"JOHANSEN VILLAGE HANSENARIUM"

A Thesis submitted in partial fulfillment of the requirements for the Degree of Master in Architecture at the Massachusetts Institute of Technology.

15 August 1958.

SUBMITTED BY

CHARLES A. BLONDHEIM, JR.

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15 August 1958

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Dear Sir:

In partial fulfillment of the requirements for the Degree of Master in Architecture, I submit my Thesis entitled "Johansen Village Hansenarium".

Sincerely yours,

Charles A. Blondheim, Jr.
The winter was cold the summer was hot but Maxie my wife kept typing
ACKNOWLEDGEMENTS

I wish to express my sincere thanks and appreciation for their criticism, advise, and inspiration.

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ABSTRACT

"Johansen Village Hansenarium"

As my thesis, I have chosen to study and design a Hansenarium, or hospital for the treatment of persons having Hansen's disease.

This thesis is a continuation of my undergraduate thesis at the Georgia Institute of Technology. At Georgia Tech, I fully developed the patient facilities but because of the size and complexity of the problem, plus the limited time, I was able to handle the non-patient facilities in site plan only. For my masters thesis I intend to develop fully the non-patient facilities, thus completing "Johansen Village Hansenarium."

A hospital for Hansen's disease patients is quite different from a general hospital. It is a self-contained unit and is somewhat isolated. Because of the contagiousness of the disease and for reasons of control, this type of hospital is divided into two main sections: the non-patient area consisting of the administration, housing for personnel and guests, dining, recreational and religious facilities, shops, warehouses, and services; and the "colony" consisting of the infirmary, clinic, quarters for patients, and religious, social, educational, and recreational facilities for patients. The Hansenarium which I am developing has facilities for 200 patients and a staff of 125.
I chose to design a Hansenarium for my undergraduate thesis quite by accident. I had been searching for some time for a thesis subject and while home visiting one weekend, I picked up a book to read, having no idea what it was about. "The Second Miracle", I soon learned, is the story of the author's life, Peter Greave. While in India, before World War II, Mr. Greave contracted Hansen's disease and after much physical and mental torture, he was taken to a convent in a remote part of England. Here, with fifteen other "lepers", he lived for eight years, until the disease was arrested. His descriptions of the simple and clean, but inadequate colony, stirred my imagination, and I found myself mentally designing a Hansenarium.

Shortly after finishing the first book, I read another, "Who Walk Alone" by Perry Burgess, about an American who had Hansen's disease. My problems were over: I decided conclusively to design a H. D. hospital for my thesis.

By way of clarification, I will define and explain some of the terms used in this report. The word "leprosy" is not deemed desirable by many doctors and most patients. The word seems to suggest something unclean and brings fear to the mind of most who hear it. A magazine "The Star", published by the patients of Carville, has been a crusader for the abolishment of the word "leprosy" in favor of "Hansen's disease. Going along with this thought, I did not want to call my thesis a leper.
colony or leprosarium. So I wrote to Stanley Stein, editor of "The Star", and asked him what to call my thesis. He suggested a new word "Hansenarium", taken from Hansen's disease.

To express the feeling of a community rather than a hospital, I decided to call the Hansenarium a village and to name it after the well-loved retired Director of Carville, Dr. F. A. Johansen. Hence, "Johansen Village Hansenarium".

There is only one Hansen's disease hospital in the continental United States, at Carville, Louisiana, which has facilities for 400 patients, but there are an estimated 2000 cases in our country. Experts fear that many of the service men who fought in the Far East during the second World War and the Korean conflict, contracted the disease, which will cause the need for another Hansenarium in the United States.

Hansen's disease is a severe illness that effects the nerves and skin. Most dictionaries and encyclopedias would probably say this and stop, but the psychological and emotional problems brought on by the disease, I think, after seeing it first hand, are equally serious. Trying to solve, or at least helping solve, these problems has been a major goal in my design of a hansenarium. I will use bright, cheerful colors, have beautiful landscaping. The buildings should be elegant, exciting, and beautiful, with bright and cheerful colors. The landscape should be enhancing, the place of worship
inspirational and inviting. The hospital should be like a home and community rather than an institution. This applies not only to the patient facilities but the staff facilities as well. The staff members are giving up some things themselves to help others. They live in an isolated place and work with a very depressing disease. Prime importance should be placed on social, recreational, religious and cultural activities—for both patients and staff. I will create the physical atmosphere and in turn this physical environment will help to control the "mental environment".

A leprosarium, or "leper colony" is a hospital for the treatment of Hansen's disease. In many ways leprosaria are like general hospitals. They have hospital rooms for patients with upset stomachs or pneumonia, they have treatment rooms, they have nurses, doctors, and dining facilities. But there are also several important factors which makes a leprosarium different from a general hospital.

First, a leprosarium must be to some extent isolated. It should be rather near a population center, but not in the middle of it. It should be, then, "in the country", and somewhat self-sustaining. Carville has its own water supply, generates its own electricity, and has quarters for many of the personnel.

Secondly, there are two major areas. One area consists of the "colony". This is where the patients live, work, play, eat, and receive medical treatment. In this second area patients are not allowed. This area contains
such things as the administrative section, nurses quarters, personnel dining and quarters. There is a strict line, and patients are not allowed to cross it.

A third factor which makes a leprosarium different from a general hospital is that the patients are there for a longer period of time. The usual **minimum** stay of a patient is three years and many stay all their lives.

To the patient in such a hospital, what to do with his time is a great problem. Therefore, there is a great emphasis on the recreational, educational, social, and religious programs. Much money, effort, and floor area are devoted to such activities in leprosaria.

There is a much larger research program, because so little is known about the disease. Carville has three large laboratories in which some of the foremost doctors on Hansen's disease in the world have studied and worked.

The disease affects patients in many different ways and the facilities must be many and varied. Some are blind, some cannot walk, some are mental cases, some have badly crippled limbs, some even have limbs missing.

The leprosarium which I shall design shall be to a large extent, patterned after the hospital at Carville. This is the finest hospital of its kind in the world: clean, up to date, well-kept, and most adequate. Though in the actual design I saw many things which could be improved upon. I think that the general scheme, the placement of elements, and the organization are quite good.
The organization chart given me at Carville runs roughly parallel to the building elements, and I think it is well worth mentioning. Under the Medical Officer in Charge (MOC) or the director are three major branches: the Clinical, the Community Activities Branch and the Administrative Branch. For ease in presentation and for further clarification, the building elements are divided into only two sections: (1) The non-patient facilities and (2) The "colony" facilities. The non-patient facilities parallels the administrative branch and the "colony" facilities parallels the clinical and the community activities.

