it benefitted from the favorable political conjuncture and technological revolutions (e.g., steamships) to develop into a city.

An entrepreneurially oriented group of French merchants exploited these possibilities in order to have access to the productive hinterland. The colonial government engaged in a series of wars of expansion against the Africans between 1855 and 1865, which gave St.-Louis' hinterland a certain spatial continuity.

Trade and related activities helped develop urban economy, and St.-Louis became a major marketing, political and cultural center; it became the capital of "Senegal and dependencies" (1854-1902), capital of French West Africa (1895-1902), and capital of Senegal (1904-1960). More people came to settle there and new *quartiers* were created, such as Ndar-Toute, Bouetville, Gokhoumbaye.

St.-Louis was dominated by its commercial/maritime sector. Its government sector was important. It was dominated by the "*Grands Hommes*" (French and mulattos) until 1914, when "new men" (blacks) emerged into the political arena. Its industrial sector

was relatively insignificant, its service sector was weak and could not accommodate the needs of the majority of the city-dwellers, who were poor. At various occasions, the administration officials complained that there were too many beggars in the city, including "a great number of strangers."

The process of city growth did not go without problems. Fire, lack of drinking water during the dry season between December and June, together with disease and bad odors from waste were chronic problems of the first order. How were they conceptualized and dealt with? Chapter four will try to find elements of answers to this question and others.

NOTES

1. Géza Alfoldy, *The Social History of Rome*. Translated by David Braund and Frank Pollock (Baltimore: The Johns Hopkins U. Press, 1991), p. X.

2. Concerning the argument and basic assumptions of the world-system theory, see Immanuel Wallerstein, *The Modern World System I: Capitalist Agriculture and the Origin of the European World-Economy in the Sixteenth Century* (New York: Academic Press, 1974); *The Modern World-System II: Mercantilism and the Consolidation of the European World Economy, 1600-1750* (New York: Academic Press, 1980); *The Modern World-System III: The Second Era of Great Expansion of the Capitalist World-Economy, 1730-1860s* (New York: Academic Press, 1989); Terence K. Hopkins and I. Wallerstein (eds.), *World-Systems Analysis: Theory and Methodology* (Beverly Hills, Calif.: Sage, 1982). For its critics, see R. Denmark and K. P. Thomas, "The Brenner-Wallerstein debate," *International Studies Quarterly* 32 (1988): 47-65; P. Polychroniou, *Marxist Perspectives on Imperialism. A Theoretical Analysis* (New York: Praeger, 1991).

3. A. Pérotin-Dumon, "Cabotage, contraband, and corsairs: the port cities of Guadeloupe and their inhabitants, 1650-1800," in F.W. Knight and L.K. Peggy, eds., *Atlantic Port Cities. Economy, Culture, and Society in the Atlantic World, 1650-1850* (Knoxville: The U. of Tennessee Press, 1991).

4. D. T. Niane and J. Suret-Canale, *Histoire de l'Afrique Occidentale* (Paris: Présence Africaine, 1961), p. 109. The last three trading stations were established as part of a large project for "settler agriculture" conceived by the Minister of Navy, *baron* Portal, after a period of shifting control over Saint-Louis between the British (1758-1778, 1809-1817) and the French (1778-1809). The project aimed at developing local resources with the collaboration of the local people under the supervision of the governor Schumaltz.

5. The monopoly was suppressed in 1791 by the French *Constituante* and restored in 1824 by the merchants from Saint-Louis, who created the *Compagnie de Galam* in 1824. The company had the monopoly of trade in the Upper Senegal river between January and August. E. Saulnier, *La Compagnie de Galam au Sénégal* (Paris: Emile Larose, 1921).

6. Leland Conley Barrows, "General Faidherbe, the Maurel and Prom Company, and French Expansion in Senegal." Ph.D. thesis, U. of California, Los Angeles, 1974, p. 50.

7. In 1856 it included a certain number of villages: Leybar, Ngalel, Maka Toubé, Gandon, Ngay-Ngay, Ndiaker, Mouit, Ndiol, and Ndieben. See Y.-J. Saint-Vincent, *Le Sénégal sous le Second Empire. Naissance d'un Empire (1850-1871)* (Paris: Karthala, 1985), p. 415.

8. R. Pasquier, "Un aspect de l'histoire des villes du Sénégal: les problèmes de ravitaillement au XIXe siècle," *Cahiers du C.R.A.*, no. 5 (1987), p. 192; see also Yves-Jean Saint-Martin, *Les Sénégal sous le Second Empire. Naissance d'un Empire Colonial, 1850-1871* (Paris: Karthala, 1989), p. 108.

9. See L. Faidherbe, *Le Sénégal. La France dans l'Afrique Occidentale* (Paris: Librairie Hachette, 1889), p. 66; P. Soleillet, *Voyage à Segou, 1878-1879* (Paris: Challamel aîné, 1887).

10. F. Zuccarelli, *La Vie Politique Sénégalaise (1789-1940)* (Paris: Cheam, 1987), p. 12.

11. ANS 22 G, piece 17, mayor of St-Louis, B. Dumont, to Indigenous Affairs Director, 13 December 1856.

12. J. Duval, *Les Colonies et la Politique Coloniale de la France* (Paris: Arthus Bertrand, 1864), p. 84.

13. It included the bureaus of the Ordonnateur, Administrative services (1840), Colonial Inspector; the *Directions* of External Affairs (1846-1863, then Political Affairs, thereafter) - organized like the Algerian *Bureaux Arabes* -, and of Interior (1869-72, 1882-98, then the General Secretariat thereafter) resembling the Guyanese model.

14. See G.E. Brooks, Jr., "The *Signares* of Saint-Louis and Gorée: women entrepreneurs in Eighteenth-Century Senegal," in N.J. Hafkin and E.G. Bay (eds.), *Women in Africa. Studies in Social and Economic Change* (Stanford, CA: Sanford U. Press, 1976), pp. 19-44.

15. Y.-J. Saint-Martin, *Le Sénégal sous le Second Empire. Naissance d'un Empire Colonial, 1850-1871* (Paris: Ed. Karthala, 1989), p. 109.

16. A. Tardieu, *L'Univers. Histoire et Description de tous Les Peuples. Sénégambie, Guinée, Nubie, Abyssinie* (Paris: Firmin Didot Frères, 1847), p. 58.

17. Y.-J. Saint-Martin, *op. cit.*, pp. 109, 191.

18. Tita Mandeleau, *Signare Anna ou Le Voyage aux Escales* (Dakar: NEAS, 1991), p. 15.

19. Tita Mandeleau, *Signare Anna, ou le Voyage aux Escales* (Dakar: NEAS, 1991), pp. 15-16: the expressions "*Enfants de Ndar*" or "*Grands Hommes*" referred exclusively to
the mulattos.

20. F. Carrère and Paul Holle, *De la Sénégambie Française* (Paris: Librairie de Firmin Didot Frères, 1855), p. 16.

21. M. Marcson, "European-African Interaction in the Precolonial Period: Saint-Louis, Senegal, 1758-1854" Ph.D. dissertation, Princeton U., 1976, pp. 34, 39.

22. *Ibid.*, p. 38. See also Boilat, *Esquisses Sénégalaises* (Paris: Karthala, 1984), p. 212.

23. Bo Strath, "Production of meaning, construction of class identities, and social change," in Bo Strath (ed.), *Language and the Construction of Class Identities: the Struggle for Discursive Power in Social Organization: Scandinavia and Germany After 1800* (Gothenberg: Gothenberg U., 1990), p. 2.

24. Indeed, the first group to mobilize itself for collective political action and to assert his rights in the framework of the city government was the *habitans* group from Saint-Louis, who addressed on April 15, 1789 to the French Constituent Assembly a "*cahier*" of their complaints in which the recently created *Compagnie du Sénégal* (1784-85), operated. Indeed, the latter had obtained a monopoly on gum trade because it was worried about competition from the British traders established at Portendic on the Mauritanian coast. The company now employed only 600 "middlemen" *habitans*, including the interpreters, brokers, and traders, whereas 2000 people were engaged before in trade in the conditions of competition. The *cahier* was sent by a group identifying itself as the *Assemblée Générale des Habitans de l'Isle St-Louis du Sénégal* under the leadership of their mayor, Ch. Cornier. In another statement, dated from August 3, 1790, the *habitans* decided not to provide the company with their service, their slaves, boats and vessels. Those who signed the statement were members of a group claiming to belong to the *Conseil des habitants*, blacks and mulattos, owners of houses, warehouses, and stores. On June 24, 1793 they signed another "declaration" affirming their moral obligation to oppose any form of oppression by way of insurrection. In 1802 the mulattos were so powerful that they forced the governor Lassere to leave Saint-Louis.

25. This impression is corroborated by the focus of the papers presented at a recent *Colloque sur les Grands Commerçants Africains de l'Afrique Occidentale*, Dakar, 1-4 May, 1990.

26. D. Robinson's book in preparation ...

27. F. Zucarelli, *La Vie Politique Sénégalaise*, *op. cit.*, p. 14.

28. F. Brigeaud and J. Vast, *Saint-Louis du Sénégal. Ville aux Mille Visages* (Dakar: Ed. ClairAfrique, 1987), pp. 37-8.

29. F. Zucarelli, *La Vie Politique Sénégalaise, op. cit.*, p. 21.

30. P. Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*. Trans. Richard Nice. (Cambridge, MA: Harvard U. Press, 1984), p. 282. He refers to the "internalization of distinctive signs and symbols of power in the form of natural "distinction."

31. *Ibid.*, p. 310.

32. See D. Boilat, *Esquisses Sénégalaises* (Paris: Karthala, 1984); Niang Fatou Siga, *Reflets de Modes et Traditions Saint-Louisiennes* (Dakar: Ed. Khoudia, 1990), pp. 29, 66, 112.

33. *Ibid.*, pp. 85-99.

34. In the 1870's the mulattos were divided between the "conservatives" (the Gasconi clan) and the "liberals" (the Devès clan). See F. Zucarelli, *La Vie Politique Sénégalaise, op. cit.*, pp. 52-53.

35. See Tita Mandeleau, *Signare Anna ou Le Voyage aux Escales, op. cit.*, pp. 15-16; see also M. Marcson, *op. cit.*, p. 40.

36. The cemetery was successively transferred from the southern part of the city to Sor, first, at the entrance of the bridge in 1821, then on Rue de Paris in 1868, and, finally, on Route du Cimetière in 1886. See the *Echo de Saint-Louis*, no. 25, November 1971, p. 5.

37. R. Pasquier, "Un aspect de l'histoire des villes du Sénégal: les problèmes de ravitaillement au XIXe siècle," *Cahiers du C.R.A.*, no. 5, 1987, p. 192.

38. F. Carrère and P. Holle, *De la Sénégambie Française, op. cit.*, p. 8.

39. F. Zuccarelli, *La Vie Politique Sénégalaise (1789-1940)* (Paris: Cheam, 1987), p. 19.

40. Alain Coursier, *Faidherbe, 1818-1889: Du Sénégal à l'Armée du Nord* (Paris: Tallndier, 1989), p. 94.

41. Ministère de l'Urbanisme et du Logement, *Urbanisme et Habitat en Afrique Noire Francophone Avant 1960* (Paris: Agence Française pour l'Amenagement et le Développement à l'Etranger, April 1984), p. 598.

42. For the political, economic, spatial and cultural importance of the built environment, see A. King, *Global Cities. Post-Imperialism and the Internationalization of London* (New York: Routledge, 1990), p. 11.

43. Frederic Carrère and Paul Holle, *De la Sénégambie Française* (Librairie de Firmin Didot Frères, 1855), pp. 12-13.

44. F. Carrère and P. Holle, *De la Sénégambie Française, op. cit.*, pp. 12-13. They argue that the occupation of *laptots* (African sailors working on vessels), well considered in the past, had lost its prestige and attracted only new migrants, such as Bambaras and Sarakolé.

45. J.F. Searing, *West African Slavery and Atlantic Commerce, op.cit.*, pp. 122-3.

46. F. Carrère and P. Holle, *op. cit.*, pp. 16-17.

47. The new trading-posts were Podor (1854), Medine (1855), Bakel (1855), Matam (1857), Ndangan (1858), Kenieba (1858, 1861), Saldé (1859), Aere (1866), and Kayes (1879).

48. The advertisements in the *Journal Officiel du Sénégal et Dépendances* contain the names of the landlords and the buildings to be rented. In addition, other sources, such as the *Bulletin Administratif*, provide insights into the conditions of accommodation in the city. For example, in 1857 Mrs. Charbounié rented her house located on 28 Cornier Street to the *Spahis* for 2,000 francs per year (see *Bulletin Adm.*, p. 107-8. In December 1885 the Navy *Commandant* paid 4,500 francs per year to rent a house that was used for office as well as for residence; for details, see *Bulletin Administratif*, 1885, ministerial dispatch, December 4, 1885, p. 532-4.

49. Roger Pasquier, "Villes du Sénégal au XIXe siècle," *Revue Histor. d'Outre-Mer*, no. 168-9, 1960, p. 414.

50. A.N.S., "Arrêté portant agrandissement du village de Bouetville, 25 July 1864, *Moniteur du Sénégal et Dépendances*, 2 August 1864, p. 95.

51. F. Zucarelli, *op. cit.*, p. 35.

52. M. Jules Duval, *Les Colonies et la Politique Coloniale de la France* (Paris: Arthus Bertrand, 1864), p. 84; F. Zucarelli, *La Vie Politique Sénégalaise, op. cit.*, p. 35; M. Echenberg, *Colonial Conscripts. The Tirailleurs Sénélais in French West Africa, 1857-1960* (Portsmouth, NH: Heinemann, 1991), p. 7. The author argues that the indigenous troops, the famous *Tirailleurs Sénégalais*, were 500 in 1857, 900 in 1862, and 1000 in 1867.

53. ANS H 22 (Senegal), record of the Sanitary Commission meeting, 14 May 1879.

54. A.N.S., decree of 30 December 1884, *Bulletin Administratif*, p. 193.

55. See David Robinson's forthcoming book entitled *Secular State in Islamic Space. Colonial and Muslim Authorities in Senegal and Mauritania, 1880-1920.*

56. See G. Wesley Johnson, *Naissance du Sénégal Contemporain. Aux Origines de la Vie Politique Moderne, 1900-1920* (Paris: Karthala, 1991), p. 53.

57. Mamadou Diouf, "Traitants ou négociants? Les commerçants Saint-Louisiens (2e moitié du XIXe s. - début XXe s.): Hamet Gora Diop (1846-1910). Etude de cas" Paper presented at the *Colloque sur les Grands Commerçants Africains de l'Afrique Occidentale*, Dakar, 1-4 May, 1990, p. 12.

58. See G.W. Johnson, *Naissance du Sénégal Contemporain, op.cit.*, p. 148.

59. G.W. Johnson, *Naissance du Sénégal Contemporain, op.cit.*, pp. 54, 135-6.

60. David Robinson, "Brokers and Hegemony ...," p. 13.

61. *Ibid.*

62. Archives Municipales de St.-Louis, 1 Q 80: recensement général de la population, February 20, 1914.

63. *Annales*, p. 144. See also G.W. Johnson, *Naissance du Sénégal Contemporain, op.cit.*, pp. 64-5.

64. A.N.S., *Bulletin Administratif*, 1892, p. 195.

65. A.N.S., "decision no. 116 of November 28, 1856," in *Bulletin Administratif*, 1856, p. 221.

66. A.N.S. 22 G 6, piece 39: recensement général de la population, 1877.

67. Fire destroyed 300 huts in 1856, 600 in 1857, and 30 huts were in flame in an hour in 1858. See *Moniteur du Sénégal et Dépéndances*, 18 , p. ; A. Coursier, *Faidherbe, 1818-1889: du Sénégal à l'Armée du Nord* (Paris: Tallandier, 1989), p. 95.

68. On March 1, 1889 a fire destroyed 100 huts in an hour in Guet-Ndar, and the following day it destroyed 129 huts. The cost was estimated to respectively 6,000 and 7,000 francs; see A.N.S., *Journal Officiel du Sénégal et Dépendances*, 1889, pp. 96-7.

69. For example, in 1886-7, the Bamana migrated to St-Louis in order to avoid slavery. They formed the first christian community of the Protestant church in St-Louis. See *Annales de la Communauté de St-Louis*, entry for 1886-7, pp. 230-31.

70. A.N.S. 2 G 6, piece 17: tableau recapitulatif de la population des principales villes, 1916.

71. Archives Municipales de St.-Louis, governor to mayor, no. 228 of 11 August 1882.

72. Archives Municipales de St.-Louis, 2 B 20, Director of Interior Service to the mayor, no. 605 of 24 August 1882.

73. A.N.F.S.O.M., Série géographique Guinée IV, 6, g: Dinah Salifou to General Dodds, 21 May 1894.

74. Id., Dinah Salifou to governor general, December 20, 1895.

75. Archives Municipales de St.-Louis, 2 B 24, governor to mayor, no. C 578 of 13 April 1912.

76. Archives Municipales de St-Louis E 22, Records of the Municipal Council meeting, 8 February 1915.

77. Archives municipales de St-Louis E 22, record of the Municipal Council meeting, 8 February 1915.

78. *Annales*, p. 141.

79. Archives Municipales de St.-Louis, 1 Q 80: recensement de la population, 1914; see also A.N.S. 22 G 6, piece 17: tableau recapitulatif de la population, St.-Louis, 1916.

80. H 73 (Serie Senegal), peste: etats des baraques epargnes a Guet-N'Dar, 1920.

CHAPTER 4

Health and Disease, Theories and Praxis, 1850-1914

The conceptions of health, ill-health and health care discussed here are aspects of peoples' world views. World views have basic assumptions about the nature of the family, the role of the individual within it, the relationships between the individual and the society at large, between people and their natural environment, and between people and the supranatural agencies. They are constructs built in order to make sense of the world through the use of classifications, categorizations and symbols. They are subject to change over time as society as a whole is undergoing the process of structuration, de-structuration and re-structuration under the pressure of local, regional or international economic and political forces.[1] For example, the research undertaken by Hammond-Tooke,[2] a leading anthropologist in South Africa in the 1980s, has shown that some individuals in the society believed in all aspects of the society's world view, while others held hybrid world views. A certain number of intervening variables affect the ways in which people make sense of the world around them: residence (rural/urban), education, religion, and occupation. These considerations apply to the beliefs about the causes of disease and the techniques for healing it. Change in this area can relate to the introduction of new knowledge about the disease etiology and epidemiology, and the discoveries or spreading of new treatments and new techniques.

A. Indigenous conceptions of health, ill-health and health care

This section deals with the theories of health and disease held by the local population. The official records refer to them as the *indigènes*. Who were they? The term itself is problematic, but it will be used here in its historical (colonial) context. The evidence gathered from various sources shows that, in French thinking, the *indigènes* were people who were not "penetrated" by French culture and ideas of "progress." They did not dress like the French; and they ate with their hands and shared the same dish. They continued to rely mainly on their ancestors' world views and practices. They occupied the bottom of the hierarchy of the "civilized" people. But, in practice, the Senegalese who were French citizens and well educated also consulted the *marabouts*. For example, in 1879 the missionaries observed that the *signares* and some traders were attracted to the "superstition."[3] As late as 1909, there were reports that

> (The) Catholics who receive our sacraments also consult the *marabout*, believe in his so-called revelations, and buy expensive but useless amulets. Women, in particular, after addressing prayers to God and the Virgin (Mary) consult any old *marabout* concerning the secrets for the future that God keeps hidden from them, the cause of an illness, the outcome of an uncertain case ... Christians feeling comfortable with such hybrid beliefs in Christianity and *maraboutage*!

The available evidence about the indigenous theories and perceptions of health and disease comes from various sources. First, there are observations made by the health officers (physicians, surgeons, nurses) about the attitude of the local population toward French medicine (or biomedicine) as well as the popular health sector. The indigenous

people behaved in accordance with their beliefs about the causes of disease and illness and the techniques for curing them.

Second, missionary sources provided interesting details about the indigenous perceptions and theories of health and disease. Unlike the doctors, who resided in Saint-Louis only two or three years, the missionaries stayed in the city for longer time period. *Abbé* Boilat, who left Senegal in 1852 after ten years of missionary work, is a good case in point. His description of the *gris-gris* and talismans worn by the traders during their business trips along the Senegal river gave an indication of how widespread were such practices in the mid-nineteenth century. Other examples concern Sister Marie Chléophas, who supervised the Sisters as *Soeur Supérieure* for 6 years between 1868 and 1874; and Sister Germaine Bouveret held the same position for 26 years between 1878 and 1904. In this perspective, their reports of people's reactions provided insights into their ideas of health and disease. Finally, Pierre Loti's description of the Saint-Louisians in the 1870s, Randau's study in the 1930s, the recent studies as well as my own field work in Senegal show a certain continuity with the past of beliefs about the causes of illnesses and techniques for curing them that can be observed among the Senegalese today.

One of the problems that the French health officers faced in Senegal was the resistance of the majority of Senegalese to the imposition of Western medicine as the official or legal medicine. Doctors, missionaries and administrators understood that the indigenous great healers and other specialists (diviners, herbalists, rainmakers, etc.), who were the depositories of the indigenous world view and its various applications, were the main obstacle to the spread of the Gospel and the progress of biomedicine, an important

component of the *Civilizing Mission*. This is the reason why they chose to wage a propaganda war against them. They referred to them in the archival record as *guérisseurs* (healers) and *marabouts* (Muslim clerics blessed with *baraka* or mystical powers). But they also made a distinction between "good" and "bad" *marabouts*. The "good" *marabouts* were knowledgeable about their religious and healing practices (through prayers), could give "good advice" to merchants involved in trade along the Senegal river, and they did not wear fetishes; while the "bad" *marabouts* misled people, provided their patients with fetishes, and imposed fees for healing services.[4]

It goes without saying that this was a value judgement which did not take into account the real influence (local, regional, national or international) exercised by Muslim clerics on people based on their social use of Islamic knowledge. Indeed, according to D. Fassin, a Muslim healer who uses healing practices based on the spoken word (blessings) and prayers is likely to have a larger audience and greater politico-religious power than the one whose cure is based on the manipulation of objects (amulets) and substances (healing plants).[5] I shall come back to the mutual influence between Islamic and African social and healing practices later, after presenting the indigenous world view and its applications in the area of medicine.

The Senegalese share with other Africans the belief that health results from a situation of harmony in the relationships between members of the (extended) family and of the society at large, between people and their natural environment (forces of nature), and between people and the supernatural agencies (God, ancestors and other spirits, genies). When these relationships are "polluted" by exposure to natural elements, conflict, envy,

jealousy, revenge, plain meanness, mismanagement of resources, irreverence for the deceased ancestors (by withholding praises, thanksgiving, libations, and sacrifices), negligence of ritual prescriptions (birth, puberty, marriage, death, kingship, travel or migration, trade), and ignorance of the most important cultural values (solidarity, reciprocity, peace, love, etc.), then, harmony is disrupted; and there is a ground for ill-health. In this perspective, healing always involves three dimensions (physical, social, and super-natural) after a diagnosis is made by a diviner using various techniques.[6]

In his now famous book first published in 1969 and reprinted many of times, entitled *African Religions and Philosophy*, John S. Mbiti reduces the causes of ill-health to one explanation: the sorcerers or witches. Central to his argument is the assertion that because Africans live in a "non scientific environment," they are irrational and superstitious and attribute

> all the various ills, misfortunes, sicknesses, accidents, tragedies, sorrows, dangers and unhappy mysteries which they encounter or experience (to) ... the use of this mystical power in the hands of a sorcerer, witch or wizard.[7]

Such an interpretation is consistent with J.S. Mbiti's educational and professional background as a Christian theologian. His biases and predispositions explain the simplistic way in which he has approached a complex reality. His interpretation does not take into account the multicausality of the African disease theory and the complexity of the decision-making process in the quest for therapy, as John M. Janzen has explained.[8]

I will argue here that there are three categories of illnesses, that is, a) the "natural" or "ordinary" illnesses, b) the illnesses from the supernatural agencies (God or divine retribution and spirits), and c) the illnesses from people (the so-called "witches" or

"sorcerers," (*liguey*) who are actually men and women of magical or mystical "power", what can be directed toward good or bad purposes).

The "natural" illnesses are related to the human condition on earth and have various causes, among which are the natural elements (changes in seasons, for example), negligence of health and diet, famine, abuses, and the process of aging. When asked about the secret of his extraordinary longevity, Omar Sarr (98 years old) replied that good diet was the key to his strong health. He prided himself for never being hospitalized his entire life.[9] Omar Sarr's case indicates that poor diet can be responsible for ill-health.

In principle, natural illnesses are cured by using the variety of treatments that indigenous pharmacopeia has developed, such as herbs, concoctions, and food restrictions. But if these treatments fail to cure the illnesses or, at least, to reduce people's sufferings, healers would conclude that such illnesses are not natural and, therefore, have another origin (supernatural or human). Epidemics enter into this category because they raise two crucial questions in the mind of the victims: why me (us)? why now?

The supernatural forces that are held responsible for certain illnesses are God, on the one hand, and spirits (*rab*), on the other. God is believed to punish people for their misconduct by sending them incurable illnesses (such as leprosy[10]), epidemics (e.g. smallpox), as well as other calamities, such as drought, locust invasions, and floods.[11]

Spirits are also held responsible for calamities and other illnesses, including mental disturbances, which involve spirit intrusion and soul loss during dreams. One healer, Ibrahima Tabane, stated that there are seven spirits responsible for mental disturbances. They dwell in the dump-trash, the abandoned houses, dried wells, deep water, in the forest

and *baobabs* trees, and in the holes in the streets.[12] Symptoms for mental illnesses involve convulsion, paralysis, madness, and possession crisis.

Surrounded by water, St-Louisians came to identify the water spirits as the cause of death due to drowning and of floods. From the missionaries' perspective, the early reported cases of death due to drowning, such as Father Etienne's death in October 1856,[13] were simply considered as accidents. But by the 1870s the belief that death by drowning was caused by the water spirits was so widespread as to be reported in the missionaries' *Journal de la Communauté* in 1879.[14] As far as flood is concerned, it invaded the city or its neighborhoods (especially Guet-Ndar and Ndar-Toute) at various occasions, as in 1905, before the construction of a dike in 1932-1933.[15]

For Guet-N'Darians, whose main economic activity was fishing, such calamities as well as a chronic inability to fish or to pilot a canoe could only be explained in terms of water spirits' displeasure with the lack of respect for the sea displayed by the majority of fishermen, who had deliberately transformed the beach into a dump-trash and sewage, and had failed to offer them sacrifices on a regular basis.[16]

The most popular water spirit is Mama Koumba Bang, who is held to dwell in the Senegal river north of Saint-Louis.[17] She is held responsible for deaths due to drowning and for illnesses affecting new-born infants, whose mothers did not offer the necessary sacrifices. Indeed, whenever a baby was born in Saint-Louis from an ordinary family, the new mother would take with her the *couscous* to offer to Mama Coumba Bang in the Senegal river in order to protect the baby from the attacks from the spirits.[18] Another precaution taken concerning the baby was not to leave it alone in the house, even for a

short time period, without putting a knife under the pillow to repel the "evil eye".[19] Some city-dwellers attributed Saint-Louis's problems to Mama Coumba Bang's dissatisfaction with the low level of sacrifices.

The most dangerous spirits were believed to haunt some houses and streets, especially the streets near the mosque, the church and the hospital. Any encounter with them - metamorphosed in the form of a white and tall horse reaching to a second floor of a storehouse, a cat, an empty barrel, a bread stick, or a "bad" or evil wind -, in the middle of the night at the "evil hour" (between midnight and 4 A.M.) could be fatal. Such spirits were believed to have been people who met untimely deaths in tragic circumstances (accidents, and suicides) or were not properly buried.[20] The cure for God- or spirit-caused illnesses requires rituals of renewal and purification, incantations, libations, prayers and exorcism.

The illnesses caused by human agency can be divided into two groups, that is, a) the illnesses resulting from the patient's own lifestyle and b) the illnesses caused by "men or women of (mystical) power". By failing to perform important ritual obligations or by choosing to transgress well-known sexual, dietary, and marital prohibitions, a person could get sick and possibly die.

In other instances, illnesses could be caused by the action of the "sorcerers" and *jeteurs de sort*. It is established that sorcery operates in an environment where capital accumulation creates inequality, makes winners and losers, thus creating a ground for envy. Sorcery intervenes as a leveling mechanism. In Saint-Louis people who gained and maintained wealth through their participation in trade or wage-earning in the

administration, made envious neighbors and felt the need to protect themselves and their property from sorcery by using charms, amulets and other *gris-gris*. Some of those who lost wealth through bankruptcy or mismanagement blamed it on potential envious persons in their entourage. The same process operated at all levels of the social hierarchy and applied to other forms of capital accumulation (children, cattle, fishing equipment, etc.). Even poor people could claim to be victims of envy ("evil" eye, "evil" tongue) because there are degrees of poverty; also people can envy someone's beauty, legs, talents, and potentialities.

One of the most striking features of the indigenous characters in Pierre Loti's *Roman d'un Spahi* is that they all wore amulets to protect themselves against the "evil eye". Fatou-Gaye, Jean Peyral's mistress, is a good case in point. One evening, she told Jean that for many days she met, at the same hour, an old and very ugly woman who always stared at her and now she felt bewitched. The couple decided to consult a local healer, Samba Latir, who made up amulets for her protection. In addition, the amulets were among the products that women sold at the marketplace in Guet-Ndar.[21] For those who fell victims of sorcery, healing consisted of exorcism following divination (using *cauris*, drawing on soil or paper). Damages caused by envy in the body through the spoken word and/or magical power could be exorcized and vomited.

Islam added new elements to the indigenous world view and healing practices. Islamic medicine itself had already integrated some Indian and Iranian healing practices. Among the Islamic elements that the Senegalese integrated to their belief system, were the importance of visions, dreams, sainthood and miracles in the disease diagnosis and cure,

and the effects of the spoken words, letters and numbers.[22] Muslim clerics denied the existence of sorcery but reinterpreted it in Islamic terms as *jinns* or *ginay* and *seetany*. Sorcery became known as *maraboutage* (*liguey* in Wolof, *sukunaabe* in Haalpulaar, *ayaalaw* in diola, and *korté* in Bamana). In 1909 *maraboutage* appeared to the missionaries as "the most common form of superstition in Senegal"[23] and the "remnants of savagery."[24]

Change could also be observed at the level of the healing practices. Muslim clerics added to the existing repertory of protective ingredients the following elements: the making of amulets and talismans containing the names of Allah (*xaatim*) and important Muslim heroes along with the name and age of the patient and names of the patient's parents; the science of magic squares (*'ilm al-awfaq*); the interpretation of nightly dreams (*listikar*); and the predictive sciences (astrology, geomancy or sandwriting, and palmistry).[25]

The new remedies to the changing repertory of diseases included, among others things, touches on the head accompanied by incantations and prayers, the inhalation of the smoke from healing plants that are being burnt, the use of Koranic verses to attack competitors or to take revenge on one's enemies, and the use of the healer's spit to be rubbed on the part of the body that is sick.[26] The most widespread Islamic remedy consisted of writing chosen Koranic verses on a writing board, washing the ink from the board into the water, and drinking the water. The remedy was used for cure, protection and good fortune.[27] Muslim healers also introduced the practice of the *variolisation* or the inoculation (transfer of smallpox matter from infected to the non immune susceptible

through incision) against smallpox, which was widespread in 1895 despite the effort of the administration to stop it.[28]

Thus, the spread of Islam gave birth to a dynamic form of syncretism of indigenous knowledge and Islamic elements. The local healers did not abandon *en masse* their practices to embrace the new healing practices. Some did but the majority of healers became Muslims without changing their ancestral medical practices.

The insertion of Saint-Louis in the world economic system first through the slave trade and, later on, through colonial rule, resulted in the spread of existing diseases over a wider area and the introduction of new diseases - such as syphilis, yellow fever, cholera, and other diseases for which local healers had no cure -, and new approaches to illness, new drugs, and therapeutic techniques (diagnosis with stethoscope and microscope, use of needles, etc.).

Indigenous healers borrowed some of the Western notions and techniques along with the use of the French language. The notion of devil or demon (used by Christians and Muslims), as a new agent in the disease causation category, was introduced. Healers utilized the same remedies used to protect people against other spirits in order to fight against the demon's attacks. Mansa Kissi Kamara, interviewed in Saint-Louis in January 1995, is a good case in point. He prided himself that, if asked, he could provide me with a strong protective fetish that could deter any demons from assailing me.

Healers also borrowed new ways of conducting everyday healing business. For example, Mansa Kissi Kamara, in search of some form of legitimacy, chose to call himself "*Docteur* Kamara," as shown on the advertisement over the main entrance of the house of

his wealthy patient and host in Sor for the last two years. He kept written records of his patients in a big notebook, including the names and addresses of the patients, the disease categories, and the duration of the cure in terms of minutes, hours, days and months, according to the gravity of the disease. He claimed to cure diseases such as cancer, diabetes, and AIDS, for which Western medicine has no cure yet. Another healer, Aboubacar Sidiki Tounkara, inspired by new advertisement techniques, has established his mobile "pharmacopeia" at a strategic location, that is, at the entrance of Guet-Ndar after the bridge and next to the marketplace. He used a piece of cloth on which were inscribed the list of diseases that he could cure and the drawings to illustrate them.

These two examples illustrate an important development in the healing practices, that is, the commoditization of healing (magical or mystical) power, which started a century ago. Indeed, there is evidence that the *marabouts* were making "a lot of money" by exploiting the credulity of their "clients", especially women.[29]

The constitution of the federation of *Afrique Occidentale Française* (*A.O.F.*) in 1895 and the expansion of monetary economy facilitated the commoditization of the healing power and introduced a distinction between "good" and "bad" healers or charlatans. The sharpness of the attacks directed against the healers (*guérisseurs* and *marabouts*) by the missionaries and administrators suggests that they (healers) were very active and had an important following.

Oral data also corroborates the idea that some *guérisseurs* and *marabouts* earned their living by traveling from one city to another in francophone West Africa where they sold remedies to people who wanted to defend themselves from sorcery, "evil eye",

envious people, and spirits. Four of the healers I interviewed during my field work - "*Docteur*" Kamara, Serigne Diba, and Abubacar Sidiki Tounkara in Saint-Louis, and Koli in Dakar -, said that the ingredients they used for their medicine as well as their magical power came from the forests of Fouta Jallon and Casamance. From their perspective, these two regions represented the last stronghold of "pure" African episteme or science, unaltered by external forces. It is a kind of hereditary profession because their fathers and grand-fathers or relatives were also wandering from city to city in the same way. Such trips could last years and, in the process, they could learn new healing concepts, techniques and plants or, at least, the efficacy of combining various healing plants. Serigne Diba, who has a Koranic school at his house in Saint-Louis (*Cité Niakh*), is an herbalist who does not travel anymore, but he sends his son or his nephew to Casamance to gather the healing plants he needs for his work. Now it is time to look at Western medicine.

B. The French Conceptions of Disease and Praxis

The French did not form a monolithic bloc. They had competing views of disease and competing agendas. One view was held by the health officials. It changed over time as new medical discoveries were made. There was a conflict of interest between the medical authorities and the merchants, who perceived sanitary measures as an obstacle to trade. Another view was defended by the missionaries. It never really changed significantly. The general French populace considered that individual rights could not be violated in the name of public health.

The founders of the Fort of Saint-Louis came from a society whose world view was deeply influenced by R. Descartes (1596-1650)' theory of the world which argued that the world was made up of two incompatible kinds of substance: the mind or consciousness (*res cogitans*) and the matter (*res extensa*). According to this view, the body was considered as a machine. This view of the body was reinforced by I. Newton (1642-1727)'s idea that all living things were natural machines.[30] One of the implications of this theory of the body as a machine was that, when one of its organs failed to function because of a disease, it was the physician's duty to fix it, sometimes by cutting and replacing some of its parts. The focus was on pathologies.

From 1850, the beginning of my period, until around 1901, when the health officials were finally convinced of the efficacy of the germ theory, health was defined as the absence of disease, while knowledge of the causes of the diseases was very speculative. There was no effective cure for most of the diseases. Remedies and cures were mainly based on either misinformation or mistaken assumptions. The sulfuric ether, chloroform, gum syrup, expectorants, mercury and hot tea were not of great help against the epidemics that struck the city; nor were the techniques of bleeding, purging, cauterizing the patient and frictioning the body with the camphorated brandy before covering it with a blanket.[31] No surgery could be safely performed before the invention of antiseptics (1864). The role of the insects in the transmission of disease was not known until 1892, for malaria, and 1902, for yellow fever. Only vaccination against smallpox could be performed with some success.[32] Even in this case, it met serious resistance from the local population.

But despite the ignorance of the causes of the diseases and the absence of effective remedies and cures, French officials had a coherent view which gave a meaning to disease and to the public health measures adopted to combat it.

Two paradigms dominated French conception of ill-health in Senegal before the "conversion" to the germ theory: the environmental paradigm and the sociocultural paradigm. I use the term "paradigm" in the Kuhnian sense, that is, a model or pattern.[33] The environment that the French were concerned about was the physical or natural environment, including the climate, and the social environment both at work and at home. As seen in chapter 2, the myth of insalubrious African climate and environment occupied French thought most of the nineteenth century.

Three elements of the natural environment were identified as the main causes of diseases: the stagnant water, the hot or rainy season (*hivernage*, from June to November), and the "evil" wind. First, in the minds of the French officials, the stagnant water, everywhere in the surroundings of St-Louis in the form of swamps, bogs, and moats was considered as the source of the highly poisonous vapors called "pernicious emanations" or "miasmas" that caused all types of diseases. The northern part of the island was covered all year long by a huge swamp and the vapors rising from it were believed to infect the air. In addition, the consumption of such unclean water was also associated with a large number of diseases, including various types of fevers.[34] The second natural element, the rainy season, characterized by constant variations in temperature, had something to do with high rates of infectious and parasitic diseases, and infant mortality and morbidity.[35] Floods and stagnant water, following each heavy rain, were believed to accelerate the

decomposition of all types of organic matters, which were quickly covered with abundant vegetation secreting the deadly "miasmas."[36] According to the health officials, during the 1867 yellow fever epidemic, the streets of St.-Louis and other urban villages were transformed into "infected ponds" by torrential rains. The administration spent 6,000 francs to drain the stagnant water.[37] The 1878 and 1881 yellow fever outbreaks occurred when the temperature reached 27° (June-July) and the rainfall was estimated at 668 mm.[38] One eyewitness referred to the rainy season as the "season of the fleas" during which it is "impossible to sleep during the night."[39] The association of the rainy season (*hivernage*) with winter in Europe (*hiver*) was justified by the fact that it was the most difficult and depressing season for the Europeans because of the rain.[40]

As far as the third natural element, that is, the "evil" wind is concerned, there is evidence that the morning breeze was believed to carry with it the "miasmas" that caused malaria and other diseases.[41] In addition, the strong wind blowing from the east and south, between June and November, was associated with the proliferation of the cases of dysentery.[42]

Beside the stagnant water, cemeteries located in Sor at the entrance of *Pont-Faidherbe* and south of Guet-Ndar constituted a source of "miasmas" or "pernicious emanations." Indeed, according to this view, when the tombs cracked under the pressure of rain - because of their low depth (0m80) and inappropriate cover -, they liberated the pestilent emanations that could infect and kill those who inhaled them. These emanations were associated with the outbreak and spreading of the 1867 yellow fever epidemic.[43] And the "evil" time, when the "evil" wind was in motion and the chance for contamination

high, was the evening.[44] Thus, the hot season, the "evil" wind, and the stagnant water on this low and swampy land at the mouth of a big river on which the city was built, constituted a dangerous trio fatal to Europeans, not to Africans or *indigènes* who were not considered to be susceptible to yellow fever.[45] The sequence of transmission of the diseases was as follows:

miasmas - man; infected object - man; (infected); man - man.

In other words, there were three instances of contamination: a) one could inhale the "bad odor" or miasma and get sick; b) one could catch the disease by touching an infected object, as chapter 5 will show; c) and one could become ill by being in contact with a patient.

