

TRANSACTIONS OF  
THE ENGINEERING ASSOCIATION OF CEYLON

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MANTIVU LEPER ASYLUM, BATTI-  
CALOA, CEYLON.

By

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The Leper Asylum of Mantivu is situated on an island adjacent to the Town of Batticaloa in the Eastern Province and on the east coast of Ceylon. Situation.

There are approximately 10,000 inhabitants. The country around Batticaloa is flat and is devoted chiefly to rice cultivation. In the vicinity of the town are many lagoons of brackish water and it is said that some are inhabited by crocodiles. The average temperature of the town for the year is 81·8 but on the island is probably slightly lower. Rainfall in the district is rather low.

2. Owing to the unusually large number of lepers in this province a special ward was originally set apart for their accommodation at Kalmunai Hospital which is about twenty-four miles south of Batticaloa. Leprosy, however, being on the increase and isolation at the ward at Kalmunai not being perfect, it was decided to segregate the lepers in one of the islands of the Batticaloa Lagoon. Mantivu was chosen as being the best and the Asylum was inaugurated in November, 1921. Selection of Site.

| Incidence. | 3. The lepers segregated here are from— |  |   |
|------------|---|--|---|
|            |   | Males.   | Females.                                      |
| (a)        | The Eastern Province                    | 91   | 31  |
| (b)        | The Uva Province                        | 8  | 0   |
| (c)        | The North-Central<br>Province ..        | 1  | 1   |
| (d)        | The Northern Province                   | 9  | 0   |
| * (e)      | The Western Province                    | 3  | 0   |
| (f)        | Indians ..                              | 4  | 3   |
|            |   | <hr style="width: 50px; margin: 0 auto;"/> 116 | <hr style="width: 50px; margin: 0 auto;"/> 35 |

\*Those from the Western Province were sent from Hendala Leper Asylum, Colombo, on punishment.

Island. 4. The island of Mantivu is approximately one hundred acres in extent, is situated in the lagoon about a mile from Batticaloa and is served by a ferry from the mainland, a small row boat taking about ten minutes to cross from the most convenient point. The island is well wooded, but is kept clear of low jungle growth as far as funds will allow. The island is generally flat along its coasts but rises slightly from the beach towards the centre, the higher spots being chosen for the buildings. A portion of the island goes under water at times of high flood, say for a week or two every year. All hollows have been filled up so as to minimise the chances of mosquito breeding. The soil is dry and sandy towards the coastline but on the higher portions has a subsoil of cabook and is suitable for cultivation. Surface drainage is simple, as the slope of land is generally from the centre towards the lagoon on all sides. The roads are of gravel as there is no cart traffic.

Drawings. 5. The following drawings are attached:—

Drawing No. 1. Map shewing incidence of leprosy in the Eastern Province.

Drawing No. 2. Map of Mantivu Island shewing layout of buildings.

Drawing No. 3. Administration block, male and female wards and kitchen.

Drawing No. 4. Male and female wards, isolation ward and dressing room.

- Drawing No. 5. Apothecary's quarters, overseer's quarters, police station and Medical Officer's quarters.
- Drawing No. 6. Religious Sisters' quarters, sick room, servants' quarters and office.
- Drawing No. 7. Type plan of cottages, female attendants' quarters, stores, mortuary and chapel, laundry, school, baths and E. CC.

6. The administration of the Asylum is in Administration. charge of the Department of Medical and Sanitary Services and there is a Medical Officer-in-Charge (Dr. T. P. Thamotheram) who was at one time Assistant Medical Officer at the Leper Asylum at Hendala near Colombo. This Officer is in general control of the institution and to enable him to maintain order he is assisted by a police force of one sergeant and six guards who are however not housed on the site. There is a small police station and prison of two cells for offenders. The chief offences are the marauding of patients' gardens and the theft of produce. Quarrelling too is common as lepers are inclined to magnify insults and are usually prone to be vindictive.

The Medical Officer's quarters are placed amongst the other buildings on the site which is an advantage from the point of view of administration and control. In the present instance the Medical Officer is a married man with a family of three children. It would appear that there is something to be said for a Medical Officer being located on the adjacent mainland, especially in the case of a married man.

7. There are at present 151 lepers in the colony. Accommodation. 116 males and 35 females. The lepers are housed in permanent buildings of brick piers with clay walling, half round roof tiles, brick floors rendered in cement, as follows:—

(i) *Cottage.* A number of able-bodied males who can cook their own meals and look after themselves are housed in pairs in twenty-four cottages which are of the simplest construction and planning and are placed on a line along the

main road in plots of fifty feet square, grouped according to nationalities. Each cottage consists of two living rooms, each 12 feet by 12 feet, with a 7 feet 6 inches wide verandah in front and a kitchen at the back. Two male patients club together in each cottage. For general use there is a common bathing place for the occupants of every six cottages. In one instance where a better class patient is housed there is a bath attached to the cottage.