I went into this subject knowing absolutely nothing, and I think that now I have a good, general knowledge, not only of the disease but also of the architectural aspects of a Hansenarium.
Leprosy is a disease which has been known since ancient times. It is known to have been endemic in Egypt, India, and China as early as 4200 B.C. Descriptions and treatments of leprosy are to be found among the oldest records available to us. The earliest of these are the "Papyrus Ebers" which were transcribed in the fifteenth century B.C. and were uncovered during excavations at Thebes, Egypt in 1874 and translated in 1890. Mention is made also in another record of 1350 B.C. in the reign of Rameses II of leprosy among negro slaves from the Sudan and Dafur to the south of Egypt. In India, reference is made to the disease in the "Rig Veda", one of the four metrical compositions which underlie the one hundred or more books of the ancient and sacred literature of India. There is, of course, the earliest written legislation on leprosy attributed to Moses. The New International Encyclopedia states that early Assyrian and Babylonian hieroglyphics make mention of the disease and points out that it was described some two thousand years ago in China. The encyclopedia also points out that leprosy was common among the Jews in the year 260 B.C.

Even at the present time there is occasionally much difficulty in the accurate diagnosis of leprosy from allied diseases, and, therefore, in ancient times and in the Middle Ages, syphilis and skin diseases undoubtedly were confused with it, making it difficult to tell whether some of the ancient writers were actually speaking of
leprosy. Yet, the disease is so striking, it must have been noticed and it is not improbable that some of the early writings refer to what modern scientists call leprosy.

Some writers question that Hippocrates described leprosy in his writings (about 400 B.C.), but there is general agreement that Aristotle's reference is authentic (about 345 B.C.). This would lend weight to the position that it was then present in Asia Minor on the Greek coast as a still rare disease, and that it became common about 200 B.C. Egypt was closed to Greece until the conquest by Cambyses in 525 B.C. Darius' invasion followed shortly after. Then in 480 B.C., according to Herodotus, Xerxes invaded Europe with an army of six million men from Asia and Africa. When he withdrew, literally thousands of his soldiers were left behind. This would account for the introduction of leprosy into Greece. When the disease reached Greece, it was known as "elephantiasis".

Leprosy seems to have been unknown in Italy until after the return of Pompey's army from Syria in 62 B.C., soon after which time it was spread throughout the Roman Empire. Galen wrote of leprosy in Germany in 180 A.D. and 400 years later Virchow affirms that there were 636 "leper houses" in Italy.

About 40 years after Spain invaded France in 757 A.D. the Spanish ruler Pepin issued a law making the marriage of people with leprosy illegal and the disease a cause for divorce.
About 600 A.D. there was an increase in the incidence of leprosy in the British Isles, and approximately at this time it is recorded that the Glasgow saint, Kentigern, was known to have become a victim of the disease. The first leper hospital was believed to have been established in England about 630 A.D. and in Ireland about 869 A.D.

Hywel Dda, a Welsh king and famous lawyer, who died about 950 A.D., is said to have written the earliest laws concerning leprosy in England. His most famous law relative to the disease is that a married female was entitled to separation and the restitution of her goods and property provided her husband was affected with leprosy.

There was, as there still is, a "leper-house" at Bergen, Norway in 1266 A.D. The disease was probably carried there from Scotland as it was later carried to Greenland and Iceland. Holland, Denmark, Sweden and the more accessible parts of Russia on the Baltic and Black Sea also suffered from the disease as early as 1256 A.D. The Crimea was affected early by the settlement of a Greek colony which located there in 550 B.C. and from heavy commercial traffic at a later date.

During the middle ages, the Christian attitude toward leprosy frequently swung from one extreme to the other. During the period of the crusades, many craved leprosy as a means of crucifying the flesh for a more unhindered development of spiritual graces. In those days the Knights Templars considered it meritorious to have as their Grand Master a man with leprosy, all things being equal.
The other extreme was that of separating leprosy victims from the church as unclean. The ceremony of separation was elaborate and rigidly enforced.

The newly diagnosed leprosy victim was brought to the church by hooded monks for his funeral. There before his neighbors, he was ordered to kneel, heard himself declared a leper, his wife a widow, and his children fatherless. The burial service was read and then the whole assembly moved out into the grave yard. The sick man was again commanded to kneel, this time by a newly dug grave, and a list of prohibitions was read to him. This list included wearing a long grey gown with a hood and carrying a wooden clapper to give warning to others of his approach. He was not allowed to enter churches, inns, milk or bake houses. He was forbidden to touch healthy persons, to wash in streams, and to walk on narrow foot paths. He was to cry out unclean when approached by another person, to wear gloves at all times and to receive what food he could beg in a basket fastened to a long pole.

After the list was read, he was again declared dead, a handful of earth sprinkled over him and the burial ceremony chanted. Then the procession hurried off, leaving the still living, but better dead, man beside his grave.

The effect of the Crusades on the diffusion and growth of leprosy is evident. Practically all parts of Europe were affected with the disease long before the Crusades
but afterwards leprosy became more widespread.

The rapid decline of leprosy in Europe during the 14th and 15th centuries is one of the most remarkable phenomena connected with the long history of the disease and the possible causes for the decline is a much debated subject among leprologists. There is little doubt that its limited course was due largely to the rigid regulations for segregation which were in force in those days, when leprosy was considered to be not only infectious but also hereditary.

In the 15th century the disease had declined noticeably in Italy and by the 17th century it had become comparatively rare. The same pattern of decline held for France; and it completely died out in France by 1789. In Germany the disease was common, but decline was noticeable in the middle of the 16th century. During the 16th century it ceased in Denmark and 100 years later in the Netherlands. Strangely, however, it remained common in Sweden until the beginning of the 19th century, and persists in small areas of that country at present. The disease also declined in Spain and Portugal; however, it still occurs fairly frequently in those countries, and in the middle of the 19th century it was widespread and actually increasing in Norway. This condition is thought to have been due to the state of civilization and diet which were then far behind those of most western European countries.
Leprosy was introduced to the Western hemisphere with the discovery of the West Indies and the American continent. The Spaniards are thought to have brought the infection to the Americas, while leprosy in the West Indies would appear to have been mainly due to the Negro slaves brought from Africa.