The second paradigm through which the French health officials viewed or understood the causes of ill-health was the sociocultural paradigm, especially the living and housing conditions, and people's behaviors and the by-products of their activities. There is evidence that throughout the second half of the nineteenth century, officials accused the *indigènes* of facilitating the spreading of the diseases by damaging the environmental sanitary conditions. Indeed, there were reports that the *indigènes* threw all the rubbish and dirt into the streets and public places, and along the docks, which made an unbearable stink. Many streets leading to the river on both sides of the island were dead-ends because of the accumulation of the waste matter, including human waste. The *indigènes* continued to urinate on the streets, which explains why certain streets corners smell terribly ("*les odeurs les plus nauséabondes*").[46] They also threw the garbage into the river; and they used the river as a cesspool. Very often, given the slow movement of

the stream during the cold season (December-May), all the filth stayed on the edge of the river for a long time before being carried away; this lent a dreadful odor to the island and made the river's edge a stinking place.[47]

One of the consequences of this state of affairs was the decision made by the public authorities in 1857 to eliminate the *indigènes* from the center of the city, where their 300 huts were located next to the houses occupied by the Europeans and the black elite. At the time there were 3,000 huts in Saint-Louis.[48] The forced removal of the *indigènes* from the center of the city was known at the time of Faidherbe as the "*bataille de la paillotte*," when in March 1859 around 226 huts were destroyed. In 1861 it applied to the remaining 80 huts, in the center of the city, between the streets St-Jean in the north and Ribet in the south. Thus, a total of fourteen streets were cleared of shacks.[49] The same year, the administration decided to clean-up the docks and to establish a road around the city-island. But three years later a report indicated that the *indigènes* continued to accumulate waste along the river, thus obstructing access to the docks.[50] In 1873 the process of elimination of the *indigènes* from the center of the city was extended to include the streets Saint-Paul in the north and Saint-Joseph in the south.[51]

But the issue was not completely resolved. It periodically came to the fore, like in October 1881 when the Governor urged the President of the Municipal Council to prevent the construction of new huts in the city and to remove all waste matters accumulated in the north-western part of the island, which was disgusting to see.[52] The following year, two solutions were explored with reference to human waste: the construction of public toilets and the acquisition of a horse for surveillance. The discussion over the

construction of ten public toilets in the city took place during the *Conseil Général* meeting of 6 February 1882. The cost of each toilet was estimated to 2,400 francs. In his intervention, J.J. Crespin, an affluent businessman, underscored the danger for the health of the city-dwellers of all the waste accumulated on both sides of the Senegal river. He proposed to build the public toilets not only on the city-island, including at the extremes north and south of the city, but also in the urban villages of Guet-Ndar, Ndar-Toute and Sor. The participants recognized the urgency of the project and voted 8 in its favor and 6 against it. The Interior Director pointed out that the traders perceived the existing wharf, run by the artillery, as an obstacle to navigation and trade; he suggested that the future wharfs be established on the small branch of the Senegal river.[53]

During another meeting, the members of the *Conseil Général* explored the next step, that is, the implementation and following-up on the issue of keeping the city totally clean. The discussion evolved around the proposition made by the administration to set up an ongoing monitoring system by providing the *Commissaire de Police* with a horse, at the cost of 1,200 francs, that would allow him to ride around the city and urban villages and make sure that the city was kept clean. The participants unanimously adopted the proposition made by G. Devès, former mayor of Saint-Louis, to pay the *Commissaire de Police* 4,500 francs per year in wages.[54]

In 1889 A. Bourmeister, mayor of Saint-Louis, signed an ordinance prohibiting the construction of new huts on the city-island. He fixed a three-month deadline for the elimination of the existing huts on the central zone of the city comprised between the streets Saint-Pierre and Thionck.[55]

The issue was not completely resolved because as late as 1912, the president of the Chamber of Commerce complained about the accumulation of waste on the border of the river, which prevented the ships from anchoring; he invited the mayor to take the necessary measures in order to prevent the *indigènes* from throwing the waste into the river. As a solution, the participants decided to put garbage boxes along the docks to be used by the local population as dump-trash. The boxes would be put there every morning and removed every evening at 7 p.m.[56]

Another problem that the medical authorities came to concern themselves with was the presence in the city of herds of sheep and cows, raised by the *indigènes*, and of the horses and mules used for transport, whose excrement was stinking greatly. They also perceived overcrowding and the interaction between people and animals to be the breeding ground for the outbreak of the 1881 yellow fever epidemic that they considered as the prolongation of the 1878 epidemic outbreak.[57]

Two years earlier, in May 1879 the debate over the causes of ill-health intensified, partly because of the coming of the rainy season, but also because of an influx into St-Louis of hundreds of European troops. Indeed, for the first time, the Sanitary Commission established a strong causal link or relationship between ailments - such as fevers and diarrhea associated with vomiting, known as *n'diank* - and the smoke generated by the drying of fish by the Guet-Ndarians. At the Commission meeting on 14 May, Pierre Carpot, the chairman of the Commission, attacked Gaspard Devès, mayor of St-Louis since 1875, for tolerating the large scale drying of fish in Guet-Ndar and for his unwillingness to implement the sanitary measures taken in 1873 and 1878 concerning the

establishment of a drying ground at the extreme south of the urban village (Guet-Ndar). Dr. Doué, Acting *Médecin en chef*, emphasized the fact that smoke coming from Guet-Ndar was offensively smelly and confirmed the existence of similar symptoms (fevers, diarrhea, vomiting) among the troops in the garrison and Europeans in the city.[58] He gave an example of three officers who had visited Guet- Ndar three days earlier and felt like vomiting when they reached the middle of the Servatius bridge on their way back home. Gaspard Devès, mayor, took considerable pain to argue that the fishing industry was not a threat to the city's health, that the right to dry fish was granted to the fishermen since 1862, that the issue of the location of the fishing industry was already on the floor during the Governorship of Pinet Laprade (1865-69) but no workable solution could be found, and that the only viable alternative chosen by the Municipal Council in 1878 was to prohibit the drying of fish between June and November. He concluded that the causes of the ailments could be found somewhere else. A vote at the end of the debate resulted in a majority in a favor of a ban on the drying of fish starting 1 May of every year.[59]

Guet-Ndar was not the only center of attention. There were reports concerning the filthy state of the urban villages of Bouetville and Sor in the 1870s. Filth mainly from animal excrement was associated with the daily presence of a great number of cows and sheep in the area, but the mayor of St-Louis, Brochet (1872-75), admitted that there was nothing to do about it.[60] Obviously, the Sanitary Commission did not include the two villages on its list of priorities. It was not until May 1885, on the eve of the rainy season, that the new mayor of St Louis, A. De Bourmeister, signed an order banning the drying of fish and skins in all urban villages in the hope to prevent the outbreak of an epidemic.[61]

If the *indigènes* as a group were considered as the source of outbreaks of disease, prostitutes, in particular, constituted the convenient scapegoats. They had all the characteristics of a target: they were visible, available, and vulnerable.[62] The archival records identify them as "submissive girls" (*"filles soumises"*), "public girls" (*"filles publiques"*), and "immoral negros" (*"négresses de mauvaise vie"*). Some were mulattos and others were blacks. Some were full-time sex workers, while others were domestics who engaged in sexual activities during their leisure time. In any case, they all were closely watched by the administration. The latter directly linked them to the outbreak of the 1900 yellow fever epidemic because some of them were in contact with the sailors aboard the "Saint Kilda" and with the soldiers who became the first victims of the disease.[63] In other instances, the interaction between the French and the Senegalese, aboard the ships for example, was viewed as one of the causes of diseases, because it resulted in frequent disputes creating "moral emotions" leading to diseases.[64]

Thus, because health officials poorly understood the causes of the diseases, they directed their frustration toward the *indigènes*, in general, and the prostitutes, in particular. As Marchoux and Grall pointed out in the conclusion of the report of their mission in Senegal in 1901,

> One needs to proclaim that the indigenous races as well as those close to them are the most dangerous, given the fact that they show almost exclusively attenuated symptoms which escape for this reason from all surveillance.[65]

Beside the Senegalese *indigènes*, the "fluctuating population" was also suspected of spreading diseases, especially smallpox. This was the case in the 1880s of slaves from the upper Senegal,[66] the migrants of Peul origin,[67] and the nomadic Moors.[68] During the 1881

yellow fever outbreak, Governor de Lanneau took special measures to confine the Moroccans to the extreme north of the city-island, called *Pointe Nord*, from 8 p.m. to 5 a.m.[69] In 1900, Syrian peddlers were added to the list of suspects.[70] Thus, the sequence of transmission of the disease here was as follows:

filth - smells/miasmas - man; man - man

In other words, the accumulation of waste or filth generated bad smells, which were associated with miasmas and believed to corrupt the air and provoke an epidemic. Then, the disease could be transmitted from the sick to the healthy people.

In the absence of effective cures and remedies, health officials adopted the solutions that they found appropriate to the local situation. Following the 1867 yellow fever epidemic, the administration decided to close down the Catholic cemetery located at the entrance of *Pont Faidherbe* in Sor and to create a new cemetery east of Bouetville at the end of the *Rue de Paris*, and to transfer the Muslim cemetery from the south of Guet-Ndar to the north of Ndar-Toute.

Given the high mortality rates observed during the 1867 and 1878 outbreaks of yellow fever, the repatriation of the non-essential personnel became the standard practice before the beginning of the rainy season. For example, in June 1886 the missionaries observed that "a great number of people from St Louis" left for France.[71] Contingency plans for repatriation were elaborated and ready for execution on a short notice. Europeans, including the troops, working for the administration were divided into three groups: a) essential personnel; b) personnel to be dispatched in camps outside the city (Pointe-aux-Chameaux, Ndiago, Richard Toll, Lampsar, Bop-Nkior, Baba Gueye, Bop-

Diara, and Gandiole); c) and the personnel to be repatriated. As far as traders are concerned, evidence from 1902 indicates that 30 out of 125 traders were considered as essential for running everyday business.[72]

Once an epidemic was declared, the affected towns or regions were placed under quarantine. The administration used the quarantine in order to combat the epidemic diseases imported in the framework of international commerce. Precautions were taken to deal with the "pestilential exotic diseases." This expression was used by the lawmakers to refer, early on, to cholera, yellow fever and plague; later on, it applied to other diseases, including typhoid fever, smallpox, diphtheria, scarlet fever, and dysentery. For all the ships coming from contaminated and suspect regions, the duration of the quarantine was fifteen days in 1878 and twenty-one days in 1881 and thereafter. The early quarantines were very strict in the sense that all kinds of communication and exchange were interrupted. But the subsequent problems of food supply led to some changes in the application of the quarantines, which became restricted to the imported merchandises and exported products.

In addition, other measures were taken to stop the spreading of the epidemics, such as a) the disinfection or fumigation, with the sulfuric acid, of suspect contaminated houses, postal mail and packages, luggage and merchandise carried by trains and ships, furniture, public and private buildings; b) the painting of suspect contaminated houses with lime; and c) the designation of areas - such as the beach of Guet-Ndar on both sides of Servatius Street -, where it was prohibited to throw waste.[73] After the 1881 yellow fever epidemic, special instructions were given to local authorities in order to expel from the

city "people without fixed residence".[74] However, the Moors were an exception. They were only prevented from staying overnight within the limits of the city between sunset (6 pm) and dawn (6 am).[75] Syrian peddlers were provided with identity cards to be used for travel purposes.[76] I shall discuss the consequences of these measures later (chap. 6). Suffice it here to indicate that starting in August 1884 an automatic quarantine was imposed between June and December on the ships coming from the regions south of the Sangomar coast no matter the sanitary conditions of the area.[77] The merchants protested against the quarantines for economic and practical reasons because these measures were not efficient; and the administration did not have the means of enforcing them in terms of qualified and motivated personnel, and adequate infrastructure (lazarettos and equipment for disinfection). In addition, the ship captains were not eager to comply with the current sanitary measures, especially the provisions of the 1884 and 1897 decrees.

I will use the decree of 31 March 1897[78] to illustrate the problems that the administration faced in the struggle against the imported epidemic diseases through land and sea. The decree, which unified and consolidated the pieces of legislation applied until then, aimed at protecting French possessions against the imported epidemic diseases through land and sea. The task of implementing the provisions of the decree was given to the agents of the sanitary police based along the coast. The sanitation workers were accountable to the head of the health service. They were divided into six categories: a) the principal health agents; b) the ordinary health agents; c) the subordinate health agents; d) the doctor of lazaretto; e) the sanitary agents; f) and the guard of the lazaretto. The principal health agent, who was a doctor in charge of a colonial hospital, was responsible

for providing ship captains leaving the port of residence with a bill of health indicating the sanitary condition of the country. Whenever the personnel was insufficient or lacking, it was the ordinary health agent, that is, the doctor in charge of the infirmary, the ambulance or the medical post of the colonial service, or the army doctor and the civilian doctor, who issued the bill of health. Abroad, the French Consulate in the port-city did the same.

The bill of health was called "clean" when there was no pestilential disease in the country of departure. The mention "brute" on the bill of health meant that the country of departure was contaminated. The decree also made compulsory the presence of a doctor aboard postal ships or any ships carrying one hundred or more Europeans for more than forty-eight hours. Upon arrival in a port and before communicating with people in the port, any ship not considered as "suspect" was visited by the sanitary authority and the captain interrogated under oath on health matters. If the ship was suspect, then, it was submitted to a special operation of control which was a sanitary inspection of the ship, including, depending on circumstances, a medical visit of passengers and the crew.

The decree also had provisions concerning the disinfection or isolation measures of suspect or contaminated ships. The compulsory disinfection concerned items such as clothes, beds, disinfected objects, carpets, and merchandise originating from contaminated regions and animals. Other objects susceptible of transmitting contagious diseases, for example animal skins, were simply destroyed. A quarantine of observation was imposed upon any ship that had left less than seven days earlier a country ravaged by cholera, and at least nine days earlier a country ravaged by yellow fever or plague. The quarantine lasted seven days for cholera and nine days for yellow fever and plague. There were other

provisions in the decree about the construction of lazarettos and sanitary stations.

Sanitary councils had to be created in the ports open to trade in order to represent local interests in the decision-making process related to health issues. The members of these councils represented various administrative, military, scientific, and commercial interests. The decree had also provisions for the creation of a Sanitation Committee in the capital of each colony as well as a Sanitation Commission in other places in order to promote public health and general hygiene.

Those who contravened these measures were punished according to sanctions contained in the law of 3 March 1822 related to the sanitary police: death penalty for those who would communicate with contaminated countries; life prison and between two hundred and two thousands francs in fees for communicating with countries under the regime qualified as "suspect," from one to ten years of prison and from one hundred to ten thousands francs in fees for a prohibited communication with places, people or things being quarantined.[79] However, there is no evidence of implementation of these provisions of the decree. The importance of these sanitary measures also lies in the fact the bureaucrats who were implementing the new policy could face severe sanctions in case of failure. For example, death penalty was requested for a sanitary agent, a state ship agent or a private company

> who, officially, in a telegram, a certificate, a report, a declaration or an evidence, would alter or distort the facts, so as to compromise the public health ... if a pestilential invasion followed.[80]

The same sanction also applied to any individual working in a "*cordon sanitaire*" or any person affected to the quarantine who would abandon his post or violate the instructions.

If the disease did not spread, such an agent would face forced labor and between ten thousands and twenty thousands francs. Other sanctions could apply to various cases concerning the refusal to implement sanitary measures or the neglect of duties. Thus, the obligation for a ship, no matter its origin, to show its bill of health upon arrival in a port of a French colony or a country under French protectorate was motivated by the need to protect public health.

The implementation of the decree of 31 March 1897 did not go without problems. The infrastructure was inappropriate and, in various places, simply nonexistent. The compulsory operations of visit and hailing of ships arriving in a port "without delay," as the decree stipulated, could be done expeditiously only if the ports in question were well-equipped in terms of motivational personnel and appropriate structures. The structures included the elements: a) an isolation camp or lazaretto to be used for the quarantine of the passengers and the disinfection of merchandises, other objects and of the ship itself, and b) sanitary stations specially arranged in order to accommodate the boats belonging to Africans coming from a contaminated region. The lazaretto needed to be equipped with an infirmary, a certain number of separate barracks that could accommodate the sick and the suspects, separate stores for merchandises and other objects to be disinfected or already disinfected, safe drinking water, a sewage system, and a machine for disinfection.

But in practice no port in West Africa was equipped with such an infrastructure to deal with complex operations of visit and hailing of ships and disinfection. Another factor that made it difficult to implement the 1897 decree concerned the attitude of the bureaucrats toward the new legislation. There is evidence to corroborate the idea that the

bureaucrats as well as the ship crew either were not up to the job assigned to them or were unwilling to accomplish the necessary tasks.

The discussions related to the sanitary measures aimed at stopping the spreading of the epidemics underscored the existence of a conflict of interest between the medical authorities and the merchants. Indeed, a careful reading of the records of various sanitary commissions clearly shows that the voice of the medical authorities was not heard when the sanitary measures were submitted to a vote. The final vote very often represented a compromise between the interests of commerce and those of the public health. For example, during the debate of the Sanitary Commission of June 6, 1899 in Saint-Louis, the head of the Health Service of Senegal proposed as a measure against yellow fever the establishment of a quarantine of five days against the ships coming from the South during which the passengers, luggage, and merchants had to be carefully disinfected. The majority of participants found that such a measure could affect economic activities and result in the payment of damages to the merchants. In the face of such a resistance, the director of the Health Service proposed to limit the operation of disinfection to the objects and cloths used by the passengers; and the measure was adopted.[81]

Thus, the majority of merchants believed that the quarantine measures were inefficient and even absurd, in part because of the deficient disorganization or the underdevelopment of health services. Moreover, merchants raised doubts about the scientific knowledge on which all the "radical measures" and "irrational" practices described above were based. During the debate over the new sanitary measures to be adopted following the 1900 yellow fever epidemic, there was a shift of emphasis from

economic, administrative, and psychological reasons to medical reasons for the suppression of the automatic quarantine between June and December. The new legislation had to be consistent with the logic of the "modern science."[82] By this expression, the members of the *Comité Colonial d'Hygiène* referred to the new medical advances made in the areas of infectious and parasitical diseases since the 1870s and the 1880s, especially the knowledge that specific diseases were caused by specific germs, as annex 1 indicates.

The new medical advances transformed the conception of diseases that had been the basis of sanitary legislation until then. They introduced a connection between a parasite, a vector (insect, mosquito) and a human being, which became the basis for public health policy. The new theories did not support the practices of incineration and disinfection as well as the quarantines, especially the automatic quarantine imposed on ships every year since 1884 between June 1 and December 15, that paralyzed all the economic activities.[83]

The Marchoux-Grall mission sent to Senegal in February- March 1901, in the aftermath of the 1900 yellow fever epidemic, had the responsibility to identify the causes of the epidemic. In their report, they attributed the origin of the epidemic to the importation through a commercial port (Goree until 1881 and Dakar thereafter); but they believed that the damaged local environmental sanitary conditions facilitated the spreading of the epidemic. They made a certain number of recommendations to help prevent the repetition of the epidemics. I shall discuss them in details in chapter 8.[84]

The new focus was the destruction of the germs that caused yellow fever, cholera, plague, malaria, and other diseases, as well as the immunization and the isolation of

individual patients suffering from infectious diseases. That meant that the administration had to drain swamps, bogs, moats, and other sites of standing water, to destroy the mosquitoes and larvae, to put screens on the windows in order to keep out insects and mosquitoes, to destroy insanitary houses, to apply insecticidal measures in the houses, prisons, meeting places, and ships, to filter the drinking water, and to flash refuse from areas of human habitation.

The reorganization of the health services between 1901 and 1903, the new ordinances on the compulsory declaration of diseases in 1902 and 1903, and the great programs of sanitation undertaken by the administration between 1905 and 1913, discussed in chapter 8, can only be understood in this context. That also meant that physicians and surgeons had the responsibility to prevent the spreading of the diseases by isolating the patients and by notifying the authorities about the outbreaks of diseases. They had to make good use of the newly acquired laboratory for bacteriological research and diagnosis established in Sor in 1896. As Bruno Latour pointed out, "physicians needed to learn the use of a microscope, a few techniques of culture, and a few gestures to inoculate the serum."[85] In 1903 the Ministry of Colonies and the *Institut Pasteur* signed a contract stipulating that the Institute would organize the training sessions for the *Médecins des Troupes Coloniales* in order to initiate them to the study of pathogenic protozoans.[86]

While health officials changed their views of disease, the missionaries adopted a moral paradigm that remained very constant throughout the period under investigation. That is, they interpreted disease as a scourge of the sinful. The outbreaks of the yellow

fever epidemic in 1867 and cholera epidemic in 1893 are good cases in point. According to the missionaries, God had used the 1867 yellow fever epidemic not only as a way of satisfying His justice but also as a sign of His mercifulness, an opportunity given to the sinners to go back to the sacraments. Yellow fever struck the city at the time when, from the church's perspective, people had lost all human respect, compassion, as well as religious devotion. The mayor and many other members of the elite had exhibited a great indifference concerning religious practices, especially at Christmas.[87] Ordinary people had also lost all human respect. For example, on 13 April 1889, around 10:30 A.M., the body of a newborn baby was found on the beach in Guet-Ndar not far from the marketplace. The search undertaken to find the baby's mother proved unsuccessful. The multiplication of this type of problems convinced the missionaries that the culture of the city was corrupted and that God's punishment could be expected.[88]

The 1893 outbreak of cholera, which made 714 victims in July alone, especially among the children, is also a good example. The missionaries believed that God had granted a special protection to the Christian community, which lost only 59 members, as a reward for devoting to Mary the new church in construction in Sor.[89] A decade later, during the sermon given on October 2, 1904, Father Lequien mentioned unfaithfulness and sensualism among the main "wounds" of the society.[90] The following month, when the news spread that yellow fever had struck the Casamance region, the question that came to the minds of the missionaries was

> whether God was preparing to punish once more the poor population of Senegal! and to make His power be felt by those who do not want to recognize it: "*oculos habent, et non videbunt*!" (they have eyes, but do not see).[91]

In 1905, when a young employee of the cable company, earning a good salary (500 frs./month), committed suicide, they took this opportunity as evidence of misconduct and heavy drinking.[92]

If disease was perceived as a punishment for the sinner, it was also an opportunity for the sinner to convert to Christianity. The missionaries' records are full of examples of "remarkable conversions" occurring during the outbreak of epidemic diseases, mostly in a clinical setting.

The missionaries' moral paradigm was not limited to epidemic diseases, but extended to other calamities, such as famine. The 1863-4 famine that occurred in Cayor and Saloum is a good case in point. Indeed, drought and crop failures in 1863, high temperatures and locust invasion in 1864, in addition to the scarcity of gum, the ongoing war against Lat Dior in Cayor and Maba Diakhu in Saloum were among the factors which pushed the country people off the land and drove them to St.-Louis in search of food, shelter and work. Such a rural exodus was a major concern for the administration, city government, and missionaries, who tried to alleviate their suffering in 1864 and 1865. Many people were too weak to make it to St-Louis and they died by the roadside. Some among those who arrived in St-Louis were so exhausted that they died after eating their first meals. Those who survived were still dying "in great numbers." According to eyewitnesses, between forty and fifty people died every day, succumbing to fatigue and diseases.[93] But the missionaries continued to explain the cause of famine in moral terms:

> This cruel famine is for the inhabitants of Saloum a just punishment for their corruption, even by the standards of the other heathen people.[94]

They saw there an opportunity for conversion, expressed it as a victory over demon.[95]

Throughout the period under investigation, the evidence from the missionaries shows that they never really departed from their theistic explanations of disease, despite their knowledge of the existence of the microbes following the medical advances of the late nineteenth century. For example, as late as 1892 the missionaries were still organizing processions at the Sor cathedral "in order to conjure the influenza."[96] In November 1904 they perceived the threat of a new outbreak of yellow fever as another punishment from God.[97]

The famine episode provides insight into Saint-Louis' charitable system, especially the existing forms of assistance towards the poor and the sick. The evidence shows that the funding of the poor relief operation came from the *fonds secrets* at the disposal of the governor and the office of the Director of Political Affairs, which delegated the task of the preparation and distribution of food to the poor to the *Congrégation des Frères de la Doctrine Chrétienne* in Sor. In July 1864, Father Duret, with the authorization of the Governor, opened a subscription among government employees, troops, and some rich families in order to help the refugees. He gathered 3,000 francs. A commission composed of the mayor, the Interior Bureau Director, and other notables was created to supervise the relief effort. The Treasury spent 24,000 francs, an average of 20 francs per day.[98] The *Commandant* of Goree sent to Saint-Louis a contribution of 40 casks of millet worth 2,000 francs.[99] Tents were built to protect the refugees from the sun and rain.[100] This form of poor relief became the standard model of intervention used later on to alleviate the suffering of the victims of floods, fire, poor harvests, and other calamities. The

administration hoped that the contribution of the missionaries would uplift the Catholic religious influence in the eyes of the local population.

Like the merchants, the general French populace in Senegal resisted the administration's effort to impose sanitary measures to all the segments of the city-dwellers. They believed that some health measures, such as home visits by the sanitary agents, violated their individual rights. They did not allow black sanitary agents to visit their houses if they were not accompanied by white agents.

Conclusion

The evidence presented in this chapter corroborates the idea that the concept of ill-health is an ethnocentric concept. The Senegalese viewed ill-health as an encompassing or holistic concept, approaching disease as one form of misfortune among others. They identified a hierarchy of causes of diseases (natural causes, human agency, supernatural agency) and operated within that framework.

The expansion of Islam and French colonial rule spread new concepts and healing techniques which were often in conflict with the indigenous conception of ill-health. The indigenous conception of disease and therapeutic itinerary became situational. City dwellers held in their minds conflicting beliefs at the same time. Some individuals, who attended the church service in the morning, did not hesitate to consult a *marabout* in the evening. They came to consider the indigenous medical system as one of the medical systems available to them. Their continuous effort to explain disease in religious or moral

terms can be considered as a normal human drive to allocate responsibility.[101]

The French health officials adopted a disease-focused approach to health. Physicians and surgeons made some correct observations, such as the associations of hot season and the epidemics or the high mortality rates of the troops and the house-related destruction of their respiratory systems and poor diets; but they were unable to make a connection between the proliferation of insects, mosquitoes, or fleas during the hot season (*hivernage*) and diseases; or between pneumonia and death. They had no knowledge of microbes, viruses, and vectors. The miasma theory was used to explain everything. However, the advent of the germ theory helped the medical officials to focus on the real causes of the diseases.

As far as they are concerned, the missionaries viewed disease as a punishment of the sinner, despite the advent of the germ theory. The general French populace seemed to put the protection of their individual rights above public health considerations.

Annex I: List of major discoveries concerning infectious and parasitical diseases.

year	disease	organism	discoverer
1873	recurrent *fever*	*spirochete*	Obermeier,
1875	dysentery	*amibia*	Losch
1877	hematozoan	*mosquito*	Manson, P.
1877	anthrax	*bacillus anthracis*	Koch, R.
1878	suppuration	*staphylococcus*	Koch, R.
1879	leprosy	*bacillus*	Hansen, A.
1879	gonorrhea	*neisseria gonorrhoeae*	Neisser, A.
1880	paludism	-	Laveran, A.
1880	typhoid fever	*salmonella typhi*	Eberth, C.J.
1881	suppuration	*streptococcus*	Ogston, A.
1881	yellow fever	*stegomyia*	Finley, C.
1882	tuberculosis	*mycobacterium tuberculosis*	Koch, R.
1883	cholera	*vibrio cholerae*	Koch, R.
1883	diphtheria	*corynebacterium diphtheriae*	Klebs, T.
1884	tetanus	*clostridium tetani*	Nicholaier
1885	diarrhea	*Escherichia coli*	Escherich,
1886	pneumonia	*streptococcus pneumoniae*	Fraenkel, A.
1887	meningitis	*neisseria meningitidis*	Weischselba.
1888	food poisoning	*salmonella enteritidis*	Gaertner, A.
1892	gas gangrene	*clostridium perfringens*	Welch, W.H.
1894	plague	*Yersinia pestis*	Kitasato, S, Yersin, A.J.
1896	botulism	*clostridium botulinum*	van Ermengem
1898	dysentery	*shigella dysenteriae*	Shiga, K.
1898	bubonic plague	rat	Simond, P.
1900	paratyphoid	*salmonella paratyphi*	Schottmuller
1901	yellow fever	virus	Reed, W.H.
1901	sleeping sick.	-	Forbe,
1903	syphilis	*treponema pallidum*	Schaudinn, F.R.
1904	fever	*tick*	Cook, A.R.

Sources: René Dubos, *Pasteur and Modern Science* (London: Springer-Verlag, 1988), p. 103. Constant Mathis, *L'Oeuvre des Pastoriens en Afrique Noire* (Paris: P.U.F., 1946), pp. 10-14.

NOTES

1. A good example of an attempt to introduce a historical dimension into health issues is made by the contributors to the volume edited by Brian M. du Toit and Ismail H. Abdalla (eds.), *African Healing Strategies* (New York: Trado-Medical Books, 1985).

2. David Hammond-Tooke, *Rituals and Medicines: Indigenous Healing in South Africa* (Johannesburg: Ad. Donker, 1989), pp. 8, 22.

3. *Echo de Saint-Louis*, May-June 1879, p. 6.

4. *Abbé* Boilat, *Esquisses Sénégalaises, op. cit.*, p. 5.

5. D. Fassin, *Pouvoir et Maladie en Afrique. Anthropologie Sociale dans la banlieue de Dakar* (Paris: P.U.F., 1992), p. 77.

6. See, among others, John M. Janzen, "The need for a taxonomy of health in the study of African therapeutics," *Social Science and Medicine*, 15B, 3 (1981), p. 190; Brian M. du Toit and Ismail H. Abdalla (eds.), *African Healing Strategies* (New York: Trado-Medical Books, 1985).

7. John S. Mbiti, *African Religions and Philosophy* (Oxford: Heinemann International, 1989), p. 200; see also pp. 169-170, 202.

8. See John M. Janzen, *The Quest for Therapy. Medical Pluralism in Lower Zaire* (Berkeley: U.C.P., 1978.

9. Interview with Omar Sarr in Saint-Louis, April 23, 1994.

10. D. Fassin, *Pouvoir et Maladie en Afrique. Anthropologie Sociale dans la Banlieue de Dakar* (Paris: P.U.F., 1992), pp. 132-133. According to the author, the Wolof believe that leper is caused by the violation of prohibitions, including sexual intercourse during a woman's period, consumption of one particular fish or goat, and intercaste marriages (between a shoemaker and smith, for example).

11. See J. Mbiti, *African Religions and Philosophy* (Oxford: Heinemann International, 1989), pp 43-44.

12. Interview with Ibrahima Tabane, healer, in Saint-Louis, January 27, 1995.

13. Archives des Pères du Saint-Esprit, Chevilly-Larue, boîte no. 146, dossier A, Senegal IV: Senegambie. Histoire du Senegal 1845-1898: *Bulletin de la Congrégation*, I, 23 and 45.

14. *Journal de la Communauté de Saint-Louis 1852-1890*, entry for July 1879, p. 105.

15. Archives de la Direction des Travaux Publics (Saint-Louis), P4: "Protection du littoral de Saint-Louis," report written by M. Giraud, February 1, 1951, pp. 4, 7-8. Parts of the dike broke on May 28-29, 1950, destroying some huts in Guet N'Dar and causing panic among
the fishermen.

16. Interview with Marieme Gueye in Saint-Louis (Guet-N'Dar), April 26, 1994.

17. Each port-city of Senegal has its own water spirit.

18. Interview with Gulane Faye in Saint-Louis, June 3, 1994.

19. Interview with Ibrahima Tabane in Saint-Louis, January 27, 1995.

20. R. Randau, "Notes sur la magie ..., *op. cit.*, pp. 282-84, 287-89, 289-290.

21. Pierre Loti, *Le Roman d'un Spahi*, *op. cit.*, pp. 146, 233.

22. Louis Brenner, "The "Esoteric sciences" in West African Islam," in Brian M. du Toit and Ismail Abdalla (eds.), *African Healing Strategies* (New York, Trado-Medic Books, 1985), p. 22.

23. *Echo de Saint-Louis*, no. 4, October 1909, p. 1.

24. *Echo de Saint-Louis*, no. 3, September 1909, pp. 1-2.

25. Louis Brenner, "The "Esoteric Sciences", op. cit., p. 22.

26. D. Fassin, *Pouvoir et Maladie*, *op. cit.*, pp. 66, 77, 80.

27. Interview with Ahmat Diba in Saint-Louis (*Cité Niakh*), June 24, 1994.

28. ANS, H 109 (Senegal), medical report of 1 September 1895.

29. *Echo de Saint-Louis*, May-June 1979, p. 6.

30. For a summary see Bertrand Russell, *A History of Western Philosophy* (New York: Simon and Schuster, 1972, pp. 557-568; A. Flew (ed.), *A Dictionary of Philosophy*. Revised second ed. (New York: St Martin's Press, 1979), pp. 89-92.

31. See Jack D. Ellis, *The Physician-Legislators of France. Medicine and Politics in the early Third Republic, 1870-1914* (New York: Cambridge U. Press, 1991), pp. 43, 68.

32. Before 1859, vaccination against smallpox was done everyday between 3 and 4 p.m.; then once a week (Friday, 8-10 A.M.); the data in 1862 indicate that it took place on

Saturday morning. See A.N.S., H.2.1 (A.O.F.), *médecin en chef* to mayor of Saint-Louis, 12 April 1859; also H.2.53 (A.O.F.), *médecin en chef* to Governor, 15 April 1862.

33. Thomas S. Khun, *The Structure of Scientific Revolutions*. Second edition (Chicago: The University of Chicago Press, 1970), p. 23.

34. *Ibid.*

35. At the beginning of the rainy season in the late 1850s, doctors complained that the hospital in Saint-Louis was crowded with over two hundred patients and suggested that the surplus of patients be transferred to Gorée.

36. A.N.S., H.20 (Senegal), Rapport du Conseil d'Hygiène et de Salubrité Publique, January 10, 1868.

37. A.N.S., *Moniteur du Sénégal et Dépendances*, 1867, p. 643.

38. A.N.S., H 32.14 (A.O.F.), "Epidémie de fièvre jaune à Saint-Louis," by the *Médecin en chef*, January 13, 1882.

39. *Journal de la Communauté, 1904-1951*, entry for May 1905.

40. R. Rousseau, *op. cit.*, p. 119.

41. A.N.S., H.1.1.4 (A.O.F.): Rapport sur l'hôpital de Ndar Toute (Navy hospital) par le chirurgien de 2e cl Thirreum au médecin en chef, 1851, p. 34.

42. A.N.S., H.2.38 (A.O.F.), *Médecin en chef* to Governor, n.d. (probably 1858).

43. *Ibid.*, pp. 8-9.

44. A.N.S., H 28.99 (A.O.F.), Ch. Tellier (merchant in Paris) to Governor, 6 November 1878.

45. ANS H 25 (Senegal), minute (record) of the meeting held by the Municipal Commission, 30 July 1900.

46. A.N.S. 2 G 10/26, p. 68.

47. ANS, H 20 (Senegal), report of the Hygienic and Public Sanitation Council meeting, 10 January 1868; see also ANS H 4 (Senegal), record of Hygienic Council meeting, 31 January 1890.

48. A.N.S., *Moniteur du Sénégal et Dépendances*, no. 41, 6 January 1857, p. 1.

49. ANS, *Moniteur du Sénégal et Dépendances*, February 1861, Ordinance of 16 February 1861 prohibiting the construction of huts in the center of St-Louis; see also *Moniteur du Sénégal et Dépendances*, June 1864, Ordinance of 15 June 1864 concerning the docks in St-Louis and the urban villages, p. 61.

50. A.N.S., *Moniteur du Sénégal et dépendances*, 14 June 1864, p. 62.

51. A.N.S., *Moniteur du Sénégal et dépendances*, 25 February 1873, p. 1.

52. Archives Municipales de St-Louis 2 B 20, Governor to the President of the Municipal Commission, no. 86, 13 October 1881.

53. A.N.S., *Conseil Général* meeting records, 6 February 1882.

54. A.N.S., *Conseil Général* meeting records, 17 February 1882, pp. 48-9.

55. A.N.S., *Bulletin Administratif*, 1889, pp. 36-8.

56. Archives Municipales de Saint-Louis, 2 B 24, Governor to mayor, no. C303 of 22 February 1912.

57. A.N.S., H 32.14 (A.O.F.), "Epidémie de fièvre jaune à Saint-Louis (23 juillet - 19 novembre 1881)", by the *Médecin en chef*, pp. 3-4.

58. The day before, on 13 May 1879, the military hospital director wrote a letter to the Governor in which he characterized the fishing industry as a "foyer of infection" and suggested the its elimination. This is the reason why the meeting took place. See ANS, H 22 (Senegal), *médecin* to Governor, 13 May 1879.

59. ANS, H 22 (Senegal), record of the Sanitary Commission meeting, 14 May 1879.

60. ANS H 20 (Senegal), record of the Municipal Council meeting, 10 February 1874.

61. ANS, *Bulletin Administratif*, 1885, pp. 164-5.

62. For more information on the characteristics of a target, see Hubert M. Blalock, Jr., *Race and Ethnic Relations* (Englewood Cliffs, N.J.: Prentice Hall, 1982), pp. 14-15.

63. A.N.S., H 45.234 (A.O.F.), Cornu (printer) to Governor general, July 21, 1900.

64. A.N.S., H 1.1.5 (A.O.F.): Rapport de Mr. Doublet, Capitaine du navire l'Etoile, 1860, pp. 41-42.

65. A.N.S., H 48.1 (A.O.F.), "Mission sanitaire du Sénégal en 1901 (février - mars). Rapport d'ensemble," by Marchoux and Grall.

66. ANS H 44 (Senegal), note of 17 August 1886. In 1886 some missionaries visited a big slave market in Medine. See Journal des Pères de la Congregation, entry for 1886.

67. ANS H 44 (Senegal), record of the Sanitary Commission meeting, 19 August 1886.

68. ANS H 44 (Senegal), record of the Hygienic Commission meeting, 14 February 1889.

69. Archives Municipales de Saint-Louis, 2 B 20, Governor to president of Municipal Council, 1 June 1881.

70. ANS, H 43, piece 3, decision of the general Governor, E. Chaudié, concerning the issuance of identity cards to the Syrian peddlers, 22 May 1900.

71. Journal de la Communauté..., entry for 1886, p. 196

72. A.N.S. H 17, piece 5, president of Chamber of Commerce to Governor, no. 700 of 8 August 1902; see also piece 31, "Notes sur la dissémination des troupes," by Health Service Director, 1903?

73. See annex for the legislation related to these various measures.

74. ANS, H 42 (Senegal), mayor to police chief, 25 September 1882.

75. ANS H 44 (Senegal), record of the Hygienic Commission meeting, 14 February 1889.

76. ANS, H 43, piece 3, decision of the general Governor, E. Chaudié, concerning the issuance of identity cards to the Syrian peddlers, 22 May 1900.

77. ANS, H 2 (Senegal), decree concerning the reorganization of the sanitary service in Senegal, 29 August 1884. This decree was similar to the decree signed on November 1883, which protected France against the suspected ships coming from America.

78. A.N.S. H 18, decret du 31 mars 1897.

79. A.N.S. H 2 (A.O.F.), law related to the sanitary police, title II, art. 7-14, 3 March 1822.

80. A.N.S. H 2, law of 3 March 1822, art. 10.

81. A.N.S. H 24 (Senegal), records of the Sanitary Commission, 6 June 1899.

82. ANS H 49 (AOF), piece 12, record of the Colonial Hygienic Committee, 6 March 1901.

83. A.N.S. H 12.71 (A.O.F.), Dr. Range to general Governor, no. 34 BM, 29 January 1904.

84. ANS H 48?, Sanitary mission in Senegal (February-March 1901).

85. Bruno Latour, *The Pasteurization of France*. Trans. by Alan Sheridan and John Law (Cambridge, MA: Harvard U. Press, 1988), p. 129.

86. Constant Mathis, *L'Oeuvre des Pastoriens en Afrique Noire*, p. 15.

87. *Annales* ..., p. 20.

88. A.N.S., *Journal Officiel du Sénégal et Dépendances*, 18 April 1889, p. 153.

89. Journal de la Communauté, entry for 1893, p. 303.

90. Journal de la Communauté, entry for 1904, pp. 467-68.

91. Journal de la Communauté, entry for 1904, p. 447.

92. Journal de la Communauté, entry for 1906, (p. 35).

93. ANS 3 G 3/4, piece 306, letter of 9 September 1864; piece 309, decree of 24 May 1865 organizing the assistance to the poor.
See also *Moniteur du Sénégal et Dépendances*, 23 February 1864, pp. 1, 12; 23 February 1864, p. 22; 24 May 1864, p. 55; *Annales...*, p. 13.

94. *Bulletin de la Congrégation*, IV, 310.

95. They organized processions in Sor and said prayers during the 1889 drought in order to obtain the rain. Another procession was organized in Sor on March 20, 1892 in order to conjure influenza. See "Journal" ..., entry for 1889, 4 August.

96. Journal de la Congrégation des Pères du Saint-Esprit, entry for 1892.

97. Journal de la Congrégation des Pères du Saint-Esprit, entry for 1904. On 28 January 1905, they wrote: "*grand vent toute la journée, cela chasse les microbes.*" The prevalence of syphilis and other sexually-transmitted diseases probably had something to do with it.

98. A.N.S. 3 G 3/4, piece 306, Governor's report, 9 September 1864.

99. A.N.S. 3 G 3/4, piece 307, *Commandant* of Goree to president of? (illegible), no. 14 of 23 xbre 1865.

100. *Annales*, Father Duret to the Most Reverend Father, 27 July 1864, p. 10.



Figure 6. St.Louis (Garbage)

CHAPTER 5

THERAPEUTIC OPTIONS IN SAINT-LOUIS, 1850-1914

The evidence presented in the previous chapters shows that St.-Louis was a central place for other localities in French West Africa. It was the base for French expansion in West Africa, the capital of Senegal (until 1960), of French West Africa (1895-1902), and of Mauritania (1901-1946). All the people that St.-Louis attracted - merchants, clergy, liberated slaves, refugees from colonial wars and famine, and others in search of work or of a place to hide -, were also potential patients.

During the period under investigation, St.-Louis had the best medical infrastructure in the regions controlled by the French, if one considers the standards of the time. The creation of the western health services came later in French Soudan (1892) and Dahomey (1893). Places such as the Guinée, including the Southern Rivers, and the French posts in Ivory Coast were run by the colonial medical personnel from Senegal. Even in this case, there was no regular colonial medical service outside Grand Bassam and Conakry.[1] Thus, St.-Louis was the place where patients - Europeans and Africans, rich and poor, young and old, men and women - hoped to find (western) cures and healing. But what was actually available to them in terms of health care?

This chapter deals with the available infrastructure in St.-Louis and the factors that determined the choices made by the patients seeking health care. Patients in St.-Louis had two choices for care: the popular medical system and biomedicine (or Western medicine).

A. THE POPULAR MEDICAL SYSTEM

The popular medical system operated at two levels: the household level and the specialized level. Indeed, the quest for therapy started at the level of the household. According to one informant, Ndoye Samba, there was a general category of drugs that most adults knew and used on a regular basis when dealing with common ailments - such as cold, coughing, headache, etc. -, at the level of the household. The use of these medicines did not require a specialized knowledge of the causes of disease. Such a knowledge remained within the family, where it was transmitted from parents to children. Very often, women tended to focus on health problems facing women and children.[2] The objective was either to cure the illnesses or to prevent them from occurring. In ordinary St.-Louisian families, all the mothers knew that when a baby was born in the city, its mother had to take the couscous (food) to Mama Coumba Bang, the Senegal River spirit, in order to protect the new-born baby from "pollution." Mothers also knew that a baby left alone in the house while laying down on the bed without a knife underneath the pillow was in great danger of being attacked by the evil spirits.[3]

Healing plants used at the household level were usually sold on the market. An experienced informant, Omar Sarr, argued that the *quinqueliba* (a form of herbal tea) sold on the public places (market, main bus stops and train stations), constituted a good example of all-purpose medicines used at the household level; it served especially as a diuretic drug.[4]

The evidence from the archival records supports the view that the Africans as well as the Europeans used the available herbs and medicines to alleviate their suffering at the time when the official medicine had little to offer. In a letter sent to Father Risch on 18 March 1868, Mother Rosalie Chapelain, who supervised all the Sisters, informed him that

> I send you a little admixture (*tisane*) that can make you feel better, but you should drink it for a while. That is what people drink when they have fevers; I will prepare it for you everyday; (...) You could share it with the junior Father who is with you, that would make him feel better too.[5]

In 1876 Dr. A. Corre visited the herbalists' stalls set up in the market in St.-Louis and made an inventory of the

> medicines from the popular pharmacopeia, sold everyday to blacks on the market in St.-Louis, which have not yet found a place in our therapeutic arsenal; (...).[6]

He identified 47 plants and medicines that St.-Louisians used to deal with various cases: fevers, hemorrhoids, diarrhea and dysentery, eye infection, anemia, venereal diseases, delivery, cough, skin diseases, pain, and impotence, as list 5.1 indicates.

It should be emphasized that it is also at the level of the household that basic health habits were inculcated to the members in order to prevent illnesses (eating habits, adequate sleep, moderation in alcohol consumption, etc.).

List 1. Medical Plants Sold in the Market in St.-Louis in 1876

Medical Plants	Diseases
cocculus bakis	gonorrhea
batiator	hemorrhoids/anorectal disorders
bek	dysentery
benfala	headaches
bentamaré	vermifuge
birbif	constipation
cachao	eye infection
dank	anemia
demoubouki/firbouki	urethritis, syphilis delivery pain killer
dongour	cough
doughour	diarrhea (children)
faftan	skin infection, elephantiasis
ghélembann	toenia
ghighis	diarrhea/dysentery
ghoui	fatigue
golomar	diarrhea/dysentery
gonaké	dysentery
guénondek/jharègne	constipation
keng	excitant
koche (koss)	delivery contraction aid/abortion
lass	urethritis
ndébarg	cough
neb-neb	diarrhea, dysentery
nguiemdam	urethritis, toenia
omguéler/rhatrhann	dysentery (children)
guieb-goloh	burn
randa	dysentry
ratt	bronchitis, pneumonia
reb-reb	constipation
rreninghao	toenia
scandandour	urethritis, cough

savatt	diarrhea
sélanleo	headaches
sing/singdour	dysentery, poison
singhéné	*siti*
sink/sinké	eye infection (children)
soum/soump	constipation
tiekrem/tiekiere	puerperal diseases, weakness
thîr/ghîr	fatigue, weakness, impotence
wachwachor	astringent potion

Source: A. Corre (Dr.), "La matière médicale des noirs au Sénégal," *Moniteur du Sénégal et Dépendances*, nos. 1060 of 6 June 1876, pp. 91-2; no. 1061 of 13 June 1876, pp. 95-6; no. 1062 of 20 June 1876, pp. 99-100.