It is understood that the medical authorities view the cottage system with great favour and state that it is a success. If adequate supervision could be devised the system could very well be extended to females.

(ii) *Wards.* There are wards for males and wards for females. All females in the institution are at present accommodated in wards. In the case of males however only advanced cases occupy wards. The wards are permanent buildings of the open type but the provision of mosquito-proofing to one male and one female ward for the benefit of bed-ridden inmates is under consideration. Each section of the institution, especially the female section, is enclosed by a high and formidable unclimbable iron fence.

(iii) There is an administration block for registration of patients, dispensary, etc., and at the back a common kitchen. Cases of general diseases are also located in the hospital.

Isolation  
Hospital.

8. There is an isolation ward for infectious diseases, such as chicken pox, measles and whooping cough, etc. This ward has its own kitchen and offices.

Dressing  
Station.

9. There is a common dressing station to which all the cottage patients go to have their wounds dressed by the Sisters. A store for bandages, wrappings, etc., is adjacent.

Laundry.

10. There is a laundry of the usual type manned by four dhobies who live outside (three for patients and one for the staff). This laundry attends to the entire washing of the institution which is done in the usual method with the assistance of a dhoby stone.

11. A Government school where patients are School. taught to read and write has been recently started.

12. Besides the quarters for the Medical Officer, Quarters. there are houses for two apothecaries, one overseer and sixteen garden coolies. At present there are no quarters for the male attendants. There is one for the female attendants. It would be more desirable if all attendants were housed on the spot in order that better control could be exercised over them. There are in all sixteen male and four female attendants, and of these, three of the male attendants and one female attendant are on night duty.

The Religious Sisters are housed in a separate block consisting of dormitories, sitting rooms, etc., with a small private chapel. They have a well-laid out garden, the whole enclosed by a wall surmounted by wire netting over which creepers grow.

13. The water supply for drinking and domestic Water use is the same as that for the Town of Batticaloa Supply. and from the same source. Supply wells are sunk at the Bar about two miles from the Town. From there it is pumped to a high reservoir in Batticaloa from whence it gravitates through a three-inch main to an elevated central tank at Mantivu. The portion of the main crossing the lagoon, when constructed, was laid in one length on rafts and then sunk. From the tank in Mantivu water is piped to the various buildings. There is one stand pipe for every six cottages and one tap to every ward. All the drinking water is filtered before using. As at times the present supply of pure water is only sufficient for drinking and domestic uses, it is proposed to construct an extra reservoir and service in order to obtain a supply of lagoon water which is quite suitable for flushing out drains and for similar uses.

14. Lighting is by means of ordinary lamps Lighting. and lanterns, there being no system of electrical lighting.

15. There is a small destructor which consumes Sanitation. rubbish and foul matter. The latrines are on the dry-earth closet system. The contents of buckets are trenched in at a remote spot in the island. A water carriage system of drainage is under consideration.

**Cemetery.** 16. A mortuary and cemetery have of course been provided and placed in a secluded portion of the site.

**Religions.** 17. There are approximately five religions:— Roman Catholic, Buddhist, Hindu, Muslim and Anglican, and each denomination has its own place of worship. There is a Roman Catholic Chapel for the use of patients and the Sisters have a corner in it for their own use. The Sisters' residence has its own private chapel in addition.

**Food.** 18. Food is supplied by Government in rations which are very liberal and probably much superior in quality and quantity to the food that a patient is likely to obtain by his own exertions outside. The cottagers have raw provisions served which they themselves cook. The daily rations comprise rice, dry and fresh fish, mutton, chicken, eggs and vegetables. The different classes of religion have to be specially catered for as Muslims will only eat meat killed by one of their own religion and will not touch pork as to them it is unclean; Hindus refuse to eat beef as they consider the cow is a sacred animal, but some of them eat other meats; Buddhists do not take life and therefore it is generally held by Buddhists that they should not eat meat.

**Cottage Patients.** 19. The occupants of the cottages are usually industrious. They cultivate a small patch of flower garden in front and generally a small fruit and vegetable garden at the back, the produce being sold to the hospital. Some patients are encouraged to keep poultry but permission is not extended to the keeping of cattle. Paddy cultivation is not allowed as paddy fields afford breeding places for mosquitoes. The cottages generally are kept very clean. Should tidiness not be observed, the tenants are punished.

Married couples were allowed in two cases to live in cottages. This is not now permitted as occasionally leprous parents bear children and difficulty arises over the care of them. These children are born free of the disease but if they are allowed to remain with their parents they run the very definite risk of contracting leprosy. There would appear

to be no objection to the living together of couples above child-bearing age.