In the United States, there are references to cases in 1756 among the Spanish who settled in Florida. South Carolina, Louisiana, Texas and California are other areas where Spanish settlers may have brought the disease. Approximately 150 of the Scandinavians who settled in Minnesota and surrounding states had Hansen's disease, but it has now practically disappeared from this area, as it has from Norway. In more recent years it has been brought from the West Indies to Florida and Louisiana, from Mexico to Texas and California, and from China, Japan and the Pacific Islands to California.

History of Carville

To relate the history of Carville, I have chosen an article from the historical issue of "The Star", a magazine edited and published by the patients at Carville. This article is quoted directly as it was written by a patient.
IN THE OLD, OLD DAYS

As a result of an Act of the Legislature the Louisiana Leper Home came into existence. The Act stated, in substance, that the State would provide a home for persons suffering from leprosy, and would attend to their subsequent care. By one of those anomalies of human nature only too well known to us, the people of various parishes, after insisting on the creation of the Homes insisted with equal pertinacity that it not be located within their particular precincts. The Board of Control quietly obtained a five year lease on the Indian Camp Plantation, Iberbille Parish, some 85 miles above New Orleans. The isolation furnished by the turgid, rapid Mississippi which encompassed the site on three sides, seemed rather ideal in those days. The plantation, some four hundred acres in extent, had been abandoned since shortly after the Civil War, but eight of the cabins formerly used for slaves, were still standing. These were repaired for the use of the patients, while the plantation "mansion", a onetime house of mirth around which legends clustered thickly, but now in the ruins of abandonment, was tentatively set aside for the use of the yet mythical personnel. To avoid frustration of their plans to establish the Home on this site, residents of nearby plantations were told that an Ostrich Farm was contemplated.

The place being prepared, after a fashion, the question arose as to transportation thither of the seven 
patients then confined in the old "pest house" of New Orleans. Banned by both railroad and steamer, the use of a coal barge towed by a tug was at last secured. In this way, on the night of November 30, 1894, the first contingent of patients was conveyed to the Home.

The services of an attending resident physician, Dr. L.A. Wailes, was secured. It is to be regretted that the data concerning his services are so meager. We should like to know more of a doctor who having given his official report on things medical and surgical with such a creditable handling of professional terms that most of it goes over our heads, adds the following which goes straight to our hearts:

"Owing to severe, prolonged bad weather, I have accomplished very little in the way of outdoor work, the constant necessity of fires and the extra attention to patients has taken up all my time."

The voice of fame which would have acclaimed him is thinly heard in this extract from a New Orleans paper of February 16, 1895:

"The patients are not only satisfied, but are almost happy, and are united in their praise of Dr. Wailes' treatment and care of them. They told President Dyer that a better man could not have been selected for the place, so kind and attentive, that he made them feel that he was their friend, as well as their medical mentor."

Skoal to thee, L.A. Wailes, M.D.!

Despite the ability and devotion of Dr. Wailes, a
year's trail proved the Home to be but a makeshift, foredoomed to failure, unless his arms were adequately strength-
ened. But how? At this juncture, Dr. Isadore Dyer, Presi-
ent of the Board of Control, suggested that the services of the Sisters of Charity be requested for the "nursing of the patients, and household management". Negotiations were completed within a very short time, the contract, which insured among other things, that the Sisters would receive no salary for their services, being signed March 25, 1896.

The only means of access to the home at that time being by steamer, the first four Sisters embarked on the Paul Tulane, at New Orleans, on April 18, 1896, arriving at their destination after a tedious trip of 18 hours. The old plantation home, built as far as can be ascer-
tained, about 1854, had been reserved for their residence. Only two rooms of the entire building were even remotely habitable. In to these the Sisters moved, using the ground floor as a combination of barn, stable and hen house. Rats, snakes and bats were for the time being left in undisturbed possession of the remainder of the building.

The year 1901 was marked by two incidents, which could be correctly termed "loss" and "gain". On September 6 of that year, Sister Beatrice, leader of the first band of Sisters, succumbed to overwork and repeated attacks of malarial fever. It was during the week of her illness that Dr. Ralph Hopkins made his first visit to the Home.

Young, enthusiastic, just graduated from Medical College,
Dr. Hopkins became fascinated by the problems of this disease, and from 1901, save for the time given to his country's service during the World War, and brief vacations—his weekly visits continued almost until his death in 1945. Accordingly as means of transportation improved, Dr. Hopkins came to us by steamer, by train, by auto.

For eight years there were no notable improvements, for the State had but leased the ground, pending the moving of the Home to a more favorable locality. Such a location was actually secured near Kenner, Louisiana, when the Board purchased a plantation known as the Elkhorn Place. When the usual protests launched by the nearby residents were ineffectual, more radical measures were adopted. Every building on the place was burned to the ground. Discouraged by this experience, the Board determined to buy the Indian Camp Plantation, but owing to the difficulty of reaching all the heirs, the actual deed of purchase was not signed until December 21, 1905.

From 1902 a marked improvement took place. The dilapidated old cabins had reached such a state that it was imperative to replace them. In planning the new buildings, it was determined to make of them the nucleus of a modern sanitarium constructed on the cottage plan. This plan was carried out and in the course of time twelve cottages, allowing a private room for each patient, were built. A Power house providing steam heat, electricity and adequate water supply and an abundance of ite worked something closely approximating a transformation.
That the public attitude, too, was changing is shown by the comment of Governor Luther Hall, the first Chief Executive of the State to visit the Home. After expressing unreserved satisfaction at the conditions he found there, he publicly stated: "The Home deserves all and more than we can ever do for it. I am going to see that the state gives more of its public funds to help with the work." And Governor Hall handsomely made good his promise.

Perhaps Louisiana's relinquishment into larger and far more capable hands of Hansen's disease with its problems, its disappointments are best expressed in the final words of its report: "By maintaining a leprosarium within an hour's ride of the capital, Louisiana has effectually demonstrated that such a Home need not be situated beyond the confines of civilization, thus adding the pangs of exile to the sufferings of the disease. By curing, within the last two years, thirteen cases, the hopelessness of the disease is convincingly contradicted. By proving that during the twenty-five years of its existence in a community as populous as is the usual rural district, not a single case of leprosy can be traced to its proximity, lepraphobia is reduced to the vanishing point."
**ITS CAUSE**

Leprosy is a chronic communicable disease of man. It is caused by the *mycobacterium leprae*, scientific name for a germ first discovered in 1874 by the Norwegian physician, Gerhard Armauer Hansen. This germ resembles closely the causative organism of tuberculosis.