These plants were part of everyday medical knowledge. The sick could go to the marketplace and buy them without protocol.

When serious health problems occurred, they were dealt with by healers who specialized in various domains. Information from eyewitnesses (such as A. Boilat) indicate that in the mid-nineteenth century there were two categories of specialists in St.-Louis: the *marabouts* or Islamic clerics and the healers (*guérisseurs*).[7] The most influential *marabouts* based their therapeutic practices on the esoteric knowledge contained in the broader Islamic tradition and relied mainly on blessings and prayers, while the less prestigious ones used herbs and amulets.

The available evidence is scanty concerning the exact number of *marabouts* in St.-Louis at any time during the period under investigation. The missionary records indicate that in 1899 there were in St.-Louis 22 Koranic schools run by the *marabouts* and attended by 937 children. In those years, the *marabouts* exercized a great influence even among the families with a long Christian tradition. These families

continued to be involved in practices considered as more or less "supersitious."[8] The interviews done by Robert Randau in the 1930s among the mulatto families support this view. Indeed, as shown in chapter three, he observed that they knew a great deal concerning the "evil" spirits, the haunted houses, streets and trees, and the "evil hour."

As far as the healers (*guérisseurs*) are concerned, it is important to point out that they were respected and sometimes feared. The research undertaken by Didier Fassin in Dakar (Pikine) in the late 1980s as well as my own field work in St.-Louis and Dakar in 1994-5 corroborate the idea that most of the healers operating in the cities of Senegal were non-Wolof and mostly men. They came from the forest areas of Casamance, Guinea, Nigeria and Côte-d'Ivoire, and from the wilderness of Mali and Niger, where the magical power was still presumed unaltered by Islam. The most popular healers were specialists in one particular domain. For example, the Bamana were famous for their magical knowledge used to kill the targeted individuals (*komo*) or to cause harm from the distance (*korté*). The Haalpulaaren had a specialty in neutralizing attacks from the "witches." Unlike the *marabouts*, who stayed at one place, the healers wandered from city to city in francophone West Africa providing various services to their patients.[9]

In any case, despite the promulgation of the decree of 1897, which made biomedicine the official medical system, the *marabouts* and *guérisseurs* continued to offer serious competition with the French physicians and surgeons for patients. Indeed, there is evidence that as late as 1903 patients went to the hospital only after

they had consulted without success all the available indigenous specialists.[10] The same observation was repeated in the 1913 annual report; it shows that health care managers were very frustrated by the situation. In this report, the *marabouts*, *guérisseurs*, and midwives were characterized as "dangerous trouble-makers." The report recommended a policy of surveillance of the *marabouts guérisseurs* in order to reduce their "disastrous and deadly" influence.[11]

Among the specialists from St.-Louis itself, the most important were probably the midwives (women). They appeared in the archival records in the 1890s. At this time the doctors complained about low admission rates of women for delivery at the hospital and held the Senegalese midwives responsible for that low-turnout and for the complications following the delivery such as tetanos.

Among other specialists, I would mention the specialists in snakebites. During my field work in St.-Louis, one informant indicated that in the village of Gandiole, located 20 miles away from St.-Louis, there were (and still are) specialists in snakebites. Their expertise is well known in the hinterland of St.-Louis.[12] Thus, the evidence presented above shows that the popular medical system was very active in St.-Louis, and that the *marabouts*, healers and midwives were in competition with the French doctors and physicians for patients.

B. BIOMEDICINE OR WESTERN THERAPY SYSTEM

The biomedicine or Western therapy system refers to the hospital-based professions, including the physicians, surgeons, and pharmacists as well as the para-

medical professions, including the nurses, medical assistants, and laboratory technicians. At the apogee of St.-Louis, the medical infrastructure comprised two hospitals, three dispensaries, one village to isolate sleeping-sickness patients, one village for leper patients, and one laboratory.

At this point, it is important to underline the fact that the effort to build the infrastructure and to organize the hospital labor force was spread over a long period of time. This long development was a response to various problems and crises, such as high rates of bed occupancy, increasing pressure on the nursing staff, epidemic diseases, and the resistance of the local population to French medicine. This section deals with the medical infrastructure and the medical and para-medical personnel.

THE HOSPITALS

The history of St.-Louis' medical infrastructure can be divided into three periods: an early period (1659-1819); a military period (1819-1897); and a public health period (1897 on). The early period started in 1659 with the building of the Fort of St.-Louis, and lasted until approximately 1819. During this period, there was no separate building for the care of the sick. The Fort of St.-Louis fulfilled various political, administrative, military as well as medical functions. One room was reserved for the sick. But with the passing of time, a separate building was made available to accommodate an increasing number of patients. A map of St.-Louis, drawn in 1820 by Grandin, shows that there was already a military hospital, located

on the fifth street on the South of the island facing Ndar-Toute, and an annex to the hospital (*succursale*), located on the third street South facing Sor.[13]

The first aides to the physicians and surgeons in the hospital were seven Sisters, members of the *Soeurs de Saint-Joseph de Cluny* (a religious order founded by Sister A.-M. Javouhey in 1812) who arrived in Senegal in 1819. The Sisters' association with the Navy hospitals went back to an agreement made in 1815 between Mother Javouhey and the Minister of Interior, Lainé, allowing the Sisters to become members of the Navy hospitals labor force in some of the French overseas colonies (Reunion, Senegal, Martinique, Guyana).[14] The Sisters were answerable to the military hospital administrators for the following areas: internal economy of the hospital; custody and maintenance of linen and furniture; cleanliness of rooms; food preparation and distribution; supervision of the cooks, nurses, and other agents.[15]

The second period, which can be called a "military period," lasted until 1897. The "military" character of this period relates to the fact that the main preoccupation of the policy makers was to protect or restore the health of the colonial troops, both European and African, although the latter were less protected than the first because of their presumed acquired immunities against "tropical diseases." The Navy military doctors (surgeons and physicians) also provided health care to the administration employees and the businesses. The military period was also characterized by the development of the nursing care and the enlargement of the hospital. The conquest of most of what became known as French West Africa took place during this period.

Everyday business in the hospital was run by the following personnel: 1 Deputy-Administrator (*Sous-Commissaire*), 1 Clerk for in-patients admissions (*Commis aux entrées*), 1 Clerk Assistant (*Commis auxiliaire*), 1 Accountant (*Agent Comptable*, a Sister), 1 Accountant Assistant (a Sister, in charge of maintenance, food and expenses), 1 warehouseman at the pharmacy (*magasinier*), and 1 Secretary to the Chief of the Health Service.[16] By 1897, the Sisters supervised a total of 20 nurses and 18 hospital workers (15 janitors, 2 cooks, 1 aide-cook).

How were the patients accommodated? In his annual report concerning the situation in Senegal in 1841, the Governor indicated that St.-Louis' hospital was built on a bad location, that its upstairs rooms were small and badly arranged, and that the rooms on the first floor were so humid and ill-ventillated that almost all the patients admitted there developed scurvy (sic!). He added that the hospital used those humid rooms reluctantly but there was not enough space to accommodate all the patients. He promised to buy the house next to the hospital in order to increase the housing capacity of the hospital; the house belonged to Durand Valentin, a wealthy mulatto, merchant wholesaler, who later became mayor of St.-Louis (1848) and deputy of Senegal in the French Parliament (1848-9, 1849-51).[17] Thus, the 1841 report by the Governor, although not very detailed about the problems facing the hospital, identified three main issues among others. First, the hospital was built on a bad location. Second, the interior was ill-designed. Finally, the hospital was too small for too many people.

How were these problems resolved? The available evidence suggests little was done to improve the situation, that the plans designed to add new rooms and to rearrange the general distribution of the rooms were never implemented. However, a map of St.-Louis, drawn in 1851 by the *Capitaine de génie en chef* Parent and showing various projects to be realized in 1852, indicates that there was a hospital for the convalescents in Ndar-Toute and a civilian hospital on the Southern part of the city-island.[18] But, as shown later in this chapter, these institutions did not resolve the problems facing the main hospital in St.-Louis, especially overcrowding. There were reports that, during the rainy season, the convalescents were hastily transferred to Gorée to make space for the new in-patients and returning out-patients.[19]

On 30 August 1895, the Ministry of Colonies issued a circular that gave instructions related to the admission of the families of officers and civil servants to the military hospitals in the colonies. The debate over the interpretation of the circular showed that until then military hospitals did not have departments of obstetrics-gynecology and pediatrics. Thus, they were not equipped to admit women and children who needed services from these two departments. In St.-Louis the small room reserved for ladies had only three beds.[20]

A description of the hospital made in July 1896 by the *médecin en chef* revealed that the main hospital in St.-Louis had no separate wards for patients with contagious diseases, that bathrooms were defective (obscure, hot, without ventilation, far away from patients' rooms), and that the hospital needed renovation.[21]A few months earlier, in a letter to the mayor of St.-Louis, the Lieutenant-Colonel Poulnot

indicated that Thevenot and Cornier Streets, which passed in the front and the back of the military hospital building, were in a poor condition: the heavy rain that fell during the night of 21-22 January had transformed these two streets into real marshes. He predicted that, given the destruction of the gutters that were part of the sewage system, the hospital would be in poor hygienic conditions during the coming *hivernage* (rainy season).[22]

While the colonial government concerned itself with the provision of health care to the troops and the elite, the city authorities were concerned about the welfare of the poor, whose vote they needed to stay in power. They pushed for the creation of a medical facility for the poor. The development of the "*Annexe de Saint-Louis*," a form of dispensary, into an *Hospice Civil* and, later on, into an *Hôpital Civil* (civilian hospital) must be understood in this context.

The available evidence concerning the history of the *Hospice Civil* comes from various sources. But the most important source is a small brochure (notice) written in 1900 by Dr. Charles Carpot, a mulatto native of St.-Louis who got his education in France. Entitled "*Dix ans de Nosologie à l'Hôpital Civil de Saint-Louis*," the brochure covers a ten-year period of medical activities at the hospital (1889-1898).[23] According to Dr. Carpot, the civilian hospital was built on an old cemetery and the tomb of General Blanchot dominated the interior courtyard of the hospital from the time it started in 1853 until 1864. This is the reason why the *indigènes* referred to the hospital as the "*cinetiore*" (cemetery) and told so many fear-inspiring stories about

it.[24] The reference made to the civilian hospital as cemetery simply meant that it was a place where patients were likely to be discharged dead, not cured.

Early on, Navy surgeons and physicians visited the *hospice civil* and provided health care free of charge for various categories of people who did not have access to the military hospital for lack of money: the sick poor, the elderly, the indigent sick, and the prisoners, who could not pay for it; the prostitutes who were in close contact with the troops; the private patients who could pay for their own care; and a certain number of people whose health care charges were paid for by the municipality. The *hospice civil* had two rooms reserved for the indigent sick found by the roadside in the city, and two rooms for in-patient admissions.

Between 1854 and 1866, the *hospice civil* very much operated like an annex to the military hospital, which provided the doctors for the care of the sick. In their various reports, the Sisters of Cluny referred to the facility as the *Annexe de Saint-Louis*.[25] It did not have a kitchen of its own; all the food for the in-patients was taken to the military hospital, where it was cooked. It did not have an administrative section to handle the correspondence and to keep the account-book. In short, all the services of the *hospice civil* were confined to the first floor level of a building still in construction.

Between 1866 and 1881, the *hospice civil* increased in size; new rooms were added to the first floor in order to separate patients who had different needs and requirements, including the prisoners and mental patients. Other rooms were made available on the second floor as well. However, there were still unresolved issues:

the doors of the wards could not be closed because of lack of locks; the rainy season transformed the interior courtyard into a small lake; the wall surrounding the hospice was not an obstacle for prostitutes and prisoners patients who wanted to evade.[26] But thanks to the renovation done, when the cholera epidemic struck the city in 1869, the hospice was able to house one category of patients (men) in one section of the hospital called *succursale* or annex.[27]

The following years, leading up to 1890, saw the enlargement of the rooms and the organization of the *hospice civil* personnel who could operate the hospice and keep it viable. Starting in 1885, records were kept of the in-patient admissions, length of stay, hospice income and expenses.[28] By then, the hospice had lost its bad reputation as a place for the destitute and a dangerous place where one went to die; and more people felt comfortable referring to the facility as a civilian hospital.[29]

But all these changes in the *hospice civil* or civilian hospital did not take place without problems. In 1889 the hospital bursar informed the head of the Health Service in St.-Louis that the situation of the hospital was very critical, that nine nurses were not enough for taking care of 109 patients, and that it was becoming more and more difficult to contain hospital charges.[30] Indeed, from the *Conseil Général* meeting records, it appears that in 1890 the civilian hospital was in a deplorable situation. P. Fawtier, Interior Director, who had the "well-being of the population" among his attributions (although the *médecin en chef* was directly accountable to the Governor), expressed his dissatisfaction with the inability of the top hospital administrators to address the issues pertaining to the functioning of the

hospital. One of the problems faced by the administrators was the lack of fiscal responsibility in the management of the budgets for the hospital. The fact that the general expenses far outweighed the cost for food, drugs, and furniture was an indication that the hospital administrators were incompetent. Another problem was that the hospital itself did not have enough rooms to accommodate all the patients. The situation worsened when some rooms were made available to the mental patients. Given the fact that the majority of patients were too poor to be charged for the rooms, food, and drugs, and that the municipality was very slow in the reimbursements of hospital charges, Mr. P. Fawtier proposed that the effective management of the hospital be given to a Sister.[31] It was in this context that three Sisters of Cluny joined the hospital administrative personnel in January 1891, followed a few years later by a pharmacist. The Sisters had the responsibility to operate the civilian hospital, to make decisions concerning key health and welfare issues, and to contain the costs.

By 1898, the civilian hospital was fully operational, with a laundry, bathrooms, a room for disinfection, a new kitchen and separate rooms for the insane. More people felt comfortable being hospitalized there. The civilian hospital remained in the hands of the Sisters until June 1904.[32]

The public health period started in 1897, when the emphasis began to shift from military concerns - the conquest of West Africa was over -, to the general welfare of the population at large. The decree of 10 March 1897, related to the administration of the hospitals in the colonies, constituted an important landmark

opening a new era. Indeed, the decree transformed the military hospital into a colonial hospital and opened its doors to all the categories of patients (employees from local and municipal services, businesses, and self-employed individuals and their families members, and ordinary people who could afford it). It also reduced the cost per in-patient and out-patient day by a third.[33] The process of transformation of the military hospital into a colonial hospital took eight years to complete and it became fully effective only in 1905. By 1912 the colonial hospital was also called the colonial ambulance.

The public health period also witnessed the creation of the *Assistance Médicale Indigène* (1905), which allowed the indigent access to free consultation in all the dispensaries and, in some instances, free dressing bandages, purgative drugs, and drugs against syphilis and malaria.[34] This period also saw the creation of the *Service d'Hygiène* (sanitation service) in 1905 to improve the urban environment, and the great programs of sanitation (1905-13). These reforms were undertaken thanks to the loans contracted by the authorities of French West Africa for the construction of public works: railways, ports, waterways, telegraph lines, roads and bridges, and public buildings.[35]

What were the conditions in the colonial hospital? A description of St.-Louis' main hospital made by an eyewitness corroborates the view of inadequate ventilation, overcrowded rooms and ill-designed building. Indeed, Dr. Grall, who visited Senegal in 1901 to enquire about the causes of the 1900 yellow fever epidemic, described the (military) hospital as a large structure, a huge three-storey building where the

personnel lived and where the patients with non-contagious diseases as well as those with contagious diseases were admitted without distinction. It was ill-ventilated and had porches only on one side.[36]

The patients were divided into three categories: the first and second categories (Europeans, the "assimilated", and some privileged indigenous inhabitants) were admitted in the rooms located upstairs, while the rest of the *indigènes* were housed on the first floor.[37] The cost per day per case in 1897 was frs. 12.83 for the officers and frs. 8.56 for the non-officers.[38] In St.-Louis the hospital had the capacity of 283 beds, including three to four beds reserved to women in *la salle des dames*. There was no room for children (see table 5.1).[39]

Table 5.1. Bed Occupancy at the Hospital of St.-Louis, 1901

Housing available	Officers	Under Officers	Troops	Indigènes	Civils serv. civilians	Civils serv. ladies	Total
1st floor	-	-	63	14	-	-	77
2nd floor	18	35	-	-	8	4	65
3rd floor	-	-	95	28	18	-	141
Total	18	35	158	42	26	4	283

Source: ANS, H 48 (A.O.F.), "Mission sanitaire du Sénégal. Hygiène Militaire (February - March 1901" by Dr. Grall, p. 56.

None the less, despite all its deficiencies, St.-Louis' main hospital from all accounts was a place of established interest, a showpiece. All the dignitaries visiting

St.-Louis (bishops, African chiefs from the interior and beyond, officers, politicians) were invited to make a tour of the hospital.

How much information is available concerning the medical and para-medical personnel? The hospital labor force was dominated on the top by the doctors (surgeons or *chirurgiens* until 1867, and physicians or *médecins* thereafter). But, as shown above, the doctors really enjoyed the medical monopoly in Senegal only in 1897 when the decree of 17 August related to the practice of medicine was applied to the colonies.[40] This law established the rights and obligations of the medical doctors and made illegal the profession of the indigenous healers.

One needs to keep in mind that the medical monopoly was not granted to the physicians and surgeons based on the superiority of the French medicine over that of the *marabouts* and *guérisseurs*. It was a political decision using French medicine as a means of spreading French culture and practices. French physicians and surgeons were given the power to define disease and treatment, a definition often in conflict with the patients' perspectives.

What was the size of the medical staff? The available data cover the period between 1857 and 1894, when the structure of the medical personnel underwent a significant change. Between 1894 and 1920 there was no radical change in this structure.

Table 5.2. The Medical Staff in Senegal, 1857-67

Year	Surgeon 1st class	Surgeon 2nd class	Surgeon 3rd class	Auxiliary Surgeon	Total
1857	2	14	6	-	22
1858	2	17	6	-	25
1859	2	19	5	2	28
1860	2	18	4	3	27
1861	2	18	4	2	26
1862	3	17	4	2	26
1863	3	19	4	2	28
1864	3	18	4	1	26
1865	4	17	4	1	26
1866	4	16	4	1	25
1867	4	15	3	2	24

Sources: Annuaire de la Marine et des Colonies (Paris: Imprimerie Impériale), 1857, pp. 466-7; 1858, p. 467; 1859, pp. 452-3; 1860, 456-7; 1861, 499; 1862, p. 537; 1863, p. 3; 1864, p. 589; 1865, pp. 608-9; 1866, pp. 639-40; 1867, pp. 702-3.

Up to early 1870, health care was delivered by the *chirurgiens de marine* (Navy surgeons), who were actually health officers trained in Navy schools of medicine at Brest, Cherbourg, and Toulon, and who had acquired their experience by working aboard Navy ships in the ports or colonies. They did not have the knowledge of physiology and biochemistry that doctors had. They were actually health technicians.

There is no evidence concerning the years between 1868 and 1872. When the data became available in 1873, a new system was already in place. The only medical staff authorized to provide health care were the *médecins de marine* (Navy doctors);

chirurgiens who wanted to become physicians had to attend civilian *facultés* of medicine in Paris, Montpelier or Bordeaux and write doctoral thesis.[41]

Table 5.3. The Medical Staff in Senegal, 1873-1894

Year	Médecin Principal	Médecin 1ere cl	Médecin 2e cl	Médecin Auxil.	Total
1873	1	4	3	14	22
1874-6	1	4	4	12	21
1877	1	4	8	-	13
1878	1	4	3	11	19
1879	1	4	3	9	17
1880-2	1	4	3	11	19
1883-5	1	4	7	13	25
1886	1	4	7	12	24
1887	1	4	7	16	28
1888	-	1	11	1	13
1889	-	1	12	-	13
1890	1	6	34	-	41
1891-2	1	5	26	-	32
1893	1	3	14	-	18
1894	1	12	19	-	32

Sources: Annuaire de la Marine et des Colonies (Paris: Imprimerie Impériale), 1873, p. 573; 1874, p. 579; 1875, pp. 614-5; 1876, pp. 630-1; 1877, pp. 646-7; 1878, pp. 651-2; 1879, pp. 637-8; 1880, p. 636; 1881, p. 646; 1882, p. 663; 1883, p. 684; 1884, p. 676; 1885, p. 726; 1886, p. 751; 1887, p. 762; 1888, p. 769; 1889, p. 795; 1890, p. 834-5; 1891, p. 808; 1892, p. 806; 1893, p. 848; 1894, p. 898.

An important observation needs to be made here. The data presented in this table suggests that "Senegal"[42] had sufficient medical staff. But, in reality, Senegal supplied other French posts with medical personnel: French Soudan and Gabon until 1891, French Congo until 1892, Dahomey until 1893; while other places such as French Guinée and Dependencies (Ivory Coast, Southern Rivers) continued to rely on Senegal until a later date. One of the consequences of this state of affairs was that the lack of sufficient physicians and surgeons became a permanent problem facing the administration. Indeed, in June 1891, Colonel Amédée Dodds, a mulatto native of St.-Louis and *Commandant Supérieur des Troupes*, wrote a letter to the Governor in which he complained that Dr. Lecoeur, the only *médecin des Troupes* present in St.-Louis, had the responsibility of providing health care for patients (troops) from all the garrisons in the city as well as from camps in N'Diambor, Pointe aux Chameaux, N'Diago, and, even, in the posts as far away as M'Pal and Louga.[43] The medical staff also included the pharmacists.

Table 5.4 Pharmacists in Senegal, 1857-1867

Year	Pharmacist 1st class	Pharmacist 2nd class	Pharmacist 3rd class
1857-60	1	1	1
1861-7	1	1	2

Source: *Annuaire de la Marine et des Colonies*, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867.

There is no data for the period between 1868 and 1872. When the data became available in 1873, the profession of pharmacists was restructured, as the following table shows.

Table 5.5 Pharmacists in Senegal, 1874-94

Year	Pharm. 1st cl.	Pharm. 2nd cl.	Aide-Ph.Aux.	Aide-Pharm.	Total
1873-5	1	2	-	-	3
1876-82	1	1	1	-	3
1883-7	1	1	1	1	4
1888	-	1	-	1	2
1889	-	1	-	-	1
1890-92	1	4	-	-	5

Source: *Annuaire de la Marine et des Colonies*, 1873-94.

During this period, the position of pharmacist third class was eliminated. Two new categories appeared: the auxiliairy aide to the pharmacist or *Aide-Pharmacien Auxiliaire* (1876) and the aide to the pharmacist or *Aide-Pharmacien* (1883). Another change intervened in 1893 with the appointment of the *Pharmacien Colonial Principal*, assisted by two pharmacists of second class, one colonial and another from Navy. Some pharmacists were military officers, while others were civilians; but all were required to show evidence that they had obtained a *diplôme de pharmacien* issued by the French government, after passing the exams at the *Facultés* or *Ecoles d'Etat*.[44]

One question comes to mind: because there were no effective cures and remedies for most diseases before the germ theory, what did the pharmacists actually

do? There is evidence suggesting that they were busy producing and selling mineral waters, lemonades and ice.[45] In any case, pharmacists did not have the monopoly of selling drugs. They were in competition with merchants, who continued to sell some types of drugs that were believed "not to harm the public health."[46]

When the medical infrastructure reached its full development - between 1897 and 1903 -, the distribution of the Sisters was as follows:

Table 5.6 Distribution of Sisters in St.-Louis

Description	1897	1900	1901	1903
Colonial Hospital	17	16	11	13
Civilian Hospital	4	3	4	4
Dispensary Ndar-Toute	3	2	2	4
Dispensary Sor	1	1	1	2
Total	25	22	18	23

Sources: Archives des Soeurs de St.-Joseph de Cluny, District de Sénégambie. Etat du personnel, 1897, 1900, 1901, 1903.

Up to 1889, the nursing staff operated without legal guidelines in the sense that there was no specific legislation organizing the nursing profession. As mentioned above, the Sisters were employed as nurses, and there were also other French nurses and their Senegalese aides.[47] The nursing staff in St.-Louis was not sufficient and, during the rainy season, the Sisters worked under tremendous pressure. Some of them had to be repatriated for medical reasons; anemia and excess of fatigue were mentioned as the main causal factors.[48] In Senegal, the Sisters performed their duties

in both the colonial and civilian hospitals until 1904, when the decision about the separation between the State and the Church was implemented in Senegal.[49] However, they did not leave Senegal en masse. Between 1904 and 1913, ten Sisters continued to run the orphans' home in Ndar-Toute and the city dispensaries in Ndar-Toute and Sor; and they continued to visit the sick in their homes.

The decree of 11 April 1889 and the ministry dispatches dated 5 June 1893 and 20 March 1894 organized the nursing profession.[50] The decree created two categories of nurses. The nurses in the first category (*infirmiers chefs* 1st class and second class, *infirmiers-majors* 1st class) were hired by the ministry in Paris; and to be eligible the candidates needed to be French citizens or naturalized French (males or females) and be less than forty years old. The nurses in the second category (*infirmiers ordinaires* of 1st class and second class) were hired in the colonies by the Governor. By making provisions for the creation of the second category of "colonial nurses," the decree opened the nursing profession to the indigenous people. A distinction was made between those with enough professional competence (*infirmiers de salle*) and the maintenance nurses less qualified (*infirmiers illetrés*).[51] In 1896 there were 19 nurses in St.-Louis; they were distributed as follows:[52]

First category		Second category
Infirmier chef 1st class:	1	Infirmier ordinaire 1st class: 4
Infirmier chef 2nd class:	-	Infirmier ordinaire 2nd class: 12
Infirmier major 1st class:	1	
Infirmier major 2nd class:	2	Total : 20

How useful were the nurses? The available data related to the nurses' performance raised the issue of their professional competence. Indeed, there were

reports that the French colonial nurses were of mediocre quality either because of insufficient training or their conduct. The Senegalese nurses were also reputed to be mediocre auxiliaries upon whom the hospital could not rely for an intelligent care for the sick. However, their services were appreciated during the rainy season, when the hospital was overcrowded and there was not enough nursing staff. The issue of high rates of bed occupancy was aggravated when the hospital used some rooms to house French nurses, including their family members, in the hospital.[53]

The lack of adequate medical and nursing staff and resources were not the only problems facing the administration. The difficulty of establishing harmonious doctor/patient relationship very much concerned health officers and threatened the future of the Civilizing Mission. The solution to the problem consisted of recruiting more Africans to be used as interpreters between doctors and patients. Indeed, as Dr. Gallay, *Médecin-Inspecteur* of the Civilian Sanitary Services pointed out in a letter to the Governor general dated 5 January 1906, the new agents were expected

> to penetrate in the intimate life of the indigenous, to gain their confidence and to exercize on them the influence we plan to rely on in order to introduce among the black populations the notions of hygiene.[54]

The new auxiliary agents were called *aides-médecins indigènes*. Their mission was defined as follows:

> They will participate in the delivery of health care to the indigenous people; they will be the agents of penetration and precious information. They will help their bosses to fight the practices of the *marabouts* or the fetish-makers, they will spread their influence and will become the number one propagandists of the civilizing ideas that we try to promote in Africa.[55]

The ordinance creating the new category of agents working in the framework of the *Assistance Médicale Indigène* was issued on 7 January 1907. The candidates to the new post were recruited among the following individuals: the nurses who had served at least three years in the hospitals; the military nurses who had been relieved after three years of service in the unit reserved to the indigenous nurses; the discharged soldiers who had undergone the necessary probation in the hospital and granted the statutory certificate; the young graduates from the schools opened in the colonies who were at least sixteen years old. To be admitted, the candidates were required to speak and write French fluently.[56] The *aides-médecins* were divided into four categories or classes.

Midwives constituted another category of para-medical personnel needed in St.-Louis. The evidence presented above shows that the two hospitals in St.-Louis did not have the obstetrics-gynecology and pediatrics units. When the colonial hospital decided to admit women as in-patients, one room with four beds was reserved to them. It was used for in-patients and out-patients admissions, delivery, as well as for emergencies. The civilian hospital hired one midwife, but after her death in 1896 she was not replaced.[57] Thus, trained midwives were needed to attend deliveries at the hospital.

In 1903 the *Chambre Syndicale des Sages-Femmes de Paris* sent a petition to the ministry of colonies concerning the creation of a maternity hospital in St.-Louis. It was hoped that French midwives would contribute to the spread of vaccination and the notions of hygiene among the *indigènes*.[58] But the project of creating a maternity

hospital did not materialize for a certain number of reasons, not necessarily financial. Indeed, the Governor general argued that the project did not rely on the French midwives, and that it would benefit (poor) pregnant women more than middle or upper class women (wives of officers, civil servants, and colonists), who did not want to have anything to do with the *hospice civil* (civilian hospital).[59] In 1911 the Municipal Council decided to allocate a subsidy of 100 frs. per month to Miss Jourblet, midwife from St.-Louis, allowing her to provide free health care to the indigents in town.[60]

DISPENSARIES AND OTHER INSTITUTIONS

In 1876, on the initiative of Bishop Duboin and with the help of Mrs. Brière de l'Isle, the Governor's wife, the Sisters opened the Sainte Anne dispensary in Guet-Ndar in order to meet the fishermen's immediate health needs. The rent for the house used as dispensary was paid for by the administration. The dispensary was run by two Sisters nurses and supervised by the municipal physician. It was subsidized by the colonial administration. The Sisters considered the dispensary as

> a way by which we enter in contact with the Blacks whom we must evangelize, and we gain their confidence.[61]

An average of ninety patients received health care daily. The most effective cure related to eye infections and wounds. In 1879, the Governor agreed to buy Mr. des Chaterelles' house instead of paying the rent. The cost was 3,500 frs.[62] In 1882 the

Municipal Council spent frs. 60,000 to renovate the dispensary and to protect it from the fire that regularly destroyed the surrounding huts.[63]

Another dispensary was built in Sor in 1888 in the vicinity of the church Notre-Dame-de-Lourdes in Sor. It was run by one Sister and was supervised by one *médecin major* (2nd class) who was also in charge of the village for sleeping sickness patients as well as of the center for vaccine.[64] The dispensary was subsdized by the Municipal Council.[65]

The need to control the spreading of sleeping sickness led the colonial administration to the decision to create a village for patients with sleeping sickness (*village de segrégation*) in Bouetville in Sor. In 1910 the village housed 44 patients.[66] In 1912 the administration created a center for the production of vaccine to be attached to the village.[67] In a letter to the *Receveur de l'Enregistrement et des Domaines*, dated 19 April 1913, the Governor of Senegal indicated the willingness of his administration to increase the housing capacity by buying a piece of land from Mrs. Léon d'Erneville, widow of the former member of the Conseil General. Located on the road leading to the Sor cemetery, the land measured 30m/30m and was worth frs. 2,000.[68] But the village does not seem to have fulfilled its mission because by 1916 there was a discussion about the possibility of suppressing it due to the lack of funds.[69]

Another village was established in Sor for patients with leprosy. It could accommodate twenty-four patients. The surplus patients were housed in the village for patients with sleeping sickness.[70]

Another element of the medical infrastructure was the infirmary opened in the prison in order to provide health care to the prisoners. The prison was built in 1866 and it housed all categories of people, Europeans and Africans, soldiers and civilians. They needed to be cared for while incarcerated. The infirmary, equiped with ten beds, was located in a special, well-ventilated room. A doctor and a nurse visited it twice a week.[71]

The evidence presented in this section shows that the western medical infrastructure in St.-Louis was insufficient to accommodate the needs of the urban population in terms of routine care, that there were too many patients for few rooms, and that infections could spread easily through hospital wards. The medical and nursing staff was insufficient. Thus, when the epidemics struck the city, the administration could not rely on this infrastructure to care for the sick. For example, when yellow fever struck the city in 1867 there were 300 deaths in September alone. The same situation occurred in 1893 when cholera affected St.-Louis and killed 150 people per day after a few hours of inimaginable suffering.

The authorities created new structures outside the city in order deal with epidemic crises: camps for the isolation of troops and lazarettos for the suspects. The main isolation camps were the following: Makana, Bop-Diarra, Richard-Toll, Pointe-

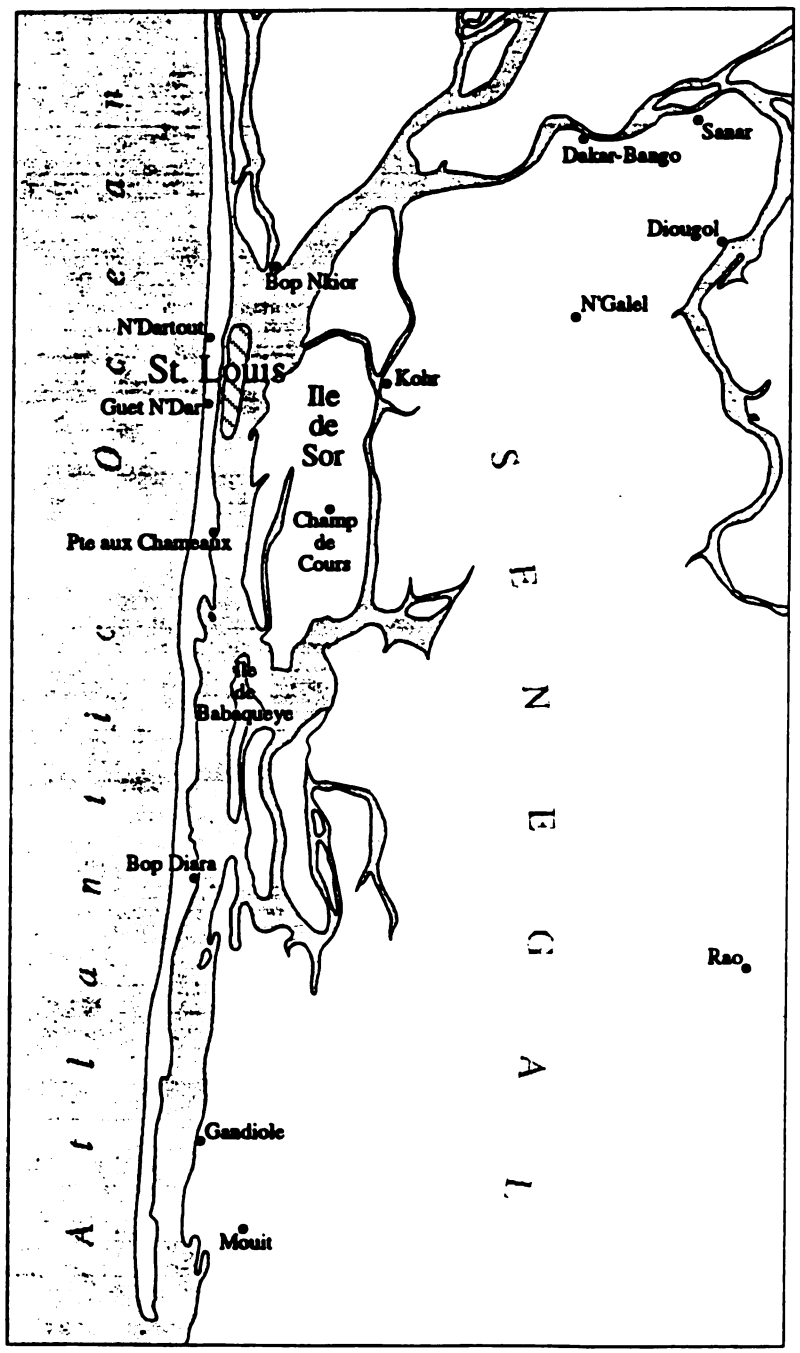


Figure 8. Isolation Camps

aux-Chameaux, N'Diago, Dakar-Bango, and M'Pal.[72] The Navy fleet and the commercial fleet were also used as temporary hospitals during the epidemic crisis.[73]

The health problems were not resolved. Both the military and civilian hospitals did not have in-patient psychiatric services. Mental patients who were seriously ill or very disruptive were kept in a few rooms in the civilian hospital. There were no specific remedies to alleviate the suffering of mental patients in St.-Louis. Some members of the Colonial Commission explored the possibility to transfer the mental patients to Algeria or the Carribean (Guadeloupe and Martinique); but after realizing that there were no facilities in these places,[74] they decided that the best course of action would be either to return the mental patients to their families, if they did not constitute a danger for the public order, or to transfer them to France where they were supposed to find more appropriate facilities, especially in Marseille and Cadillac.

If it was easy to make the decision, finding a carrier revealed more difficult. The *Société Générale de Transports Maritimes à Vapeur* agent flatly declined the offer made by the Interior Director concerning the transport of the insane. Finally, the deal was made with the Fraissinet & Cie agent.[75] Following the agreement, cohorts of mental patients were sent to France for health care. The transfer of the insane reached its peak in 1897 when 21 insane (Africans) were sent aboard one ship. It probably continued until the outbreak of the World War I. Many patients died either during the trip or in France; a few patients were discharged "cured." But the

administration had no other valid options. In a letter to the Director of the lunatic asylum in Marseilles on 28 January 1898, the Director of Interior recognized that

> Our doctors do not have at their disposal either the facilities, or the methods of treatment, or anything that would be necessary to provide efficient care to mental patients, ... the administration communicates with you in the hope that our patients would be put in normal conditions and would receive the intelligent and attentive care that you provide your paying guests (*pensionnaires*, patients).[76]

A careful reading of the records reveals some weaknesses of the colonial medicine in the definition of disease and treatment. It also revealed how the functions of the police, responsible for maintaining 'law and order', extended in the realm of medicine. Police defined mental patients as those who acted in a way "contrary to public morals," arrested them and took them to the civilian hospital for sequestration. Here the hospital played the role of a "normalizing" incarcerative institution that Michel Foucault attributed also to asylums, schools, prisons, and almhouses.[77] Because the hospital was not equipped to care for the insane, their sequestration could only be understood in the framework of maintaining social control over the urban poor, including the beggars and the prostitutes.

The weaknesses of the colonial medicine appeared in the definition and diagnosis of mental disease. Doctors diagnosed different instances of sickness. For example, the medical certificates written by Dr. Duval, Director of the civilian hospital in St.-Louis in the 1890s, revealed various instances of mental sickness: erotic insanity (*folie erotique*), mania (furious mania, mania of persecution, religious mania), melancholia, madness (*démence*), and hallucination.[78] Once admitted to the civilian hospital, a mental patient first underwent a phase of observation during which

the symptoms were analysed and diagnosed; then, two outcomes were possible: either the patient' condition was considered as "improved" and he/she was discharged and returned to his/her relatives, or the doctor identified the symptoms, gave them the "appropriate" label, and made the decision to transfer the patient to France, where there was cure either. The therapeutic programs included the "use of mild tonics and sedatives, dietary restrictions and supplements, massages, low-current electrical stimulation, and visits to water spas and other health resorts."[79] The physicians' diagnosis was often contested by the parents or relatives of the mental patients, who put forward their own theories of mental disease, requested that the sick be returned to their homes, and offered garanties that public order would not be disturbed.

Finally, how about the health of the administration employees? Starting in 1897, the European colonial personnel who were "debilitated" by the *hivernage* (rainy season) were offered an opportunity to take some time out and to recover in one of three thermal stations in France: Aix-les-Bains, Chatel-Guyon, and Bourboule. In 1909 another thermal station was added to the list: Dax (Landes).[80] How many civil servants from Senegal visited these thermal stations is not known.

Conclusion

From the data analyzed here, it appears that the building of the medical infrastructure did not result from a colonial project with clearly defined goals. Instead, it was put in place over a long period of time, following the needs of the troops, the elite, and the population at large (the ordinary people, the prostitutes, the

prisoners, the elderly, the mental patients). But the problems were enormous: crowding and shortage of beds, lack of sufficient and interested medical and para-medical staff, scarcity of resources, absence of facilities for delivery and for children, poor management, and the ignorance of the doctors concerning the cause of many diseases. The situation worsened during the periods of epidemic crises.

These problems explain why the process of integration of all the segments of the urban population was very gradual and why, for example, the insane were transferred to France for health care. They also help explain why for many patients the hospital was not the first choice in their quest for therapy, and why the *marabouts* and the *guérisseurs* were in competition with the physicians and surgeons for patients as late as 1912 and beyond.

NOTES

1. ANS H 24 (Senegal), record of the Sanitary Commission meeting, 6 June 1899; see also *Annuaire Coloniale*, 1891, p. 812; 1893, p. 853.

2. Interview with Ndoye Samba in St.-Louis (Corniche), September 14, 1994.

3. Interview with Gnilane Faye in St.-Louis (Sor), 15 September 1994; also interview with Ibrahima Tabane in St.-Louis (Pikine), 27 January 1995.

4. Interview with Omar Sarr in St.-Louis, April 23, 1994. My conversation with Bishop Sagna of St.-Louis the same month confirmed Sarr's assertions.

5. Archives des Soeurs de St.-Joseph de Cluny, C 1 1-4, Lettres de Mère Rosalie Chapelain, 18 mars 1868.

6. Dr. A. Corre, "La matière médicale des noirs au Sénégal," Moniteur du Sénégal et Dépendances, nos. 1060, 6 June 1876, pp. 91-2; 1061, 13 June 1876, pp. 95-6; and 1062, 20 June 1876, pp. 99-100.

7. See endnote no. 61.

8. *Bulletin*, XIX, p. 217; see also *Annales*, p. 108.

9. D. Fassin, *Pouvoir et Maladie en Afrique. Anthropologie Sociale dans la Banlieue de Dakar* (Paris: P.U.F., 1992), pp. 67, 74, 76-7, 82-3. The Wolofs are believed to have devalued their indigenous, pre-Islamic and magical healing practices. Those who practice the profession are simple herbalists, who sell their plants and remedies on the market.

10. A.N.S. 2 G 2/16, Annual report, 1903, p. 115.

11. A.N.S. 2 G 13/26, Annual report, 1913, pp. 162-4.

12. Interview with Ndoye Samba in St.-Louis (Sor, Corniche), 14 September 1994.

13. A.N.F.S.O.M., DCF portfolio 26 A 181 A, plan of St.-Louis, 1820.

14. Anonymous, *Une Grande Missionnaire Anne-Marie Javouhey, 1779-1851* (Osny, 1990), pp. 9-10.

15. Dr. P. Aude, *Code des Officiers du Corps de Santé de la Marine* (Paris: Berger-Levrault et Cie, 1877), pp. 81-7.

16. ANS, H ? (A.O.F.), "Rapport sur l'application au Sénégal du réglement du 10 Mars 1897 sur le fonctionnement des hôpitaux," by Dr. Primet, 21 May 1897, p. 8.

17. ANF.SOM., Série géographique Sénégal XII d. 8 b, "Extrait d'un rapport du gouverneur du Sénégal sur la situation de la colonie, 1-1-1842.

18. A.N.F.S.O.M., Série géographique Sénégal XII, dossier 8 c; see also H 1.1.4, Rapport sur l'hôpital de Ndar-Toute (hôpital de la marine), 1850-1, by surgeon 2nd class Thirreum, n.d., pp. 34-40.

19. A.N.S. H 2.37 (A.O.F.), *médecin* to *Ordonnateur*, n.d.; see also A.N.S. H 2.39 (A.O.F.), *médecin* to Governor, n.d.