20. The work of nursing the patients is done by **Nursing.** six Roman Catholic Religious Sisters, presided over by a Mother Superior. They belong to the Franciscan Order and have to hold themselves in readiness to proceed wherever in the world they are sent. The Mother Superior is a French Canadian and has been in the Island for three years and the other Sisters have been serving for various years, one of them from the start of the institution nine years ago. One elderly Sister has been here for one year. She came from Mandalay Leper Asylum where she has served for twenty-five years. The Sisters may be sent to any institution where work is carried on by the Franciscan Order. The Mother Superior said her own sister had arrived from Canada and was serving as a nurse in the General Hospital, Colombo.

Besides the nursing of the patients, one of the Sisters' duties is to attend on the patients and dress their wounds which must be a very distasteful job. The Mother Superior stated that the Sisters engaged in it, though they have the option of wearing rubber gloves soon discard them because gloves hamper work. The risk of contracting the disease is ever present although science has not yet discovered positively how the disease is contracted. One avenue may probably be by means of mosquitoes, flies and bed bugs but usually 'prolonged intimate contact' is essential.

21. The female attendants' room was at one **Treatment.** time the residence of a Mother Superior who had contracted the disease. When in South India, at a Mission Dispensary for the poor at Coimbatore, she was attending on a leper, whose case however was unfortunately not then diagnosed as one of leprosy, when the Mother Superior's finger was pricked by a pin and two years later the tell-tale patch appeared on the forearm. She was transferred to the female attendants' room and went under remedial treatment. The Medical Officer stated that she had three hundred injections before being discharged as a "non-infective" case. The injections usually consist of what is

known as E.C.C.O. (Ethyl Esters of Chaulmoogra Oil with Creasote Camphor and Olive Oil). These injections have a complete curative effect in early cases if the patient is in a good state of bodily health, the disease is not far advanced and the patient is determined to put up a good fight. The effect on more advanced cases is that of a palliative and if the patients treated shew no signs of the disease after three examinations at six weeks' intervals, they are discharged as "non-infective."

Generally.

22. One remarkable aspect of this institution is the brightness and cheerfulness of the patients. It is quite possible that there may be dull days and patients may suffer from depression but on the day of the visit no despondent looks were to be seen, on the contrary smiles and glad looks were very much in evidence. The face of one young Tamil woman wore a look of brightness and the reason for her presence in the hospital was not apparent until the bandages on her feet were noticed. There was a European patient in one of the cottages. He has been in the Asylum for two years and was proceeding quite well until six weeks ago when his lungs shewed signs of trouble. It is understood that tuberculosis is often present and accompanies certain stages of the disease. He is now bedridden and is very ill but is smilingly thankful for the little comforts given him and any extra attention shewn him. (This patient has since died).

The institution is a wonderful example of efficiency and cleanliness and reflects great credit on the Medical Officer and staff who are keen on their duties. The Medical Officer is a thorough optimist and the Religious Sisters are splendid examples of quiet and unwearrying devotion.

A recent remark in the Visitors' Book by Mr. H. L. Dowbiggin, C.M.G., Inspector-General of Police, is worth recording. It is as follows:—

"It is always a pleasure to see this institution, which if I may say so does credit to the Colony. I take off my hat very humbly to the Medical Officer, Sisters and Staff who work here. A



capital idea starting a school. The guard is in very good order. A cheerful spirit amongst Staff and patients which it is very nice to see."

29th July, 1930.

*Note:—The drawings of buildings attached hereto are from designs prepared by the Public Works Department and are reproduced by permission of the Director of Public Works. The diagram shewing incidence of leprosy in the Eastern Province is compiled from a sketch furnished by the Medical Officer, Mantivu Leper Asylum. The photographs were kindly taken by Col. A. C. B. Jonklaas, V.D., Provincial Engineer, Eastern Province.*

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GENERAL VIEW OF WARDS, MANTIVU ASYLUM.



COTTAGE WARD



FEMALE WARD.



ISOLATION WARD.