**ITS PREVALENCE**

About 10 million people in the world have leprosy. It is a major health problem in South Africa, India, South China, Japan, the Malayan Archipelago, many Pacific Islands, South America, Mexico and other parts of Central America.

The United States enjoys a relative degree of freedom from leprosy. It now occurs chiefly in certain local areas of Florida, Louisiana, Texas and California. Valid estimates indicate that only about 2,000 people in the United States have the disease.

**ITS SPREAD**

Present day medical thought suggests that leprosy is transmitted directly from one person to another. Exactly how the causative germ enters the body to produce the disease remains a mystery, although authorities believe the most likely entry to be the mucous membranes or the skin. The germ has not been grown in the laboratory, and attempts to infect animals with it have failed. Scientists attempting to learn about the transmission of the disease encounter added difficulties because many years usually elapse between the time of exposure and the actual onset of illness.
Reliable and extensive surveys demonstrate that leprosy is more commonly acquired by infants and young children. Therefore, exposure of young children—especially within a household—promotes a serious health hazard.

From the public health management point of view, leprosy infections are classed as "open" or "closed", depending upon whether or not routine microscopic examination reveals the germ in scrapings from skin lesions and nasal membranes. There is no adequate evidence to justify departure from the widely practiced policy of confining segregation to open cases.

ITS EFFECTS

Leprosy affects the whole being of those who have it. After the germs invade and take hold sufficiently for the disease to show itself, they can be found widely distributed throughout the entire body. The disease process, however, shows a predilection for certain parts of the body. Most of the symptoms and findings are referable to the skin and nerves.

Skin lesions may vary from insignificant discolorations to large nodular masses. There is usually an associated loss of sensation in the affected areas. In such places, for instance, the individual feels no pain from a needle prick and cannot differentiate heat from cold. Nerve involvement may also cause weakness or paralysis of important muscle groups.
The leprosy infection and its complications may lead to serious, irreparable damage if allowed to progress without treatment. Painful complications do often affect the eye and blindness is a common end result.

Leprosy is not a killer, in the popular sense of the word. However, if neglected or left untreated, it can be a contributory cause of death, materially shortening life through its debilitating action which renders the individual susceptible to acute infections and other diseases.

**ITS TREATMENT**

For hundreds of years, leprosy has stubbornly resisted man's efforts to find a cure. The most widely used medication against leprosy for a long time was chaulmoogra oil, derived from the nut of a tropical tree. Chaulmoogra oil has been almost completely abandoned since the sulfone drugs in 1941 were introduced at Carville, La.

All workers in the field of leprosy agree that the sulfones offer a comparatively effective form of treatment. Most sulfone-treated patients enjoy greatly improved general health. In the majority of instances, the irreparable ravages of long-standing leprosy can be avoided provided treatment is started during the early stages.

Leprosy parallels tuberculosis in that a stage of apparent arrest may be reached and the patient may enjoy long periods relatively free from disease activity.
HANSEN'S DISEASE--LEPROSY

Certain individuals and groups would change the name of leprosy to Hansen's disease. They express the belief that the redesignation will allay the fears allegedly based on misinterpretation of the Holy Bible, wherein the word leprosy probably included several ailments other than the disease as it is currently known.
### DISTRIBUTION FOR HANSEN'S DISEASE IN UNITED STATES

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QUESTIONS AND ANSWERS ABOUT HANSEN'S DISEASE

Who Walk Alone  by Burgess

Q. What is Hansen's Disease?
A. Hansen's disease is a systemic infection (affecting the whole body), but has particular affinity for the skin and nerves.

Q. Is the causative agent known?
A. It is generally accepted that the disease is caused by the mycobacterium leprae discovered by Gerhard Armauer Hansen in 1871?

Q. Can the bacilli be grown outside the human body?
A. Since Hansen's isolation of the bacillus, hundreds of attempts have been made to culture the organism but to date none of these has successfully met the requirements for proof.

Q. Where is the disease found?
A. It is found mostly in tropical and subtropical regions, with residual areas of low prevalence in cooler regions. The most heavily infected localities are in tropical Africa, India, China, South-east Asia, Japan, Oceania (excepting Australia, New Zealand, and Tasmania), the Dutch East Indies, the Philippines and in certain parts of Central and South America. Cases to a limited degree are found in almost all countries.

Q. Does the disease exist in the United States?
A. Some cases arise in Florida, Louisiana, Texas, and southern California. Occasional cases discovered in the north are usually imports. The estimated total
is from one to two thousand.

Q. Does the United States provide leprosaria?
A. Yes. Six are maintained by the United States, its Territories, and Dependencies. An excellent leperarium, under the direction of the Public Health Service, is maintained by the United States at Carville, Louisiana. It is staffed by personal of the Service and by Sisters of Charity. It has a modern laboratory for routine work and scientific investigation. There are also leprosaria in the Hawaiian Islands, Puerto Rico, St. Croix in the Virgin Islands, the Canal Zone, and for the Trust Territory of the Pacific, in Tinian, Marianas.

Q. How many patients are there at Carville?
A. 400

Q. At what age does the disease usually occur?
A. In childhood, but occasionally adults contact it.

Q. Are males more susceptible than females?
A. Yes

Q. What are the sources of infection?
A. The only known sources of infection are human beings suffering from the lepromatous ("open") form of the disease.

Q. How is Hansen's disease spread?
A. This is not known. The bacilli are present in nasal discharges and scrapings from the skin of patients. Possibly they are inhaled or swallowed or they may enter healthy persons through wounds in the skin.
Q. Is the disease easily transmitted?
A. Although the disease is infectious, intimate contact of a susceptible person with an ill individual apparently is required. Physicians, nurses, and attendants in leprosaria rarely contact Hansen's disease. Infection of husband or wife from an infected spouse is likewise rare.

Q. Is the disease hereditary?
A. No.

Q. Is the disease congenital?
A. No.

Q. Is it true that the incubation period for Hansen's disease often covers many years?
A. Hansen's disease is noted for its long incubation period, which may be a matter of months or even several years. It is thought that the average incubation period is four or five years, although intervals of 30 years have been reported.