20. ANS H 9.125 (A.O.F.), Governor general of A.O.F. to the ministry of colonies, ? November 1896.

21. A.N.S. 2 G 1/7, Annual report 1896, p. 17.

22. Archives Municipales de Saint-Louis, 2 B 20 (1881-1899), Lieutenant-Colonel Poulnot to mayor, no. 4 of 1-26-1896.

23. A.N.S. H 16, "Dix ans de nosologie à l'hôpital civil de Saint-Louis" by Dr. Charles Carpot, 16 January 1900.

24. *Ibid.*, p. 1.

25. Archives de la Congrégation des Soeurs de St.-Joseph de Cluny, Personnel, St.-Louis, Hôpital.

26. A.N.S. H 2.39 (A.O.F.), Carrere to Ordonnateur, 25 April 1867.

27. A.N.S. H 16, "Dix ans de nosologie à l'hôpital civil de Saint-Louis" by Dr. Charles Carpot, 16 January 1900.

28. *Ibid.*, pp. 5-6.

29. Charles Carpot, "Dix ans de Nosologie ...," *op. cit.*, pp. 1, 5.

30. A.N.S. H 44 (Senegal), bursar to the administrator of the civilian hospital, 2 June 1889.

31. *Conseil Général* meeting records, 11 December 1890, pp. 111-112.

32. Archives paroissiales, Journal (1904-51), entry for 4 January 1905 and 30 January 1905.

33. Bulletin de la Congrégation des Soeurs de St.-Joseph de Cluny, LVI December 1899, p. 669.

34. A.N.S. 2 G 13/26, Annual report 1913, p. 63.

35. See "Le secrétariat général du gouvernment général. Un emprunt de 65 millions," *Questions diplomatiques et coloniales*, XV (1903), pp. 195-6; Arrêté no. 742, *Journal Officiel de l'Afrique Occidentale Française*, 1905, pp. 509-12; Arrêté no. 152, *Journal Officiel du Sénégal*, 1907, pp. 87-88; Arrêté no. 219, *Journal Officiel de l'Afrique Occidentale Française*, 1909, pp. 104-7; cited by McLane, Margaret Osborne, "Economic expansionism and the shape of empire: French enterprise in West Africa, 1850-1914," Ph.D. dissertation, The University of Wisconsin - Madison, 1992, pp. 328-32.

36. ANS, H 48 (A.O.F.), "Mission sanitaire du Sénégal. Hygiène militaire (January - March 1901)," by Dr. Grall, pp. 18, 40-1.

37. A.N.S. 2 G 13/26, Rapport annual 1913, p. 62.

38. ANS, H ? (A.O.F.), "Rapport sur l'application au Sénégal du réglement du 10 Mars 1897 sur le fonctionnement des hôpitaux," by Dr. Primet, 21 May 1897, p. 7.

39. ANS, H ? (A.O.F.), "Rapport sur l'application au Sénégal du réglement du 10 Mars 1897 sur le fonctionnement des hôpitaux," by Dr. Primet, 21 May 1897, pp. 5-6.

40. The decree of 17 August 1897 was promulgated in French West Africa on July 7, 1903.

41. See Yves-Jean Saint-Martin, *Le Sénégal sous le Second Empire. Naissance d'un Empire Colonial, 1850-1871* (Paris: Ed. Karthala, 1989), p. 142 note 19.

42. By "Senegal" I mean

43. ANS, H 8 (A.O.F.) piece 12, *Commandant Supérieur des Troupes*, Colonel Dodds, to Governor, no. 689 of 28 June 1891.

44. See *Arrêté* of the Governor General of 25 May 1906, *Bulletin Administratif*, 1906, pp. 553-61.

45. A.N.F.S.O.M. Série géographique Sénégal XI d. 36, Governor to ministry, 9 October 1883.

46. A.N.F.S.O.M., Série géographique Sénégal XI d.36, Caminale (pharmacist) to Governor, March 1875.

47. A.N.S. H 2.94 (A.O.F.), *médecin* to Governor, 2 September 1867.

48. Archives des Soeurs de St.-Joseph de Cluny, Paris 14, Senegal 2A E8, certificats de visite médicale, 1886-9.

49. A.N.S., Journal Officiel du Sénégal et Dépendances, 16 January 1904: Circulaire ministérielle, 28 November 1903, p. 30.

50. Source: Journal Officiel du Sénégal et Dépendances, supplément, 11 April 1889, p. 147.

51. ANS, H ? (A.O.F.), "Rapport sur l'application au Sénégal du réglement du 10 Mars 1897 sur le fonctionnement des hôpitaux," by Dr. Primet, 21 May 1897, p. 14.

52. A.N.S. 2 G 1/7, Annual report 1896, p. 17; see also Service de Santé, Rapport sur les économies susceptibles d'être réalisées dans les dépenses du service hospitalier au Sénégal (dépêche du 23 Octobre 1896), p. 2.

53. A.N.S. 2 G 1/7, Annual report 1896, pp. 17-8.

54. A.N.S., *Bulletin Administratif* 1906: Rapport au Governor General de l'Afrique Occidentale Française suivi d'un arrêté portant création d'aides-médecins indigènes de l'Assistance Médicale Indigène de l'Afrique Occidentale Française, pp. 55-6.

55. Ibid., p. 56.

56. A.N.S., *Journal Officiel du Sénégal*, 31 January 1907, pp. 60-2.

57. A.N.S. H 12.26 (Senegal), Governor to Governor general, 24 June 1903.

58. A.N.S. H 12.26, Governor to Governor general, 24 June 1903.

59. A.N.S. H 12.25, Governor general to Governor, n.d. (probably June or July 1903).

60. Archives Municipales de St.-Louis 2 B 24, Governor to mayor, no. ga 1160, 6 October 1911.

61. *Annales*, pp. 51-2; see also the *Bulletin*, XIII, p. 636.

62. A.N.F.S.O.M., Série géographique, Sénégal XI d. 43.

63. *Annales*, p. 77.

64. A.N.S. 2 G 13/26, Annual report Senegal, p. 139.

65. Archives Municipales de Saint-Louis, E 94, Municipal Council meeting, 25 July 1895.

66. A.N.S. 2 G 10/26, Annual report 1910, p. 56.

67. A.N.S., Annual report 1912, p. 264.

68. ANS, H 23 (A.O.F.), Governor to *Receveur de l'Enregistrement et des Domaines*, 19 April 1913.

69. ANS 2 G 16/18, Rapport médical annual 1916, by the chief of the Health Service, Dr. Damien, p. 30.

70. ANS 2 G 16/18, Rapport médical annual 1916, by the chief of the Health Service, Dr. Damien, pp. 27, 30-1.

71. ANF.SOM, S. géogr. Senegal XI d. 21 A, Governor to minister, 9 August 1884; C, Governor to Under-Secretary of colonies, 7 November 1892.

72. A.N.S. H 52.2 (A.O.F.), Governor general to ministry of colonies, no. 605, 16 May 1905.

73. A.N.S. H 2.111 (A.O.F.), *médecin* to *Ordonnateur*, 9 October 1867.

74. A.N.S. H 45 (Senegal), Colonial Commission meeting records, 22 June 1891.

75. A.N.S. H 45 (Senegal), Fraissinet & Cie agent to the Interior Director, no. 569, 13 June 1897.

76. A.N.S. H 45 (Senegal), Interior Director to Director of the lunatic asylum in Marseilles, no. 27 of 28 January 1898.

77. Michel Foucault, *Discipline and Punish* (Harmondsworth, 1979).

78. A.N.S. H 45 (Senegal), *médecin en chef* to Interior Director, no. 301 of 4 February 1898; deputy-director of Indigenous Affairs to general prosecutor, no. 2383 of 28 September 1898; general prosecutor to general secretary of the government of Senegal, no. 189 of 29 September 1898; medical certificate, Fatimata Toure, 17 June 1897. For more information on the subject, see, among others, R. Collignon, "Social psychiatry in French-speaking Africa," in Olayiwola A. Erinosho and Norman W. Bell (eds.), *Mental Health in Africa* (Ibadan: Ibadan University Press, 1982, pp. 8-27; Jan Goldstein, *Console and Classify. The French Psychiatric Profession in the Nineteenth Century* (Cambridge: C.U.P., 1987).

79. Jack D. Pressman, "Concepts of Mental Illness in the West," in Kenneth F. Kipple (ed.), *The Cambridge World History of Human Disease* (New York:

Cambridge University Press, 1993), p. 72.

80. See the decree of 6 February 1909 in the *Journal Officiel du Sénégal*, p. 135.

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CITY GROWTH, HEALTH PROBLEMS, AND COLONIAL GOVERNMENT RESPONSE: SAINT-LOUIS (SENEGAL), FROM MID-NINETEENTH CENTURY TO THE FIRST WORLD WAR

By

Kalala J. Ngalamulume

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CHAPTER 6

INTERNATIONAL TRADE AND THE IMPORTATION OF DISEASES, 1850-1901

The abolition, in the mid-nineteenth century, of commercial monopolies given to specific companies as well as the introduction of a new generation of steamers in the subsequent years resulted in the development of international trade and the extension of the field of colonial activity. By the 1870s, it took the *Compagnie des Messageries Maritimes* 25 days to go from Bordeaux to Buenos Aryes via Lisbon-Dakar-Rio de Janeiro-Montevideo, and 27 days to return to Bordeaux after adding Bahia and Pernambuco to its itinerary. The Senegalese port-cities of Saint-Louis and Goree until the 1870s, and Dakar, thereafter, became central places in an Atlantic trading network which extended north to Bordeaux, Marseille, Liverpool, Genes, Havre, Dunkerque, Gottenburg, and Hamburg; west to Guadeloupe, Martinique, Brazil, Argentine and USA; south to Bathrust, Freetown, Conakry, Grand-Bassam and beyond; and east to upper Senegal.[1] The rapid movement of people and goods resulted either in the introduction and spread of new infectious diseases or in the transfer of existing pathogen agents to new host populations. This chapter deals with the epidemic diseases, especially yellow fever and cholera, which struck Saint-Louis (and the Senegal) before the introduction of sanitary measures based on the germ theory. Two other killers, smallpox and plague, are excluded from the discussion for the following reasons: smallpox did not emerge in the framework of international

trade during the second half of the nineteenth century; it was an old disease that migrants brought to the city. Plague struck the city in 1918-20, which falls outside the time period under investigation. The choice of a thematic presentation, instead of the chronological one, has to do with the ways in which these diseases were perceived by the French authorities: yellow fever struck the Europeans, while cholera was the Blacks' disease.

I. YELLOW FEVER OR THE "WHITE MAN'S DISEASE", 1867-1901

Yellow fever was among the epidemic diseases that propagated in the framework of international trade. The virus that causes yellow fever is transmitted to humans by mosquitoes called *stegomyia faciata* (*Aedes aegypti*). A person who becomes ill presents the symptoms that cause panic: jaundice, high fever, internal hemorrhage, and vomiting of blood. A Cuban researcher, Carlos Finley, discovered its mode of transmission in 1881, while the virus itself was identified in 1901 by Walter Reed. Yellow fever was endemic in the gulf of Mexico from which it spread to the port-cities of Caribbean, Brazil, and the rest of Latin America, as well as to cities in USA and Canada. It also spread to Europe and Africa. The disease struck Barcelona in 1821 where it killed 20,000 persons; it reached Lisbon in 1857-8, made 7,000 victims and threatened French ports; in 1861, it reached Saint-Nazaire.[2] Yellow fever had also swept through the coast of West Africa since the 18th century. The evidence shows that it was imported from the Caribbean and South America by

the ships involved in the slave trade. The virus became a permanent resident of the gulf of Guinea and Sierra Leone. Its outbreaks occurred in Latin America between January and April and in West Africa between May and October during the rainy season, when the breeding places for the Aedes aegypti were abundant.[3]

For the period under investigation, yellow fever struck Saint-Louis in 1867, 1878, 1880-81, 1900-01.[4] Besides the 1880-1 outbreak, each time the disease was imported to the city via Gorée or Dakar. The spread of yellow fever in West Africa could be compared to that of yellow fever in U.S.A., where more than 6,000 victims died in Memphis alone in 1878 and thousands died in Louisiana between 1795 and 1905.[5] Brazilian coastal towns also suffered terrible outbreaks in the 18th and 19th centuries. Ships involved in the international trade and travel played a major role in the spread of diseases such as yellow fever, dengue, and cholera because they provided breeding places for *A. aegypti* and other infectious agents, especially in bilge water, in the containers for wash basins in cabins and in various places in the hold.[6] The 1880-1 outbreak could be reasonably considered as the continuation of the 1878 yellow fever epidemic. I shall discuss it later. Nine years passed without another outbreak of yellow fever. The evidence indicates that the 1900 yellow fever epidemic spread to Senegal from Côte-d'Ivoire or Gambia. Now, let us turn to the 1867 yellow fever epidemic.

The 1867 Yellow Fever Epidemic

The evidence related to the 1867 epidemic is scanty compared to the available evidence concerning the subsequent episodes of the disease. It struck the city at the end of August. According to missionary records, the first victim was one Brother from the Ploermel congregation. The disease spread rapidly throughout the city, provoking a general panic. No family was spared; the hospital was overcrowded with 300 patients, twenty of whom died daily. Seven Sisters, who cared for the sick, had also died. It was frightening!

The city was not prepared to deal with the disease threat. The miasmatic theory provided the framework within which doctors (poorly) understood the etiology and epidemiology of yellow fever. The cause of the outbreak, according to health officials, lied in the torrential rains that had transformed the streets of Saint-Louis into "infected ponds." From their perspective, the solution was clear: the administration had to drain the stagnant water. Taking their advice, the Governor signed a decree on 30 September 1867 providing the local service with 6,000 francs to be used to repair the roads in the city and the urban villages that were transformed into pools by the rain.[7] Why did the administration wait for a month before giving the money is not known. When the disease subsided at the end of October, the colonial authorities were certainly convinced that their response to the epidemic disease was "accurate." But, they failed to understand that yellow fever subsided simply because the mosquitoes ran out of victims and, probably, out of breeding places.

The epidemic disease stimulated the administration to create the framework of a public health organization. Indeed, on 25 October 1867, the Governor issued a decree creating one Council of Hygiene and Public Sanitation in Saint-Louis and another in Goree.[8] The Council was chaired by the *médecin en chef*, (Rulland?), and it included the mayor (Dumont), two doctors, the *Pharmacien en chef*, the hospital administrator, the chair of the *Service de Génie*, the commander of the garrison of the *Spahis*, one merchant, and one landlord. On 10 January 1868 the Council met to analyze a) the causes of poor sanitary conditions on the island of Saint-Louis and the urban villages, b) the causes of the outbreak of the 1867 epidemic and the solutions to prevent its repetition, c) and the issue of the future of the cemeteries located in Sor and Guet-Ndar, especially the possibility of their enlargement or transfer at another location.[9]

Doctors were convinced that the stagnant water following each rain constituted a breeding ground of pestilence that caused fevers. If, for financial reasons, it was not possible to pave the streets, they argued, the practical solution would be to dry the areas of standing water. They also recommended, as solutions to the epidemic, the collection of trash, the construction of more public toilets, and the disinfection of public and private buildings and the objects that had been in contact with the victims during the epidemic. They urged the owners of particular stores selling partially dried cow skins, slaughterhouses, and other fat foods to eliminate them from the center of the city and to provide their businesses with adequate ventilation. Council members also suggested the creation of a permanent commission of hygiene that

would enforce the law of 13 April 1850 concerning the sanitation of unsanitary houses and would set up house-to-house visitation. Convinced that, besides the climate and the soil, the dirty drinking water was responsible for many diseases, the participants urged the administration to accelerate the steps under way in order to find a reliable supply of water.[10]

The next day, on 11 January 1868, the Council members held another meeting to discuss the causes of the outbreak of the 1867 yellow fever epidemic. They recognized that once the disease was imported to the city, it found a fertile ground for its spread and incidence. But the miasmatic theory led them to the wrong targets. They did not know that *A. aegypti* was the vector for yellow fever. They also failed to understand that the policy of forced removal of the indigenes from the center of the city, applied between 1857 and 1861, had created at the extremes north and south of the city slum areas that facilitated the spread of diseases, including yellow fever, dengue fever, cholera, etc. In their ignorance, they established a hierarchy of causes which, they believed, would help explain why yellow fever made "so many victims." They regarded the natural environment surrounding the city as the primary cause: a flat and swampy land, the mouth of the Senegal river, and the mixture of salty and non salty water in the river around the city. The participants also identified two secondary causes: the frequent and terrible breezes from the south and the "pestilential emanations" from the cemeteries. They recommended to the authorities the following measures in order to prepare for the epidemic near *hivernage*: the cleanliness of the public and private buildings; the isolation of European troops in the

garrisons; the isolation of the sick and the convalescents; the increase in the number of bedclothes in the hospitals; the interdiction to bury the corpses less than 35 to 40 meters from the limits of the city and the urban villages; the immediate closure of the cemetery in Sor for at least seven years; the opening of two new cemeteries: one for the Catholics in Sor and another for the Muslims north of Ndar-Toute two kilometers away from the last huts; the hiring of a guard for the Muslim cemetery who would pay attention to the depth of the tombs and maintain the fence.[11]

The administration welcomed these sanitary measures and took specific steps to implement them. Additional measures were taken between February and July in order to prevent the introduction and spreading of epidemics. At the end of February 1868, the Sanitary Commission, presided by the *Ordonnateur*, Tredos, held a meeting during which the decision was taken to impose a quarantine lasting seven to fifteen days to ships dropping anchor at the ports of Saint-Louis and Goree with a "brut" bill of health (*patente de santé*).[12] On 1 June, the Council of Hygiene and Public Sanitation introduced a preventive quarantine of observation of five days to ships arriving in Saint-Louis from the south between Sangomar and Salne with a clean bill of health. Ships arriving from Sierra Leone, Sainte-Marie de Bathrust and Sedhiou were not concerned by this measure for the good and simple reason that their bills of health were already approved by the French Consuls in these localities.[13]

In July, a decree was signed which created a new Catholic cemetery in Sor east of Bouetville. It had the capacity of 2,181 tombs and was placed under the authority of the mayor, who provided authorization for burial. The decree had also

provisions for the creation of a position of guard/grave-digger with a salary of 800 francs/year. The same day, one decree closed down the old Catholic cemetery located at the entrance of the Faidherbe Bridge, and another decree closed down the old Muslim cemetery located south of Guet-Ndar and opened a new cemetery north of Ndar-Toute with a capacity of 5,300 tombs. The decree also had provisions concerning a guard/grave-digger appointed by the *Ordonnateur* on the *Cadi's* proposition. His salary was 400 francs/year.[14]

How effective were the measures taken to control yellow fever? In their analysis of the causes of the outbreak, the members of the Council of Hygiene and Public Sanitation did not grasp the conditions that favored the spread of yellow fever in the city. The measures taken to prevent the reemergence of the disease did not affect the mosquitoes vectors for yellow fever. In addition, there is little evidence about the way in which the quarantine was used or concerning the number of quarantine stations. But the fact that the following year (1869) Saint-Louis was struck by a terrible cholera epidemic (that will be discussed later in this chapter) is an indication that it was too early for the quarantine to be an effective tool in combatting infectious diseases. Nine years later, yellow fever re-visited Saint-Louis and most of Senegal. The following section will explore the medical events associated with the outbreak.

The 1878 Yellow Fever Epidemic

Two issues that deserve attention concern the timing of the outbreak and the incidence of the disease. Why did yellow fever strike in 1878 and not another year and why did it spread the way it did? These are the questions that first come to mind. The evidence supports the idea that the yellow fever epidemic that struck Senegal in 1878 orginated from Brazil where there was an outbreak of yellow fever and where such ships as *Le Niger* and *L'Orénique* arrived from in May; and they were received in the port of Dakar without being quarantined.[15] Finding the reasons why the outbreak occured in Brazil in 1878 would be far beyond the scope of my investigation. Suffice it to say that once imported, the disease found in Senegal propitious conditions for its spread. The 1878 epidemic occurred in a conjuncture already dominated by wars and famine in the countryside. Crowding and starvation provided the virus with new host populations who did not develop immunity against yellow fever or who had lost their immunity. The situation in towns was also problematic. Urban growth had created vast problems of sewerage, waste removal, housing, and water supply and increased the quantity of breeding places for the mosquitoes. In Saint-Louis, a city of 16,000 people, the policy of forced removal of the poor from the center of the city had continued in 1873 to include the streets Saint-Paul in the north and Saint-Joseph in the south, as chapter 4 has shown.

The French colonial administration was in a precarious situation. It had abandoned Cayor (especially Louga and Mekhe) in Senegal and Grand-Bassam and Assinie in Côte d'Ivoire. Gabon was reduced to a simple entrepot for charcoal. The administration was very much preoccupied by that situation and little attention was paid to the outbreak of the epidemic of yellow fever in Brazil.

But things changed quickly. On 15 July, the Governor in Saint-Louis was notified about cases of yellow fever in Goree. A week later, on 24 July, the *Commandant* of the second district imposed a maritime quarantine on the port-towns of Goree, Dakar, and Rufisque; the decision was quickly approved by the Governor.[16] The Sanitary Commission in Saint-Louis convened a meeting on 26 July to discuss the measures to be taken against yellow fever. The participants recommended to the administration the establishment of the quarantine for ships anchoring in Saint-Louis and a *cordon sanitaire* for all contacts by land. The following day, when the "Castor" approached Saint-Louis from the south, it was immediately quarantined for fifteen days.[17]

This was the beginning of a series of measures aimed at protecting the city against the epidemic. In order to prevent people who had been exposed to yellow fever from coming to Saint-Louis by land, the Governor imposed a cordon sanitaire near two bridges giving access to Saint-Louis: Leybou and Khor. The cordon sanitaire was protected by a task force designated by the *Commandant Supérieur* of troops. But for reasons that have to do with food supply to the city, the cordon sanitaire was selective; it was not imposed on the pedestrians and their local supplies nor to the horsemen without merchandise. The main targets were the caravans and

individuals with all types of merchandise as well as the products destined to export. The cordon sanitaire was enforced by the *Ordonnateur*, the *Commandant Supérieur* of troops, and the Interior Director.[18]

In early August, the Governor began to concern himself with the health of the European personnel believed to be the first victims of the epidemic. He decided to reduce the number of hours that they were authorized to work to two hours per day, from 7 to 9 A.M.[19] In order to make the quarantine more efficient, the Governor decided, on 7 August 1878, to put the Navy health officers in charge of the special operations of sanitary inspection of the passengers and crew for signs and symptoms of communicable diseases. They were directly accountable to the *Ordonnateur*. The Captain of the port was responsible for informing them about the schedule of the arrival of ships.[20]

Unfortunately, all these control measures did not prevent the epidemic from striking the city. By the second week of September, the doctors observed the first clinical case at the military hospital and reported to the administration. The Council of Hygiene and Public Sanitation met on 13 September 1878 to discuss further measures. The participants decided to open two quarantine stations at Bop-Diara, south of St.-Louis on the Senegal river, for the large steam-ships and at Bop-Nkior, north of St.-Louis on Thionq island, for barges and small boats arriving in Saint-Louis from the Senegal river, especially Bakel and the area between Bakel and Podor. They determined the duration of the quarantine: five days for Blacks and fifteen days for the Europeans; the underlying mistaken assumption was that Blacks and mulattoes

were immunized against yellow fever. The quarantine was fifteen days for merchandise, at the exclusion of groundnut and gum that were fumigated before embarkation and shipped directly to Saint-Louis without transit through the quarantine stations.[21]

Two days later, the Council hastily convened another meeting presided by Gaspard Devès, mayor. The participants explored the measures to be taken in order to prevent the disease from spreading in the city. They decided to recommend to the administration a certain number of practical measures, including the creation of an ambulance at the Pointe-aux-Chameaux on the Langue de Barbarie for the sick who were already admitted at the military hospital, the cleaning of the city streets and houses, the education of the population about the danger of communicating with people coming to the city from the hinterland by the Senegal river and from the second district (Goree, Dakar, Rufisque), and the danger of handling the objects susceptible of transmitting the disease, such as skins, leather, wool, and feathers.[22] The enumeration of these objects was an aberration which made sense only in the context of the contagion/miasma model described in chapter 4.

From the perspective of the Central Administration in Paris, especially the General Inspector of the Health Service, Rochard, the outbreak of yellow fever in Senegal was the consequence of the bureaucratic deficiencies in the sense that the bureaucrats, who were responsible for implementing the control measures, were not up to the job. In a letter to the Ministry of Navy and Colonies, dated 20 September 1878, Inspector Rochard indicated that the bureaucrats in Senegal did not know very

much about the basic legislation regulating the sanitary police: the law of 3 March 1822 and the decree of 22 February 1876. He suggested that a copy of this legislation be sent to all the colonial bureaucrats.[23]

In any case, the disease spread in the city and new cases and deaths were reported everyday. It reached its peak in October before declining. Because the mode of transmission of the virus was not known and would not be for the following three years and there were no remedies, the control measures taken to combat the spread of the disease were inspired by the miasma theory. On 12 October, in what appeared to be a desperate measure, Colonel Brière de l'Isle, Governor, declared all the towns along the Senegal river "suspect" and, therefore, authorized local agents to inspect the passengers and crew of all the boats in each town between Podor and Bop-Nkior and to disinfect the boats using the phenic (carbolic?) acid. He advised the Europeans to bathe more frequently than usual because it was believed that bathing protected people against the infectious agents. The Governor also extended the cordon sanitaire to include the post of Lampsar and the Diaoudoune Bridge, but without allowing people, animals and merchandise free access to the city.[24] The isolation of the city from its region and the outside world was a radical measure that put the city in precarious situation in terms of food supply and trade.

As the case rate continued to rise, the hospital became too small for too many patients. The Governor decided to transfer the surplus patients at Dakar-Bango, a small camp located outside the city. But, by 20 October 1878, he realized that this was not a practical solution; so he limited the operation of transfer to Dakar-Bango to

only part of the convalescents from yellow fever. Other convalescents were sent to a small farm in Sor that was made available to the administration by the mayor, Gaspard Devès. The farm house had the capacity of ten beds equipped with mosquito-nets and all the necessary material to feed the medical personnel.[25] Two days later, the Governor modified his decision once more: the convalescents from yellow fever would be transferred to the barracks located at Pointe-aux-Chameaux, on the Langue de Barbarie.[26] These precipitous decisions indicated that the administration was under tremendous stress and pressure.

By December, yellow fever had killed 652 Europeans out of a European population of 1300, including 14 Sisters who cared for the sick, and an undetermined number of indigenous people. The situation was frightening! The last clinical case was reported on 17 December 1878. The communication with the second district resumed then.[27]

The epidemic provided an opportunity for the elaboration of new theories of disease causation and transmission. On 6 November 1878, the Governor of "Senegal and dependencies" received a letter, addressed apparently to all the Governors of "French possessions," by a certain Ch. Tellier, a scientist from Paris. In his letter, Tellier argued that people who became sick had likely caught yellow fever in the evenings when it was highly contagious, as he believed the example of Rio de Janeiro had demonstrated. He suggested that the only remedy to the disease was to expose the patients to the steam from a boiling water at 711 degree (Celsius?).[28] The new theory represented a progress in the etiology of the disease: the evening was the time

when the mosquitoes came out. But the mosquito as vector of yellow fever remained to be identified.

How did the administration assess the situation after the epidemic had departed? The members of the Navy *Conseil Supérieur de Santé* (Health Superior Council) in Paris, who had received reports from the Governor about the sanitary condition of the colony, concerned themselves with the situation in Senegal. In a meeting held on 30 January 1879, the Council members expressed their fear about the possibility of another epidemic. They were convinced that, because of its climatic conditions, Senegal was predisposed to receive and spread yellow fever. They decided to apply to Senegal the provisions of the law of 3 March 1822 related to the sanitary police as well as the provisions of the decree of 22 February 1876 concerning the sanitary police used so far only in the French ports on the Mediterranean Sea to enforce the operations of quarantine against the ships arriving from areas such as Brazil that were infected by yellow fever.[29]

At the beginning of *hivernage*, Brière de L'Isle, Governor, issued a decree on 25 June 1879 to enforce the quarantine regulations against ships arriving in the ports of Senegal from areas located between the Pointe Sangomar and Gabon. It had provisions for the use of lazarets for the quarantine and the disinfection of merchandises, other objects and the ships themselves. Another decree, issued on 28 July, determined the fees that individuals had to pay to cover the expenses engaged by local service for food and maintenance and for the disinfection of ships: 7f50c for officers and first class passengers; 3f50c for under-officers and economy class

passengers; 1f25c for corporals and deck passengers; half of the fees for children under 12; free stay for infants; 1f00c for the disinfection of 100 kilograms of merchandises and passengers' luggage. The decrees were enforced by the Interior Director, L. Massy.[30]

While putting in place these control measures, the colonial administration started thinking seriously about the possibility of introducing a policy of segregation in Senegal. Indeed, there is evidence that the administration was convinced that the separation between Europeans and *indigènes* was "an element of first importance from the point of view of hygiene," and that necessary steps were to be taken in order to implement this principle in the new agglomerations to be constituted in the future. Such a measure, they realized, could not apply to the existing agglomerations, such as Saint-Louis, Dakar, or Conakry, where it would not find supporters among the merchants who were primary concerned with profit, not hygiene.[31]

Thus, the administration clearly understood the potential for the return of another serious epidemic disease, especially yellow fever that the Europeans feared the most. It was also well aware of the factors that were implicated in the outbreak and spread of the epidemic: external contacts, "environment" (meaning areas of standing water), and bureaucratic deficiencies. But the steps taken to prevent further dissemination of infectious agents, that is, quarantine regulations, cleanup of city streets and houses, elimination of slums and cemeteries, were not informed by an accurate clinical understanding of the infectious diseases. Two years later, yellow

fever struck the city and Senegal again, creating panic and disorganizing the productive activities. Was the new outbreak different from the previous ones?

The 1880-81 Yellow Fever Epidemic

For the first time in the history of Saint-Louis' experience with disease and sanitation, the interval between two outbreaks of yellow fever epidemic was very short (2 years). The consensus among health officials was that once imported in 1878 yellow fever became endemic to Senegal and that the 1880-1 episode was simply a transformation from endemic to epidemic disease. But they did not provide sufficient explanation of the way in which the transformation took place.

Using insight from Elizabeth Eldredge's (1987) explanatory model, which sheds light on the links, under certain circumstances, between the movement of population caused by wars, drought or famine and epidemics,[32] I would argue here that after the elimination of the urban form of yellow fever in 1878, the disease was spread into the countryside probably by the troops, the traders as well as other infected urban dwellers who had fled the city in panic while incubating the disease. Colonial wars and famine created the conditions propitious for the spread of the disease. The 1880-1 urban epidemic probably started in Saint-Louis from infection introduced by the troops or people who might have contracted the disease in the countryside. The *A. aegypti*, the yellow fever mosquito that had adapted living in the

city, then spread yellow fever as a typical urban outbreak different from the jungle or forest form of yellow fever.

In July 1880, cases of yellow fever were reported in Saint-Louis, especially among the patients admitted at the military hospital. On July 24, 1880, the administration decided to establish a quarantine for all the ships arriving in Saint-Louis from contaminated areas.[33] By September, more cases were reported. In a month, between 1 September and 1 October, 47 troops had died.[34] In November, the administration decided to dispatch the troops in camps outside the city. New cases and deaths continued to be reported until mid-December.[35]

On 14 December, Governor Brière de l'Isle enforced the quarantine regulations by obliging the passengers of commercial ships and the crews, at the exception of the captains, to stay aboard ships day or night without going to the city.[36] The following day, he gave instructions obligating the ships to leave Saint-Louis immediately after loading the ships.[37] At the end of *hivernage* in December the epidemic subsided. It had made approximatively 80 victims, including 3 Sisters and 3 Brothers. On 23 February 1881, the quarantine was lifted.[38]

The evidence is scanty concerning the efforts undertaken between February and May 1881 by the administration to prepare for the next rainy season and epidemic. One piece of evidence suggests that a lot of time was spent in meetings and deliberations without concrete results. On 18 April, Governor Brière de l'Isle was replaced by Governor De Lanneau. So, when yellow fever struck the colony again, the new Governor did not have the time to familiarize himself with the

problems facing the colony: territorial expansion toward Niger, competition with the British in West Africa, and diseases. These problems were associated with the colonial conquest and colonial rule and they were interconnected.

On June 26, 1881 Mr. Pauvril, clarion at the *Tirailleurs Sénégalais* regiment based in the North Roignat garrison and who had arrived in Senegal 9 months earlier, became seriously ill and was admitted at the military hospital the following day after complaining of "fever." He was treated by Dr. Cheveux. On 2 July, he died. The autopsy performed on his body revealed the evidence of "organic lesions" characteristic of yellow fever. Three weeks later, Mr. Casterint?, who worked as gunsmith at the *Tirailleurs Sénégalais* regiment in the South Roignat garrison, got sick on 20 July and died on 23 July. He had lived and worked in Senegal for 18 months. In the meantime, three other cases were reported elsewhere in the city.[39]

The multiplication of new cases very much alarmed health officials. On 25 July the Hygiene Commission held a hastily convened meeting to discuss the causes of unsanitary conditions in the city. The causes of the outbreak, according to the participants, were three: the stagnant water in the city streets following each rain, the unsanitary houses where deaths were reported during the 1878 epidemic, the location of the main hospital (military hospital) in the middle of the city where it constituted a "foyer of infection" during the outbreak of epidemics.

The analysis made by the Hygiene Commission members indicated that they were not aware of the discovery made by Finlay the same year that *A. aegypti* transmitted yellow fever by its bite. They targeted only houses where deaths had

occurred two years earlier, implying that the infectious agents were still alive in those houses after two years. In any case, during the debate a certain number of measures susceptible to combat the disease were explored; they ranged from using the Moroccans to level the city streets to using lime and fumigation to disinfect the suspected houses. An impatient Director of *Ponts et Chaussées*, Mr. Brignet, argued against these "platonic wishes" and in favor of a "radical solution." The *médecin en chef* vehemently rejected the idea that people acquired the infections at the hospital and he argued that all the cases of yellow fever occurred in the city and the garrison, not at the hospital. At the end of the meeting, they agreed on the urgency for the administration to build barracks outside the city to accommodate the troops during the rainy season.[40]

By July 27, the *médecin en chef* informed the Governor that the hospital was quickly becoming overcrowded and suggested that new cases among the Navy troops be admitted at the civilian hospital.[41] Two days earlier, Mr. Bezia, an influential trader, had told the Governor that his building located at Leybar and another at N'Diago were available for immediate use by the troops as isolation camps. In order to avoid that high death rates frighten the city-dwellers, the parish priest was advised to stop performing the funeral ceremonies at the Cathedral.[42] On July 29, the Governor decided to dispatch the troops in camps located outside the city: Lampsar and Makana (artillery), Richard Toll (Spahis), Langue de Barbarie (Navy infantry, Moroccan workers), Bop-Diarra, and Mauit (*Tirailleurs*). The officers and technicians were confined aboard ships such as "Le Gaston" and "Herminie."[43] The

Navy infantry and the *Tirailleurs* officers recorded more deaths than the other units, as the following data show.

Table 6.1 The situation of the troops on 30 July 1881

	Total	Sick	Deaths	Cured
Infantry	30	18	15	5
	296	198	122	26
Artillery	9	4	4	-
	176	56	31	11
Spahis	6	-	5	2
Cavalry	82	10	2	1
Total	599	286	179	45

Source: A.N.S. H 32 piece 14, "Epidémie de fièvre jaune à Saint-Louis (23 July - 19 November 1881)," by the *médecin en chef*, 13 January 1882, p. 12.

In the meantime, the president of the Municipal Commission and mayor, A. De Bourmeister, assured the Governor that the execution of control measures was well under way in the city as well as in the urban villages. In addition, the corpses were quickly buried in the tombs measuring between 0m80 and 0m90 in depth and contaminated houses were being disinfected under the surveillance of the police chief.[44] Indeed, on 26 July 1881, he had issued an ordinance determining the sanitary measures to clean the city: the cleaning of city streets twice a day, between 6 and 8 am and 5 and 6 pm; house to house visitation after 8 am by the police commissar; the elimination of manure from horses, cows and sheep before 8 am; the interdiction of pigsty within the city limits; and the disinfection of suspect or contaminated houses.[45]

These measures concerned some conditions under which yellow fever could flourish, that is, the inadequate sanitation. They did not address the issues of poor housing and overcrowding that played a major role in the spread of the yellow fever and other vector-borne diseases such as dengue fever and malaria.

The emotion reached its high point on August 4, 1881 when Governor de Lanneau died after three days of terrible suffering. He was hastily buried the same day with a minimum of religious service; there was no military ceremony.[46] The rest of the story is about the dead, the sick and the convalescents. When the new Governor, Colonel Canard, arrived in Saint-Louis on 2 October, he found that yellow fever had made 400 victims, including 53 officers and civil servants; the administration was completely disorganized.[47] He toured the city streets more than once and observed that there was inadequate sanitation, which suggested that the decrees related to the public sanitation, especially the decrees of 27 September 1842, 20 September 1842, 20 September 1862, and 30 November 1864, were not implemented; the accumulation of garbage in the northwestern part of the city-island was particularly frightening. He indicated to the mayor that a rapid response to yellow fever threat was needed.[48]

There were deaths everyday. The majority of the victims came from the infantry, as the following table shows.

Table 6.2 Distribution of deaths from yellow fever

Location	deaths
military hospital	269
city and hospice	109
Makana camp	10
Bop-Diarra camp	13
Aboard ships or camps for crews	93
Aboard the "Tannesi" in the river	9
Total	503

Sources: A.N.S. H 32 piece 14, "Epidémie de fièvre jaune à Saint-Louis (23 July - 19 November 1881)," by the *médecin en chef*, 13 January 1882, p. 10.

How did the authorities explain the outbreak of yellow fever? The members of the Hygiene and Public Sanitation Council, who held a meeting on September 7, 1881, in the middle of the epidemic, did not mention any of the causes of disease identified by the Hygiene Commission in July discussed above. In the contrary, they pointed to the three cemeteries surrounding the city as constituting a "permanent danger" to city health. The "infectious emanations" coming from the cemeteries, they believed, were likely to aggravate the sanitary situation. They proposed three solutions to the problem: a) to use six layers of materials to cover the existing tombs (lime - sand - smashed charcoal - sand - lime - clay) and five substantial layers for the new tombs (lime - sand - smashed charcoal - sand - lime) (the administration had to order charcoal from France!); b) to dig the tombs where the soil allowed 1m50 of depth; c) and to replace the three existing cemeteries by one.[49]

In a fifteen-page report written in January 1882, after the end of the epidemic disease, the *médecin en chef* summarized what he believed were the five of the main causes of the epidemic as presented by the theories of the time: a) the temperature reaching 27o in June-July as in 1878; b) early rain reaching 668 mm; these two factors were considered as instrumental in the production and reproduction of the epidemic; c) filth as well as domestic waste thrown into the river; d) stagnant water (huge pools) in the northern part of the city; e) and overcrowding, mixture of European and indigenous houses, and poor hygiene for blacks. The *médecin en chef* arrived at the conclusion that yellow fever had reached endemic proportions in the city and that these five factors contributed to its transformation from an endemic to an epidemic disease. The evidence in support of his hypothesis came from the first seven cases reported: they lived in different parts of the city in houses where previous cases of yellow fever were reported.[50]

The *médecin en chef* also recognized that there were two schools of thought concerning the response to the threats posed by yellow fever: the external origin and the local origin of the disease. The defenders of the external origin of the disease argued in favor of a surveillance program that would enforce the quarantine regulations applying to incoming ships; they also believed that local unsanitary conditions contributed to the spread and incidence of the disease. The defenders of the local origin of the disease emphasized sanitation and hygiene enforced by serious municipal police, the dispatch of troops in camps outside of the city, the construction of docks, the imposition of severe penalties against the transgressors of sanitary laws,

the progressive elimination of the *indigènes* from the center of the city, first, and from the city-island, later, and the provision of safe drinking water as appropriate tools for controlling the disease.[51] These two schools of thought represent the two paradigms already examined in chapter 4.

The administration in Paris found the thesis about the local origin of the disease very attractive, probably because of the pressure of lobby groups who opposed strong quarantine, which disrupted the economic activities. In a report to the President of the Republic dated 13 September 1882, the Ministry of Navy and Colonies mentioned the unsanitary conditions of the overcrowded houses as "one imminent and fatal cause" of the reemergence of yellow fever. He strongly suggested that the sanitation laws of 19 January, 7 March and 13 April 1850 be applied in Senegal.[52]

Thus, the medical thought in the early 1880s was dominated by a combination of miasma/contagion theories. Environmental conditions (hot temperature, rain) and pathogenic emanations from the cemeteries or putrefaction in the stagnant water were believed to cause yellow fever. In addition, the objects or persons in contact with the contaminated persons as well as the houses where they had lived could transmit the infection.

What does these medical theories and practices tell us about the French colonial mentality? Given the fact that health officials ignored the causes and mode of transmission of yellow fever, the French colonial mentality appeared to be obsessed with the overwhelming need to blame the "environment" of Senegal, including the

climate, and the African urban poor for the outbreak. Yellow fever provided the colonial administration with an opportunity to express the anxieties which Senegal evoked in French imagination. Senegal continued to be viewed as a dangerous land, a land of curse characterized by paralyzing heat and a rainy season which brought deadly diseases. The urban poor were blamed for the failure of the measures undertaken by the administration to control the disease. Colonial officials had a ready-made "culture of poverty" explanation (racism?) to justify the reemergence of yellow fever and the imposition of a form of "sanitary segregation": filth and overcrowding conditions were presented as natural to the Africans. The poor did not belong in the city-island. Their natural place would be the urban villages or elsewhere.

The epidemic had provided two new administrative units that could elaborate a comprehensive program to monitor the causes of yellow fever and reduce its incidence in the city: the Health Service that gained its autonomy from the *Ordonnateur* in 1881[53] and the Permanent Sanitary Commission of Saint-Louis, organized on 12 October 1881.[54] By then, health issues were the concern of a vast bureaucracy, including the following units:

Administrative unit	Year	President
Council of Hygiene and Public San.	1867	*Médecin chef*
Sanitary Commission	1874	*Ordonnateur*
Health Service	1881	*Médecin chef*
Permanent Sanitary Commission	1881	*Médecin chef*?

The epidemic had also provided an opportunity to pass the necessary measures to preserve the city's health. It was in this context that two critical pieces of legislation were promulgated in Senegal and dependencies: a) the law of 19 January, 7 March, and 13 April 1850 related to unsanitary housing promulgated on October 6, 1882[55] and the decree of 29 August 1884 that reorganized the Sanitary Service in Senegal and imposed an automatic quarantine of observation between 1 June and 15 December every year to all ships arriving from the areas situated between the Pointe Sangomar and Gabon. Other measures related to the interdiction to dry fish in the urban villages between 1 June and 15 December[56] and the organization of the lazarets.[57]

Thus, in the aftermath of the 1881 epidemic, sustained efforts were made to control yellow fever. But because the epidemiological knowledge of the disease was incomplete, these efforts were dominated by social assumptions and the victim-blaming ideology; they were misdirected and did not prevent the epidemics from reemerging.

The archival evidence for this period is dominated by the debate around the effects of sanitary measures, especially quarantines, on the economic activities. Merchants believed that the quarantines were ineffective in combating the emergence or reemergence of the epidemic diseases and that the measures only disrupted economic activities. They wanted to take full advantage of the railroad Dakar-Saint-Louis that was inaugurated in 1885.