DRAWING N°1

THERE ARE ALSO CASES OF LEPROSY AT KATHIRAVELI NEAR THE SEA COAST 43 1/2 MILES NORTH OF BATTICALOA

# INCIDENCE OF LEPROSY IN THE EASTERN PROVINCE

MILE 0 1 2 3 4 5

MURAKKODANCHENAI  
CHANTIVELI  
SITTANDI

KAMMATURAI

TIMILATIVU  
BATTICALOA

MANTIVU ISLAND

VICHCHUKALMUNAI  
KATTANKUDI

ARAPPATTAL

MUNAIKADU

KURUKKAL MADAM  
CHEDDIPALAYAM

TETTATIVU

PALUKAMAM

KALUTAVALAI

KALLAR

TURAINILAVANAI

PANDIRUPPU  
KALMUNAI

NAIPPADDIMUNAI

SAINTAMARUTU

SAMMANTURAI

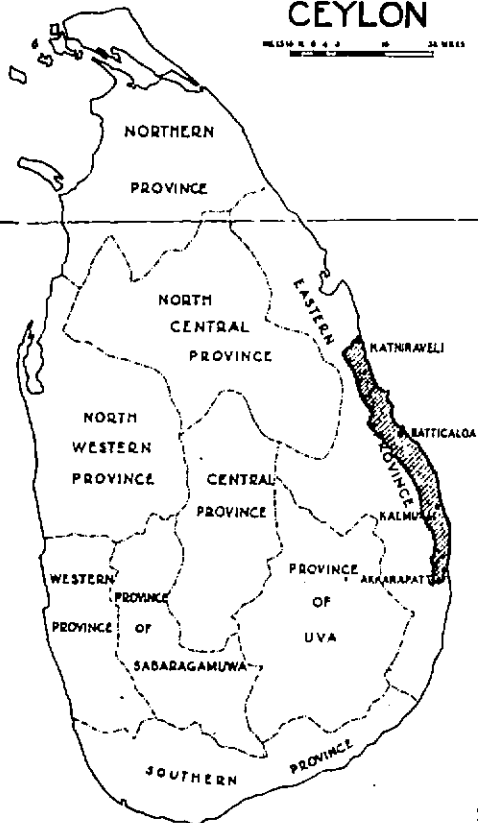
KARATIVU

NINDAVUR

THERE ARE ALSO CASES OF LEPROSY AT AKKARAPATTU NEAR THE SEA COAST 38 MILES SOUTH OF BATTICALOA

## CEYLON

MILE 0 1 2 3 4 5