Q. Are there different types of the disease?
A. According to accepted international classification there are two main types of the disease, "lepromatous" and "tuberculoid". A subclassification is also recognized and is known as "incharacteristic" or "indeterminate". From the Public Health standpoint, the classification is closed for the tuberculoid type and open for the lepromatous type. The closed cases are considered noninfectious.
Q. Is the disease fatal?
A. Not as a rule. The patient usually succumbs to some other cause. There are known cases where individuals are still living after 40 years of illness.

Q. Is the disease painful?
A. Usually the patient suffers little from the disease itself. Nerve involvement, however, may be extremely painful and there is much discomfort caused by various complications.

Q. Can Hansen's disease be cured?
A. No drug has been proved to cure the disease. Consequently, the word "arrested" is used in preference to "cured". In recent years it has been found that the drugs of the sulfone group, promin, diasone, and sulphtrone, are the best therapeutic agents, but it is not yet known whether the clinical improvement which follows their use will be permanent.
CARVILLE AND
OTHER HANSENARIA
There are approximately 300 leprosaria or "leper colonies" in the world today. Though they all have a common cause, to take care of the sufferers of Hansen's Disease, they are all different. Some are large and some are small; some are isolated and some are near populated areas. Some are old and some are new. In some, the patients live in beautiful buildings, in some they live in straw shacks. The medical care is different and the leprosaria are sponsored by many, many different organizations. They are located in different countries with varying climates, living conditions and customs.

The disease is found, for the most part, in the tropics and sub-tropics. Once introduced into these areas, it persists at a high level and shows no signs of abating. The level of incidence in the areas of the temperate zone is low, and the trend is a downward one. The total number of world cases is estimated to be 10 million.

A large number of colonies are located in areas where the disease is most prevalent, namely in Africa, India, China, Indo-China, the Dutch East Indies, the Philippines, and parts of Oceania, Central America, and South America. In areas of high prevalence, however, rates vary considerably. The average in India is 3.4 per 1000 population, but districts within that country have a prevalence rate which varies from 0 to 120 per 1000. In the temperate zone, the disease is still quite prevalent in parts of Russia, Japan, Korea, Spain, Portugal, Greece, and South Africa.
There is one leprosarium in the United States and five others in U.S. possessions: Kalaupapa and Hale Mohalu in the Hawaiian Islands, Palo Seco in the Panama Canal Zone, Trujillo Alto in Puerto Rico and St. Croix in the Virgin Islands. There are over 1000 patients in the six hospitals.

U.S. PUBLIC HEALTH SERVICE HOSPITAL
Carville, La.

The Carville hospital was established in 1894, and was operated as a State Institution by Louisiana, more as a "home" than as a hospital, until 1921 when it was purchased by the U.S. Government and became a National Institution, operated by the United States Public Health Service, now under the Department of Health, Education and Welfare. The institution was rebuilt in 1941 at a cost of $2,500,000, providing facilities for 450 ambulatory and 56 hospitalized patients. It has six resident physicians, including the Medical Officer in Charge, a resident dentist, and 231 full-time non-patient Civil Service Employees. Cost of operation for the fiscal year ending June 1955 was $1,556,160, representing a daily cost of $13.80 per patient. Approximately 350 patients are here now.

The Carville hospital occupies a 350 acre tract, located on the eastern shore of the Mississippi River, 75 miles northwest of New Orleans, and about 25 miles south of Baton Rouge. Its white, fireproof stucco and brick
structures form a quadrangle, dominated on one side by the Infirmary, with X-ray, laboratory, operating room, clinics, pharmacy, medical records department, and other facilities, and on the other by the recreation building which houses a theatre, ballroom, lounge, library, canteen and post office substation. Ambulatory patients live in 16 two story residence halls, each floor with 12 single rooms, bath facilities, and porches interconnected by screened in walkways. Some of the patients occupy 19 privately owned cottages in the rear of the hospital grounds. A nine-hole golf course, tennis court, lighted softball diamond, 20 acre lake, picnic grove and abundant garden space flank the buildings. Modern Protestant and Roman Catholic chapels blend harmoniously with the rest of the hospital, and there are two resident chaplains. The hospital also has its own water purification plant and generates its own power.

Besides its own resident staff, the hospital enjoys the benefit of the services of outstanding consultants in such specialities as orthopedic surgery, eye, ear, nose, and throat, psychiatry, gynecology, dermatology, and other specialities, all from the medical centers in New Orleans. The hospital also furnishes such services as physical therapy, with two registered PTs on daily duty, occupational therapy, with two OTs on duty, and medical social service.

Three instructors certified by the State of Louisiana teach the full range of grade and high school subjects.
from the three R's to commercial courses, and there is a Manual Arts department with instructor. Students completing their academic work in accordance with the standards set by the State receive fully accredited diplomas. Adult education classes in reading, spelling, arithmetic, and citizenship are popular among foreign born patients.

The patients have their own social clubs, and a diverse program of supervised recreational activities, under a Director of Community Activities. The hospital employs approximately 90 patients on a part-time basis. Some of the patients operate private enterprises, such as a gift shop, miniature department store, cleaning and pressing, bicycle and scooter repair shops, radio repair shop, carpenter shop and barber shop.

National groups, such as the American Legion, The American Legion Auxiliary, the Forty and Eight, and the Lions Club have granted authorization for and stimulated the founding of local chapters in which patients who qualify are welcomed as members.

In 1941, the Carville hospital pioneered in the use of sulfone therapy for Hansen's disease. Since then the sulfone drugs have become "the treatment of choice" for this disease the world over.
For many years, experts have argued about the most suitable location for a leprosarium. Until recently the feeling that an isolated site was best took precedence. Then with the development of the sulfone drugs and the gradual changing of public opinion toward Hansen's disease, the theory of isolation began to seem inhuman and uneconomical.

The following article entitled "Where Should a Leprosarium Be?" appeared in the December, 1950 issue of Leprosy Briefs:

"The recent decision of the Territorial Government of Hawaii to establish a leprosarium near Honolulu and to discontinue sending patients to the island of Molekai is an indication of changing public sentiment as the facts concerning leprosy become more widely known. The enforced removal of leprosy patients to remote and relatively inaccessible places is of questionable value as a means of control and, more than that, it is inhuman. Yet we must remember that such locations as Culien, Spinalonga, and others were accepted as satisfactory by leading leprologists forty or fifty years ago. These locations however were usually dictated by circumstances. Municipalities objected then, as many do today, to establishment of any institutions for chronic illness, especially leprosy or tuberculosis, within their limits.