The debate in Senegal can be understood in the framework of a larger debate that was going on in France and was animated by the members of the 'Colonial Party.' They pushed for a policy of *mise en valeur* of the colonies. After all, the colonial expansion was motivated by the desire to accumulate wealth. However, nine years later, the terms of the debate changed with the new outbreak of yellow fever in 1900.

The 1900-01 Yellow Fever Epidemic

In 1895 Saint-Louis became the capital of French West African federation. It was also the capital of Senegal. Its population grew from 20,000 in 1895 to 30,000 in 1900, including 1,500 Europeans. Saint-Louis was the economic and cultural center of a vast territory under French control. But the urban population growth, because of the overcrowding and unsanitary conditions that accompanied it, also created the conditions for the spread of diseases.

In May 1899 the Ministry of Colonies received a report concerning the outbreak of yellow fever in Côte d'Ivoire and sent a cablegram to the Governor of Senegal warning him about the danger. Other sources confirmed another outbreak of the disease in Bathurst. The Sanitary Commission held an urgent meeting and decided to impose a quarantine on suspect or contaminated ships.[58] But the *hivernage* passed without a significance disease threat for Senegal.

In May 1900, 7 cases of yellow fever were identified in Dakar over a three-week period. On 20 May Governor general, E. Chaudié, imposed a quarantine of

observation of 9 days on ships arriving from Goree, Dakar and Rufisque and established a lazaret at Baba-Guèye for the inspection and isolation of crews and passengers. Kelle, located along the railroad Dakar-Saint-Louis, was also chosen as the terminal point for the trains, where all the operations of disinfection were to take place. Sanitary agents were placed at Khor and Leybar Bridges and various places in Gandiole to prevent suspected persons from communicating with Saint-Louis.[59] The administration considered the quarantine as the appropriate tool for combating the disease. This was the beginning of a series of measures aimed at protecting Saint-Louis from yellow fever. The same day, the missionaries noted in their "Journal" that Saint-Louis was a dirty city and that the sanitation work had just started. They expressed the hope that the alarm would not have deadly consequences.[60]

The following day, the Ministry of Colonies sent a cablegram to the local administration with specific instructions concerning the repatriation of non-essential personnel, a thorough inspection of the hygienic conditions in the garrisons, and a rigorous disinfection of the houses where the previous cases were reported and the disinfection of clothes, beds, and other objects.[61]

Other measures followed such as the issuance by the police of identity cards to and the medical examination of 35 suspect Syrian peddlers operating between Saint-Louis, Goree, Dakar and Rufisque, and who had business connections in Bathurst, in order to control their movement,[62] the dispatch of troops from Dakar and Rufisque in camps outside the cities, the liming of suspected houses, and the opening of an

additional quarantine station in Goree for the inspection of the ships arriving from Dakar, Rufisque, the ports in Saloum and along the Petite Côte.[63]

The absence of new cases and the pressure from the business community prompted the Governor General to lift the last quarantine measure on 7 June. However, on 10 June, the Governor general signed a decree in which he reminded everyone about the actuality of the sanctions that applied to the transgressors of the sanitary measures: death penalty, years in prison, fines, etc., as seen in chapter 4.[64] He also received a report of three new cases of yellow fever in Dakar and five cases in Rufisque; and he imposed once more a quarantine on ships leaving Dakar as well as Bathurst.[65] He also decided that special trains authorized to circulate between Dakar and Rufisque were to be operated by black personnel because of their supposed immunity, as seen in chapter 5. On 10 June, Bishop Buléon, who had spent 7 months in Senegal, became ill in Rufisque where he was visiting the Christian community despite the warnings about the timing of such a visit. He died on 13 June and the Sister who had cared for him died three days later. The news provoked a panic in Saint-Louis. The administration placed Rufisque and Goree under the regime of quarantine[66] and started preparing for the operation of repatriation of non-essential personnel. The operation started on 27 June and the first ships to be mobilized were the *Vauban*, owned by the Maurel and Prom firm, and the *Taurus*, owned by the Company Traissines.[67]

As the case rate began to rise in Dakar, yellow fever struck Saint-Louis on 17 July 1900 and made the first victims among the troops from the infantry. The disease

soon spread outside the garrison throughout the city. The Governor General took a certain number of measures on July 23. He suppressed the regular trains and replaced them with sanitary trains operating four days a week between Saint-Louis and Dakar, which transported the personnel to be repatriated in France. He chose Baba-Guèye as the quarantine station for the disinfection of merchandise imported from Europe through Dakar destined to Saint-Louis and the trade centers in Upper Senegal and Middle Niger Rivers. All city residents, especially landlords, owners of property, doctors and pharmacists, were ordered to report new or suspected cases of yellow fever to the health officials. One provision of the decree of July 26 required the isolation of the confirmed cases of yellow fever inside the houses where they occurred and the implementation of specific measures taken by local sanitary officials.[68]

The isolation of the sick in their houses instead of the hospital represented a departure from the practices observed so far. The measure reflected the general belief that yellow fever could be transmitted by contagious substances attached to clothes and other objects used by the victims. In conformity with this belief, the mayor, L. Descemet, signed on August 1 an ordinance providing specific guidelines for dealing with yellow fever: the isolation of the contaminated person inside the house under the surveillance of a sanitary agent; the disinfection, with (eau biochloruree or phénique), of parents and friends who were in contact with the sick, including their clothes; the disinfection of the furniture; the presence of disinfectants in the vases receiving the substances vomited and the fecal matter; the compulsory

report of deaths; a speedy burial of the dead inside the coffins; and the burning of the bedclothes, pillows and mattresses at the extremes north and south of the city under the surveillance of the police.[69]

Between 17 July and 22 August, 49 Europeans, 6 Moroccans and 4 Syrians had succumbed to yellow fever;[70] and hundreds of Europeans were repatriated, including the Governor General, E. Chaudié, and some prominent civil servants. On 11 August, the missionaries wrote in the *Journal* that

> Many new cases were reported from everywhere (in the city). One does not know where to look at. It is a general panic![71]

L'Echo de Paris also reported that

> a complete anarchy exist in Senegal since the hasty departure of M. Chaudié and the shameful flight of some civil servants following the example of their chief; it is unacceptable that the telegraph no longer functions.[72]

Various therapies were tried against fever and vomiting: purgation, frictions, potions, and cold baths, to mention only the most common ones. But yellow fever continued its ravages until September 15 before declining, in part because many Saint-Louisians had deserted the city. The virulence of the outbreak also declined in Dakar. Although the special trains were suppressed, the ordinary trains were not made available to all passengers.[73] Between 24 September and 31 October 1900, the *médecin en chef*, Head of Health Service, undertook the operation of disinfection of 34 public buildings and warehouses as well as garrisons and other military installations.[74] New cases and deaths continued to be reported until January 12, 1901, when the *médecin en chef* informed the new Governor General that the epidemic was

officially over.[75] The free circulation of trains between Saint-Louis, Dakar, and Rufisque was authorized after December 5.

Throughout the epidemic crisis, traders from the hinterland of Dakar, Rufisque and Saint-Louis, who were directly affected by the quarantine measures, voiced their opposition to such measures they found "radical." The "Société le Syndicat du Soudan Français" is a good case in point. In a strongly worded letter to the Governor general, dated 7 September 1900, M. Meyer, representative of the business interests in Soudan, argued against the rigorous quarantine which resulted in a great loss for the traders. He wrote that he could not find one example in Europe or elsewhere in other colonies, where commerce was completely stopped because of the epidemic. He emphasized that the quarantine intervened during the three months when the Senegal river was navigable until Kayes: August, September, and mid-October. But, despite the pressure from the merchants, the quarantine remained in place until November 5. The Europeans in Tivouaouane also complained about the suppression of the delivery of ice, a precious resource during *hivernage*.[76]

Concerning the debate about the origin of yellow fever, there is evidence that the majority of Saint-Louisians believed in the external origin of the disease. In a letter to the Governor general dated July 21, 1900 Mr. Cornu, a local publisher (imprimeur), argued that the probable causes of the emergence of yellow fever in Saint-Louis had something to do with the contact between the crew members of the ship *Saint Kilda* and four female domestic servants from the Sarrazin family located on Parquet Street, whom he called prostitutes (*négresses de mauvaise vie*). He

affirmed that the crews brought the "germ" of yellow fever and passed it to the women, who in turn contaminated the troops. Raynaud and his friends among the troops, who were among the first victims, used to spend an average of four hours a day entertaining the women. Another source of infection, he believed, was a small house located at the end of the same street where other *négresses* lived and were visited by the troops. He ended his letter by emphasizing that it was his duty to report these facts to the authorities.[77] These observations were confirmed the same day by the police chief a.i., J. Avrial, in a letter to the Governor general. He confirmed that the first house belonged to Mrs. Sarrazin, who lived there with her daughter. He recommended that her house, as well as another house located across the street from the customs office (no. 8), where other prostitutes lived, be thoroughly disinfected.[78]

Once more, the administration found convenient scapegoats to blame for the outbreak among the most vulnerable fraction of the urban poor, that is, the prostitutes. The authorities considered them as being saturated with sexuality and, thus, a threat to city's health.[79] They needed to be controlled and prevented from destroying the colonial society. Chapter 7 will explore some the solutions proposed in order to control their sexuality.

The 1900 outbreak of yellow fever had provided the cities of Saint-Louis, Dakar, and Rufisque with a new administrative unit: the Public Disinfection Service. The Saint-Louis's bureau was created on October 1, 1900 and operated under the control of the director of the bacteriological laboratory. It was assigned the task of

disinfecting the houses where yellow fever patients had lived, the furniture and other contaminated or suspect objects. The staff members who ran the operations of disinfection consisted of one *médecin* (1st cl.), two nurses from the colonial hospital, who were the permanent personnel, and an unspecified number of temporary workers. The doctors received a compensation of 12 frs. a day, while the nurses received each 2fr50c a day. The temporary workers were paid the following: 1f50c (daily workers), 2fr50c (builders), 1 fr00c (*toucouleurs*), and 3 fr00c (driver mecanics).[80]

Thus, yellow fever occupied a special place in the colonial mind, not because of the number of victims it made, but because of its disruptive nature and the panic that it provoked. However, it was not the only deadly disease that constituted a challenge to French colonial rule in Senegal and West Africa. The authorities concerned themselves with other diseases such as cholera and smallpox.

II. CHOLERA, "THE BLACK MAN'S DISEASE," 1868-93

Cholera was another disease that spread in the context of international travel and commerce. *Vibrio cholerae*, the bacterium that causes the disease, spreads through fecal contamination of the water supply, the consumption of fish and shellfish contaminated by bilge water from the ships that are dumped into the harbor, and contaminated foodstuffs (fruits and vegetables). *Vibrio cholerae* was discovered by R. Koch in 1883. It is believed that the disease expanded from Bengale in Asia, where it was endemic, to Europe in the 1830s. Cholera spread through much of European

cities, especially London and Paris between 1830 and 1884). It also crossed the Atlantic in the 1830s. The disease can kill between 40 to 60 per cent of the patients. The symptoms are spectacular: severe cramps, vomiting and diarrhea. Cholera was first reported in Saint-Louis (Senegal) in 1868, apparently imported to the city by the caravans of traders: the Trarzas Moors or the traders from Tombouctou.

The 1868-9 Epidemic

One year after yellow fever epidemic struck Saint-Louis, the first four cases of cholera, followed by deaths, appeared in the city on 25 November 1868. Soon, the number of new cases reported at the military hospital rose to 164. The situation was very critical and the city was in a state of panic. Two days later, the administration decided to dispatch the troops in the camps outside the city: the *Tirailleurs Sénégalais* and the Navy artillery were sent to Gandiole, and the Navy infantry and the *Compagnie des Disciplinaires* were stationed at Lampsar. The *Spahis* were dispatched in the vicinity of Gandiole. They were given instructions not to stay at one location more than one day.

The Brothers of Ploermel and the Sisters of Cluny, who ran the school system, sent the students back to their parents. The panic was general and city residents began to flee. Within days about 10,000 people, out of a population of 20,000, had left the city.[81]

The 1867 yellow fever epidemic had provided health officials with some experience in handling an epidemic crisis. So as early as November 29 they organized an *ambulance* or temporary shelter for the sick in the southern part of the island and transformed one ship into a floating hospital. All the new cases were to be sent there. The Governor also ordered the cleaning of the city streets and docks that were covered with trash and filth.

The disease quickly spread throughout the city. Doctors had no effective drugs to combat the disease. The treatment consisted of 1 gr of sulfuric ether, 1-9 c of laudarum, 20-9 c of gum syrup, 100-9 c of gum water, and 1 teaspoon of P.V.A. (?) every twenty minutes. Another form of treatment was also used in a simple formula: hot potion, friction of the patient's arms and legs with *eau de vie camphrée* before covering him/her with a blanket and warming him/her with hot bricks.[82] Such a treatment was not able to stop the spread of the disease. Doctors did not know that they needed to perform an oral rehydration therapy, which has the advantage of replacing the fluids lost in diarrheal stools.

In any case, the number of deaths increased rapidly, reaching 150 per day. This number covered the officially recorded cases and did not take into account the deaths that occurred incognito in the city or during the flight. By the end of the epidemic, in December 1868, about 1204 Saint-Louisians, including 1112 *indigènes* and 92 Europeans, out of a population of 20,000, had died in Saint-Louis as well as in various camps, as the following table indicates. From eyewitness accounts, the

cholera epidemic had surpassed in intensity the yellow fever epidemic which ravaged the city the previous year.[83]

Table 6.3 Distribution of deaths from cholera in 1868

Location	Europeans	*Indigènes*	Total
Military hosp.	16	9	25
Floating hosp.	23	45	68
Ambulance	7	170	117
Lampsar cam	40	-	40
Gandiole camp	6	40	46
City (St.-Louis)	-	848	848
Total	92	1112	1204

Source: A.N.F.S.O.M. Série géographique Senegal XI d. 30, *médecin en chef* a.i., H. Rulland to Governor, 3 January 1869.

But the actual number of deaths was higher than the official numbers. The statistics show that 92 Europeans, out of 127 patients admitted at different medical facilities, had died; 250 *indigènes*, out of 324 patients, had also died. However, the majority of *indigènes* who died in the city, estimated at 848, did not have access to medical care. They were abandoned in their huts by their parents and relatives who fled the city in panic. Missionaries's sources put forward the frightening number of 5,000 deaths.[84] But there is no other independent source to corroborate this assertion. The data also indicate that cholera had concentrated its attacks among the urban poor, who had no reliable supply of water and who were more exposed to filth than the upper class.

On 11 January 1869 the Sanitary Commission decided to suppress the quarantine measures that were taken in order to prevent the spread of cholera in the

city. The debate about the origin of cholera focused on the Trarzas Moors as a foyer of infection. Travelers had previously observed the symptoms characteristics of cholera among the Moors in their homeland: diarrhea, vomiting, cold, and cramps. Because many Moors were present in Saint-Louis when the disease struck the city, the conclusion was that they had introduced yellow fever as well as cholera in Saint-Louis.[85] From missionaries's perspective, cholera was imported from Tombouctou by caravans of traders who came to Saint-Louis.

Why were the Moors blamed for the outbreak of cholera in Saint-Louis? The administration considered the Moors as an obstacle to the development of trade relations between Saint-Louis and the Waalo and Kajoor regions. They were difficult partners in the gum trade. Very often, they closed down the *escales* or marketplaces along the Senegal River. One of the official reasons for the construction of the bridges between Saint-Louis and the continent in 1856 and 1858 was to enable a quick intervention of troops against the Moors, who attacked the local population in Saint-Louis' hinterland. Thus, the attribution of the responsibility for the outbreak and death of thousands of city residents as well as rural population to the Trarzas Moors made them the enemies. Consequently, their identification as enemies justified the war against them and probably made other Moor groups vulnerable to persecution or, at least, to "sanitary segregation."

In the aftermath of the cholera epidemic, the missionaries opened an orphanage for the children from the poor Muslim families who had lost their parents to the disease. It was a golden opportunity for baptism.

Cholera reemerged first in Gambia in early May 1869. It, then, spread rapidly throughout various towns in Senegal such as Dakar, Podor and Dagana. Cholera struck Senegal at the time when the administration was at war with Amadou Sekhou in Cayor. The latter found in cholera an opportunity to recruit a following. Argument could be made here that there was a link between war and the spread of the cholera epidemic in the sense that war provoked the movement of people, caused famine, and exposed the refugees, whose immune system was already weakened by poor diet, to contaminated water. Soldiers were probably instrumental in the spread of cholera in the city.

The disease reappeared in Saint-Louis on May 25: two soldiers, who became ill, were cured. But by early June the case rate increased and 6 to 7 deaths were reported daily. News from Bakel were alarming: 800 people had died in the town, including the local doctor. The beginning of July witnessed a stabilization of the number of cases at 7 to 8 deaths every day. The majority of the victims were the poor city residents, who had no access to clean drinking water; until then, only three Europeans had died. But in August 18, Governor Pinet-Laprade succumbed to the disease, followed by the death of doctor Maurel.[86] The sources are silent about the date and the ways in which the 1869 cholera epidemic ended. Very little evidence is available concerning the total number of victims and the incidence of the disease in the city.

The 1893 Cholera Epidemic

Beginning in June 1890 Paris kept the administration in Saint-Louis informed about the presence of cholera and yellow fever in Spain. In order to prevent the disease from entering and spreading in Senegal, a quarantine of observation of 16 days was imposed against all ships arriving from Europe and the Canaries islands in accordance with the decree of 29 August 1884. Merchandise, parcel post and letters were disinfected; and the import and sale of fruits and vegetables was prohibited.[87] The quarantine remained in effect until October 27, 1892, when it was suppressed for all ships but those arriving from Hamburg.[88]

The reemergence of infectious diseases enhanced the status of the physician in the eyes the administration officials and made him a key player in the decision-making process. The decree of 28 January 1892 appointed the physician as a member of the *Conseil Privé* with deliberative voice. In a report to the President of the Republic, Mr. Carnot, the Minister of Commerce, Industry and Colonies, Jules Roche, highlighted the importance of the Health Office in the following terms:

> This service has become so important in this (colonial) possession, where most of the affairs are linked, by the force of circumstances, to the issues of hygiene and sanitary police, that it is indispensable to modify this situation (by admitting the Head of Health Office in the *Conseil Privé).*[89]

The decree had important implications in terms of social control. The physician's role in shaping and maintaining the colonial order sharply increased. It would not be an exaggeration to argue that Senegal had then entered a phase of 'medicalization' of colonial affairs. Government officials had to seek the opinion of the *médecin en chef*

in various instances such as the creation of an administrative post, especially concerning its location, its spatial lay-out, and the arrangement of buildings; the official declaration of an epidemic or its end; the appropriate control measures; the assessment of human responsibilities in the emergence or spread of the outbreak.[90]

During the 1893 *hivernage*, on June 29 a ship dropped anchor at Saint-Louis's harbor and started unloading the commodities. One of the daily workers who had helped carry the merchandise went back home in the northern part of Saint-Louis and became ill. He complained of severe cramps, vomiting and diarrhea. When Dr. Charles Carpot, a *métis* from one of the most powerful families of Saint-Louis, visited him in late afternoon, he found him dead. His diagnosis was clear: it was cholera. Two days later, during the night of July 1 and 2, a woman in good health fell sick after eating dinner and died early in the morning after long hours of incredible suffering.[91]

Dr. Charles Carpot reported the cases to the mayor and the director of Health Service. On July 2 and 6 the Hygiene Council met to discuss the necessary measures to be taken in order to contain the spread of the disease. By then the number of deaths rose to an average of 8 per day. New cases were reported in different parts of the city. The mayor, Jules Couchard, signed an ordinance on July 6 containing a comprehensive anticholera program. He urged the landlords, tenants, and keepers or guardians of houses and huts to report to him new cases of cholera as well as deaths. City residents were also ordered to put biochlorure of mercury in vases containing the patients' vomiting and stool, to bury the dead rapidly, even during the night, and to

burn the mattresses and other objects used by cholera victims. Article 11 of the ordinance required all the houses and huts occupied by the *indigènes* in the northern *quartier* of the city from Boufflers Street upward and in the southern *quartier* from Repentigny Street southward to be submitted to an automatic and general disinfection.[92]

The underlying assumption behind this ordinance was that the urban poor were the natural victims of cholera not only because of their ignorance of hygiene and sanitation, but also because of their culture, especially the burial customs and the imperatives of solidarity. According to Dr. Charles Carpot, one of the principal causes of the sudden and simultaneous outbreak in different *quartiers* had to do with

> the complete ignorance of the notion of hygiene and sanitation on the part of the residents of the outlying *quartiers* (... and with) the requirements of the customs of the land that when a person died all the acquaintances had to visit the parents of the deceased in order to offer their sympathy.[93]

Dr. Charles Carpot implied that the gathering of many people at the burial site and at the home of the deceased contributed to the spread of the disease among the urban poor. His attitude was consistent with the scapegoating mentality discussed above. He correctly mentioned that the urban poor formed the majority of the victims because they had no access to sanitary toilets, but he lost sight of the fact that they had no access to potable water either.

In any case, the police were responsible for the follow-up of the implementation of the provisions of the ordinance. The daily report made by the police chief included the number of deaths per day as well as the number of persons

who contravened the ordinance by throwing trash in the street or by failing to sweep in front of their houses.[94]

The reemergence of cholera created panic among the *indigènes*, the majority of whom refused to be treated at the existing medical facilities. They, nevertheless, welcomed the measures of disinfection of their houses and the incineration of the objects used by the victims.[95] There is no evidence to help explain their refusal to get medical attention during this terrible epidemic crisis.

It was not until the following day, July 7, that the Sanitary Commission officially declared the reemergence of cholera in the city. The number of deaths reached an average of 20 per day on July 8, and 56 deaths were reported on July 21 alone. By the end of July, Saint-Louis had suffered 753 deaths among the urban poor, out of a population of 20,173.[96] Only 4 Europeans died from cholera. In August the case rate started to decline with less than 10 cases per day. The last case was reported on October 11. By then cholera had killed between 1,500 and 2,000 poor city residents.[97]

The missionaries interpreted the ravages of cholera in religious not class terms. They believed that the Christian community had received a special protection from the Providence. When cholera appeared in Saint-Louis, they turned to God, organized processions and prayer meetings in Sor where the statue of St Roch was erected. They were convinced that Virgin Mary had provided them protection as a reward for the cathedral recently built in Sor as a proof of their trust and devotion. Their report indicated that

> Mary rewarded our confidence, and we escaped the disaster. The *marabouts*, taken by surprise, expressed their amazement for the fact that the Christians did not die, while their own devotees died at the rate of 50 to 60 per day.[98]

The missionaries' assessment of the incidence of cholera in the city needs to be understood in the context of the ongoing competition between the missionaries and the *marabouts* for souls. Missionaries saw the selective nature of cholera as a message informing the *marabouts* about the Christians' strength in divine resources. They made statements in words as well as in actions (processions, prayers) about their command over supernatural resources. Their objective was to destroy the *marabouts*' reputation and to show the Muslims that the Christians were on the winning side and that conversion to Christianity was the right move. Thus, from the missionaries's perspective, the God of Christians was stronger than the God of Muslims. How did the *marabouts* understand what was going on? Did they view the missionaries' statements and actions as a form of confrontation?

There is no evidence available to answer these questions and others.

Conclusion

The international travel and trade that increased in the second half of the nineteenth century was one of the factors that contributed to the propagation of infectious diseases. Yellow fever remained the most famous of all the diseases. It struck Saint-Louis four times between 1867 and 1900 and presented a formidable challenge to the viability of French rule in Senegal because it disorganized economic

activities and the normal operation of the administration. The widespread and mistaken belief was that yellow fever was the "disease of the white people" and that blacks were immunized against it. Cholera also spread in the framework of international trade and travel. Its major outbreaks in Saint-Louis occurred in 1869 and 1893. Cholera was perceived as the "black man's disease" because the majority of its victims were the city poor who did not have access to clean water supply.

Medical knowledge based on the miasmatic theory shaped the types of measures taken to combat the spread of diseases in the city. Although the diseases were imported, they found in Senegal favorable conditions for their spread: wars and famine in the countryside; problems of sewerage, waste removal, overcrowding, poor housing, and water supply in the urban centers.

The assessment of the situation after the end of outbreaks revealed the French colonial mentality, which was dominated by the need to find scapegoats to blame for the outbreaks: cemeteries; the marketplaces, the African poor, especially the prostitutes; the colonial minorities (Trarzas Moors, Moroccans, Syrians); and the climate of Senegal (hot temperature and rain). Yellow fever and cholera showed that the colonial officials had a ready-made "culture of poverty" explanation to justify the forced removal of the poor from the city center and their relegation at the extremes north and south of the city as well as in the urban villages of Ndar-Toute and Sor. Control measures were inspired by social assumptions and the victim-blaming ideology. Yellow fever in particular provided the colonial authorities with an

opportunity to express the anxiety which Senegal evoked in French imagination: a dangerous land.

Yellow fever also provided an opportunity for the organization of administrative structures that could coordinate the response to disease threats, analyze the causes of new outbreaks of disease, and monitor the efforts to prevent them. The creation of the Hygiene and Public Sanitation Council, the Sanitary Commission, and the Health Office can be understood in this context. In addition, the personal status of the doctor was enhanced within the administration: by 1888 the Head of the Health Office became a member of the *Conseil de Défense* and, in 1892, he became a member of the *Conseil Privé*.

The missionaries interpreted the ravages of cholera in religious not class terms. They believed that the Christian community had received a special protection from the Providence. They did not understand that cholera made its victims mainly among the urban poor because they did not have access to sanitary toilets and potable water. The outbreak of cholera also highlighted the existence of competition between the missionaries and the *marabouts* for souls.

All Saint-Louis's health problems were not caused by its participation in international trade. Other factors were implicated in the incidence of diseases in an urban environment as well, including the *hivernage*, human behavior, and bureaucratic deficiencies. The following chapter will deal with the internal factors that contributed to the spread of diseases in Saint-Louis.

NOTES

1. A.N.S., *Moniteur du Sénégal et Dépendances*, January 1877, p. 16; June 1878, pp. 132, 137-8, 142-3, 147-8, 154-5.

2. A.N.S., *Moniteur du Sénégal et dépendances*, 21 December 1880, police sanitaire, pp. 257-8.

3. J. Sanarelli (Dr.), "La fièvre jaune," *L'Oeuvre Médico-chirurgicale*, no. 8 (April 1898), pp. 3-4.

4. Yellow fever had also ravaged Saint-Louis in 1830.

5. See Jo Ann Carrigan, *The Saffron Scourge: A History of Yellow Fever in Louisiana, 1796-1905* (Lafayette: University of Southewestern Louisiana, Center for Louisiana Studies, 1994); Khaled Bloom, *The Mississipi Valley's Great Yellow Fever Epidemic of 1878* (Baton Rouge: Louisiana State University Press, 19).

6. For more information, see Sir S. Rickard Christophers, *Aedes Aegypti (L.) The Yellow Fever Mosquito. Its Life History, Bionomics and Structure* (Cambridge: The Cambridge University Press, 1960), p. 57.

7. A.N.S., *Moniteur du Sénégal et Dépendances*, arrêté of 30 September 1867, p. 643.

8. A.N.S., *Bulletin Officiel du Sénégal*, 1867, p. 252.

9. A.N.S., H 20 (Senegal), minutes of the Council of Public Hygiene and Sanitation meeting, 10 January 1868.

10. A.N.S., H 20 (Senegal), minutes of the Council of Public Hygiene and Sanitation meeting, 10 January 1868.

11. A.N.S., H 20 (Senegal), minutes of the Council of Hygiene and Public Sanitation meeting, 11 January 1868, pp. 8-10.

12. A.N.S., *Moniteur du Sénégal et Dépendances*, 3 March 1868, Sanitary Commission meeting records, 27 February 1868, p. 35.

13. Id., 9 June 1868, Council of Hygiene and Public Sanitation meeting records, 1 June 1868, p. 91.

14. A.N.S., *Bulletin Administratif du Sénégal*, arrêtés of 18 July 1868, pp. 196-8; see also *Moniteur du Sénégal et Dépendances*, 21 July 1868, pp. 115-7.

15. A.N.F.S.O.M., ministry of agriculture and commerce to the ministry of Navy, 16 May 1878. Cited in Série géographique Senegal XI 34, minutes of the Navy Health Superior Council meeting of 30 January 1879.

16. A.N.S., H 28 piece 2 (A.O.F.): Governor's decision no. 15 of 2? July 1878.

17. A.N.S., H 28 piece 4 (A.O.F.), decision of Governor, no. 17 of 27 July 1878.

18. A.N.S. H 28 piece 5: decree no. 16 of 28 July 1878.

19. A.N.S. H 28 piece 37, *Ordonnateur* to Governor, 6 August 1878.

20. A.N.S. H 28 piece 9 (A.O.F.), Governor's decision no. 20 of 7 August 1878.

21. A.N.S., *Moniteur du Sénégal et dépendances*, 17 September 1878, pp. 203-4.

22. A.N.S. H 22 (Senegal), minutes of the Council of Hygiene and Public Sanitation meeting, 15 September 1878.

23. A.N.F.S.O.M. Séries géographique Senegal XI 34, General Inspector to the Ministry of Navy and Colonies, 20 September 1878.

24. A.N.S., *Moniteur du Sénégal et dépendances*, 15 October 1878, p. 225.

25. A.N.S. H 7 piece 32 (A.O.F.), Governor's decision no. 212 of 20 October 1878.

26. A.N.S. H 7 piece 33 (A.O.F.), Governor's ordinance no. 216 of 22 October 1878.

27. A.N.S. H 28 piece 43 (A.O.F.), Governor's decision, no. 2 of 7 January 1879.

28. A.N.S. H 28 piece 99, Ch. Tellier to Governor, 6 November 1878.

29. A.N.F.S.O.M., Séries géographique Senegal XI 34, minutes of the Navy Health Superior Council meeting, 30 January 1879.

30. A.N.S., *Bulletin Administratif du Sénégal*, 1879, pp. 400-1.

31. A.N.S. H 32 piece no.?, a draft of an unfinished letter.

32. E.A. Eldredge, "Drought, famine and disease in nineteenth-century Lesotho," *African Economic History*, no. 16, 1987, especially pp. 63-8.

33. Archives Paroissiales, Saint-Louis, Journal, entry for 1880, p. 108.

34. A.N.S. H 32 piece 18 (Senegal), list of deaths among the troops; see also *Moniteur du Sénégal et Dépendances*, 30 November 1880.

35. A.N.S., *Moniteur du Sénégal*, 14 December 1880, pp. 251-2; 21 December 1880, p. 257; 28 December 1880, p. 269.

36. A.N.S. H 32 piece 17, ordinance of Governor, 14 December 1880.

37. A.N.S., *Moniteur*, 14 December 1880, p. 252.

38. *Annales*, 1881, p. 55.

39. A.N.S. H 32 piece 14 (A.O.F.), "Epidémie de fièvre jaune à Saint-Louis (23 July - 19 November 1881)" by the *médecin en chef*, 13 January 1882.

40. A.N.S. H 32 (Senegal), minutes of the Hygiene Commission meeting, 25 July 1881.

41. A.N.S. H 32 piece 8, Head of Navy Health Service to Governor, 27 July 1881.

42. A.N.S. H 32 piece 7, mayor to Lane (Law?), 28 July 1881.

43. A.N.S. H 32 piece 36, circular of Governor, 29 July 1881.

44. A.N.S. H 32 piece 10, president of Municipal Commission to Governor, 1 August 1881.

45. A.N.S., *Moniteur*, 2 August 1881, pp. 179-180.

46. Archives Paroissiales, Journal, pp. 110-11.

47. A.N.S., *Moniteur*, 11 October 1881, p. 231.

48. Archives municipales, 2 B 20, Governor to president of Municipal Council, no. 86 of 13 October 1881.

49. A.N.S. H 2 (Senegal), minutes of the Hygiene and Public Sanitation meeting, 7 September 1881.

50. A.N.S. H 32 piece 14, "Epidémie de fièvre jaune à Saint-Louis (23 Juillet - 19 November 1881), by the *médecin en chef*, pp. 2-7.

51. A.N.S. H 32 piece 14, "Epidémie de fièvre jaune à Saint-Louis (23 Juillet - 19 November 1881), by the *médecin en chef*, pp. 14-15.

52. A.N.F.S.O.M., Série géographique Senegal XI d. 41.

53. A.N.F.S.O.M. Série géographique Sénégal XI d. 28, minutes of the *Conseil Privé* meetings of 9 and 10 February 1883.

54. A.N.S. H 38 piece 38, arrêté no. 26 of 12 October 1881. The Commission included: the *médecin en chef* (president), mayor, head of garrison, pharmacist 1 cl. Navy, *médecin* 1st cl. Navy, *médecin* of civilian hospital, port Captain, two notables appointed by the Governor, one colonial administration employee.

55. A.N.S., *Moniteur*, 1882, p. 182.

56. A.N.S., *Bulletin Administratif*, 1885, decree of 23 May 1885, pp. 164-5

57. A.N.S., *Bulletin Administratif*, 1885, decree of 20 November 1885, pp. 488-490.

58. A.N.S. H 24 (Senegal), minutes of the Sanitary Commission meeting, 17 May 1899.

59. A.N.S. H 41 piece 120, decree no. 216 of 20 May 1900.

60. Archives paroissiales, "Journal," entry for 1900, p. 382.

61. A.N.S. H 43 piece 20, Governor general to *Commandant Supérieur, médecin en chef*, police chief, administration service head, 25 May 1900.

62. A.N.S. H 41 piece 3, decision of Governor general of A.O.F., 22 May 1900; see also piece 6, Head of Health Service to Governor general, 27 May 1900.

63. A.N.S., *Bulletin Administratif*, 1900, decree of 27 May 1900.

64. A.N.S. H 41 no piece nb., decree of 10 June 1900.

65. A.N.S., *B.A.*, decree of 10 June 1900; decree of 18 June 1900.

66. A.N.S., *B.A.*, 1900, decrees of 23 June.

67. A.N.S. H 43 piece 15.

68. A.N.S., *B.A.*, 1900, decrees of 23 and 26 July.

69. A.N.S., *Journal Officiel du Sénégal*, 1900, p. 386?

70. A.N.S. H 45 piece 107, lists of deaths; see also "Journal," p. 385-6.

71. Archives paroissiales, "Journal," entry for 11 August 1900, p. 386.

72. *L'Echo de Paris*, Wednesday 5 September 1900, no. 5943, p. 1.

73. A.N.S., *Journal Officiel de l'Afrique Occidentale Française*, p. 371.

74. A.N.S. H 41 piece 213, list of buildings disinfected, 1 November 1900.

75. A.N.S. H 41 piece 287, Head of Health Service to Governor general, 12 January 1901. The Sanitary Commissions from Saint-Louis and Dakar had met the day before to make the decision.

76. A.N.S. H 42 piece 106, administrator to Governor general, 19 May 1900; piece 107, *médecin* 1st cl. to administrator of Tivouaouane, 12 June 1900; piece 108, administrator of Tivouaouane to Governor general, 4 July 1900; piece 114, inhabitants of Tivouaouane to Governor general, 2 August 1900.

77. A.N.S. H 45 piece 234, Cornu to Governor general, 21 July 1900.

78. A.N.S. H 45 piece 235, J. Avrial to Governor general, 21 July 1900.

79. For more information on the "hysterization of women's bodies," see Michel Foucault, *The History of Sexuality*. vol. I. *An Introduction*. Translated from the French by Robert Hurley (New York: Penguin Books, 1976), pp. 104-5.

80. A.N.S., *Bulletin Officiel*, 1900, decree of 1 October 1900.

81. A.N.S. H 27 no piece nb., *médecin en chef*, Henri Rulland, to Governor: "Rapport sur l'épidémie de choléra de Saint-Louis (Sénégal) en 1868," 3 January 1869, pp. 1-5.

82. A.N.S. H 27 no piece nb., *médecin en chef*, Henri Rulland, to Governor: "Rapport sur l'épidémie de choléra de Saint-Louis (Sénégal) en 1868," 3 January 1869, p. 11.

83. A.N.F.S.O.M. Série géographique Senegal XI d. 30, *médecin en chef* a.i., H. Rulland to Governor: "Rapport sur l'épidémie de choléra de Saint-Louis," 3 January 1869.

85. Sister Marie-Ange, p. 79.

86. A.N.S. H 27 no piece nb., *médecin en chef*, Henri Rulland, to Governor: "Rapport sur l'épidémie de choléra de Saint-Louis (Sénégal) en 1868," 25 November 1868, p. 5.

87. Annales, pp. 23-5; see also *Bulletin de la Congrégation*, VII, pp. 131-2, 135-7.

88. A.N.S. H 4 (Senegal), minutes of Public Hygiene and Sanitation Council meeting, 20 June 1890.

89. A.N.S. H 4 (Senegal), minutes of the Sanitary Commission, Saint-Louis, 27 October 1892.

89. A.N.S., *Bulletin Administratif*, 1892, pp. 65-6.

90. A.N.S. H 9 (A.O.F.), piece 77, Head of Health Service to Governor General of A.O.F., no. 296 of 27 November 1895.

92. A.N.S. H 16, Dr. Carpot, "Nosologie ...," 238.

93. A.N.S., *Journal Officiel du Sénégal*, 8 July 1893, pp. 30-2.

94. Dr. Ch. Carpot, "Nosologie ...," p. 238.

95. A.N.S. H 36 piece 2, rapports journaliers du Commissaire de police de Saint-Louis.

95. Ibid.

96. A.N.S. H 16, Dr. Carpot, "Nosologie ...," 238.

97. *Bulletin de la Congrégation*, XVII, p. 205.

98. *Bulletin de la Congrégation*, 1892-3, XVII, p. 205.

CHAPTER 7

INTERNALLY-INDUCED DISEASES AND OTHER 'COLONIAL' DISEASES, 1850- 1914

It is possible, from 1889, to obtain from the surviving hospital records and, after 1896, from the Annual Reports sent to the Governor General, a detailed picture of the trends in the incidence in Saint-Louis of diseases other than yellow fever, cholera, and plague. Before then other data can be drawn from the minutes of the meetings of various Sanitary Commissions/Committees/Councils. They emphasized the main epidemic diseases, such as yellow fever, cholera, and plague, that were spectacular in their signs and symptoms, causing panic and disorganizing economic activities government. They neglected to note competing but "silent" killers which contributed to morbidity and mortality. This chapter will discuss the incidence of "other" diseases in the city and identify the internal factors which contributed to their (re)emergence.

The Data

Hospital records, from 1889 to 1902, and Annual Reports, between 1902 and 1914, provided the data for the study of the patterns of incidence of diseases. Patient statistics from the medical records included the following details: disease

categories and sub-categories, number of admissions, number of persons discharged cured and deaths. The information about the patients in the Annual Reports was classified by race, class, and, in some instances, by gender.

The official classification of diseases included three main disease categories (epidemic, endemic, and "sporadic" diseases) and four secondary disease categories (surgical, venereal, mental and unknown diseases). The epidemics were divided into two categories: a) the imported epidemics (cholera), b) and the locally-induced epidemics (smallpox, chicken-pox, beriberi, flu, dengue fever, and typhoid fever). The endemic diseases were seasonal (dysentery, diarrhea, and other affections of the digestive system) as well as the "sporadic" diseases (bronchitis, pneumonia and pleurisy, arthritis, phthisis, and "spontanous" tetanus).[1] The "surgical diseases" category included wounds and burns, abscesses, various types of tumours, fractures, arthritis and "white" tumours, and traumatic tetanus. The following tables suggest the trends in incidence of major diseases and the changes in the order of the diseases.

7.1 Trends in incidence of 11 major diseases (admissions)

	1889	1891	1893	1895	1898
Syphilis	63	45	31	26	33
Wounds	55	51	21	31	45
Beriberi	30	11	10	49	14
	Fevers 31/7	29/1	18/11	18/4	25/6
Dysentery	27	29	29/76	40	16/5
Smallpox	16	-	-	15	1
Bronchitis	15	14	16	10	7
S.T.Ds.	11	7	5/8	8/7	12/12
Dengue	9	-	-	-	2
Eye inf.	9	1	7	10	5
Skin inf.	7	7	8	7	6
Total					

Sources: A.N.S. H 16, Tableau synoptique des maladies et mouvement des malades, 1889-1898.

The first observation to be made is that the classification of diseases and allergies was very vague and ill-defined. For example, a wide variety of conditions were treated under the disease category of "fevers." They comprized four different categories, each classified as a different disease: a) fever and gastritis, b) pernicious attack (*accès pernicieux*), c) anemia and malarial *cachexia*, d) and bile fever (*accès*

bileux mélanurrique). By 1903 something called "five-day fever," characterized by cyclical fevers, appeared in the reports. It had no cure, but supportive treatment included cold baths and lotions.[2] Also the case for "dysentery" included all types of bowel infections. The sexually-transmitted diseases were reported under two different labels: a) venereal diseases, including syphilis and gonorrhea, b) and urinary trac infections. 50% of the persons admitted to the hospital for venereal diseases had syphilis, which became endemic during the second half of the nineteenth century.

A closer look at the comments accompanying the reports suggests a certain number of other observations. First, the fact that Europeans were admitted at the civilian hospital was an indication that the reputation of the institution had improved. However, their numbers remained small: 19 in 1891, 56 in 1893, 50 in 1895, and 59 in 1898. Second, the majority of patients in those years were admitted in the *hivernage* months, especially in June, July and August, which suggests a normal seasonal pattern of infectious diseases. Third, the low admission rate in a city of 30,000 residents in the 1890s, as well as the type of diseases treated, confirms two recurrent themes in the archival materials.

The first theme was that the *indigènes* had developed immunity for most "tropical" diseases, but that they remained natural carriers of the infectious agents. That was simply a misrepresentation, but the implication of this belief was that they could be denied access to quality health care. The second theme emphasized the resistance of the *indigènes* to biomedicine. Indeed, the widespread belief, corroborated by the *indigènes*'s own behaviour, was that their therapeutic itinerary led

them first to the healers and *marabouts* and only thereafter to hospital-based health care, as in the case of diseases such as syphilis that 'traditional' medicine was unable to cure.[3] Even in the latter case, patients went to the hospital only when the disease had reached the tertiary stage. The same generalization applied to childbirth as well, since as late as 1912, female *indigènes* continued to give birth at home.[4] In general, the majority of the patients were men. Now, let us look at the changes in the incidence of the disease between 1900 and 1913.

7.2 Changing patterns of hospital admissions

	1900	1903	1906	1908	1910
A. Civilian hospital					
surgical	63	134	115	153	179
	-	-	20 (E)	38 (E)	41 (E)
syphilis	37	51	25	44	46
	-	-	1 (E)	-	2
venereal	18	32	26	34	20
	-	-	7 (E)	6 (E)	16
bronchit.	18	30	-	-	-
mental il	15	19	18	11	16
	-	-	3 (E)	4 (E)	4 (E)
urinary i	14	22	-	-	-
intestin	20	62	-	-	-eyes
	7	29	-	-	-
malaria	10	09	05	2	11
	-	-	39 (E)	29 (E)	32 (E)
sporadic	(16)	10	54	95	128
	-	-	32 (E)	31 (E)	64 (E)
birth	3	16	19	35	26
	-	-	13 (E)	15 (E)	23 (E)
tuberculo	2	10	22	-	-
	-	-	7 (E)	-	-
endemics	-	-	6	18	15
	-	-	5 (E)	4 (E)	7 (E)
skin	-	-	-	16	25
	-	-	-	12 (E)	11 (E)

	1900	1903	1906	1908	1910
B. Colonial hospital (Europeans)					
malaria	-	-	236	120	227
sporadic	-	-	119	175	90
surgical	-	-	89	67	75
endemics	-	-	74	49	64
venereal	-	-	28	31	37
skin	-	-	16	8	16
birth	-	-	4	11	15
C. Colonial hospital (*Indigènes*)					
sporadic	-	-	95	103	106surgical
	-	-	64	133	95
endemics	-	-	39	37	55
venereal	-	-	23	25	29
skin dis	-	-	14	22	24
G. worm	-	-	12	13	13

(E) = Europeans

Sources: A.N.S. H 16, tableau synoptique des maladies et mouvement des malades, 1889-1913; A.N.S. 2 G 6/24; A.N.S. 2 G 8/25; A.N.S. 2 G 10/26; A.N.S. 2 G 13/26.