REFERENCE

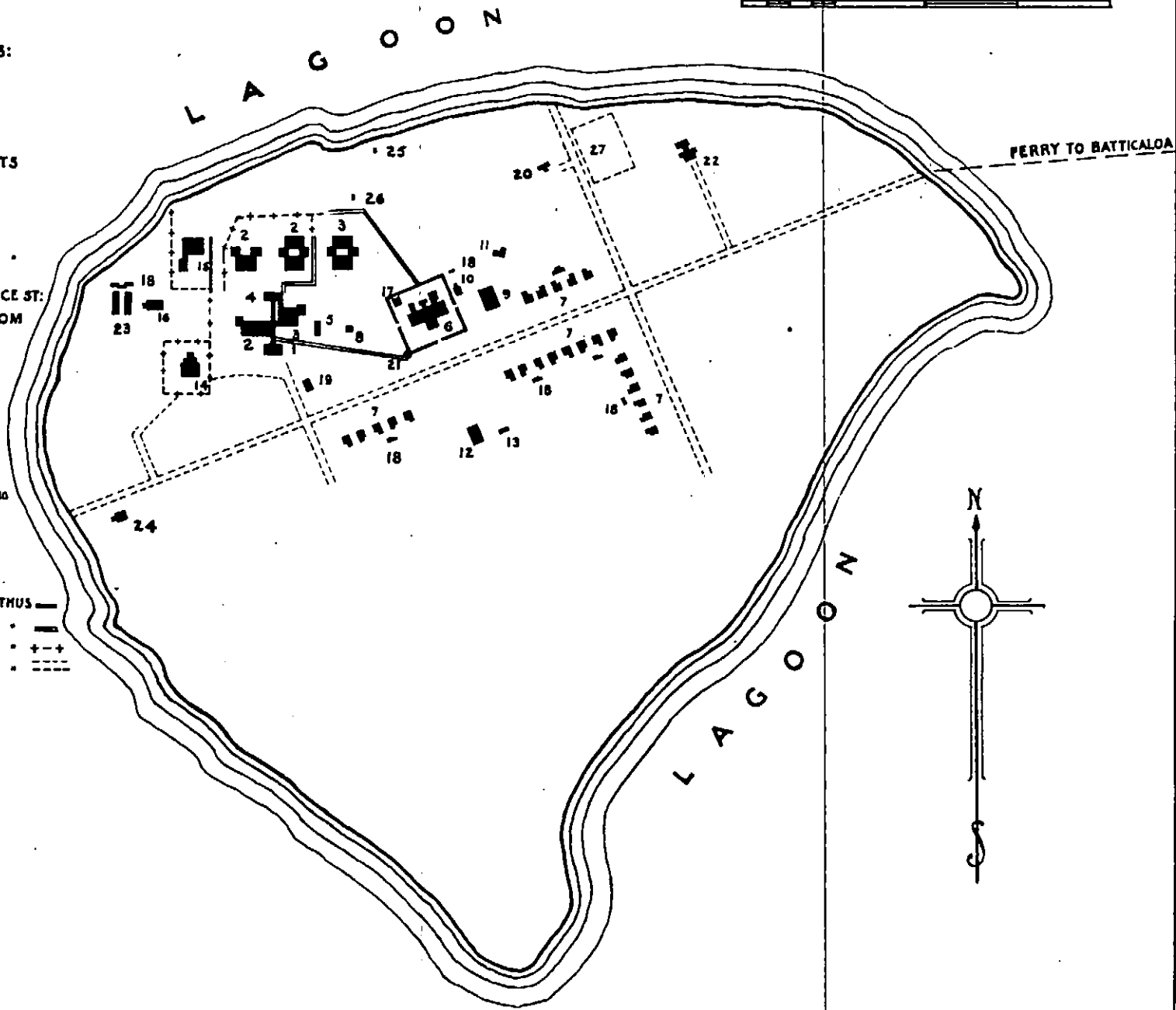
DRAWING No 2

MANTIVU LEPER ASYLUM

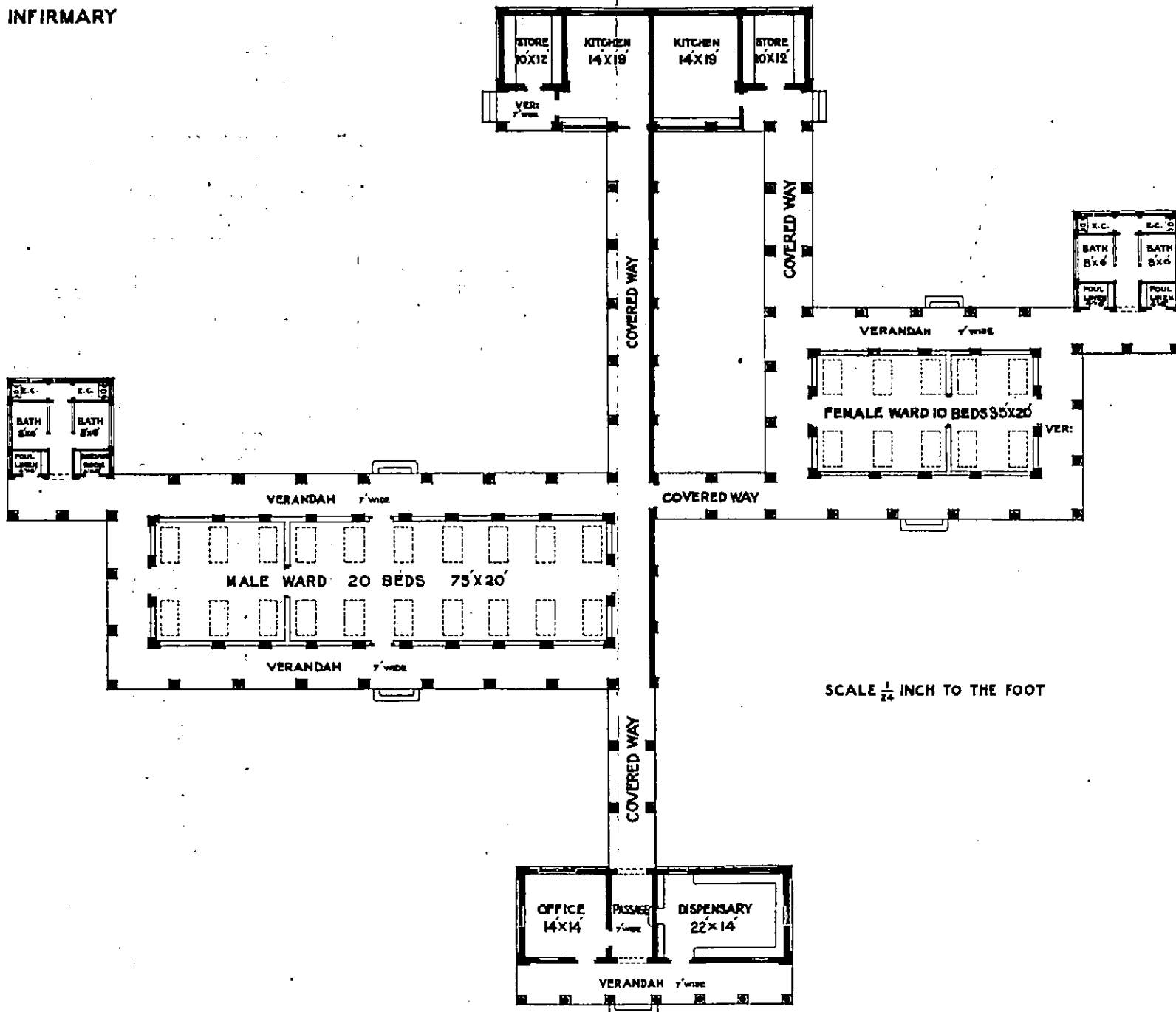
- 1 ADMINISTRATION BLOCK
- 2 MALE WARD
- 3 FEMALE WARD
- 4 KITCHEN
- 5 FEMALE ATTENDS: QRS:
- 6 REL: SISTERS' QRS:
- 7 COTTAGES
- 8 REL: SISTERS' OFFICE
- 9 R. C. CHURCH
- 10 REL: SISTERS' SERVANTS
- 11 LAUNDRY
- 12 DRESSING ROOM
- 13 STORE
- 14 APOS: QRS:
- 15 M.O: QRS:
- 16 OVERSEERS' QRS: & POLICE ST:
- 17 REL: SISTERS' SICK ROOM
- 18 BATH & E.C.
- 19 SCHOOL
- 20 MORTUARY
- 21 WATER TOWER
- 22 ISOLATION WARD
- 23 MALE ATTENDS: QRS:
- 24 HINDU TEMPLE
- 25 PUMP HOUSE } FOR FLUSHING
- 26 WATER TANK } DRAINS
- 27 CEMETERY