On this point the recommendations of the Fifth International Congress on Leprosy, Havana, 1948, have this to say, (Transactions, p.86)
"It is recommended that the leprosarium should be situated in the proximity of an urban center with easy means of communications. Preferably it should be within a radius of 10 to 30 km. (about 6 to 18 miles) from the nearest city. The isolation of patients on special islands is categorically condemned."

Apart from such a humanitarian consideration as proximity of patients to their families and friends, there are other factors which are important in determining location of a leprosarium. Foremost among these are availability of roads and public transportation, telephone service, electric current, water supplies, etc. Such facilities have a direct relationship to other essential requirements, including ready supervision by the responsible health authorities, practicability of obtaining resident physicians, consultants, nurses, and other staff at reasonable salaries, and low cost of shipment of food stuffs and other supplies.

If, in seeking new sites, authorities were to forget about leprosy and search for places suitable for tuberculosis sanitoria, mistakes in location of leprosaria would be fewer and less serious."

After considering a great many possibilities, I have chosen a site that meets, I think, all the requirements and is in general very suitable. The location of the leprosarium will be in the northwest section of Florida on U.S. highway 98, between Fort Walton and Panama City.
Florida has 102 known cases of Hansen's disease. Only four states, Louisiana, Texas, California, and New York have a greater number of cases. Florida also has a very pleasant climate being almost subtropical. The average temperature for January is 60 degrees and 80 degrees for July. There is an unusually steady breeze from the Gulf during the day and from the land at night which keeps up during the summer months.

Along the Gulf in the northwest section of Florida, there is a long narrow island that extends almost unbroken from Pensacola past Fort Walton, varying from several hundred yards to several miles from the mainland. The leprosarium will be located on this strip of land. Fort Walton (population 6,000) is 19 miles to the west and Panama City (population 25,000) is 42 miles to the east. Two other very small towns are also close by: Destin, 12 miles west, and Santa Rosa, 5 miles east. Eglin Air Force Base is 10 miles north of Fort Walton, and the hospital would possibly be able to secure specialists when needed. Therefore, this immediate area is pleasant and "in the country", but by no means isolated.

The actual site is about 4,000 feet north of the highway, the Gulf of Mexico being south of the highway. The site is pulled back because U.S. 98 is a very busy highway, especially in the summer, and the noise might be a nuisance. Also, the beaches eastward along the Gulf are popular resort spots and are tending to spread westward.

The site is approximately a rectangle 3,500 feet by
4,500 feet, or 360 acres. A large area is needed, not only because the hospital might expand, but also because it is not desirable to have people build to near by. The northern boundary is Choctwhatchee Bay, while two small bayous, Hewett and Mack, flank the east and west sides. In addition to providing pleasant views, these bodies of water also form a neutral boundary. The entire tract at Carville is fenced in by a high cyclone fence, and I found this rather disturbing. The terrain has a very gentle slope to the bay and the two bayous, the highest point of the site being a little east of the center. The growth is fairly thick and consists of long leaf and slash pine and of lives oaks. The oaks do not grow very large and are covered with moss. The undergrowth consists of low thick brush and palmettoes. There are numerous roads on and around the site, but these are narrow, ungraded fishing roads.

Therefore, I was quite pleased when I located this site, and I feel that it meets all the requirements for a suitable location for a leprosarium.
OVER ALL PROGRAM

I  Non Patient Facilities
   (A) Administration
   (B) Recreation and Social
   (C) Nurse's Quarters
   (E) Guest Suites
   (F) Dining
   (G) Religion
   (H) Family Housing
   (I) Building and Grounds

II Patient Facilities
   (A) Clinic
   (B) Infirmary
   (C) Laboratory
   (D) Morgue
   (E) Dining
   (F) Patients Quarters
   (G) Couples Housing
   (H) Education
   (I) Therapy
   (J) Patient Enterprises
   (K) Religion
   (L) Patient laundry
Non Patient Facilities

(A) Administration

1. Lobby and exhibition
2. Office for the Medical Officer In Charge
   (a) Office for secretary
   (b) Toilet
3. Office for Administrative Director
4. Office for Clinical Director
5. Office for Chaplian
6. Office for Dietician
7. General Office (8 secretaries)
8. Personnel Section
9. Financial Section
   (a) Office for Head
   (b) Office for secretaries (3)
   (c) Vault
10. Conference room
11. Mailroom
12. Storage
13. Toilets (100 sq.ft. each)

Square Feet

(A) Administration

1. Lobby and exhibition 1500
2. Office for the Medical Officer In Charge 250
   (a) Office for secretary 150
   (b) Toilet 25
3. Office for Administrative Director 200
4. Office for Clinical Director 150
5. Office for Chaplian 150
6. Office for Dietician 150
7. General Office (8 secretaries) 800
8. Personnel Section 500
9. Financial Section
   (a) Office for Head 150
   (b) Office for secretaries (3) 300
   (c) Vault 80
10. Conference room 350
11. Mailroom 200
12. Storage 100
13. Toilets (100 sq.ft. each) 200

(B) Recreation and Social

1. Staff lounge and entertainment room 1500
2. Auditorium (seating 125 @ 9 sq.ft. per seat 1125
   (a) Projection booth 80
   (b) Chair storage 150
3. Staff library 1000
4. Class room

5. Office of Community Activities Director 200

6. Canteen and General Store 900

7. Toilets (100 sq.ft. each) 200

8. Outdoor recreation to include:
   (a) Tennis courts (2)
   (b) Volly ball courts (2)
   (c) Badminton courts (2)
   (d) Croquet
   (e) Horseshoes
   (f) Shuffle board
   (g) Soft ball diamond
   (h) Swimming beach
   (i) Boat docks
   (j) 3-hole golf course
   (k) Children's playground

(C) Nurse's Quarters (for 30)

1. 12 double rooms (250 sq.ft. each) 3000
   (a) Baths (12 at 60 sq.ft. each) 720
   (B) Closets

2. 6 single rooms (250 sq.ft. each) 1500
   (a) Baths (6 at 60 sq.ft. each) 360
   (b) Closets

3. Sitting room 600

4. Kitchenette 125

5. Laundry 300

6. General storage 125
(D) Bachelor's Quarter (for 24)

1. 9 double rooms (250 sq.ft. each) 2250
   (a) Baths (9 at 60 sq.ft. each) 540
   (b) Closets

2. 6 single rooms (250 sq.ft. each) 1500
   (a) Baths (6 at 60 sq.ft. each) 360
   (b) Closets

3. Sitting room 600

4. Kitchenette 125

5. Laundry 125

6. General storage 125

(E) Guest Suites

1. 2 special suites (750 sq.ft. each) 1500
   To include:
   (a) Sitting room
   (b) Bedroom
   (c) Bath
   (d) Closets

2. 4 double suites (320 sq.ft. each) 1280
   To include:
   (a) Bedroom
   (b) Bath
   (c) Closet

(F) Dining

1. Dining room (80 persons, 15 sq.ft. each) 1200

2. Serving counter 200
3. Kitchen
4. Toilets (100 each)

(G) Religion

Meditation Chapel

(H) Family Housing

To include:

Twelve 2 and 3 bedroom houses for officers
and their families.