The data show that the "surgical" diseases headed the list of admissions at the European and African hospitals. This category included wounds and burns, abscesses, various types of tumours, fractures, arthritis and "white" tumours, and "traumatic" tetanus. The "sporadic" diseases were the second cause of admissions; they comprized bronchitis, pneumonia and pleurisy, arthritis, phthisis, and "spontanous" tetanus.

In 1904 malaria was the leading cause of morbidity for Europeans. Syphilis and other venereal diseases were widespread but the official records show that they affected mostly the *Tirailleurs Sénégalais*.[5] The fact that the number of admissions for 'surgical' diseases sharply increased from 63 in 1900 to 153 in 1908 suggests that

more *indigènes* were trusting some aspects of biomedicine, especially concerning wounds and venerreal diseases. The tincture of potassium and mercury, and, later on, the navarsin-benzol, used to treat syphilis, were having positive effects. However, Africans did not trust the European midwives, and women continued to deliver at home. In 1910 physicians were under the impression that

> There is little confidence in the European man who assists women in childbirth or in the European midwife and it is only after exploring all aspects of the science (knowledge) of the *marabouts* and local (African) midwives that the indigenous woman comes in emergency to die at the hospital.[6]

In 1913, the last year for which the detailed annual reports are available, medical officials remained dissatisfied with the limited progress made by biomedicine among the *indigènes*, especially since the modification introduced in the public health care policy in 1897, which was followed by the creation of the *Assistance Médicale Indigène* in 1905.[7] How did doctors explain the reluctance of the *indigènes* to come forward for treatment or childbirth? They argued that the main obstacles stemmed from

> the special mentality of the *indigènes*, their indifference, their ever present distrust, the poor condition of the rooms for consultation of the ill, and the misinterpretation of the (medical) prescriptions.[8]

Argument could be made here that the issue was not the "special mentality" of the poor, but rather the effectiveness of biomedicine, the cost of health care, and the very nature of the clinical encounter, where the patient's perspective was neglected.

Three solutions were suggested in order to deal with the problem. The first was to provide the *indigènes* with much-needed sanitary and hygienic education, and to warn them against the "fraudulent and deadly" practices of the *marabouts*,

guérisseurs, and other midwives. The education of the *indigènes* would be provided by doctors such as Dr. Bourrague who would prepare twelve lectures containing the elementary notions and practices of hygiene and prophylaxy to be taught to primary school students. The training of midwives aides and hospital wards aides as well as the extension of the hygiene services to areas where the *indigènes* lived, were also important components of the educational program.

The second solution to the problem was to devalue the importance of the *marabouts* healers, the *guérisseurs(ses)*, and local midwives, regarded as "dangerous malefactors." Indeed, from the physicians' perspective

> our most irreductible adversaries for the extension of our influence in Senegal are the *Marabouts* healers who perceive us as formidable competitors and correctly apprehend that the adoption by the *indigènes* of our therapeutic procedures would definitely consecrate the ruine of their lucrative industry.[9]

The "bad" *marabouts* (healers) repeatedly intimidated the *indigènes* who sought medical attention from the French doctors and the *Soeurs hospitalières* by threatening to use persecution, "*mauvais sorts*," and poison against them. The "good" *marabouts* or religious leaders, were not included in this category.

The identification of the *marabouts* healers as enemies provided the colonial government with a justification for persecuting them. The authorities' reasoning was simply: by using the "wrong" tactics, local healers did not know how to compete; therefore, their persecution was justified. The *marabouts* appeared in the eyes of the French colonial authorities as the last obstacle to the accomplishment of the Civilizing Mission. Already in 1907 medical officials sought to resolve the "*marabout* problem"

by using the *aides-médecins indigènes* (see chapter 5). Six years later, the *marabouts* still revealed formidable competitors.

The third solution to the crisis was to equip each dispensary in the colony with at least six to eight beds and drugs. The objective was

> to provide the patients with the type of health care that would produce important and impressive medical or surgical cures that would have a resounding echo among the *indigènes*, detach them from the *marabouts* and indigenous midwives, and get them to come forward to the dispensary (for biomedicine).[10]

The admission in 1913 at Saint-Louis's hospital of one of the great Muslim clerics, El Hadj Malick Sy, who had a cataract, provided an illustration of what colonial officials expected to gain from spectacular surgical operations. Indeed, in a letter to the Governor of Senegal dated on 12 May 1913, the chief administrator of the *Cercle* of Cayor in Tivaouane explained his expectations about the eye operation as follows:

> As there would be a high interest that it (eye surgery) succeed and that the *marabout* be cared for with a great deal of attention and consideration during his convalescence, I respectfully draw your kind attention to his case. In my opinion and if it is feasible, it would not be a good idea to let him share the same ward with the other *indigènes* and (...) to charge him for the (surgical) operation and subsequent care. <u>We would do there a good propaganda in favor of our interests</u>. (emphasis added)[11]

In this case colonial officials wanted to use biomedicine as a means of promoting French influence in Senegal, as a "tool of empire."

Other initiatives concerned the creation of three new health services: a) a maternity run by midwives and nurses midwives; b) an ayslum for the elderly and incurable at Goree; c) and a team which would conduct research and prophylaxy related to the infectious endemo-epidemic diseases.[12]

Thus, the French medical thinking focused on the *indigènes* as the main source of the problem and on the health services as an intervening variable in the process of care. It failed to address important issues related to the organization of health care delivery (resource use, governmental priorities, and process of care itself) as well as other factors determining the health of the city residents. Despite the progress made in the areas of bacteriology and epidemiology, the French medical officials continued to frame health problems in terms of the simplistic environmental and socio-cultural paradigms. What is an alternative reading of the data related to diseases presented in this chapter, especially the factors involved in their causation?

B. Interpretation

The data from hospital admissions can help the researcher identify the factors which influenced the (re-)emergence and spread of diseases presented in tables 6.1 and 6.2, which were not understood in the same way by the health officials, as seen above. First, *hivernage* was the mosquito season. Rains and floods accompanying the hot weather contributed to mosquito infestation. Each year, mosquito bites during the hot season resulted in the "fevers" (malaria and dengue). Periodic outbreaks of yellow fever also occurred when crews and passengers infected with the virus visited the city and infected the *A. aegypti* mosquitoes, which then spread the disease.

Second, the consumption of polluted drinking water and the problems of sanitation and sewage disposal were responsible for the spread of diseases such as,

typhoid fever, typhus, dysentry and diarrhea. Third, human behaviour and lifestyles were responsible for the high incidence in venereal diseases. Finally, the poor quality of the smallpox vaccine as well as the reluctance of the local population to go forward for vaccination and revaccination contributed to the spread of smallpox in the city.

1. Hivernage-Related Diseases

Early on, as shown in chapter four, French health officials made a connection between the rain and the flooding of July through December and an increase in the number of allergies and other diseases. They correctly observed that most epidemic diseases emerged and spread during the hot season, with its heat and rainfall. However, given the scientific knowledge of the time, health officials were unable to understand the relationship between the change in the average temperature and the multiplication of mosquitoes and other insects and diseases. Their perception of the health problems, shaped by the miasma theory, led to sanitary measures aimed at drying areas of standing water with sand and eliminating the garbage from the city streets. The inefficacy of these measures convinced the authorities to adopt another permanent solution, that is, the repatriation of non-essential European personnel.

Thus, *hivernage* was associated with an increased exposure to and increased number of vector-borne diseases. Missionaries reported the "season of the fleas" during which "it is impossible to sleep"[13] and "fevers" were widespread. Dr. Bérenger-Feraud, who was in Saint-Louis in 1873, observed that, during *hivernage*,

the combination of heat, thirst, fatigue, bad dreams, and mosquitoes seriously compromised the health of city-dwellers. He gave a long list of hot weather-related ailments: fevers, hepatitis, skin diseases, boils, respiratory complaints, diarrhea and dysentry, rheumatism, and ophtalmies (for those who spent their nights outside in the open). The most vulnerable among the Europeans were not the recent immigrants nor those who had stayed for many years in the colony and were in a certain way already "seasoned" or "creolised"; but those who were in-between, experiencing their second or third *hivernage*.[14] Dengue fever and malaria can be used to illustrate the point made here.

Dengue is a typical disease of children but it affects adults as well. Its vectors are the mosquitoes *Aedes aegypti* and *Aedes albopictus*. Population growth, uncontrolled urbanization, and the movement of people into new areas contribute to the (re)emergence of dengue. The mosquitoes vectors of dengue are also associated with shipping and harbours. The incubation of the disease varies between eight and fourteen days. In severe cases of dengue the sick bleeds from the mouth and nose and has difficulty in breathing. There is no cure and no vaccine.[15]

Toward the end of the 1889 *hivernage* many cases of dengue were reported in Saint-Louis. By then, the city's population had grown from 15,980 in 1882 to 20,000 in the early 1890s. A new urban village, Gokhumbaye, was erected on the Langue de Barbarie in 1884 for the urban poor. There was also an influx of Europeans in Saint-Louis itself at the end of the decade.

By early 1890 medical authorities began to concern themselves with dengue fever. The patients complained of high fever and intense body pain, which was very often accompanied by a skin eruption. Meeting on 4 January 1890, the Sanitary Commission agreed that dengue was basically a problem of public and domestic sanitation. The *indigènes* were blamed, since Saint-Louis was a dirty city, where garbage and waste matter, including human waste, could be seen everywhere. The Commission decided that the best way to deal with the immediate crisis was to implement the existing sanitary legislation, which included the following control measures: the clean-up of city streets, docks and beach; the enforcement of the law agaisnt unsanitary housing; prohibiting anyone from building huts outside the framework defined by various decrees; stopping city residents from letting their chicken, sheep, and cows run loose in the streets; and regulating the slaughterhouses.[16]

As in the cases of epidemic diseases, the implementation of sanitary measures was less than complete. There were reasons for this: unmotivated personnel who lacked funds and planning. The result was continuing vulnerability and an easily disruptive environment. Thus by August 1890 a virulent outbreak of dengue epidemic began sweeping through the city. About 1,000 Europeans and thousands of *indigènes* were infected, and the administration and businesses were seriously disrupted. The three available physicians in Saint-Louis were unable to provide adequate care and the *médecin en chef* requested that three additional physicians be sent to the city.[17] On 11

August 1890 cases of dengue fever were reported in Dakar and Goree, disorganizing all the public services.

As seen in chapter 6, since August 1884, hivernage-related diseases (especially yellow fever) had resulted in the imposition of an automatic five-day quarantine on all the ships arriving from the areas located between Sangomar and Gabon between 1 June and 15 December every year.[18] By 1891 the toll of the quarantine on the economic activities was heavy, especially on the operation of the railroad Dakar-Saint-Louis inaugurated in 1885. The measure triggered a debate about how to reconcile commercial and financial interests with the superior interest of public health. In a Sanitary Commission meeting held on 23 July 1891, the head of the Administration Service, de Korsaint-Gilly, suggested the suppression of the quarantine and its replacement by the disinfection of ships and trains coming from infected regions and the installation of lazarettos and cordons sanitaires at the entrance of all uncontaminated centers. The *médecin en chef*, Dr. Ayme, rejected the suggestion and argued that the colony could not afford any construction. At the end of the meeting, 8 out of 11 participants voted in favour of the suppression of trains in case of outbreak of an epidemic disease along the railroad.[19]

Malaria was another serious problem. It was endemic in West Africa and was responsible for great mortality and morbidity, especially during the hot season. Malaria and health problems linked to the consumption of polluted drinking water were responsible for 86% of hospital admissions in 1904.[20] The same year, in an interview with *Le Temps*, Governor General E. Roume identified yellow fever and

malaria as significant problems in urban Senegal. He put the campaign for their elimination on the list of the priorities to be achieved as part of his program of public works. He undertook such specific measures as the disinfection of contaminated houses, the destruction of suspect objects and furniture, the isolation of the sick, the vaccination of children and adults, the elimination of polluted water from consumption, and the creation of a supervising Superior Committee of Hygiene and Public Salubrity based in Dakar.[21]

The new measures reflected changes in medical knowledge following the major discoveries concerning infectious and parasital diseases. In a letter dated on 19 January 1904, Dr. Range, Inspector of the *Services Sanitaires Civils*, found Governor General Roume a progressist politician, "converted to the new theories of spread of some diseases." He admitted that he himself (Dr. Range) became a fervent follower of the new theories only after his recent contacts with the members of the M.M. Marchoux-Simond mission to Brazil, who were investigating the mode of transmission of yellow fever and the role of mosquitoes as vectors of the virus.[22] But Governor General Roume was not alone in this crusade. The Governor of Senegal, Camille Guy, was also an enthousiast of the new theories. On 12 January 1905 he signed a decree prohibiting pools and stagnant water in the cities. Households were ordered to avoid storing water in open containers, which would have become the breeding ground of mosquitoes, and to make sure that there was no stagnant water nor sand and garbage in the gutters near their residences.

The administration also urged residents to equip wash-houses and watering places with adequate drainage. Households and tenants were strongly encouraged to eliminate the mosquito's breeding places by covering water containers, wells and citerns, turning fishermen's boats on the beach upside down, and removing empty cans, discarded pots and pans, and broken bottles. The mayors of Saint-Louis, Dakar, Rufisque, and Gorée were made responsible for the application of the decree.[23] The Hygiene Service was created the same year to deal with the complex issues of public sanitation.

Malaria continued to be a public health problem despite the clean-up campaign and an effort at public education about the role of the mosquitoes in the transmission of the disease, as the following table suggests.

Table 7.3 The incidence of malaria during hivernage from hospital admissions, 1904-06

	1904	1905	1906
Europeans	173	127	253
Indigènes	23	14	10
Total	196	141	263

Sources: A.N.S. H 19 piece 42, Governor to Governor general, no. 543.BM of 15 June 1907.

The data show that between 1904 and 1906 more Europeans were admitted to the hospital for malaria than the *indigènes*. It would be misleading to conclude, however,

that Europeans were more affected by malaria than the *indigènes*. These numbers have to do with the differential access to health care on the one hand, and the resistance of the *indigènes* to biomedicine, on the other. Not all the Europeans were admitted to the hospital either. The majority of the persons who became ill were received at the hospital as outpatients. The 1905 report indicates that there were 739 cases of malaria within the European community, 175 repatriations, and 6 deaths. In 1906 345 Europeans out of a population of 1,261 persons were repatriated, and 10 died from the disease.[24]

The incidence of malaria among the European population in 1910 prompted the Governor of Senegal, Jules Peuvergne, to enforce the regulation of 23 February 1905 fixing two years as the duration of the effective stay of the civil servants in Senegal.[25] Many civil servants stayed in the colony well beyond their term limits. Conventional wisdom believed that the climate of Senegal was "debilitating and unfavorable to Europeans."[26] Here again, the environmental paradigm was used to simplify a complex problem.

The number of cases of malaria tended to increase during *hivernage*, as the following table indicates.

Table 7.4 Trends in the incidence of malaria, Jan-Dec 1911-12

	Ja	Fe	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	D
1911	57	29	35	31	57	32	82	106	181	120	81	40
1912	26	23	32	25	24	26	67	201	155	196	142	96

Sources: A.N.S. Rapport d'ensemble 1912, p. 262.

It appears that the case rate increased sharply in July and reached its peak between August and October before declining in November and December. Two factors can help explain the ravages of malaria in the city. First, six years after its creation, the Hygiene Service continued to focus its attention on the elimination of the mosquito breeding places in the city-island to the neglect of the urban villages of Guet-Ndar, Ndar-Toute, Sor and Goukhoumbaye. In Sor there was a huge pool, which constituted an important breeding ground for the mosquitoes. Second, different administrative units did not pursue the implementation of sanitary measures.

The official explanation for the persistence of malaria was that the majority of the residents who fell sick had spent some time in Sor, where they were exposed to mosquitoes. But a closer look at the sanitary condition of the city itself in July 1911, revealed that it was very dirty. Indeed, a report made by Raumégana, a builder working for the administration, and Maliseye Niang, a delegate from the mayor's office, who monitored compliance with the sanitary measures, indicated that the streets leading to the big arm of the river in the northern part of the city were dead-ends, obstructed by the accumulation of garbage. The border of the river was also transformed into a dumping-ground. From their own account, the filth accumulated there reached the height of one meter above the ground. There was no doubt in their mind that the environmental contamination of the city-island itself constituted a threat to the health of the residents as well as that of the workers involved in the sanitation program under way.[27]

The Governor, H. Cor, therefore signed, on 12 December 1912 a decree completing the provisions relating to the stagnant water in the city. It emphasized the elimination of the mosquito's breeding places, the construction of houses in a way that would keep the mosquitoes out, and the killing of mosquito larvae.[28] How the decree was implemented is not clear because of the wartime interruption in the production of annual reports. However, the outbreak of plague in Saint-Louis in 1918-19, suggests the multiplication of rats following the breakdown of public health measures during the war. The same applies to the pandemic influenza as well.

2. Health Problems from Drinking Water Contamination

Drinking and bathing in polluted water was the second major cause for the high incidence of diseases such as diarrhea, dysentery and other gastrointestinal disorders, and typhoid fever in Saint-Louis.

Saint-Louisians enjoyed an abundance of water only 4 months a year during the *hivernage* season, particularly between mid-July and mid-November. City residents obtained fresh water from two sources: a) the Senegal river, b) and the cisterns. Government cisterns met the needs of the civilian hospital, the Roignat garrisons, and the *Génie* workshops. Since only 100 city dwellers had private cisterns, the remaining 14,900 residents had to rely on contaminated river water. During the eight months dry season, between December and mid-July, water supply was a serious problem,[29] since the river water turned brackish. Table 6.5 shows the transformation

of the quality of water, as measured in a study conducted by Dr. Audibert, chief pharmacist at the military hospital in St.-Louis.

Table 7.5 Changing level of salt in the Senegal river, 1851-2 (per 100 gr)

June 1	July 1	August 1	Sept 1	Oct 1	Nov 1
0,2530	0,0618	0,0640	0,0013	0,0009	0,0016
Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1
0,4915	1,0906	2,0570	2,0325	2,0302	0,6250

Source: Berenger-Féraud, "Etudes sur la Sénégambie," *Moniteur du Sénégal*, 1873, pp. 111-2.

The table shows that the Senegal river water around St.-Louis became fresh in mid-July and could be used safely through December, explaining why Governor Valière fixed, in 1870, the date of 4 January for the distribution of water from a government cistern to civil servants and the military.[30]

During the period of water shortages, the rich utilized the water they had stored in the citerns during the rainy season, while the administration put in service a ship water-tank, which carried water from up stream at the Kassack *marigot* to the city. Ships such as *La Sénégambie* in the 1860s-1870s and *L'Akba* in the 1880s-1890s, represented life and hope for many city residents. Kassack was located near Makana village, 16 kms east of Saint-Louis. The water was distributed to government employees as follows:

Table 7.6 Distribution of water to government employees, 1873

Civil servants and troops	Quantity of water/day
Head of administr & Controler	12 *livres*
Chiefs of corps & services milit. officers & assimilated	8 *livres*
Low-ranked officials	5 *livres*
Low-ranked mil. officers, corporals, troops, sailors, other agents	4 *livres*
Family members of officials	4 *livres*/person
Administration employees	2 *livres*
Total:	35 *livres*

Source: Berenger-Feraud, Dr., "Etudes sur la Sénégambie," *Moniteur du Sénégal et Dépendances*, 14 January 1873, p. 9

Animals owned by the administration and used for transportation received water from this source: 10 to 12 liters of water per day per mule and 12 to 14 liters per horse.[31]

The quantities were insufficient to cover government employees' daily needs. Bathing in particular was a crucial problem. The bath was available at the military hospital between 2-4 pm every day on a fee basis for those who carried an authorization from the head of the Administration Service and a medical certificate.

Table 7.7 The cost of bathing at the military hospital

Service	Cost	Beneficiaries
Partial bath	1fr50	Officers
	2frs	Private individuals
Body	2frs	Officers
	3frs	Private individuals
Shower	1fr50	Officers
	2frs	Private individuals

Source: *Bulletin Administratif*, 1892, pp. 123-4.

The poor relied on wells that they dug outside the city in the dunes in Sor or in the Pointe de Barbarie. The water drawn from these wells was poor in quantity and quality, and the wells rapidly filled with salty water. So the poor continued to bath and wash their clothes and ustensils in the polluted river water. They were known for drinking the "bad water."[32] Yet, it was possible in St.-Louis to buy water from private individuals, as seen in an advertisement published in the *Moniteur du Sénégal et Dépendances* in 1864:

NOTICE

> FOR SALE: Potable water for 1 franc a cask, from the citern owned by Gilbert. Contact Mr. Boudou.[33]

By early 1878 the price of 1 cask or barrel of water had increased from 12 to 15 frs.[34] But the poor could not afford to buy the water. By 1885 some Muslims who could show evidence of a marriage certificate issued by the *Cadi/Tasmir* that they had only one legitimate wife, were allowed to obtain the water distributed by the administration for fr013335105c a liter.[35] How many people qualified to buy the water is not known; but the majority of the poor were excluded for financial reasons.

Civilian prisoners also did not have access to potable water during the dry season. In 1868 the *médecin en chef* observed that the water distributed to the prison population was brackish and contained a large amount of salty ocean water. He recommended that all the prisoners, military and civilian, be equally treated and given water from the cisterns.[36]

Thus, during the dry season, water shortages and the contamination of water supplies were responsible for many cases of typhoid fever, diarrhea, dysentery and

gastrointestinal disorders.[37] Saint-Louisians knew "from experience" that during the "season of the winds from the east" the diseases of the intestinal system as well as a variety of respiratory conditions from the bronchitis/pneumonia/influenza group increased.[38] Saint-Louis's expanding population led to more waste matter being discharged directly into the river and to more exposure to disease. The administration was well aware of the fact that water shortages constituted a bottleneck to urban growth. Efforts to provide the city with reliable and safe source of fresh water were made as early as 1840. Later on, in 1861, Governor Faidherbe attempted to build artesian wells in the northern part of the city. The cost of building a well 250 m deep in order to bring water to the surface was estimated at 54,000 frs. but the appropriate technology was not available in the colony. The construction of the well was suspended pending the arrival of the new machine from France.[39] In 1862 the Inspector of the *Service des Ponts et Chaussées* recognized that

> the lack of water is one of the principal obstacles to the extension of our domination.[40]

The decision to provide the city with a permanent source of clean drinking water by building a waterworks was taken by Governor Pinet-Laprade. In 1866, a year after he took office, he erected a barrage on the Kassack marigot at Lampsar in order to create a man-made reservoir of water measuring 600 m long, 70 m large and 2.5 m depth. The estimated capacity was 8,500,000 cubic meters, which was sufficient to meet city residents' daily needs.[41] The barrage was destroyed by floods.

The 1868 cholera epidemic came as a warning call to the administration to find a permanent solution to the problem of clean water supply. In early 1869 the director

of the *Bureau du Génie* prepared a detailed project for water supply, while the Governor approved. Water would be transported from Lampsar to a pumping station at Khor by means of pumping engines at Makhana and a main aqueduc. From Sor the water would be taken to a high level reservoir and water tank in Saint-Louis from where it would be distributed to city residents through smaller pipes.

Each resident would get at least 100 liters of water per day. The reservoir would be built either on the ground previously occupied by the market, or near the church, or on the Pointe du Nord in the middle of the public garden. The estimated cost of the project was 980,000 frs., and the annual operating expenses were estimated at 19,000 frs. The empty buildings of the old military post at Lampsar would be used to house the maintenance personnel and to store the equipment and fuel for the operation of the pumps.[42]

The project was approved by the *Conseil d'Administration* on 30 June 1869, as cholera struck the city for the second consecutive year. The cost of the project was estimated at 320,000 frs. But Governor Pinet-Laprade's death to cholera on 18 August, put the scheme on hold. The issue of the establishment of a water supply system was again discussed by the *Conseil d'Administration* during a meeting held on 12 July 1870. The Interior Director indicated in his briefing that the execution of the project would require the mobilisation of all the Navy infantry artillerymen, all the *Disciplinaire* personnel, and a section of the *Tirailleurs* batalion. He underlined the fact that the tasks they would perform, that is, digging and filling trenches, laying pipes, and sealing joints, would be detrimental to the health of the Europeans

involved in the project. He also pointed out that the project would not cost less than 800,000 frs., that the administration could only mobilize 590,000 frs., and that, given the war between France and Germany, no funding would come from Paris. The Governor, Valière, recognized that his administration had two options: either to postpone the construction of the waterworks or to execute the project for the amount of 685,000 frs. At the end of the meeting no decision was taken.[43] Nevertheless, the administration sent the Lampsar project to Paris for analysis. In the meantime, flood during *hivernage* seriously damaged the dam built at the Kassack marigot and the reservoir was transformed into a stream; it revealed the vulnerability of the project and raised concern among the decision-makers. A new solution had to be found.

The members of the *Conseil des Travaux de la Marine*, an institution based in Paris, met on 11 October 1870 to discuss the viability of the Lampsar project. They recommended that the administration try to build another artesian well in Saint-Louis, to find ways to supply the Kassack reservoir with water from the upper river for a longer time period, to provide them with complete information concerning the quality of the water from the reservoir, and to put the pumping station at Makhana.[44] Two years passed without any tangible progress made concerning the construction of the project.

In 1872 the *Capitaine de génie*, Gouin, abandoned the Lampsar project and designed a new water supply system focusing on the construction of eight vast reservoirs on Pointe Nord in Saint-Louis that could be covered and filled with the river water during *hivernage* through pumps propelled by the north-west winds. Each

reservoir would have the capacity of 4,000 cubic meters and cost 75,000 frs. He estimated the total cost of the project at 600,000 frs. and the annual operating expenses at 8,000 frs. According to his calculation, each resident would receive 10 liters of fresh water per day for 20 centimes.[45] But Gouin's project, despite the advantages it had in terms of labor and cost, did not find supporters among the decision-makers for reasons that remain obscur.

On 9 January 1873 Governor Valière sent a letter to the Minister of Navy in Paris requesting that an engineer from the service of *Ponts et Chaussées* be sent to Saint-Louis for the establishment of a water supply system at Lampsar. He argued that the cost of maintaining and repairing the damages done to the dam by flood would mount to 8 to 10,000 frs. per year.[46]

The following five years were spent in debates over cost, technology, and funding. Important segments of the city's residents petitioned for a reliable water supply system.[47] In early 1878, the Navy Ministry in Paris, under the pressure of the *négociants* living in France, rejected the most recent Lampsar project presented by the engineer M. Badois, because the cost, estimated at 1,505,000 frs., was too prohibitive for the local administration as well as the municipality. But for "political as well as humanitarian reasons," the Governor decided to keep the Ministry's position secret until further notice. Instead, in order to avoid an open hostility between the business community and city residents and give moral satisfaction to the Saint-Louisians, he requested that the Ministry provide him with an hedge: the submission of the new Lampsar project and the Badois contract annexed to it to the *Conseil des Travaux de*

la Marine for examination. Personally, he believed that there were signs that in the near future the business interests were not going to oppose any longer the execution of the project because they were in the process of demanding the creation of a *Conseil Général* for Senegal. He concluded his letter by emphasizing that the execution of the project would constitute the most important achievement of any administration. The improvement of living conditions would put Senegal on an equal footing with the other colonies.[48]

As part of its internal policy, the administration had to make a complicated decision: to gain time by continuing to give the impression that it was committed to the execution of the Lampsar project. Lacking sufficient financial resources, the Governor turned for financing to the municipality which, since 1872, had the authority to borrow money. When the Municipal Council decided to take on debt, a group of 31 prominent taxpayers sent, on 27 April 1878, a letter of protestation to Brière de l'Isle, in which they argued that they were not consulted by the Municipal Council, as required by article 58 of the decree of 10 August 1872. From the Governor's perspective, based on the stipulations of the article 42 of the law of 18 July 1837, the Municipal Council had the obligation to consult the *habitants* only when the municipal income was below 100,000 frs.[49]

The Governor also spent a great deal of time dealing with the logistics of the project, especially the search for a location for the high level reservoir and the revision of the estimate. The powder-house (*poudrière*) was appropriated to become

the water tank and the initial estimate made by Badois was revised and adjusted. The new estimate of the Lampsar project was 1,675,500 frs.

Table 7.8 The revised estimate of the Badois contract

Labor/Equipment	Cost
Makhana's pumping station	60,000 frs
Buildings	78,000 frs
Machines	180,000 frs
Water transportation	781,237 frs
Accessory pillars at Makana	20,000 frs
Reservoir at Sor	75,000 frs
Reservoir at St.-Louis	75,000 frs
Hydrants/Fountains/Street taps	55,000 frs
General expenses	134,000 frs
Total	1,675,500 frs

Source: A.N.F.S.O.M. Série géographique Senegal XII d. 18 c, Revised estimate (Badois's project), 28 August 1878.

The estimate did not take into account the expenses related to the distribution pipes through the city, the construction of intermediary reservoirs along the distribution network, and the work to be done at the Gorun marigot.

The strategy adopted by the Governor finally paid off. On 2 January 1879, the Ministry of Navy and Colonies in Paris, Vice-Admiral Jaureguiberry, who had served in Senegal as Governor between 1861 and 1863, accepted to back up loans for a water supply system in Saint-Louis and put the project out to bids.[50] On 10 December 1879, the contract was given to J. Le Blanc, engineer and supplier, who committed himself to provide Saint-Louis with a reliable water supply system within a

reasonable time. The initial work now cost 1,100,000 frs.; and additional funds would be needed to complete the reservoir in Sor (80,054.50 frs.), the reservoir in St.-Louis (45,145.50 frs.), distribution systems for Sor and St.-Louis (171,610 frs.), and miscellanous expenses (28,389.60 frs.). The total cost was estimated at 1,463.000 frs.[51]

The news reached the administration in St.-Louis on 20 January 1880, and the happy Governor hastened to communicate it to the population.[52] The administration and the Municipal Council were authorized to borrow money for the execution of the Lampsar project.[53] City residents also learned that in order to accomplish the task with efficiency, J. Le Blanc delegated his authority to Mr. Colot, a local engineer.[54] The decision came at the time when the financial cost of operating and maintaining the ship for water distribution had sharply increased for reasons that are not yet clear; it went from 13,368.56 frs. for 1,386,251 liters of water distributed in 1872 to 47,571.83 frs. for 1,912,051 liters in 1880.[55]

The resolution of the financial question was just one of the many problems with which the administration had to deal. By May 1881 the initial excitement gave way to anxiety. The Lampsar water, measured by Richard, the Navy pharmacist, contained a significant quantity of vegetable debris and other impurities. It did not cook vegetables; beans boiled for two hours with the Lampsar water remained unchanged, while those done with the water from the hospital cistern were well-done. In short, the Lampsar water was unfit for human consumption and for most aspects of domestic use.[56] Some members of the *Conseil Général* argued that the engineers of

Ponts et Chaussées had known that the Lampsar water was not even close to safety standards, but, for selfish or other unknown reasons, they misled the administration to support a project bound to fail.[57] These reactions underscored the tension between the French, who controlled the colonial administration, and the mulattos, who dominated the *Conseil Général* and the Municipal Council and stood for the protection of local interests.

The administration continued to borrow money for St.-Louis's water supply, despite the succession of accusations and counter-accusations. In 1886 the project was completed. The water was taken from Makhana between December and July and from Khor between July and early December. When it arrived, Saint-Louis's residents realized that the water distribution network was incomplete. Certain sections of the city either were deprived of water for long hours during the day or received a small quantity. Thus, 12,000 additional meters of smaller distribution pipes and more street taps and hydrants were needed. The total cost was estimated at 80,000 frs. The urban villages were provided with a few public fountains.[58] But the extension of the water distribution network through the city did not take place overnight. It was accomplished over the course of years and in several stages.

The water itself, between January and April, was pure and contained a small quantity of organic matter, salt, and clay that could be eliminated through filters. But toward the end of the dry season (May-June), samples of the water from four public taps in the city and in the urban village of Sor revealed that the water had become brackish, not drinkable, and loaded with vegetable matter called "*tambalayes*."[59]

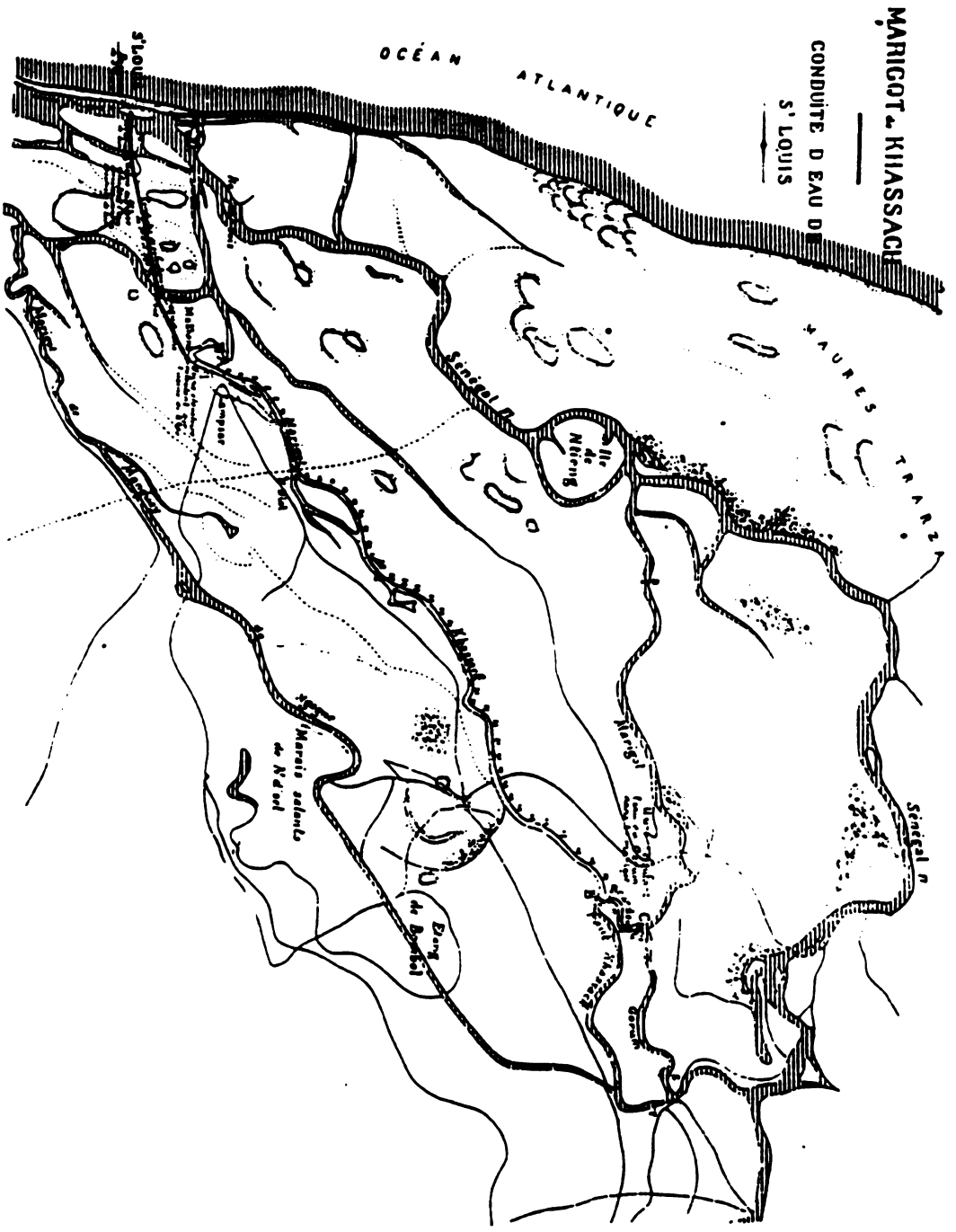


Figure 9. Marigot of Kassak (Source: H14.1, 1901)

The population growth that characterized the 1890s increased the demand for water, resulting in a deficit of approximatively 800 tons. The shortage, mostly toward the end of *hivernage* (early November), obliged the administration to tap the small arm of the Senegal river to supply the military hospital and the Roignat garrison; the big arm of the river to meet the needs of the *Subsistances* Service (a kind of store for the administration); and, later on, to use the "Akba" to bring water from up river near Richard Toll to the city. When cholera struck Saint-Louis in June-October 1893, there was serious water shortages in the city. A study of the quality of the river water taken in November 1895 in front of the military hospital and the Roignat garrison revealed that Saint-Louis's water continued to contain organic matter and other pathogens responsible for diarrhoeal diseases, dysentry, and thyphoid fever.

In order to reduce the high incidence of the diseases of the digestive system, the *médecin en chef*, on 24 November 1895, made a suggestion to the Governor General to divide each cistern into two compartments: the first would contain the water for human consumption from the rain collected during *hivernage* and the "Akba" water supplied during the dry season; and the second compartment would contain river water that could be used for cleaning, bathing, washing, and, if boiled, cooking and *tisane*-making.[60]

But on 13 December 1895 the *commandant en chef des Troupes* made a different suggestion to the Governor general: to equip each military settlement with two separate cisterns, one cistern containing the water to be used for human consumption and the other containing the water for other domestic uses (cleaning,

bathing, cooking, etc.). He recommended that, following the wishes expressed by General Borgnis-Desbordes during his visit to Senegal in 1892, the water be filtered (Chamberland filter type) a practice current in the metropolitan army. He reminded the Governor General that the issue of improving the quality of water through filtration had been brought to the attention of the Ministry of Colonies in 1894 and the UnderSecretary of State for Colonies in early 1895, but it had not been resolved because of the heavy operating expenses related to the use of filter. He concluded that if the administration was determined to preserve the colonial society and the very existence of the European soldiers, it needed to obtain special loans in order to buy the much-needed equipment.[61]

A temporary solution was found in 1896, when the administration decided to avoid utilizing the river water around St.-Louis, which was polluted and contained the pathogens such as *E. coli*, and to supply the city with the water from the rain stored in the cisterns during *hivernage* and with the river water distributed during the dry season.[62]

Thus, almost ten years after the establishment of the water supply system in the city, the demand for clean water was far from being met for natural as well as technological reasons. The water from the Kassack marigot, taken from a pumping station at Makhana since December, was polluted by March: it was loaded with vegetable debris and animal waste, contained a high level of salt, and had a bad smell. It was not even good for sprinkling gardens. By May, the marigot was dry, forcing the pumping engines to shut down for many hours every day. The water

technology used was not well developed in those years. The level of salt in the water often damaged the pipe transporting the water from Makhana, reducing the volume of water transported from 2,200 to 1,800 cubic meters per day.[63] Alternative projects were tried at Richard-Toll and N'dial and abandoned.

In order to find a permanent solution to the problem of deteriorating water quality, the *Conseil Général* approved, in May 1899, an administration plan aimed at improving the water supply system, and authorized a 700,000.00 frs. loan for the building of a new dam at Kilère (150,000 frs.), the repair of the main distribution pipe near Makhana (80,000 frs.), the installation of sand filters at Khor (80,000 frs.), the extension of the distribution pipes network in the city, especially in the Pointe du Nord *quartiers*, as well as in the urban villages of Guet-Ndar and Sor (80,000 frs.), and miscellaneous tasks (55,000 frs.).[64] In a report sent to the *Conseil Général*, the chief of the *Travaux Publics* Service, Malenfant, suggested that the improvement of the quality of the Makhana water necessitated its purification before distribution. Such operation required either the construction of covered reservoirs measuring 40,000 cubic meters and costing 1,800,000 frs. or recourse to a less expensive operation of "*ozonization*" used at Lille and Osborne and costing 350,000 frs.[65]

In the aftermath of the 1900 yellow fever epidemic, the Sanitary Mission sent to Senegal to investigate the causes of the outbreak (see chapter 8) underscored the importance of the provision of clean water to city residents. From their perspective, the poor quality of the Makhana water distributed to residents required two additional operations besides filtering: a) the sterilization with heat, which destroyed the

microbes but not the organic matter, and b) the "ozonization," which destroyed the microbes as well as the organic matter. The permanent solution would be the construction of artesian wells. Following on the recommendation made by the Sanitary Mission, the *Conseil Général* approved the project of connecting the island of Bop-Nkior, located north of St.-Louis, to the city water distribution network. The estimate was 11,000 frs.[66]

How long it took the engineers to complete the renovation of the water supply system is not known. There is evidence that by 1903, the program was still being worked on and that the administration continued to use the ship "Akba" and the barges to transport and distribute the public water. Filters were utilized in the cisterns containing the water for human consumption. Table 6.8 shows the distribution of cisterns in the city.

Table 7.9 The distribution of cisterns in the city in 1903

Location of cisterns	Capacity
Subsistances	350^3
North Roignat	350^3
South Roignat	200^3
Hospital	250^3
Commissariat	50^3
Secretariat General	60^3
Pointe-aux-Chameaux 1	43^3
Pointe-aux-Chameaux 2	50^3
Hôtel Gouvernment	15^3
Gouvernment Général	50^3
School 1	302^3
School 2	153^3

Source: A.N.S. H 15 piece 15, citerns.

The cisterns were supplied with the water from the rain during hivernage and from the river at Dagana, where the river water was fresh all year long; it was transported to the city by the "Akba" along with 2 barges equiped with cisterns and towed by the "Dianlée."

When the data become available in 1908, it appears that the implementation of the program of renovation of the water supply system did not result in an improvement of the water quality. Indeed, on February 1908, one study found the water "highly suspect," not drinkable, and recommended an additional chemical and bacteriological analysis at the bacteriological laboratory of Saint-Louis (built in 1897 in the framework of the extension of the activities of the *Institut Pasteur* in the colonies).

The bacteriological analysis, done by Dr. Thiroux on 21 March 1908, revealed that it was mediocre and unfit for human consumption even after decantation, filtering, or boiling.[67] The Governor urged the director of the *Travaux Publics* Service to study the issue carefully.[68] Two years later, the admission at the hospital of two soldiers from the Roignat garrison with symptoms of typhoid fever led to another study of the water at the garrison. The result indicated that it contained *E. coli* pathogens, suggesting that the filtering system was not efficient.[69]

The quantity of the water did not meet the needs of all the city residents either. In June 1910 the urban poor living in Sor, who supplied the city with vegetables, petitioned the administration for two additional fountains to provide the water needed for their gardens as well as for their domestic use. The administration argued that,

for financial reasons, the operating expenses of the water supply system, especially fuel for the operation of the pumps and labor, could not then be increased.[70] Nevertheless, by 1913 a third pumping station was built at Boudoun, located upstream of the Kassack marigot, in order to supply Kassack with the water taken from the Gorun marigot and, thus, compensate for evaporation. It was operated between January and March every year.[71] Table 7.10 indicates the complicated operation of the water supply between 1906 and 1913.