- BOUNDARY WALL SHOWN THUS ———
- UNCLIMBABLE FENCE .. + ———
- BARBED WIRE .. + ———
- ROADS .. - - - - -

CHAINS 4 3 2 1 0 4 8 12 CHAINS



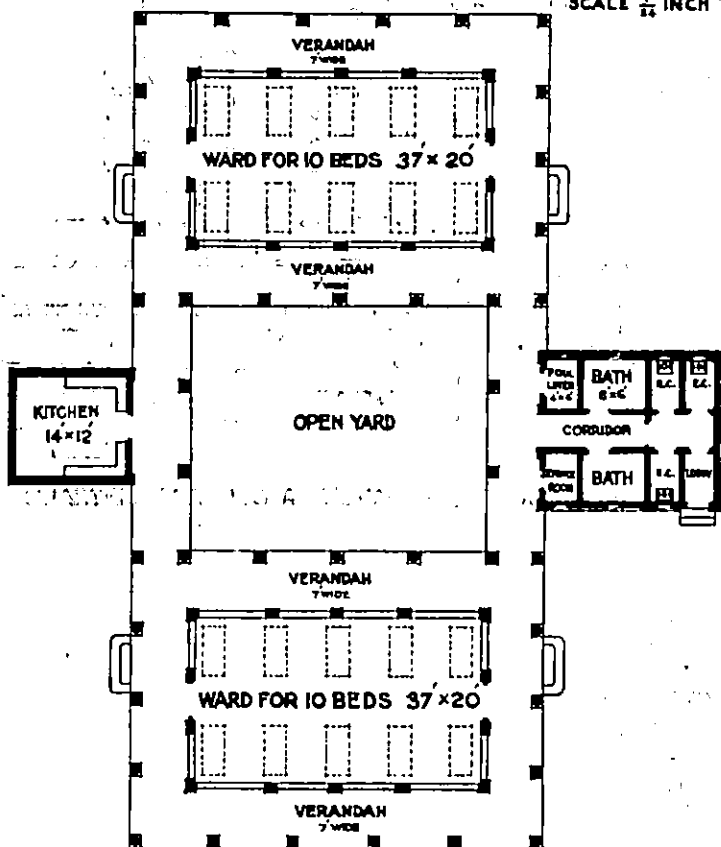
INFIRMARY



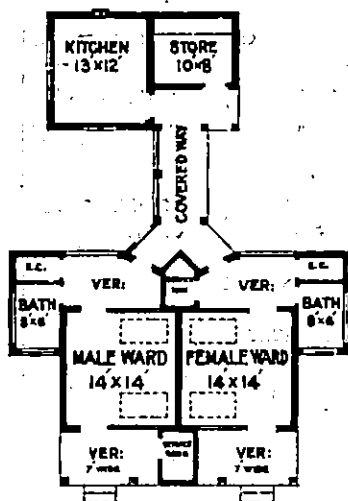
ADMINISTRATION BLOCK

**DRAWING No 4 .**

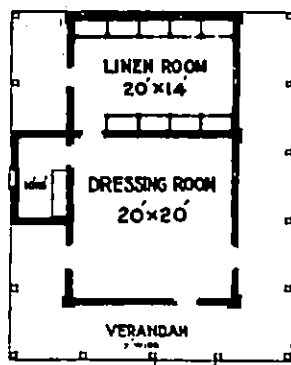
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**FEMALE WARD**