(I) Building and Grounds

1. Shops (7 at 500 sq.ft. each) 3500
2. Garages (10 at 200 sq.ft. each) 2000
3. Heating plant 12000
4. Offices 500
5. Supply warehouse 8000

Sections (A) through (G) have been fully developed
in this thesis, while sections (H) and (I) have been
handled in the site plan only.
TRIP TO CARVILLE
While working on the research for my undergraduate thesis at Georgia Institute of Technology, I felt the best way to learn about Hansenaria was to visit one. To fulfill this idea, in November of 1956, I left Atlanta, Georgia and six hundred miles and fifteen hours later I was in New Orleans. After much searching, I found Carville on the map, a small town (population 200) on the Mississippi River between New Orleans and Baton Rouge. Figuring that there would be no hotel accommodations in Carville, I drove to Genzolas from New Orleans, about forty miles south of Baton Rouge. This was the nearest town, of any size, to Carville and I found a motel room there. At seven O'clock Friday morning, I started out on a poorly marked dirt road, following the Mississippi River for approximately forty-five minutes until I was certain of my being lost. Driving on, I soon came upon a wide place in the road, large enough for only three small stores. Upon inquiry I learned that this was Carville. Driving two miles further, I noticed a large, beautiful, flat pasture on my right with the river to my left, and in the distance I noticed a group of white "forms". Just as the step from night to day, with no transition, I was there----an "oasis".

The white "forms" soon became the buildings which made up the United States Public Health Service Hospital, the only leprosarium in the continental United States. I drove up to the gate, stopped between two large pillars, and was informed by the guard that I was expected. I was immediately amazed at my first over-all view.
Carville consisted of spotlessly clean, neat buildings and grounds— not a piece of paper or discarded cigarette could be found. Every sprig of grass seemed to be individually placed. As I stood there, astounded, a pleasant voice said, "Mr. Blondheim," and I turned around and shook hands with Mr. Francis Ellis, the Administrative Director. Mr. Ellis, who was "in charge" of me during my visit, was a very interesting as well as informative person.

Mr. Ellis's office was in the old plantation house, which having been remodeled, was the administration building. Very interestingly, he proceeded to tell me about Carville: its history, set-up, how it was operated, and its organization. He first wanted me to visit the "colony", so I was taken to the office of Dr. R. R. Walcott, the Clinical Director.

From the parking lot, Dr. Walcott began the tour he had planned for me. We drove down a beautiful little street by the houses of the personnel, the majority of which were built around 1930, but were well-kept and very pleasant looking. On my left was a high cyclone fence which surrounded most of the three hundred or more acres of the site. We passed by the personnel swimming pool on the far south west corner of the property and turned a right angle, driving parallel to the personnel golf course. At the foot of the golf course, on the rear side of the property, we came to Lake Johansen where several patients were fishing. We followed the shore line of the lake and came to the patients' golf course. These large, clean-cut
grass areas on each side of the site add to the pleasing appearance of the hospital.

We passed the baseball field, which has bleacher seating, and drove behind the "colony" dorms. We stopped at the dorm immediately past the recreation building, which contains the patient-operated stores. I had told Dr. Walcott earlier that I would like to buy picture postcards of the hospital because the weather was too bad for taking pictures. We went inside the building and entered the photo shop, which is operated by a patient who was a commercial photographer before contacting Hansen's disease. We chatted with the photographer for awhile and then left for the clinic.

After a tour of the clinic and the infirmary, we went to Dr. Walcott's office and discussed the things I had observed. I was shown photographs and other material concerning leprosaria which Dr. Walcott had seen while traveling through out the world.

It was the lunch hour so I went to the administration building where Mr. Ellis introduced me to several of the personnel, whom I had lunch with. In the personnel dining room we settled down to a nice lunch, which took much longer to eat than it should have, for I kept them busy with my questions. A large majority of the 260 persons working at the hospital rarely see the patients, except from a distance. I was told that only one of the employees had ever contacted the disease and it is thought that this person became infected before coming to Carville.
The personnel live on the premises and in neighboring communities and are paid well: the "hazard pay" bringing the average salaries to about $5,000 per year.

After lunch Mr. Ellis took me on a tour of the "colony" beginning in the clinic. He explained many construction and mechanical problems and features, here and throughout the entire tour, which proved very valuable. We walked through the corridors, three miles in all, which connect the whole colony. Even though valuable, the corridors have presented a problem because the floors become slippery when wet because of the type of concrete used. Since the patients use bicycles for transportation, the corridors were built wide to accommodate them.

We went into the therapy shops and the school where class was in session. After observing for a while we started our walk to the other side of the colony. We passed many patients, as we did on our entire tour, and they were always very friendly and spoke with a big smile.

We went through a dorm unit, which houses twenty-eight patients. Each patient can decorate his room to please his tastes, which helps relieve the monotony. There is a sitting room and a large screened area facing the "colony" court on each side.

We then walked to the recreation building, and from a mere glance, one can tell that this is the favorite "hangout" for the patients. The ball room was large and spacious, and the theater was much like that in any small town. We went by the T.V. rooms and the post office and
then walked to the other side of the colony to the laundry, followed by a short visit to the mental ward. We then left the colony and went to the water supply building. The water purification system is a replica in miniature of the system for the city of New Orleans. The water goes through a series of settling and aeration basins and is then pumped to the water tower. This interesting tour came to a close after visiting the shops and supply warehouse. I was permitted to see and study the many blue prints of the hospital which are kept in the supply warehouse.

In a short time, I found myself again on the road to begin my six hundred mile drive back to Atlanta.