Table 7.10 Details related to the operations of the water supply between 1906 and 1913

Operation	1906	1907	1908	1909	1910	1911	1912	1913
Makhana dam closed	21 Nov	2 Dec	17 Nov	23 Nov	11 Nov	1 Nov	2 Nov	14 Oct
Boudoun dam closed	30 Nov	5 Dec	23 Nov	26 Nov	16 Nov	6 Nov	21 Oct	15 Oct
Up.Kassack dam closed	15 Nov	9 Dec	5 Dec	20 Nov	27 Nov	5 Nov	1 Nov	3 Dec
Makhana started	10 Dec	18 Nov	16 Nov	5 Dec	20 Nov	29 Nov	16 Nov	27 Sept
Pumping started	1 Feb	24 Apr	7 Feb	25 Feb	20 Nov	1 Mar	26 Jan	24 Jan
Pumping ended	15 Apr	22 May	19 Apr	23 Apr	-	20 Apr	2 Mar	6 Feb
Up.Kassack dam opened	16 Aug	-	21 Aug	15 Aug	25 Jun	23 Aug	24 Aug	20 Sept
Boudun dam opened	13 Aug	13 Aug	-	18 Aug	30 Jun	15 Aug	3 Aug	29 Aug
Makhana power station stopped	26 Jul	20 Aug	4 Aug	5 Aug	15 Aug	22 Aug	28 Aug	8 Sept
Khor power station started	-	-	-	-	-	-	-	-
Makhana dam opened	15 Sept	22 Sept	1 Sept	22 Aug	27 Aug	3 Sept	30 Aug	30 Sept

Source: A.N.S. 2 G 13/26, p. 28.

As the table indicates, the operation of the water supply system was complex. It included a certain number of dams on the Upper Kassack, at Boudoun and Makhana, and three power stations at Boundoun, Makhana, and Khor. It was, nevertheless, unable to provide the needed supply of water. The 1913 *hivernage* came without bringing rain, which reduced the quantity and quality of water taken from the Gorun marigot in the Boundoun. The water distributed in the city was polluted by organic matter, despite filtering with sulfate of alumine done in special pools. The engineers requested the adoption in 1913 of filters using potassium.[72] In any case, the operating expenses, especially the maintenance and repair of the components, were estimated at 117,000 frs.[73]

The poor quality of the water distributed in the city was partly responsible for the cases of diarrhoea and dysentry observed in St.-Louis between 1911 and 1913. The mortality rate was particularly high among the children.[74] Consequently, city-dwellers were required to boil the drinking water in order to reduce the incidence of diarrhoeal diseases.[75] In October 1913 the administration once again created a commission charged with the study of the issue of the water supply in the city,[76] but World War I intervened. Let us turn now to the third factor in the emergence of diseases in the city, that is, human behavior and lifestyle.

C. Urban Interaction and Other Diseases

The third factor in the emergence of diseases in St.-Louis related to human behavior and lifestyle. Prostitution will be considered here.

Sexually-transmitted diseases (STDs) were widespread in St.-Louis. When the statistics became available, it appeared that STDs were the leading cause of consultations and admissions into the hospitals. 7.1 indicates that syphilis was the most important infection among the *indigènes* who sought medical attention from the French doctors and nurses between 1889 and 1898. It was followed by "surgical" diseases. 7.2 shows that the STDs (syphilis, venereal diseases, urinary infections) constituted 50% of the six major diseases affecting the *indigènes* and 30% of the six major diseases affecting the Europeans between 1904 and 1910. How did the administration and medical authorities deal with these diseases?

The incidence of venereal diseases in Saint-Louis provided the colonial administration with an opportunity to intrude into the private lives of city residents, especially the unmarried women, who were blamed for the spread of yellow fever, and associated with venereal diseases and danger. Early on, the administration applied to Senegal the system of registration of prostitutes that was effective in Paris. Alain Corbin (1978), Jill Harsin (1985), and Jacques Solé (1993) have studied prostitution in France and explained the system of registration.[77] A woman became *fille soumise* (tolerated prostitute) by voluntarily registrating at the prefecture of police

or after been forced by the police to registrate. She was subject to periodic medical examination and certain police regulations.

By 1864 the practice was to sequester prostitutes at the civilian hospital until cured. Prostitutes began to manipulate the system of registration for their own benefit. Those who had friends in high places obtained from the mayor the privilege to be treated at their homes by the doctors from the civilian hospital, to the great displeasure of the *médecin en chef.*[78] Other prostitutes declared that they were leaving Saint-Louis and the colony in order to avoid the compulsory medical visits; but they continued to live in the city. In February 1864 only 13 out of 19 officially-registered prostitutes received medical attention.[79]

More *filles publiques* were operating underground. They were partly responsible for the high incidence of STDs observed in the city in 1882. Given the great number of venereal diseases in Saint-Louis, the chief of the Interior Service urged the *médecin en chef* to enforce the legislation concerning the weekly medical visits imposed upon the "girls of bad morals." He requested that a substantial report be sent to him about the current situation of prostitution in the city.[80] In his reply, Dr. Dubouch stated that 5 out of 10 officially-registered prostitutes were present in the city. He emphasized that the major issue concerned clandestine prostitution and that syphilis was responsible for 1 death out of 10 newborn babies.[81] But no radical solution was found to deal with the issue of prostitution.

By 1896 the administration began to concern itself with the impact of sexually-transmitted diseases on the health of the soldiers, who were used to impose the

colonial rule. The *Commandant en chef*, recognizing that prostitutes performed a necessary function, decided to prevent underground prostitution from affecting the health of the soldiers. He asked the opinion of the medical authorities concerning the best way to prevent venereal diseases among the soldiers. He was told that the institution of a "*prostitution surveillée*" (controlled prostitution) was the ideal solution to the crisis. It required a constitution of a pool of healthy prostitutes at the disposal of healthy soldiers; the military doctors would keep them under strict medical surveillance. This solution was suggested again to the *Commandant* of the *Tirailleurs Sénégalais* in 1897. Dr. Réjou recognized that the solution was sound from medical but not from the social and moral point of view.[82] He pointed out that

> It is unquestionable that the establishment of controlled prostitution, either in a closed home or in cards, and including compulsory medical visits with the help of military doctors working under the supervision of the doctor in charge of the dispensary, would be the best preventive measure to take. Thus, it is, from medical point of view, something to advice. But it is not up to the medical service to envisage the moral and social consequences that this controlled prostitution would bring.[83]

Doctors adopted such a radical solution because venereal diseases had become a "real disaster" for the health of the troops. The number of days during which soldiers were unavailable had drastically increased, reaching 297 for the *tirailleurs* and 73 for Navy infantry garrison. But the radical solution did not find supporters among the medical circles nor within the administration. The only acceptable solution was to enforce, with the help of the municipality, the surveillance of the prostitutes and to require soldiers to give the names of their sexual partners for the follow-up measures.[84]

The administration created a special branch of the police dealing with morals named the *Police des Moeurs* or vice squad. The objective was to make sure that registered prostitutes reported for their medical examination, to monitor their activities, and to identify unregistered prostitutes. But the targeted women continued to resist the attempts made by the police to control their lives. For example, in January 1905 51 prostitutes were registered with the police. But by the end of the year, only 16 women were still on the inscription rolls: 14 allegedly got married according to the Muslim law and presented marriage certificates delivered by the *Cadi*; 1 had died; 5 had moved to another location; 2 were deleted from the list following the intervention of the Governor and the Secretary General; 8 had fled the city; and 2 were admitted at the dispensary for leper patients in Sor. Nevertheless, the administration was satisfied with the surveillance measures taken and decided to create similar special police branches in Dakar, Rufisque and other towns along the railroad.[85]

Thus, the tensions and anxieties of colonial rule found an expression in the policing of prostitution. The colonial administration hoped to bring order into disorder. But the system of registration resulted in the increasing "marginalization" of the prostitutes and the creation of what Jill Harsin called "a cliental relationship between the prostitute and the administration."[86] By signing the inscription book, prostitutes lost part of their freedom and they had to adopt new strategies in order to regain control over their lives. Let us turn now to the last factors in disease causation.

D. Smallpox

The poor quality of smallpox vaccination and the reluctance of the population to go forward for vaccination and revaccination contributed to the spread of smallpox in the city. Smallpox, a virus causing *variola major* and *variola minor* in humans, was, in the colonial context, a newly recognized but old disease. It originated either in Egypt or in India and spread throughout the world in the framework of trade and travel. The Spanish army introduced it to the New World in the 16th century, where it devastated much of the indigenous population. Smallpox also made hundreds of thousands victims in Europe in the 17th and 18th centuries. Its incubation period was 12 days. Signs and symptoms usually appeared the ninth day (fever, headache, rash); infection (or death) occurred after the rash appeared on the skin. The virus could survive in clothes and bedding and be transmitted by travelers (soldiers, pilgrims, and traders). The smallpox vaccination was discovered in 1796 by an English physician, Edward Jenner, who used cowpox to immunize people against the disease.[87] How and when smallpox reached West Africa is not known. What is certain is that inoculation or "*variolation*" was practiced before the arrival of the Europeans to protect uninfected people against smallpox infection, and that smallpox spread over vast regions with the movement of people and goods facilitated by the colonial rule.

In St.-Louis, smallpox affected mainly the urban poor, especially the children and migrants new to the city. It was endemic during the nineteenth century, with major outbreaks occurring in 1864 and 1888-9. Contrary to other killers such as

yellow fever and cholera, for which there were no available drugs until the end of the nineteenth century, the administration had smallpox vaccine. But the local population did not adopt vaccination because the indigenous healers also had a remedy against the disease: inoculation or *variolation*, that is, the transfer of smallpox matter from infected persons to the non immune susceptibles through an incision in the arm. Thus, health officials and indigenous healers were engaged in competition in order to promote their respective techniques.

As early as February 1852, vaccination was being promoted in the city. But the majority of the residents resisted this aspect of biomedicine, despite the pressure put by health officials on the mayor in order to get him to convince his constituencies that vaccination would provide them with lifelong immunity.[88] They, then, limited the vaccination program to Fridays between 8 and 10 am and, later on, to Saturdays at 8 am, instead of everyday between 3 and 4 pm. Health officials were then convinced that the only viable solution was to make smallpox vaccination compulsory. In a letter to the Governor, dated 15 April 1862, the *médecin en chef* suggested that school-age children as well as new recruits among the *Tirailleurs* be required to present evidence of smallpox vaccination before being admitted to school or into the army.[89] On 1 May 1862 the Governor decreed that, given the *indigènes*' disregard for the vaccination of their children, no Muslim child would be admitted to a Koranic school without evidence of smallpox vaccination or of previous infection with measles.

Here again, the colonial administration used disease and medicine as a means of social control. It had established a "technology of control", to borrow Michel Foucault's expression,[90] including the school system, which could force important segments of the Muslim population to go forward for vaccination. Education provided the key to social mobility, and the administration imposed vaccination as a condition to attend the French school.

The first time smallpox had posed a credible threat to the city's health was in 1864, when drought and famine in the hinterland forced thousands of country people to seek refuge in St.-Louis. The concentration of people in the city provided an important reservoir of non immune susceptibles and an opportunity for the virus to become endemic. Indeed, there were reports that persons with pustules and crusts on their bodies were seen circulating in the city streets. The *médecin en chef* urged the *Ordonnateur* to take the necessary measures, including the intervention of the police, in order to prevent the disease from spreading.[91]

While there is no evidence of transmission of the disease on a large scale in the city, in February 1870, the smallpox threat was identified in the city. Consequently, the 1862 decree, which applied to Muslim children only, was extended on 28 February to all school-age children. Within three months children had to present evidence of smallpox vaccination or that they had suffered from measles in the past.[92] Another report of smallpox in the city was made in 1883, when the disease hit the children. The sick were isolated and uninfected children were vaccinated.[93]

The most serious outbreak of smallpox occurred in 1888-9, when there was an influx of Europeans and troops in Saint-Louis. It spread in early February 1888 in the towns along the railroad such as Dakar, Rufisque, and Thies. By April about 2,000 persons were vaccinated in St.-Louis; and in May about 600 persons (students, traders, soldiers) were also vaccinated with locally-produced cowpox. The success rate was 66%.[94] Until then, the vaccine came from the military hospital in Bordeaux, but because of an increase in local demand, Dr. A. Doué decided to use cowpox matter to produce temporary immunity against the disease. On 26 May 1888 the Acting Interior Director, L. Turquet (the well-being of the population was among his attributions), wrote a letter to the mayor in which he informed him that the administration prohibited students from attending school if they did not carry a medical certificate issued by the *médecin en chef* testifying that they had been vaccinated or had previously contracted measles and they had no infectious or organic diseases.[95] The administration clearly defined school as the prize and vaccination as the action to take to merit it.

By 10 June smallpox had caused 18 deaths out of 60 cases identified in Sor, 10 deaths out of 24 cases in Ndar-Toute, and 2 out of 36 in Guet-Ndar.[96] The idea of isolating the sick was discussed in March 1888, but the cost of building a quarantine hospital, comprizing five huts, for smallpox patients and for the medical staff was estimated at 4,800 frs, while the available financial resources amounted to 3,000 frs. The project was abandoned.[97] Now, in order to prevent the disease from spreading through the city, a suggestion was made by the Director of the Public Works Service

to build a separate room or ward for the sick in Sor. But when the medical authorities started the operation of identifying the sick, the chief of Sor village, Macau, tried to conceal the disease from them. The sick did not come forward. The people who went to the military hospital for vaccination were the members of the upper classes, the students and the Moors visiting the city.[98] Once more, the *indigènes* rejected an aspect of biomedecine and relied on *variolation* or inoculation as a form of prevention. Their attitude was justified by the fact that the success of vaccination was only 66%. They had observed that some people who were vaccinated, later became ill. In the eyes of the local population, vaccination was not more efficient than inoculation. By the 1890s the resistance to biomedicine was lessened. There were also cases of collaboration between the administration and some indigenous chiefs. For example, in January 1895 a police report indicated that the chief of Guet-Ndar, Malik Gaye (Gueye?), reported to the police chief that two children in his village had contracted smallpox.[99]

Between January and April 1889, smallpox swept through the city and killed 199 victims, including 1 European adult, 1 European child, and the urban poor.[100] The medical authorities reacted by organizing a vaccination campaign of protected children and the revaccination of those who had received a primary vaccination. But the disease did not disappear. To the contrary, by July 1895 there was an increase in smallpox as urban population increased. The authorities attributed the spread of the disease to the expansion of Islam and the technique of *variolation* that accompanied it. They observed that 2/3 of city residents remained indifferent to vaccination and that

only 721 out of 2,000 students attending the Koranic schools were vaccinated.[101] In July the disease subsided. The geography of smallpox indicated the nature of its class base. The European community had suffered only one death.

By 1903 smallpox was endemic along the railroad Dakar-Saint-Louis, especially in Tivaouane where thousands of persons gathered every year for religious ceremonies connected with Tijaniyya and Malik Sy and spread the virus.[102]

Convinced that smallpox was, above all, a children's affliction, and that children formed probably the most vulnerable section of the population, the Governor of Senegal issued, on 18 March 1904, a decree aimed at preventing and combatting the epidemics in the elementary schools. The decree required that schools be provided with clean drinking water (filtered or boiled) and that classrooms and toilets be kept clean. Other measures concerned the permanent ventilation of the classrooms, the elimination of empty cans, the sanitary education of the children (clean cloths, bath, and hygiene), the compulsory vaccination of the children, and the isolation of the sick.

The decree had also provisions concerning the compulsory declaration of infectious diseases. The school personnel were included in the machinery of social control. The school principal had to report new cases to the municipal doctor and the head of the education department, who would contact the Governor and suggest the appropriate sanitary measures to be taken. The sick students would be sent home or to the dispensary and prevented from attending the school; the classrooms had to be disinfected either in-between classes or in the evening after the students had left

school. Teachers were required to provide the parents of the sick students with medical information concerning the precautions to be taken in order to prevent the spread of the infections such as bathing, the disinfection of cloths, and the destruction of textbooks and notebooks. The readmission of the convalescent students was subordinated to the presentation of a medical certificate. 7.10 indicates the duration of the eviction of the infected students from school.

7.11 Duration of the eviction of the sick students

Diseases	Duration of eviction
Smallpox	40 days + destruction of books
Scarlatine	40 days + destruction of books dismissal of students if more cases observed
Measles	16 days + destruction of books dismissal of children less than 6 y. old
Chicken-pox	successive eviction of the sick
Ear infection	10 days
Diphteria	40 days
Whooping-cough	21 days
Eye infections	eviction until healed

Source: *Journal Officiel du Sénégal et Dépendances*, 26 March 1904, pp. 164-5.

It was clear that the medical authorities were now concerned with all the diseases affecting the children, not with smallpox alone. However, smallpox continued to attract the attention of the administration. The decree of 10 June 1905 made compulsory the vaccination of unvaccinated persons and the revaccination of vaccinated individuals who had lost their immunity following primary vaccination. But only the European community, the mulattos and their employees complied with

the health measures. The majority of the *indigènes* continued to resist vaccination during the period under investigation.[103]

Conclusion

Among the internal factors responsible for the emergence of diseases in St.-Louis, four were prominent. The first factor related to *hivernage*. The rain and floods that accompanied it facilitated the multiplication of mosquitoes, which transmitted diseases such as malaria and dengue fever. The second factor was the consumption of polluted drinking water supply that was also linked to the problems of sanitation and sewage disposal. The third factor was related to human behavior and lifestyle, responsible for the spread of sexually-transmitted diseases. The final factor had to do with the competition between inoculation, practiced by the *indigènes*, and vaccination introduced by biomedicine.

The administration in St.-Louis addressed health problems linked to *hivernage* by trying to clean-up the city and by eliminating the stagnant water that formed the breeding ground for the mosquitoes. The solution to the health problems related to the consumption of contaminated water was to establish a water supply system. This task was accomplished over many years; but in 1914 the quality of drinking water was still poor. The spread of sexually-transmitted diseases provided the administration with an opportunity to control the lives of the unmarried women. The

promotion of smallpox vaccination in the city was hindered by the poor quality of imported vaccine, on the one hand, and by the resistance of the *indigènes* to biomedicine, on the other. Another important step toward the reduction of the incidence of diseases in the city was undertaken in the framework of the "great programs" of public works aimed at the improvement of the physical environment of the city between 1904 and 1914, that will be discussed in chapter 8.

NOTES

1. A.N.S. H 16, tableau synoptique des maladies et mouvement des malades, 1889-98.

2. A.N.S. 2 G 3/18 Senegal. Annual Report, 1903, p. 114.

3. A.N.S. 2 G 3/18 Senegal. Rapport d'ensemble sur la situation politique, administrative, financière et économique et sur le fonctionnement des divers services pendant l'année 1903 (Saint-Louis, 1904, 177-16p), in 8o, p. 115.

4. A.N.S. Rapport d'ensemble, 1912, p. 131.

5. A.N.S. Rapport d'ensemble 1912, p. 261.

6. A.N.S. 2 G 10/26, Rapport d'ensemble sur la situation de la colonie pendant l'année 1910. VII. Service Sanitaire, p. 41.

7. See A.N.S. 2 G 8/25, Rapport Annuel 1908, p. 18; see also Rapport Annuel 1912, p. 131; Rapport Annuel 1913, pp. 139, 140-41, 156.

8. A.N.S. 2 G 13/26. Senegal. Rapport Annuel, 1913, p. 158.

9. A.N.S. 2 G 13/26, Rapport Annuel, 1913, p. 162.

10. A.N.S. 2 G 13/26, Rapport Annuel, 1913, pp. 164-5.

11. A.N.S. H 11 (Senegal), Chief Administrator of Cayor in Tivaouane, 12 May 1913.

12. A.N.S. 2 G 13/26. Senegal, Rapport Annuel 1913, pp. 158-78.

13. *Journal*, entry for 2 May 1905.

14. *Moniteur du Sénégal et Dépendances*, 1873, pp. 126-7.

15. World Health Report, 1996, pp. 48, 49, 50; see also J. Lederberg, R.E. Shope, and S.C. Oaks, Jr. (eds.), *Emerging Infections: Microbial Threats to Health in the United States* (Institute of Medicine, National Academy Press, 1992); Sir S. Rickard Christophers, *Aedes Aegypti (L.) The Yellow Fever Mosquito*, *op. cit.*, pp. 57-8, 81-2.

16. A.N.S. H 4 (Série Sénégal), minutes of the Sanitary Commission meeting, 4 January 1890.

17. A.N.S. H 8 piece 124, *médecin en chef*, Michel, to Governor, no. 20 of 9 August 1890; see also "Journal," entry for 11 July 1890, p. 247.

18. See decree of 29 August 1884, esp. art. 113.

19. A.N.F.S.O.M., Série géogr. Senegal XI d. 31.

20. A.N.S. 2 G 4/23 Senegal. Annual Report, 1904, p. 14.

21. A.N.S. H 12 piece 68, n.d., n.a., reporting on the interview with *Le Temps*, 18 February 1904.

22. A.N.S. H 12 piece 71, Dr. Range, Inspector of the Civilian Sanitary Services, to Governor general Roume, no. 34SM of 29 January 1905.

23. A.N.S. H 23 (Senegal), decree of 12 January 1905.

24. A.N.S. 2 G 6/24, Annual Report, 1906, p. 120.

25. The decree of 23 December 1897 had fixed the duration of service at three years.

26. A.N.S., Circular of 15 February 1910, *Journal Officiel du Senegal*, p. 128.

27. Archives Municipales de Saint-Louis, 1 K 53, a report made on 28 July 1911.

28. A.N.S., Arrêté du 12 decembre 1912, *Journal Officiel du Sénégal*, pp. 36-7.

29. Sometimes, the river water remained salty until August. See *Moniteur du Sénégal*, 2 August 1868, p. 218; see also A.N.F.S.O.M. Séries géographique Senegal XII d. 17 b, "Mémoire sur un avant-project de conduite d'eau destinée à l'alimentation de Saint-Louis et de ses faubourgs," 6 April 1869 by the chief of *Bureau du Génie*.

30. Ministère de la Marine et des Colonies. Sénégal et Dépendances, *Bulletin Administratif des Actes du Gouvernement*, 1870 (Saint-Louis: Imprimerie du gouvernement, MDCCCLXXI), p. 8.

31. *Bulletin Administratif*, 1892, pp. 119-20.

32. Archives Paroissiales, Chevilly-Larue, Boîte no. 157, dossier B. Senegambie. Senegal. Gambie. Affaires diverses, 1864-1876, piece 033: "Epidémie du Sénégal," in *Univers*, 23 November 1867.

33. A.N.S., *Moniteur du Sénégal et Dépendances*, 26 January 1864, p. 14.

34. A.N.F.S.O.M. Série géographique Senegal d. 18 a, minutes of the *Conseil d'Administration* meeting, 4-5 Februay 1878.

35. *Bulletin Administratif*, 1885, p. 534; see also the decree of 21 March 1885.

36. A.N.S. H 2 piece 9 (A.O.F.), *médecin* 1 cl, Beaussier, to *médecin en chef*, 29 January 1868.

37. A.N.S. H 20 (Séries Sénégal), minutes of the Hygiene and Public Sanitation Commission meeting, 10 January 1868.

38. A.N.S. H 2 piece 38, *médecin en chef* to Governor, n.d.

39. A.N.F.S.O.M. Série géogr Senegal XII d. 17 b, "Rapport sur le forage du puits artésien de Saint-Louis," by the Inspecteur du Service des Ponts et Chaussées.

40. A.N.F.S.O.M., Séries géographique. Senegal XII d. 17 b.

41. A.N.F.S.O.M. Séries Senegal XII d. 17 b, "Mémoire complémentaire sur le projet de conduite d'eau du marigot de Lampsar à Saint-Louis," by the director of *Ponts et Chaussées*, 12 May 1870.

42. A.N.F.S.O.M. Séries géographique Senegal XII d. 17 b, "Mémoire sur un avant-projet de conduite d'eau destinée à l'alimentation de Saint-Louis et de ses faubourgs," 6 April 1869 by the chief of *Bureau du Génie*.

43. A.N.F.S.O.M. Séries géographique Senegal XII d. 17 b, minutes of the *Conseil d'Administration* meeting, 12 July 1870.

44. A.N.F.S.O.M. Séries géographique Senegal XII d. 17 b, minutes of the *Conseil des Travaux de la Marine* meeting, 11 October 1870.

45. A.N.F.S.O.M. Séries géographique Senegal XII d. 17 c piece 14, "Extrait d'un projet de réservoir à la pointe du nord de l'île de Saint-Louis," by the *Capitaine de génie*, Gouin, s.d. (1872).

46. A.N.F.S.O.M. Séries géographique Senegal XII d. 17 b, Governor to minister, 9 January 1873.

47. A.N.F.S.O.M. Série géographique Senegal XII d. 18, Governor to Ministry, 8 April 1878.

48. A.N.F.S.O.M. Série géographique Senegal XII d. 18 a, Governor to Minister, 22 April 1878.

49. A.N.F.S.O.M. Série géographique Senegal XII d. 18 a, *Habitants* to Governor, 27 April 1878; 3 May 1878; Governor to *Habitants*, 3 May 1878; minutes of the *Conseil des Travaux de la Marine* meeting, 4 June 1878.

50. A.N.F.S.O.M. Série géographique Senegal XII d. 18 c, minutes of the *Conseil d'Administration* meeting, 2 January 1879.

51. A.N.F.S.O.M. Série géographique Senegal XII d. 19, Cahier des charges relatif à l'entreprise des Travaux à exécuter pour l'etablissement d'une conduite d'eau potable à St.-Louis, Paris, 10 December 1879.

52. *Moniteur du Sénégal et Dépendances*, 20 January 1880, p. 9.

53. The decree of 29 May 1880 authorized the administration to borrow 800,000 frs. for the water supply system at the interest rate of 5%; the debt would be reimbursed in 12 years, using the ordinary resources of the colony, especially the taxes on alcohol and customs service. See *Moniteur*, 22 June 1880, p. 116.

54. *Moniteur*, 3 February 1880, pp. 15-16.

55. *Moniteur du Sénégal et Dépendances*, 1873, p. 1; 1881, p. 101.

56. *Moniteur*, 14 June 1881, p. 133.

57. A.N.S., minutes of the *Conseil Général* meeting, 6 February 1882.

58. A.N.S., *Conseil Général*, Recueil des Rapports, 1889, pp. 23 and 25. See also *Bulletin Administratif*, 1889, pp. 26-7.

59. *Journal Officiel du Sénégal et Dépendances*, 28 March 1889, p. 120; 8 August 1889, pp. 291, 301; see also A.N.F.S.O.M. Série géographique Sénégal XII d. 21, Rapport du chef de Service des Travaux Publiques, 30 July 1889.

60. A.N.S. H 15 piece 2, *général de Brigade*, Boilève, to general Governor, 15 November 1895; piece 3, *médecin-major*, Henry Reboul, to *commandant en chef des Troupes de l'AOF*, 12 November 1895; piece 5, *médecin en chef* to general Governor, no. 294 of 24 November 1894.

61. A.N.S. H 15 piece 6, *commandant en chef des Troupes* to Governor general, no. 551 of 13 December 1895.

62. A.N.S. 2 G 1/7, Rapports des chefs d'Administration, 1896: *médecin en chef* to Governor general, 15 July 1896.

63. A.N.S., *Conseil Général*, Recueil des Rapports, minutes of the meeting in May 1899, p. 26.

64. A.N.S., *Conseil Général*, Recueil des Rapports, minutes of the meeting in May 1899, p. 30.

65. *Ibid.*, pp. 33-4.

66. *Journal Officiel du Sénégal et Dépendances*, 29 June 1901, p. 294.

67. A.N.S. H 15 piece 25, Dr. G. Merveilleux to *Commandant Militaire* in St.-Louis, 9 February 1908; piece 29.2, bacteriological analysis by Dr. Thiroux, 21 March 1908.

68. A.N.S. 2 G 6/22, Governor general to Governor of Senegal, March 1908.

69. A.N.S. H 15 piece 54, Dr. Bourret, director of the bacteriological laboratory, to *médecin en chef*, 2 September 1910.

70. A.N.S., minutes of the *Conseil Général* meeting, 31 May 1910, pp. 63, 66-67, 138-9.

71. A.N.S. 2 G 13/35. Service des Travaux Publics, Rapport d'ensemble, 1913, p. 24.

72. A.N.S. 2 G 13/26, p. 228.

73. A.N.S. 2 G 13/26, p. 29.

74. A.N.S. 2 G 13/26. Annual Report, 1913, p. 32.

75. Archives municipales, 2 B 6, *médecin de 1 cl* to mayor, no. 513 of 10 July 1911.

76. A.N.S. H 11 (Senegal), Governor's decision, no. 1568 of 10 October 1913 (modified on 17 March 1914); H 8 (Senegal), Dr. L. Huot to Governor, 19 October 1913; *Journal Officiel*, 16 October 1913.

77. See Alain Corbin, *Les Filles de Noce. Misère Sexuelle et Prostitution aux 19e et 20e Siècles* (Paris: Aubier Montaigne, 1978); Jill Harsin, *Policing Prostitution in Nineteenth-Century Paris* (Princeton: Princeton University Press, 1985); Jacques Solé, *L'Age d'Or de la Prostitution: De 1870 à Nos Jours* (Paris: Plon, 1993).

78. A.N.S. H 2 piece 105, *médecin en chef*, Villett, to *Ordonnateur*, 3 February 1864.

79. A.N.S. H 2 piece 109, *médecin en chef* to *Ordonnateur*, 27 February 1864.

80. A.N.S. H 42 (Senegal), chief of the Interior Service to Dr. Dubouch, 28 September 1882.

81. A.N.S. H 42 (Senegal), Dr. Dubouch to chief of Interior Service, s.d.

82. A.N.S. H 9 piece 160, *médecin aide-major*, Réjou, to *Commandant des Tirailleurs*, no. 1124 of 3-?-1897.

83. A.N.S. H 9 piece 160, Dr. Réjou to *Commandant le Régiment de Tirailleurs Sénégalais*, no. 1124 of March ?, 1897.

84. A.N.S. H 9 piece 159, Colonel Pujol to Governor general, no. 907 of 4 June 1897.

85. A.N.S. H 5 (Senegal), Police chief to Governor (confidential police report), no. 528 of 8 June 1906.

86. Jill Harsin, *op. cit.*, pp. 235-6.

87. See among others, F. Fenner, D.A. Henderson, et al., *Smallpox and Its Eradication* (Geneva: W.H.O., 1988).

88. A.N.S. H 1, *médecin* to *Commandant*, 3 February 1852.

89. A.N.S. H 2 piece 53, *médecin* to Governor, 15 April 1862.

90. Michel Foucault, *History of Sexuality*, *op. cit.*, p. 126.

91. A.N.S. H 2 piece 121, *médecin en chef* to *Ordonnateur*, 30 May 1864; piece 167, *médecin en chef* to *Ordonnateur*, 30 Xe 1864.

92. *Bulletin Administratif*, 1870, decree of 28 February 1870, p. 77; see also H 7 piece 20.

93. A.N.S H 22 (Senegal), minutes of the Sanitary Commission meeting, 30 March 1883.

94. A.N.S. H 39, *médecin en chef* to Governor, no. 244 of 28 May 1888.

95. Archives municipales de St.-Louis 2 B 20, Acting Interior Director, L. Turquet, to mayor, no. 80 of 26 May 1888.

96. A.N.S. H 39, Police deputy chief, Pellissier, to Interior Director, no. 72 of 13 June 1888.

97. A.N.S. H 22 (Senegal), head of Public Works Service to Interior Director, no. 162 of 27 March 1888.

98. A.N.S. H 2 (Senegal), *médecin en chef* to Interior Director, 13 April 1888.

99. Archives municipales 1 K 53, police report, no. 32 of 17 January 1895.

100. A.N.S. H 44 (Senegal), Police chief to Interior Director, 4 May 1899.

101. A.N.S. H 109 (Senegal), Rapport medical, 1 September 1895.

102. A.N.S. H 12 piece 28, extrait du rapport du président de Yang-Yang, February 1903.

103. See A.N.S. H 11, Dr. Huot to Governor, no. 158 of 6 May 1913; no. 156 of 7 March 1914; no. 55 of 22 January 1914.

CHAPTER 8

COPING WITH DISEASES: THE IMPROVEMENTS IN THE URBAN ENVIRONMENT, 1901-1914

French colonial rule in Senegal was seriously challenged by the high incidence of imported as well as locally-induced diseases, the inability of the French doctors to correctly identify the factors responsible for their appearance and reappearance, and bureaucratic deficiencies. Among the diseases that threatened the viability of the colonial rule, yellow fever was the most feared because of its mysterious nature, its spectacular attacks and the panic that it created, the disorganization of all the activities in the colony that it provoked, and the psychological impact it made on people's minds. In the aftermath of the 1900 yellow fever epidemic, which witnessed the paralysis of the administration after Governor General E. Chaudié and the bureaucrats deserted the city, the Ministry of Colonies in Paris decided to address the disease threat.

The bacteriological revolution in the last few years had provided a scientific basis for the adoption of new public health measures or sanitary engineering, to borrow P. Curtin's expression.[1] The emphasis was on prevention, not cure. The social engineering, based on the new medical advances, could be applied to three critical areas.

The first area was the vector control. The connection established by Ronald Ross in 1897 between the mosquito anopheles and malaria called for the destruction of the vector (mosquito), the change in the environment (clearing swamps, street cleaning), the isolation of the infected persons. The second area was the water supply. The research done in 1883 by R. Koch on cholera (*V. cholerae*), by T. Escherich in 1885 on diarrhea (*E. coli*), and by K. Shiga in 1898 on dysentery (*shigellla dysenteriae*) had also made the connection between the bacterial contamination of drinking water and diarrheal diseases. In order to remove the bacteria, the water could be boiled or filtered (slow sand filter, Chamberlain filter, ione purification or chlorine purification). The third and final area was sewage disposal, where the dangerous practice of throwing waste matter into the river could be replaced by the flush toilet or water closet.[2]

In the middle of this health crisis, the authorities (the Ballay, Roume and Ponty administrations) were also concerned with the increasing economic marginalisation of St.-Louis, a city with an underdeveloped port not easily accessible for the ships because of the bar. Indeed, a look at the number of ships which anchored in the four major ports-cities in Senegal in 1903 shows that Saint-Louis came in the third position after Dakar and Rufisque. Out of 1254 ships which arrived in the Senegalese ports from Europe in 1903, 665 anchored in Dakar, 334 in Rufisque, 210 in Saint-Louis and 45 in Goree, as table 7.1 suggests.

Table 7.1 Provenance of ships, 1903

Country	Ships	Country	Ships
France	791	U.S.A.	10
Britain	220	Russia	8
Germany	83	Sweden	5
Portugal	38	Belgium	4
Denmark	35	Italy	3
Holland	27	Norway	27

Source: A.N.S. 2 G 3/19, A.O.F. Inspection des Services Sanitaires civils. Rapport Administratif d'Ensemble, pp. 11-12.

This chapter will examine the new approach adopted by the Ministry of Colonies in order to combat the continuous reemergence and spread of the disease(s) and its effects in terms of city development.

A. The Grall-Marchoux Sanitary Mission (February-March 1901)

The idea of sending a team of doctors and engineers to Senegal to identify the causes of the diseases and suggest the solutions to the health crisis was first put forward by Jacques D'Urville, a journalist, in *L'Echo de Paris* of 5 September 1900. In an article entitled "La Fièvre Jaune au Sénégal," he vehemently attacked Governor General E. Chaudié and his collaborators for their cowardly act of abandoning their posts in the middle of an epidemic crisis. He pointed out that

> The ravages caused by the fever in Senegal are already considerable. It is urgent to send there a special medical mission charged to study the disease and to determine the curative and preventive methods to apply. (...) doctors in Senegal, from what is alleged, hesitate to decide about the means to use in order to combat the disaster. In Saint-Louis, patients are treated with iced water; in Dakar, they make patients sweat abundantly. (...) M. Chaudié did not hesitate to affirm that any white person suffering from yellow fever is in advance condemned.[3]

The suggestion to send a special medical mission to Senegal found supporters within the Ministry of Colonies. On 2 February 1901 the Sanitary Mission received specific ministerial instructions concerning the aim of the mission: to investigate the sanitary situation of the colony and to set up a sanitation program. After obtaining the ministerial instructions, the Sanitary Mission traveled to Senegal to start its investigation. It included Dr. D. Grall, *médecin inspecteur* and president of the Sanitary Mission, Dr. E. Marchoux, member, engineer Jacquerez, inspector at the Public Works service, and Captain Rambaud, from artillery. Dr Grall and Dr Marchoux knew Senegal from having worked there in 1890. Dr. Marchoux was again in Senegal in 1897 where he opened the bacteriological laboratory in Saint-Louis. They understood their mission as a consultative one.

In Senegal the members of the Sanitary Mission visited the garrisons and hospitals in St.-Louis, Dakar, and Goree. They also investigated the sanitary situation in these three cities as well as in Rufisque and in the towns located along the railroad St.-Louis-Dakar, including Thies, Tivaouane, and Louga, where there was a substantial French presence. They spoke with the French traders and the administrative authorities about their understanding of the health problems and the solutions to resolve them. They did not seek the opinion of the *indigènes* and their

leaders such as village chiefs, because they shared with the French colonial and medical officials the basic assumption that the *indigènes* had developed immunity against yellow fever and other diseases, that they were carriers of infectious agents, and that they were used to taking their water directly from the rivers without great danger for their health. Their main preoccupation was with the health of the Europeans. They were convinced that hygiene was one of the most important attributes of the Civilizing Mission and that the colonial rule over vast intertropical regions would be impossible without hygiene. By 6 March 1901 the Sanitary Mission brought its investigation to an end and wrote its final report, including specific recommendations.

The Final Report

The Sanitary Mission based its conclusions and recommendations on the observations the experts made on the ground, the meetings they had with various authorities (the Governor, the chiefs of local services, the presidents of elective assemblies, and the *habitants notables*, meaning *métis*), the knowledge disseminated in the framework of the bacteriological revolution, especially the mode of transmission of the major diseases such as cholera, typhoid fever, dysentery, malaria and yellow fever, as well as on their own speculation. More importantly, the experts had first-hand knowledge of the effects of greater hygiene, pure water, pure food, and sewage disposal on the reduction of mortality rates in the French cities during the second half

of the nineteenth century.[4] They also knew that the city of Vera Cruz, which was the principal foyer of yellow fever in Mexico, became safer after the implementation of the sanitation programs. They also had in mind the examples of other cities in tropical America such as Santos, Campinhas Casa Branca and Rio Claro, where the introduction of sewage disposal and the draining of swamps had resulted in the reduction in the incidence of yellow fever and malaria. They were well-informed experts for the time and they show the racial bias of the time as well.

The final report dealt with three main health sectors: military hygiene (Dr. D. Grall), urban hygiene (Dr. E. Marchoux), and technical issues (drinking water, sewers, rubbish collection, and areas of standing water such as swamps, bogs, and moats) (engineer Jacquerez). The experts first provided a general overview of the ravages caused by the diseases, especially yellow fever and malaria, before presenting detailed recommendations on improving the sanitary situation in the garrisons, on improving the quality of public health infrastructure, on better medical personnel management, on improving the state of St.-Louis's sanitation, and on the provision of amenities to the city. The emphasis here will be on the aspects of the report related to St.-Louis.[5]

With respect to the first health sector, that is, the military hygiene, the Sanitary Mission recommended the isolation of the sick (= their admission at the hospital) as soon as the first signs and symptoms of the disease appeared, instead of keeping them in their rooms or in the infirmary for three or four days before providing them with an efficient treatment. To provide the troops with such

protection required that a certain number of conditions be fulfilled, including the transfer of the military hospital to Pointe Nord near the mosque after draining the swamp, the provision of the hospital with large and clean rooms, enough ventilation and light, and the building of a special hospital or a special room for persons with infectious diseases on the Langue de Barbarie between Guet-Ndar and the Muslim cemetery.

The experts knew that the medical infrastructure alone would be useless if there was no permanent and motivated personnel. They recommended the constitution of a specialized personnel, who could work in the colony for a long time period in order to get acclimated to the local conditions. Before 1900 the majority of the victims were young people who had recently migrated to the colony and not long-term residents like the medical personnel. In order to stay healthy, the personnel would be required to observe strict rules of hygiene, including washing and disinfecting the medical personnel's and patients's clothes and bedclothes. This required the installation of administrative laundries.

The Sanitary Mission paid a special attention to the living conditions of the soldiers. It had observed that soldiers were not sufficiently protected against the arthropod vectors of yellow fever, malaria and other diseases such as mosquitoes, gnats, and ticks that were found in great numbers in the rooms. The best way to protect soldiers would be to prevent them from sleeping on the first floor and to use mosquito-nets around the bed. The experts also recommended the cleanliness of the rooms and the premises of the garrisons. This included the renovation and

enlargement of the rooms, the elimination of the workshops, stores, and other used furniture, which were annexed to the garrisons and were difficult to clean. The Roignat garrison, considered a foyer of infections, was to be discarded as housing for the European troops. In order to avoid overcrowding conditions, new garrisons had to be built on the periphery of the city: infantry garrisons either across the street from the future hospital in Pointe Nord or in Guet-Ndar.

Convinced that the indigenous people were potential carriers of diseases, the Sanitary Mission recommended a form of "sanitary segregation" in order to prevent the European troops from interacting with the African troops (that is, *Tirailleurs*, *Spahis*, and *Conducteurs*). The medical view was that African troops were susceptible of contracting the disease in the urban villages, where they lived, and to transmit it through their clothes, supplies, and vermin, and through shared housing. A limited interaction would be authorized with "an indispensable fraction of their (European) cadres" necessary for the daily running of the service. Another possibility would be to put them in a "military village," like in Cochinchine, in the periphery of the city beyond Ndar-Toute.[6] This case shows that, in the aftermath of the yellow fever epidemic, the "sanitation syndrome", to borrow Maynard Swanson's expression,[7] had reached its climax.

The second health sector, that the Sanitary Mission investigated, was the urban hygiene. The experts recommended the completion of the construction of the docks around the island and the construction of a toilet system equipped with flushing on the small arm of the Senegal river. They also highlighted the importance of the provision

of clean drinking water to the city (see chapter 7). The presence of the urban poor on the city-island very much preoccupied the colonial authorities. The outbreak of the 1990-1 yellow fever epidemic was blamed on the poor city-dwellers, who were already confined to the extremes north and south of the city and the urban villages, where they lived in crowded conditions. The members of the Sanitary Mission must have discussed the fate of the urban poor with the colonial authorities, because one of their recommendations concerned the forced removal of primitive housing (and of the poor) from the island and their transfer in Sor (Bouetville) once the draining of the swamps was completed.