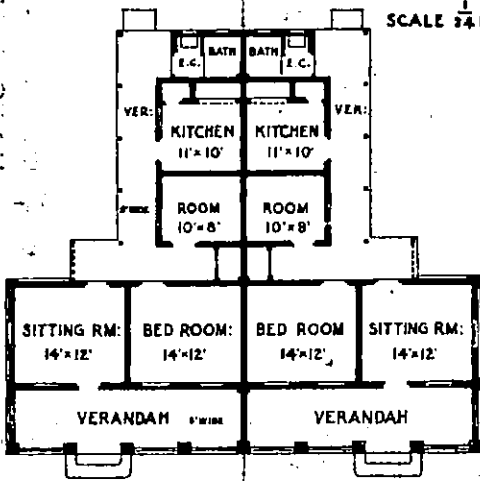
**ISOLATION WARD**



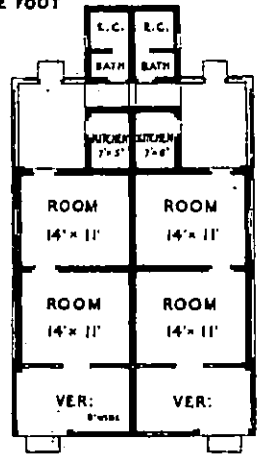
**DRESSING ROOM**

**DRAWING N<sup>o</sup> 5**

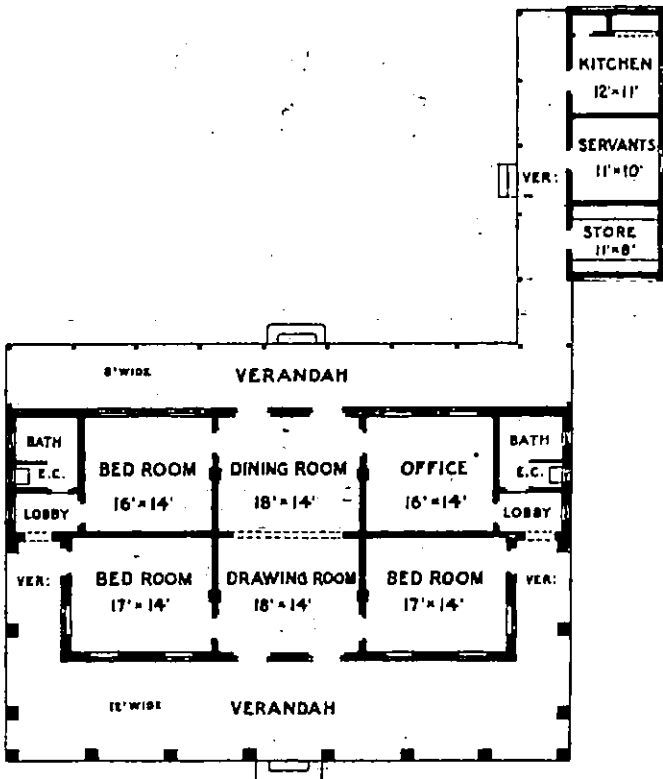
SCALE  $\frac{1}{32}$  INCH TO THE FOOT



**QUARTERS FOR TWO APOTHECARIES**



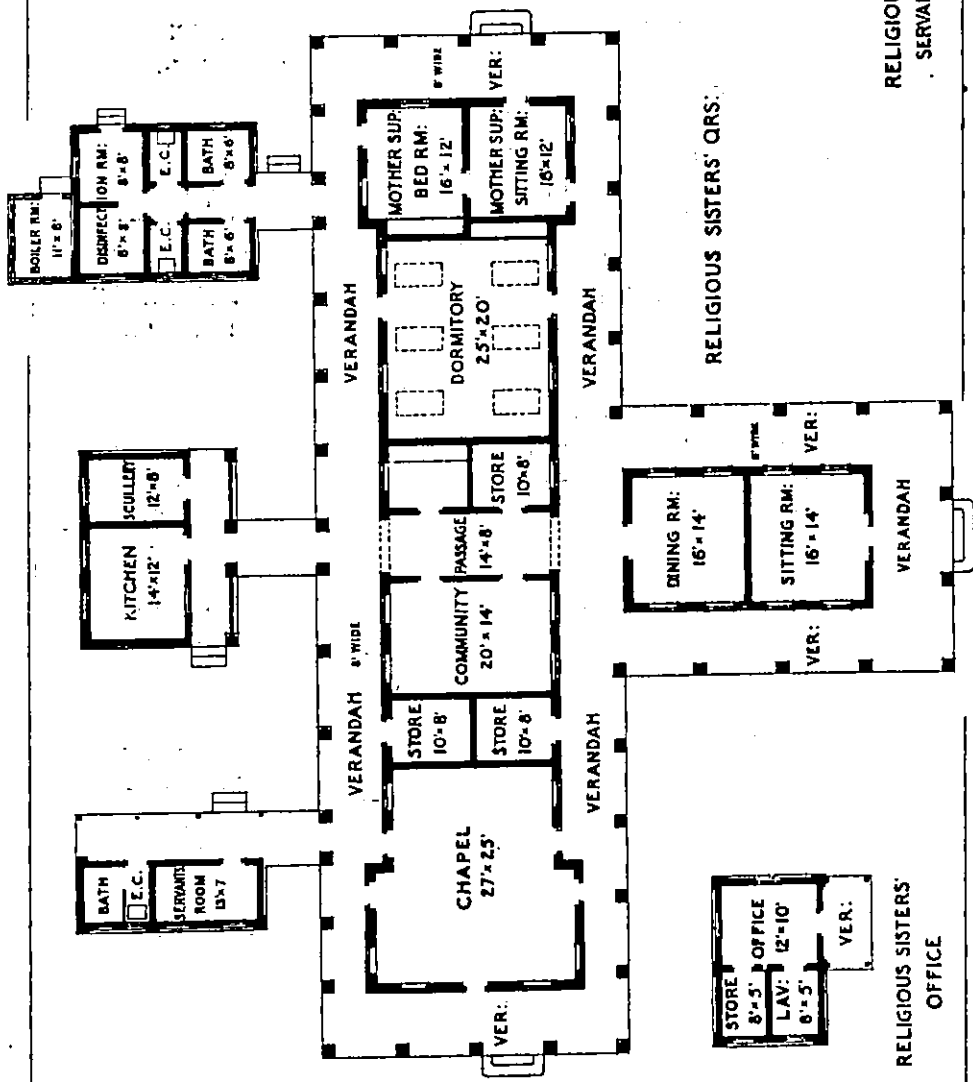
**OVERSEER'S QRS. & POLICE STATION**



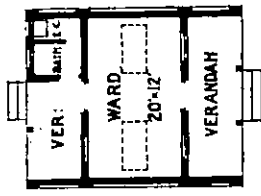
**MEDICAL OFFICERS' QRS:**



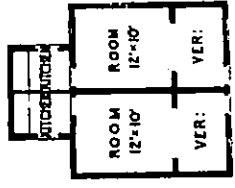
DRAWING No 6.  
SCALE 1/4 INCH TO THE FOOT.



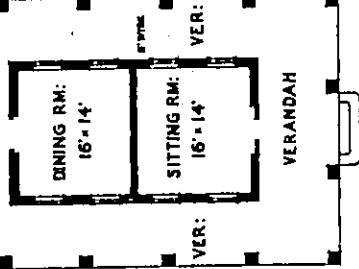
RELIGIOUS SISTERS' SICK ROOM



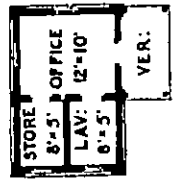