I cannot express the importance of my trip to Carville and the impact it had upon me. By visiting an actual leprosarium, seeing it in operation, observing the patients, and talking to the doctors and personnel, I obtained an invaluable amount of help and information. In closing, I would like to say that I owe sincere thanks to the personnel, and especially Mr. Ellis and Dr. Walcott, for they were perfect hosts and, most important, they helped to make this trip a very interesting, valuable, and educational one for me.
I have talked with many people regarding Hansen's disease. These include doctors, ministers, and sociologists. I had discussions both long and short with the staff and other workers at Carville: Mr. F. R. Ellis, the Administrative Director, Dr. R. R. Walcott, the Clinical Director, a dentist, the gate keeper, a carpenter, a diettian, a nurse, a secretary, and many others. I also talked with several of the patients.

So much of the information that I received from these people has been integrated into other sections throughout this thesis; therefore, an interview, written as, would be repetitious. However, I do not want to de-emphasize the importance of these meetings, for they were invaluable.

The interview that follows is one with Dr. E. B. Johnwick, newly appointed Medical Officer in Charge (M.O.C.) at Carville.

Interview with Dr. E. B. Johnwick

In December, 1956, I found out, quite by accident, that Dr. E. B. Johnwick lived in Atlanta. When I telephoned him, he was in the process of getting ready to move his family to Carville, but said he would be glad to talk with me.

During the interview, I found Dr. Johnwick friendly, intelligent and most firm in his convictions. This discussion, as I prefer calling it, was very helpful and informative.

We discussed Carville and the disease, leprosaria around the world, about sources of information on Hansen's
disease, its psychological problems, and about doctors and ministers who have worked with the disease, Stanly Stein, Ann Page, Betty Martan, Father Damien—all famous people who were victims of Hansen's disease.

One of the main purposes of my visit was to become informed on Dr. Johnwick's policies and the changes, if any, he would make. It seems that there has been a controversy at Carville between the administration and the patients. This feud has received world wide publicity. Dr. Gordoan succeeded Dr. F. A. Johansen as M.O.C. at Carville. It seems that "Dr. Jo", as he was called by the patients, was very popular and perhaps a little lax in his direction of the hospital. As Dr. Johnwick said, "Anybody who followed Dr. Jo would have a hard time of it, because he was so popular." Dr. Gordan became M.O.C. in 1953 and made quite a few changes which the patients did not like. Consequently, quite a commotion resulted, and the following article appeared in TIME (Sept. 17, 1956):

"Long-dreaded leprosy is rated by top experts a hundred times less contagious than TB, and it is virtually impossible for an adult to be infected by casual contact. On these facts, the U.S. Public Health Service Hospital at Carville, La.—the national leprosarium—based its extraordinary system of allowing patients to live near-normal lives. Under Dr. Frederick Andrew Johanses, who spent 29 years there, Carville helped a whole generation of leprosy patients to feel (psychologically, at least) like normal human beings. "Dr. Jo" let patients marry and live to—
gather, encouraged outsiders (provided they were over twelve) to come in and play golf or softball with the patients and dance with them at socials.

In 1953 Dr. Jo retired and was succeeded as director by Dr. Eddie Monroe Gordon, Jr., a Health Service officer with 19 separate assignments in 28 years of service. Newcomer Gordon improved Carville's physical plant and administration, but set out to change the hospital's famed, widely admired system. He ordered the hospital staff to stop fraternizing with patients, discouraged visits by the public, upped minimum age for visitors (other than relatives) from 12 to 20. The worst blow to patients: a ban on games, sports, and dances between patients and nonpatients.

Typical of the logic of Dr. Gordon's rules was the case of a woman patient whose uninfected husband visited her regularly. She asked Gordon if she could dance with him. Gordon said no, because it was too difficult to keep track of patients and nonpatients. Complained the patient: "I can stay in bed with my husband all day--but they won't let me dance with him."

The Carville inmates decided to fight. Angry protest meetings were held. The Patients' Federation drafted a 2,500-word letter of complaint to PHS headquarters, sent a lawyer with it to Washington. Last week the patients won a clear-cut victory. PHS decided to shift Dr. Gordon, 52, to his 20th assignment."

There are strong arguments for both the administration and the patients. Many people are interested in seeing the
results of the new M.O.C.'s efforts. He is coming into the game at a crucial point, but after my interview with Dr. Johnwick, I feel that the situation is in good hands.

Dr. Johnwick says the best way to handle a person or group of persons is to make them think for themselves. This will give them confidence in themselves and in the people in charge of them, as well as make them "feel like somebody". More than anyone else, the patients do not want other people to contract the disease, but also they are human and want to be treated as such.

An example of what Dr. Johnwick means can be seen by the answer he gave when I asked "What will you do about the dances with patients and nonpatients?" He said a patient at Carville asked him the same question the other day, and he told him the same thing he told me. In essence, Dr. Johnwick said this:

So very little is known about the disease. It might be possible that a patient with no signs of bacilli could be infected further by another patient with a great many bacilli. The patients know this, and there is a type of "social segregation" among them. A patient from one "social set" might not dance with a person of another set for fear of further infection. If a patient is highly infected, she can easily say to the nonpatient who asks her to dance, "Thank you, but I believe I will let this one out." There is certainly no disgrace in this, but on the contrary it shows a great deal of intellect and courage.

Dr. Johnwick also said that he felt that there was a
great need for more training programs about the disease. These programs would be for patients and personnel alike. Different phases of the program would be taught by different people—e.g. staff member, personnel, and patients themselves. There are so many fallacies concerning Hansen's disease. The article in TIME states "—leprosy is rated by top experts a hundred times less contagious than TB—". Who are the top experts that say this? Who can say that this disease is X times as contagious as that disease? You might ask a group of people if leprosy is a hundred times less contagious than TB. Some would say yes, some would say no, and some would say they do not know. And do you know the ones who would say they do not know? The doctors and experts on Hansen's disease, because they don't know, and they know they don't know.

Many other of the points that Dr. Johnwick brought out are covered in other sections of this thesis.
JOHANSEN VILLAGE
HANSENARIUM

A HOSPITAL FOR HANSEN'S DISEASE PATIENTS

CHARLES A. BLONDHEIM
ARCH. 503 THESIS
GEORGIA INSTITUTE OF TECHNOLOGY
WINTER QUARTER 1957
LOCATION OF SITE IN FLORIDA

SITE PLAN OF HANSENARIUM

SITE PLAN OF COLONY AREA

SHEET 2
INTERIOR FROM MEZZANINE
EXTERIOR LOOKING EAST
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