The swamps formed an ideal breeding place for the mosquitoes and they had to be eliminated. The most dangerous swamps were at six locations: a) the northern part of St.-Louis; b) the zone comprised between the railroad, the street leading to the train station, and the river; c) the marigot in Bouetville, including the ground across the street from the church in Sor; d) the ground beyond the train station for merchandise on the right side of the railroad; e) the extremity of the island of Bop-N'Kior; and f) the low grounds between the cemetery no. 2 and the cemetery no. 3 in Sor. They had to be drained. The embankment would involve 1,055,000 cubic meters. The experts also made suggestions concerning the construction of a slaughterhouse in the city and the elimination of the discarded cemetery at the entrance of the Faidherbe Bridge in Sor.[8]

The third and last health sector, that the Sanitary Mission examined, concerned the "technical" issues. With respect to the problem of waste disposal, the Sanitary

Mission recommended the construction of long wharfs along the small arm of the Senegal river equipped with public toilets at their extremity. The "*marseillaises*" (vases used as toilets) containing human waste could also be emptied there. Another recommendation focused on the rebuilding and cleaning of city streets and the collection of garbage and other waste matter. The municipality would simply implement effectively the decree issued by the mayor on 18 January 1882. The Sanitary Mission concluded the final report with an estimation of the total cost of the sanitation program in St.-Louis: the program would cost 4,900,000 frs., without taking into account the cost of improving the water system.[9]

On 4 March 1901 Dr. Grall attended a meeting organized by the *Comité Municipal d'Hygiène*. The participants discussed the recommendations made by the Sanitary Mission and the role the city would play in terms of improving city sanitation and enforcing the existing sanitary legislation. On 6 March 1901, Dr. D. Grall sent a letter to the Ministry of Colonies informing him about the sanitation program to be executed for the city of St.-Louis.[10] The same day he attended a meeting held by the *Comité Colonial d'Hygiène* at the *Hôtel de Ville*. The discussion evolved around the need to abandon the outmoded system of automatic quarantine between 1 June and 15 December (art. 113 of the decree of 29-8-1884) in favor of sanitary measures compatible with modern science, the situation of poor housing, garbage collection, drinking water and the draining of the swamps in the northern part of the city, in Sor, and on Bop N'Kior island.[11] After discussing their findings with the administration and municipal authorities, the Sanitary Mission left Senegal for

Paris. On 4 April 1901 Dr. Grall sent a letter to the Governor General providing him with the details concerning the cost of the sanitation program, as shown in table 7.1.

Table 8.1 Expenses for the sanitation program

Nature of work	Estimated cost
Construction of docks around city	989,000 frs
Construction of docks in Guet-Ndar and Ndar-Toute	900,000 frs
Construction of docks on left bank of Senegal river below Faidh Bridge	270,000 frs
Draining and refuse collection at Pointes north and south of the city	289,000 frs
Draining of swamps in Sor between Upper Sor and big arm of river, incl. various works of drainage	2,110,000 frs
Sewage system on left bank of small arm of Senegal river	300 to 350,000 frs
Total	4,908,000 frs

Source: A.N.S. H 49 piece 52, Dr. Grall to Governor general, 4 April 1901.

On 1 June 1901 Dr. Grall was back to St.-Louis to attend a special meeting of the Commission, presided by Governor General, N. Ballay, charged to examine the recommendations of the Sanitary Mission; his presence was necessary to provide additional information to the Commission.[12]

The interpretation of the main findings of the Sanitary Mission led to a tension between the administration and the municipality. Indeed, in their analysis of the factors which influenced the reemergence of infectious diseases in the city, especially

yellow fever, the experts of the Sanitary Mission had underlined the inability of the bureaucracy to enforce the existing public health measures. From their perspective, yellow fever surprised everyone because

> The sanitary legislation had become loose, if not in its leading ideas, at least in its interpretation and its application; the sanitary equipment was neither completed nor improved according to the directives provided by the decree of 1897 - the personnel in charge of the implementation lacked experience and was understaffed; the lessons from the past were forgotten.[13]

Dr. Grall came hard on the physicians, who did a sloppy job in the diagnosis of yellow fever, the isolation of the sick, and the supervision of the disinfection teams. However, he was particularly harsh on the municipal authorities, who, because of their

> apathy and carelessness, facilitated the spread (of the disease) and created dangers for the future.[14]

Dr. Grall simply repeated what the administration had expressed in other circumstances, that is, the state of city sanitation was the responsibility of the municipality; the latter had to take the blame for the dirty and unsanitary city and the spread of yellow fever epidemic. But the municipality had a different understanding of the issue. In a letter, dated 25 September 1901, to the Governor General and president of the special commission examining the conclusions of the Sanitary Mission, Theodore Carpot, president of the *Conseil Général* and deputy-mayor, vehemently protested against the allegations of negligence made by the members of the commission. He argued that the public health measures were enforced until the day Dr. Lecorre, director of the Health Service, president of the Sanitary Commission and of the Local Hygiene Committee, provided reasons for ending the enforcement of

the public health measures. He reminded the Governor General that the power of the city authorities was not boundless and that the sanitary laws themselves were flawed. He concluded that the true origin of yellow fever and its mode of transmission had to be found somewhere else.[15] These reactions reflected the ongoing conflict between the municipal authorities and the administration, which perhaps had to do with the fact that the mulattoes, who controlled the city government, never really felt accepted by the French families with which they were connected. The French authorities blamed the municipal authorities (mulattoes) for protecting the interests of the local population (election politics) and jeopardizing city's health. After the initial phase of accusations, counter-accusations and denunciation of various officials, the administration and the municipality prepared their responses to the recommendations of the Sanitary Mission.

B. The Response(s) of the Administration and Municipality: Sanitary Laws

Between 1901 and 1912 the administration issued a series of sanitary laws that emphasized the surveillance and rapid response to disease threats. Some were really new, but the majority of them strengthened the previous sanitary laws that were no longer enforced once the epidemic crisis was over. Priority was given to the measures to be taken in case of an outbreak of yellow fever. In a letter dated 30 March 1901, Dr. Grall proposed special measures to be taken for the 1901 *hivernage*: the separation of African troops, "active carriers of the epidemic," from the European troops; and the dispatch of the 2 officers and 60 troops in a camp located at Pointe

aux Chameaux and of the essential cadres in a camp in Ndar-Toute.[16] The measures reflected the "sanitation syndrome" that characterized the colonial mentality. But the *hivernage* came without any serious threat of yellow fever.

On 26 January 1902 Governor General, N. Ballay, died after less than two years in Senegal. He was replaced by E. Roume. Roume's education, received at the *Ecole Polytechnique*, led him to the implementation of a program of *mise en valeur*, including public works such as railroads, ports, and health services. His previous work experience as Director in the Ministry of Colonies had helped him make connections with the financial circles in Paris. Under his leadership the Government General of French West Africa obtained fiscal autonomy and a centralized bureaucracy. Indeed, the decree of 1 October 1902, reorganizing the government general of the French West Africa, provided Roume with more control over the financial resources of the colonies.[17] The execution of the sanitation program in Saint-Louis took place under his Governorship.

The emphasis was on prevention. One of the new forms of prevention of diseases consisted of notifying the authorities about the epidemic diseases as early as possible. It was in this perspective that two important pieces of legislation were enacted in early 1902. The first, the ministerial decree of 7 January 1902, made compulsory the declaration of 14 epidemic diseases and mentioned in passing the responsibility of the medical personnel in reporting the diseases to the Governor, the mayor or their representatives. The list included the following diseases[18]:

1. typhoid fever
2. typhus exanthematique
3. smallpox
4. scarlatina
5. diphtheria
6. military "suette"
7. cholera and by-product
8. plague
9. yellow fever
10. diagnosed dysentery
11. puerperal infections
12. ophthalmia for newborn
13. measles
14. leper

But the decree was not promulgated in Senegal until 11 July 1903.[19]

Another significant development in 1902 was the emergence of the notion of "public health," which became part of the daily vocabulary of the administration officials. Indeed, the law protecting Public Health was enacted on 5 February 1902. It was revised and completed by the decree of 14 April 1904, as explained below.

On 16 July 1903 the administration defined the process of reporting the diseases mentioned above as well as the sanitary measures to be taken against specific epidemic diseases such as yellow fever, plague, and cholera. The key players in the process were the doctors, heads of households, landlords, and *Canton* or village chiefs. They were made responsible for reporting, within 12 hrs, cases of epidemic diseases to the local administrators, mayors, Secretary General of the government, and Director of the Health Service. In cases of emergency, they were authorized to take the necessary sanitary measures such as cleansing, isolation of the sick, quarantine and disinfection, before informing the authorities. The burial of the corpses was to take place within 24 hrs.[20] The same day the mayor, L. Descemet, signed an ordinance with provisions for cleanliness, security and easy circulation on city streets, tranquility and the respect for public order.[21]

The decree of 14 April 1904 strengthened the provisions of the law of 5 February 1904. It addressed the issues of compulsory declaration of epidemic diseases and insanitary housing. One provision of the decree created a Superior Committee of Public Hygiene and Sanitation, which was charged to advise the Governor General concerning the sanitary laws. However, the decree did not resolve all the issues. Instead, it created a general framework and gave the Governor General and the Governors of French West Africa the full discretion to implement it and follow-up on the measures according the specificities of each colony.[22]

In accordance with the provisions of the decree of 14 April 1904, the Governor of Senegal, Camille Guy, initiated a certain number of projects of decrees aimed at creating the administrative units that would recognize the disease threats and implement the necessary sanitary measures. His ideas about the changes to bring about and the anticipated resistance of the population to sanitary laws was contained in a letter sent to the Governor general, E. Roume, on 15 May 1904. In his letter, Camille Guy recognized that, until then, the authorities never really sought the opinions of the members of the existing administrative units, that is, the Hygiene Commission and the Municipal Commission, that their very attributions were ill-defined and their role limited, and that the appointment of new members was never on schedule. The Governor went on to reaffirm his willingness to implement and follow-upon the new public health measures aimed at combating the "infectious diseases and the insect that transmits them," with the help of the representatives of the elected bodies and the notable residents. He committed himself to the organization of the

campaign against the mosquitoes "by applying the measures prescribed by the modern science," which had proven efficient in Cuba, Brazil, and some foreign colonies against the same "disaster." The campaign would focus on the elimination of stagnant water everywhere: on the city streets, in the gardens, the courtyards, and houses, and on the cleanliness of the streets and docks, the draining away of rain water, the elimination of garbage and filth, in short, on the general sanitation. The campaign would be led by the new bureaucratic structures to be established, including the Municipal Hygiene Commissions and the Local Hygiene Committee. The agents in charge of implementing the sanitation program would be sworn in and authorized to penetrate inside private houses. Senegal would be divided into three sanitary districts, each monitored by a Special Commission.

What would be the reactions of city residents to the new measures? In his letter to the Governor General, Camille Guy indicated that the new decree would provoke strong reactions from three categories of people: a) those who considered all the measures taken by the administration as an attempt to reduce their freedom; b) those who would interpret the new measures as the administration's interference in their own affairs and habits; c) and the sceptics, the most dangerous group, who would laugh at and oppose a systematic resistance to the new measures and, thus, attract the sympathy of the naive and unhappy people around them. His targets would be the civil servants, the individuals who believed in the public health measures, and the people of good faith; and his approach would be through persuasion. He admitted that a simple decree would not modify the *indigènes*'s old habits acquired over

centuries and lead them to abandon their prejudices and their contempt for hygiene and hut sanitation. The task to be accomplished would require patience.[23] This evidence shows that, although the resistance came from all the segments of the population, including important sections of the European community, the resistance of the urban poor to sanitary measures was presented as associated with their nature and culture. It was natural for them to be dirty. As late as 1904, the "culture of poverty" argument was still widely used in the official circles.

In his response, dated 18 May 1904, the Governor General advised the Governor not to create new bureaucratic structures, but to simply revamp the existing institutions (committees and commissions) established by the local decree of 15 November 1900 in accordance with the provisions of the decree of 31 March 1897; these institutions were in harmony with the article 15 of the decree of 14 April 1904.[24]

When the Governor submitted to the Local Committee of Public Hygiene and Sanitation, presided by Dr. Merveilleux, his projects of local decrees to be issued in the framework of the decree of 14 April 1904, the suggested provision for the doctor or the sanitary agents to inspect private-owned buildings was rejected by 8 votes against and 3 in favor. The participants found the provision "vexatious and not sufficiently justified" and invited the Governor to rely on the existing decree related to the insanitary and dangerous buildings.[25] Camille Guy, Governor, did not get discouraged by an apparent lack of enthusiasm exhibited by the Governor General and the members of the Local Committee of Public Hygiene and Sanitation. In order to

execute the dispositions of the decree of 14 April 1904, he created, on 5 January 1905, a Municipal Hygiene Service.[26] A week later, on 12 January 1905, he issued a decree related to the stagnant water in the interior of the cities. Residents were required to get rid of the discarded cans, vases and containers in and around their houses; and landlords were required to obtain the authorization of the mayor before undertaking any work of renovation of an old house or building a new house. The decree also set the standards for safe housing.[27] Specific measures were taken concerning stagnant water in Sor and Bouetville.[28]

As *hivernage* approached, Governor Camille Guy promulgated a decree related to the measures to be taken in order to prevent or to stop the spreading of epidemic diseases. Besides the list of 14 diseases requiring a compulsory declaration, the decree had a provision for 8 diseases for which the declaration was optional:

1. pulmonary tuberculosis
2. whooping-cough
3. flu
4. pneumonia and broncho-pneumonia
5. *erysipède*
6. mumps
7. *teigne*
8. conjunctivitis/ ophthalmia

The Health Service provided individuals suffering from these diseases with the disinfection of their homes and furniture.[29] The rest of the decrees published in 1905 focused on various issues such as smallpox vaccination and revaccination for children (20 June),[30] and housing conditions (4 July).[31] On 19 June 1905 the Navy Ministry informed the Ministry of Colonies that, in case of reemergence of yellow fever in Senegal, two ships would be ready in Toulon within 48 hrs to repatriate in five days the non-essential personnel: the *Nive* could accommodate 822 people and the

Shamrock had the capacity to transport 765 passengers. It would cost the colony 30,000 frs., without taking into account the expenses for charcoal and oil.[32] A few weeks before, the Ministry of Colonies had suggested that 1,800 to 2,000 Europeans could be repatriated, including 1,350 troops, 150 women, 50 children to be evacuated during the first convoy.[33]

This testified to the state of preparedness of the administration in case of another epidemic crisis. The colonial authorities were determined to avoid the kind of panic that the 1900 yellow fever epidemic provoked. Governor General E. Chaudié's flight then could be associated with his perception of limited opportunities for escape. Now, the administration wanted to make sure that, by keeping completely open the routes for escape, an outbreak would not lead to panic.[34]

Between 1906 and 1912, the administration promulgated additional sanitary measures aimed at protecting the colony from imported diseases as well as locally-induced diseases. The most important measures were the following: the decree of 30 May 1910 promulgating in French West Africa the decree of 10 May 1909, issued by the president of the Republic in Paris, concerning the sanitary maritime police and the protection of the colonies from imported epidemic diseases;[35] the ministerial circular reducing to two years the term limit for civil servants (15 February 1910);[36] the local circular related to the human trypanosomiasis (29 August 1911);[37] the decree determining the penalties for violating sanitary measures concerning the stagnant water in the cities (18 October 1911); and the decrees related to the stagnant water in

the cities and other towns with European population (18 May 1912; 12 December 1912).[38]

The success of these sanitary laws depended on the underlying scientific assumptions on which they were based and their enforcement. The evidence indicates that the number one preoccupation was the control of mosquitoes through the surveillance of the sanitary situation, the disinfection, the destruction of the breeding sites for the mosquitoes, the use of mosquito-nets, and the installation of the screens to the doors and windows of public buildings such as garrisons, hospitals, and schools. Very often, the huts of the *indigènes* contaminated or suspects as well as the homes of the Europeans that were in bad shape and could not be disinfected were simply burned down. In order to limit the spread of infectious diseases, the separation between the Europeans and the *indigènes* was recommended where possible.[39] This shows that the "sanitation syndrome" continued to dominate the colonial mentality as late as 1911. The public enemy number one was called the *stegomyia* mosquito. The Governor General W. Ponty provided the Governors with specific instructions to combat the mosquito. He urged them:

> to prevent the *stegomyia* mosquito from reproducing; to destroy the larvae if it had succeeded in surviving; to kill the developing larvae; to defend yourselves against it (mosquito) if it was not killed and to prevent it from becoming infectious (...).[40]

The application of sanitary laws was characterized by moments of resistance as well as collaboration. By the end of 1907 there were signs that the campaign against the mosquitoes was helped by the completion of the draining of the swamps on the island and part of Sor. The house-to-house visitation, undertaken in the framework of

the mosquito control program led by the Hygiene Service, resulted in fewer contraventions, which could be interpreted as an acceptation by city residents, Africans and an important section of the European population, of the Hygiene Service. The control measures intensified in November 1912 when cases of yellow fever were reported in Dakar and Kelle, a train station.[41]

There were also instances of resistance to the sanitary measures from the ordinary people as well as from the bureaucrats. For example, in early 1907 the *marabouts* from Guet-Ndar protested against what they considered the violation of their homes by the Senegalese sanitary agents. They were supported in their claims by the municipality, which underscored the persistent tension between the municipal authorities and health officials.[42] City residents also complained that the fees imposed by the tribunals on the violators of sanitary laws were lenient and cases of violation were not reported to the director of the Health Service.[43] There were also reports of corruption among the sanitary agents charged to enforce the sanitary laws. The agent Demba Seck is a good case in point. His area of operation was Ndar-Toute and Guet-Ndar and eyewitnesses testified that he used to receive gifts from residents who did not want their names to be reported as violators of sanitary measures. He was fired.[44] However, the ultimate success of the control measures depended on the elimination of the main breeding sites for mosquitoes constituted by the swamps in the northern part of the city and in Sor, the provision of pure water, and the construction of a sewage system. The following section will address these issues.

C. The Response(s) of the Administration: The Great Sanitation Program

The cost of the draining the swamps in Sor and in the northern part of St.-Louis, as calculated by the Sanitary Mission, was estimated at 1,650,000 francs.[45] The money for this project would come from the 5.45 million francs destined to sanitation in Senegal out of 65 million francs loan contracted in 1903 by the new Governor general E. Roume. The law of 5 July 1903 authorized the government of French West Africa to contract the loan.[46]

The sanitation program was granted to three builders or *entrepreneurs de travaux publics* (Touzet, representing Ed. Coignet; Sallenave; and Martinez) and part of the project was done under the system of "Régie," for which the details were not provided. The most urgent among the projects was the draining of the swamps in the northern part of the island, the closest breeding ground for mosquitoes to the city. It required the transportation of sand from the dunes on the Langue de Barbarie to St.-Louis through barges and rail for 500,000 francs or 2.50 francs per cubic meter.[47] The adjudication for the construction in the northern part of the city and Sor was granted to the *Entreprise* Touzet on 22 March 1905, to the *Entreprise* Sallenave on 29 July 1906 and 18 February 1907, and to the *Entreprise* Martinez on 29 September 1906. The rest of the construction for part of the Pointe Nord and part of Sor was conducted in *Régie*.

On 24 December 1909 the construction in Pointe Nord and part of Sor was completed and the drained area was officially presented to the administration of the colony. The table 7.2 shows the details of the expenses.

Table 8.2 Expenses for the sanitation program until 1909

Year	Touzet	Sallenave	Martinez	Régie	Total
1904	-	-	-	80,495.41	80,495.4
1905	96,203.34	36,612.00	-	136,626.6	269,441
1906	173,855.6	79,625.40	8,412.24	48,518.95	310,412
1907	77,207.58	54,193.42	4,915.56	13,394.81	149,711
1908	-	-	-	4,598.14	4,598.14
1909	-	1,800.00	-	1,540.86	3,340.86
Total	347,266.5	172,230.8	13,327.8	285,174.7	818,000

Source: A.N.S. P 165 piece 36, Travaux Publics. Assainissement des marais de Saint-Louis. Remise à la colonie des travaux faits sur fonds d'emprunt. Situation des dépenses faites, by the Director of the Public Works, 24 December 1909.

The maintenance expenses were estimated at 3,000 francs minimum per year.[48] But the sanitation program for Sor was far from being completed. Also, the program for the sewage system and the docks in the city was underfunded, as table 7.3 shows.

Table 8.3 Expenses for the sewage system and docks in 1906 (frs.)

Description	Estimates	Credits	Expenses
Sewage	200,000	40,000	16,577.94
Swamps	250,000	350,000	310,657.93
Docks	800,000	100,000	59,997.26

Source: A.N.S. 2 G 6/22. Service des Travaux Publics. Rapport Annuel, 1906, p. 13.

The data show that priority was given to the draining of swamps on the northern part of the island at the time when the mosquito control was the principal preoccupation of the administrations of Roume and Ponty (1902-08; 1908-15). The credits provided for the three projects were below the estimates, and all the credits made available were not even spent during the year. The work was eventually accomplished by 1909.

After the completion of the sanitation program on the Pointe Nord, health officials realized that the health of city residents depended also on the draining of the remaining swamps in Sor and the construction of the city's sewage system.[49] A certain number of initiatives can be understood in this context. For example, in 1910 the Hygiene Service was authorized to extend its area of mosquito control to include Sor.[50] By then, it had created three antimosquito brigades. The brigade no. 1 operated since 1905 in the city under the supervision of an *agent de police*. The brigades nos. 2 and 3 were operational only in 1911: the brigade no. 2 controlled Guet-Ndar and Ndar-Toute and it was led by a *gendarme*; and the brigade no. 3 monitored Sor and was supervised by another *gendarme*. There was no brigade for the urban village of Gokhumbaye. Besides the sanitary agents, prisoners were used to participate in the implementation of the decree related to the stagnant water in the city.[51]

A project of the construction of the sewage system within 15 months for the cost of 210,000 francs was also under examination in 1910.[52] Until then, city

residents continued to throw waste matter, including human waste, into the river, thus, increasing the risk of bacterial contamination.

In the meantime, the *Entreprise* Sallenave obtained the authorization to extract 8,000 cubic meters of sand on the Langue de Barbarie for the embankment of the docks in the north and south of the city.[53] In 1911 the administration received an offer from the *Compagnie Française de l'Afrique Occidentale* to drain, at its own expenses, the swamps on its concession located southwest of the domain occupied by the railroad company in Sor.[54] The same year, the *Entreprise* Touzet was involved in the building of the docks in the northern part of the city.[55]

When, in 1912, Governor General W. Ponty contracted 65 million francs loan for various public works projects, he provided money for sewage disposal and vector control, as the following table indicates.

Table 8.4 Expenses for sanitation program in 1912

Projects	Estimates (francs)
Sewage/St.-Louis	88,392.86
Swamps/St.-Louis	818,602.35
Sewage/Dakar	1,835,999.00
Sewage/Rufisque	220,000.00
Swamps/Rufisque	810,000.00
Total	2,773,994.21

Saint-Louis received 88,392.86 francs for its sewage system and 818,602.35 francs for the draining of swamps.[56] But in a letter to the Governor General, dated 28 May

1912, the Governor of Senegal, H. Cor, argued that, according to the experts, the lie of the land in the city did not allow an easy execution of the sewage system and that 261,000 francs would be used to drain the swamps in Sor and to provide more land to city residents. He suggested that the city would be better off with a modest system of wharf latrines built on the small arm of the Senegal river.[57]

The following year (1913) people connected with the municipal authorities expressed their dissatisfaction with the ways in which the administration was enforcing the sanitary laws. Indeed, on 4 August 1913 Dr. L. Huot sent a letter to the Governor informing him that the Local Hygiene Committee members, a group presided by the mayor (J. Devès) and dealing with urban hygiene, wished to see the draining of the swamps in Sor completed as soon as possible and the enforcement of the decree of 13 January 1905 done with moderation until the swamps in Sor were drained. The request of the Committee members was motivated by the fact that the mosquitoes in Sor transmitted malaria and not yellow fever, and that the dangerous mosquitoes responsible for the transmission of yellow fever, the stégomyas, were highly domestic and lived indoors or near human habitation.[58] In other words, given the fact that the breeding grounds for mosquitoes on the city-island were eliminated, the Hygiene Service did not need to lead an aggressive antimosquito campaign in the city, but in the urban villages instead. From the perspective of the Committee members, malaria seemed to be less dangerous than yellow fever.

The pressure exercised by the Local Hygiene Committee members on the Governor could also be justified by the presence in 1913 in the city of around 100

displaced fishermen and other poor residents from Guet-Ndar and Ndar-Toute, who were made homeless by the floods that destroyed their neighborhood in April 1912. The Committee members were aware of the reports from the Public Works Service indicating that about 250,000 francs were still needed to complete the work in Sor before displaced people as well as the surplus population (*population flottante*) could be accommodated.[59] By 1914 the displaced people were eventually granted some concessions in Sor. But the outbreak of the First World War interrupted the sanitation program as well as other public works projects.

Conclusion

In the aftermath of the 1900 yellow fever epidemic, which disorganized the economic activities and the government, the Ministry of Colonies sent a mission of inquiry to Senegal to investigate the causes of the reemergence of yellow fever, to examine the health conditions in the colony and to suggest appropriate solutions.

The Sanitary Mission found that the city's health problems had to do with poor living and housing conditions, overcrowding, environmental contamination due to the lack of drainage and sewage system, the poor quality of drinking water, the existence of swamps and other breeding sites for mosquitoes, and the interaction between the Europeans and the *indigènes*. The Mission proposed emergency measures to be taken in case of the reemergence of another yellow fever epidemic and a sanitation program, including the draining of the swamps, the fight against the *stegomyia*

mosquitoes, the construction of a sewage system, the construction of docks, and garbage collection.

The administrations of E. Roume and W. Ponty borrowed money for the public works projects, including the sanitation programs. The first part of the project was accomplished between 1903 and 1909, when the spatial lay-out of Saint-Louis was transformed thanks to the draining of the swamps and the construction of portions of the docks. The sanitation program in Sor and the urban villages of Guet-Ndar and Ndar-Toute continued until 1914, when it was interrupted by the First World War.

The sanitation program had contributed to the reduction of the incidence of diseases transmitted by the mosquitoes such as yellow fever, malaria and dengue fevers. It had reduced the exposure to garbage and other waste. But it had failed to provide city residents with clean drinking water and a sewage system, which would have helped reduce the incidence of the diseases of the digestive system. The sanitation program was first implemented for city residents living on the island (civil servants, business community, troops and those assimilated to them) before being extended to the urban villages. For example, the Hygiene Service, created in 1905, operated for six years on the island. It included the urban villages in its program only in 1911. The widespread belief that local people were immunized against some diseases can explain that attitude.

The implementation of the sanitation program provided insights into the bureaucratic structures and the tension between the administration and the municipality. The administration expected the city government to implement various

sanitary laws but without giving the mayor the means of action (funds, personnel) until 1905, when the Hygiene Service was created. The administration blamed the mayor for its own deficiencies. Laws and their application also helped understand the goals of the administration and the reactions of the local population, ranging from collaboration to resistance.

NOTES

1. Philip D. Curtin, *Death By Migration. Europe's Encounter with the Tropical World in the Nineteenth Century* (Cambridge: Cambridge University Press, 1989), pp. 111-25.

2. See P. Curtin, *ibid.*; Mathis Constant, *L'Oeuvre des Pastoriens en Afrique* (Paris: P.U.F., 1946), pp. 10-14; Bruno Latour, *The Pasteurization of France*, *op. cit.*, pp. 122, 142-4; A. C. Twaddle and R. M. Hessler, *A sociology of Health*. second ed. (New York: Macmillan Publ. Cy, 1987), pp. 9-11.

3. *L'Echo de Paris*, no. 5943, Wednesday 5 September 1900, pp. 1-2.

4. For more information, see, among others, Samuel H. Preston and E. Van De Walle, "Urban French mortality in the nineteenth century," *Population Studies*, 32.2 (July 1978), pp. 275-97.

5. A.N.S. H 48 pieces 1, 2, 3, Mission Sanitaire du Sénégal. Rapports 1901: Rapport d'ensemble; Hygiène militaire; Rapport partiel: hygiène urbaine; Rapport technique, Résumé et Conclusions.
See also H 49 piece 41, Mission Sanitaire: Rapport sommaire, by Dr. Grall.

6. A.N.S. H 48, Mission Sanitaire du Sénégal. Hygiène Militaire, by Dr. Grall, 89 p.

7. Maynard Swanson, "The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony, 1900-1909," *Journal of African History*, XVIII, 3 (1977), pp. 387-410.

8. A.N.S. H 48, Mission Sanitaire du Sénégal, Rapport Partiel: Hygiène Urbaine, by Dr. Marchoux, p. 37.

9. A.N.S. H 48, Mission Sanitaire du Sénégal, Rapport Technique, 28 May 1901, by Jacquerez, 53 p.

10. A.N.S. H 49 piece 9, Dr. Grall to Ministry of Colonies, no. 30 of 6 March 1901.

11. A.N.S. H 49 piece 12, minutes of the *Comité Colonial d'Hygiène* meeting, 6 March 1901.

12. A.N.S. H 49 piece 66, minutes of a special Commission meeting, 1 June 1901.

13. A.N.S. H 49 piece 41, Mission Sanitaire: Rapport Sommaire, s.d., by Grall.

14. *Ibid.*

15. A.N.S. H 49 piece 67, Theodore Carpot, president of the *Conseil Général* and deputy-mayor, to Governor general, N. Ballay, 25 September 1901.

16. The new forms of prevention of diseases consisted of notifying the authorities about the epidemic diseases as early as possible. It was in this perspective that two important pieces of legislation were enacted in early 1902. The first, the ministerial decree of 7 January 1902, made compulsory the declaration of 14 epidemic diseases.

17. *B.A.*, 1903, pp. 361-2.

18. *B.O.*, 1903, p. 401.

19. *B.A.*, 1903, pp. 401-4.

20. *B.A.*, 1903, pp. 401-4.

21. *B.A.*, 1904, pp. 272-8.

22. A.N.S. H 23 (Senegal), decree related to the stagnant water, 12 January 1905.

23. *B.O.*, 1905, p. 281.

24. *B.A.*, 1905, pp. 562-571.

25. **B.A.**, 1905, pp. 741-4.

26. *B.A.*, 1905, pp. 649-766.

27. A.N.S. H 13 piece 5, Ministry of Navy to Ministry of Colonies, 19 June 1905.

28. A.N.S. H 52 piece 2, Governor general to Ministry of Colonies, no. 605 of 16 May 1905.

29. For the details on panic, see Neil J. Smelser, *Theory of Collective Behavior* (New York: The Free Press of Glencoe, 1963), especially pp. 131-169.

30. *Journal Officiel du Sénégal*, 1910, pp. 70-9.

31. *Journal Officiel*, 1910, p. 128.

32. *Journal Officiel*, 1911, pp. 742-3.

33. *Journal Officiel*, 1912, pp. 36-46.

34. A.N.S. H 60, Governor General, Clozel, to Governor, no. 611 of 3 April 1912.

35. A.N.S. H 54, no piece number, Governor general to Governors, 30 November 1911.

36. A.N.S. H 23 (Senegal), decree of 17 November 1912.

37. A.N.S. H 32 (Senegal), Annual Report 1907. The tension between the municipal authorities and the health officials had to do with the fact that the first believed that health officials were severe in the implementation of sanitary laws and that such severity was not justified, while the latter attributed the poor state of city sanitation to the inability of the municipal authorities to enforce city ordinances.

38. A.N.S. H 13 piece 196, Governor to Governor general, 26 May 1913.

39. A.N.S. H 8 (Senegal), head of Health Service to Governor, no. 42 of 15 February 1913.

40. A.N.S. P 165 piece 10, minutes of the *Comité des Travaux Publics* meeting, 9 November 1903. The cost included the elevator engine (90,000 frs), the draining of the swamps in Sor (1,121,000 frs), the draining of the swamps in the northern part of the city (297,634.43 frs), and miscellaneous expenses (141,909.87 frs).

41. Margaret O. MClane, "Economic expansionism and the shape of empire," *op. cit.*, p. 194.

42. A.N.S. P 165 piece 8, director of Public Works to Governor, 22 July 1904.

43. A.N.S. piece 39, Rapport du chef d'arrondissement Michas, no. 1206 of 15 December 1909.

44. A.N.S. 2 G 6/24, Annual Report, 1906, pp. 145-7.

45. A.N.S. 2 G 10/26, Annual Report 1910, p. 60.

46. A.N.S. H 60 (Senegal), Bouet to Inspecteur des Services Sanitaire Civils, no. 18 of 3 May 1912.

47. A.N.S. P 166 piece 3, Travaux Publics. Emprunt de 65 million. Assainissement de la ville de Saint-Louis.

48. *J.O.*, 1910, p. 586, decree of 25 July authorizing Sallenave to extract sand on the Langue de Barbarie.

49. *J.O.*, 1911, p. 491, decree making public the adjudication of the draining of a piece of land in Sor.

50. *J.O.*, 1911, p. 407, decree of 2 June authorizing Touzet to occupy a piece of land for the duration of the work.

51. A.N.S. P 166 piece 31, Finance director for French West Africa to Public Works inspector, no. 930 of 7 June 1912.

52. A.N.S. P 166 piece 32, Governor of Senegal to Governor general, no. T 674 of 28 May 1912.

53. A.N.S. H 8, Dr. L. Huot to Governor, 4 August 1913.

54. A.N.S. P 165 piece 84, Governor to Governor general, no. ga 278 of 12 March 1912.

Conclusion

A number of scholars have written about the political and economic history of Saint-Louis, a colonial port-city located at the mouth of the Senegal River. Most studies are dominated by what can be considered as an elite approach focusing on important individuals (Governors, military officers and merchants) and groups such as the Maurel and the Devès families, who dominated the political life of the city and the colony. But little attention has been given to the medical and social history of the city. René Collignon and Charles Becker's bibliography on health and population, entitled *Santé et Population en Sénégambie dès Origines à 1960* (1989), shows that a certain number of studies related to Saint-Louis were written by colonial officials, physicians, and missionaries. However, they are primarily descriptive and emphasize epidemiology and health efforts of the colonial administration. Although they contain a wealth of information, they do not study the epidemics in relation to the political, social, and economic realities of the time. In a scholarly article entitled "Une Epidémie de Fièvre Jaune à Saint-Louis du Sénégal (1881)", Claude Pulvenis (1968) has tried to go beyond the simple description of disease and health efforts in his study of yellow fever, which struck both Saint-Louis and among the troops involved in the conquest of the Upper Soudan in 1881, but his analysis is limited in scope to one epidemic crisis. Only a political economy approach to health problems, using insights

from the Central Place theory and the Network System, can help understand the epidemics in relation to the political, social, and economic realities of the time.

The study covers an important period in Saint-Louis's history. Between the mid-nineteenth century and the First World War, important changes took place in the city: a) the reform of the social system in 1848 with the liberation of slaves; b) the organization of the colonial administration and city government; c) the suppression of monopoly companies the same year, which contributed to the transformation of Saint-Louis from a commercial entrepot to a colonial port-city in the framework of international trade; d) and the extension of the built environment. The growth of the city resulted in population growth, the concentration of too many people on a small island, environmental contamination - despite the emergence of new *quartiers* -, and disease. The development of the city's spatial lay-out came about as the authorities were looking for solutions to the city's health problems. The First World War corresponds to a setback in the process of growth of Saint-Louis.

The available evidence used to examine the history of Saint-Louis's experience with disease and sanitation includes the archival materials, published sources, literary evidence, and oral sources. The archival materials and published sources, generated by an expanding bureaucracy, show that the priorities of the colonial government, between 1850 and 1895, focused on the health of the European community (troops, officials and bureaucrats, and merchants) and those associated with them (colonial minorities and unmarried women). After 1896 the priorities shifted from military concerns to the general welfare of all the segments of the colonial society. The

Sisters' archives provided information concerning the urban poor, who formed the majority of their patients, the medical infrastructure, and the process of health care. The Fathers' archives shed light on the reactions of the city-dwellers to the outbreaks. Researchers need to approach these sources without loosing sight of the value judgements and myths that characterized the colonial mentality. Oral sources help understand the reactions of the Africans to the sanitary measures taken by the colonial government and their theories of disease and health. They must be submitted to the same critical evaluation as the written sources.

City's health problems were due to two sets of factors, external and internal. The external factors related to the importation of diseases (epidemic and others) in the framework of international trade. Yellow fever, imported from tropical America, struck the city in a spectacular way in 1867, 1878, 1880-1, and 1900. Cholera ravaged the city in 1868-9 and 1893. Both diseases made many victims. The internal factors had to do with the inadequacies of public health policies, especially concerning housing, waste removal and water supply. Indeed, in order to meet their needs in water, city residents relied on the river water during the rainy season (July-December), and on wells and rain water from the cisterns during the dry season. The consumption of polluted drinking water was responsible for a great number of cases of diseases of the digestive system. The lack of a sewage system in the city led residents to throw excrement into the river, thus contributing to the bacterial contamination of the river. In the absence of an organized garbage collection system, the accumulation of the waste matter at the streets corners resulted in the

environmental contamination. Sometimes, the accumulation of garbage prevented ships from anchoring. Horses and mules used for transport left excrement on the streets, which smell terribly. Stagnant pools in the city and outlying areas became the breeding sites for mosquitoes and other arthropod vectors, which were responsible for malaria, dengue fever, the children's diseases, etc. Overcrowding provided opportunities for infection with respiratory and enteric diseases, and other serious sanitation problems. Urban interaction contributed to the spread of sexually-transmitted diseases, especially syphilis. The poor quality of vaccine and the reluctance of the Africans to go forward for smallpox vaccination could explain the spread of smallpox.

The medical authorities poorly understood the etiology of diseases and attributed the diseases to "miasmas," cemeteries, *hivernage* (rainy season), the "evil" wind, city market, drying of fish and skins, and to the colonial minorities (Moors, Moroccans, Syrians) and the *indigènes*, especially their living conditions and activities. Unmarried women, who were in contact with the soldiers, provided convenient scapegoats. The miasma theory, which dominated medical thinking until the 1900 yellow fever epidemic, argued that diseases were caused by "bad odors" coming from the swamps, polluted water and putrefying matter.

The French health officials made some correct observations, such as the associations of hot season and the epidemics ; but they were unable to make a connection between the proliferation of insects, mosquitoes, or fleas during the hot season and disease.

In order to address the disease threats, the authorities issued a great number of laws, decrees, and ordinances, which represented a compromise between the laws issued in France and the local realities. They were often abandoned once the epidemic diseases disappeared. These "solutions" were not effective. City markets and the cemeteries were transferred outside of the city. Another solution used to reduce the incidence of internally-induced diseases was to eliminate the *indigènes*, thought to be carriers of infectious agents and responsible for the environmental contamination, from the center of the city and to confine them to the extremes north and south of the city. The forced removal of the poor from the city center took place over decades. It expressed the "sanitation syndrome" that characterized the colonial mentality until as late as 1913.

Another method used to combat imported diseases was the quarantine of ships and passengers arriving from contaminated or suspect regions. It failed to protect the city and the colony from imported diseases. By 1884 an automatic quarantine was in place for ships arriving from the South between 1 June and 15 December, no matter the sanitary situation of the port of departure. It disorganized the economic activities and merchants protested against the measure, underscoring a conflict between the interests of commerce and the interests of public health. The inefficiency of the quarantine left the administration with one choice: the repatriation of the "non-essential personnel" every year during the *hivernage*. Other measures related to the disinfection or fumigation of suspect contaminated houses, postal mail and packages,

and merchandises carried by trains and ships, furniture, public and private buildings; and the painting of suspect contaminated houses with lime.

Sanitary and public health measures promulgated in Senegal represented different things to different segments of the urban society. Some individuals within the European community saw the measures as an invasion of their freedom and privacy. The businessmen opposed the quarantine laws because they disrupted the economic activities and were not effective. Sanitary measures represented a compromise between the interests of commerce and those of the public health.

The reactions of the *indigènes* to biomedicine were situational, depending on the nature of the disease or illness. Indigenous patients were likely to seek medical attention from French doctors for cases that could be cured fast (e.g., wounds, burns) or for cases that local healers failed to cure (e.g., venerreal diseases, especially syphilis). They relied on the local healers and midwives for childbirth; and they went to the hospital only in complicated cases. The *indigènes* were reluctant to go forward for smallpox vaccination because they had their own solution, that is, the inoculation or *variolation*. By introducing compulsory smallpox vaccination as a condition for the admission of children at the French school system, the colonial administration hoped to force parents to accept this aspect of biomedicine. However, the local population enthousiastically welcomed the initiative taken by the administration to introduce the water supply system and sewerage in the city. Thus, the indigenous population made choices according to their own needs and interests.

The organization of bureaucratic structures to deal with health issues also took decades to complete. The decision-making process concerning the health issues involved the *médecin en chef* and various sanitary commissions and committees, where the representatives of different administrative bureaus and the mayor participated. The colonial administration led early efforts to find a solution to the problem of water supply, but the water technology was not appropriate until the 1880s. The municipality had limited financial resources and focused on the clean-up of city streets and on the enforcement of the ordinances related to the construction of houses, which often provoked a conflict between the administration and the municipality.

The official declaration of the epidemic disease, which did not correspond with its real appearance, was always followed by panic and an initial phase of disorientation, then came the flight and the search for scapegoats: the *indigènes*, especially the prostitutes or "public girls". The Catholic missionaries emphasized divine vengeance against the sinners and the heathen. Thus, sanitary measures and epidemics underscored people's conceptions of health and disease; and disease revealed the urban society to itself: unequal development, prejudices (concern with finding social or cultural "origins" for disease patterns), heterogeneity and tensions across *quartiers*, social classes, religions, races and ethnic groups, but also, to some extent, homogeneity and solidarity within them.

The 1900 yellow fever epidemic revealed that there was a gap between the state of scientific knowledge and the public health measures taken to fight the

emergence and spread of diseases such as yellow fever (quarantine, disinfection, demolition of homes and buildings). By 1900 the bacteriological revolution provided a better understanding of the etiology of diseases. Medical officials knew that yellow fever and malaria were transmitted by the mosquitoes and that the solution was not the quarantine but the elimination of the mosquitoes, their natural breeding sites (swamps and stagnant pools), and human-made sites (open containers, discarded cans and bottles). They also knew that dysentery and other diarrheal diseases were caused by infectious agents such as bacteria (*V. cholerae*, *E. coli*), and other gastroenteritis viruses, and that the primary source of infection was fecal contamination of water supply.

In the aftermath of the 1900 yellow fever epidemic, the Ministry of Colonies in Paris sent a mission of inquiry to Senegal to investigate the causes of the reemergence of yellow fever. The Sanitary Mission found that there were lapses in the public health measures and hygiene. The members of the mission suggested a sanitation program aimed at promoting the health of city residents in the areas of military hygiene, urban hygiene and technical issues (drinking water supply, vector control, and sewage disposal).

The administration took specific measures aimed at improving the quantity and quality of water from Makana. The technologies of slow sand filter, and sulfate of alumina and potassium purification were utilized to purify the water but without success. Boiling water in order to kill the bacteria remained the most viable solution throughout the period under investigation.

In order to eliminate the mosquitoes in the city, the administration undertook to clear the swamps in the Pointe Nord and in Sor by granting contracts to three businesses. The work was eventually completed for the northern part of the city and part of Sor between 1903 and 1909. The construction of docks and the drainage of the remaining swamps in Sor slowly continued; they were not completed when the First World War started. The Hygiene Service was created in 1905 in order to conduct the antimosquito campaign. It was involved in the activities of indoor and outdoor spraying of chemical products, the elimination of human-made breeding sites for mosquitoes, and the enforcement of the sanitary laws. But it concentrated its activities on the city-island and did not reach the urban villages until 1911, when it created two additional antimosquito brigades. But the issue of the introduction of a sewage system in the city was not resolved by 1914 for technological reasons. City residents continued to throw human waste into the river. Thus, the only relative success of the sanitation program was the antimosquito campaign, which contributed to the reduction of the level of exposure of city residents to mosquito bites and filth.

The irony is that, when Saint-Louis's health problems were finally seriously addressed, the city lost its preeminence to Dakar, which became the capital of French West Africa in 1902. But one needs to keep in mind that Saint-Louis is a good case of thinking and action about health. The city was equipped with waterworks at the time when many towns in France still relied on river water.

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