RELIGIOUS SISTERS' SERVANTS' QRS.



RELIGIOUS SISTERS' QRS.

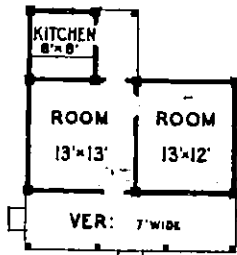


RELIGIOUS SISTERS' OFFICE

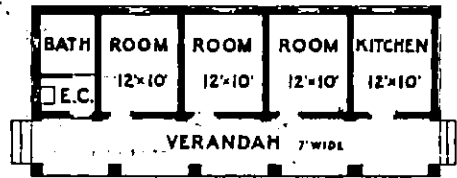


DRAWING No 7

SCALE  $\frac{1}{24}$  INCH TO THE FOOT.



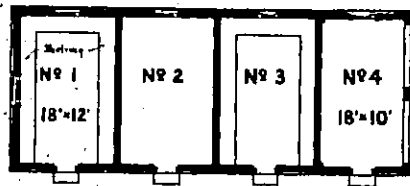
COTTAGE  
(TYPICAL PLAN)



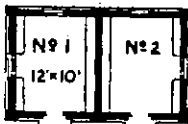
QUARTERS FOR FEMALE ATTENDANTS



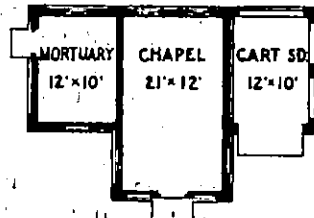
BATH & E.C. FOR  
COTTAGES



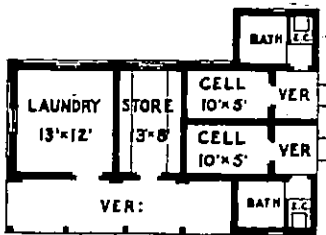
STORE ROOMS



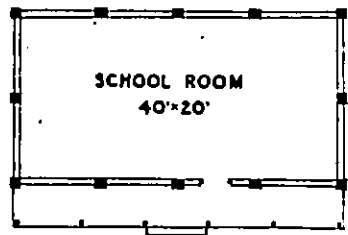
STORE ROOMS



MORTUARY & CART SHED



LAUNDRY & CELLS



SCHOOL



BATH & E.C. FOR  
COTTAGES