*Asylum Hospitals, with Plans.* By RICHARD GREENE, L.R.C.P., Superintendent of the Berry Wood Asylum, Northampton.

The Commissioners in Lunacy have lately recommended the erection of detached hospitals for the treatment of infectious disease at most of the English County Asylums, and it would seem that at least twenty of these institutions are already equipped in this matter. These hospitals differ greatly as to size, form of construction, adjuncts, distance from the main building, and, in fact, in all their features. Some resemble villas rather than hospitals, others are attached by corridors to the asylum. The most of them are of one story only, but one or two are of two stories. Some are divided into blocks, others are in one continuous building. The causes of this endless variety are, firstly, that there are no model plans of asylum hospitals published, and, as far as I am aware, no plans published at all, if I except that lately built at the East Riding Asylum, described in this Journal for April, 1887; and, secondly, that these hospitals being for the most part small affairs, architects are rarely invited to send in plans, so that there is a total absence of the stimulus of competition.

The plans are generally prepared by the County Surveyor, who may, or perhaps more frequently may not, have had previous experience of hospital construction, and who sometimes receives help from the medical superintendent.

The Scotch Lunacy Commissioners exhibit plans of what they look upon as model asylum buildings: but it may be doubted whether much is gained thereby. It may show an architect in which direction he ought to work, and so do good, or it may have a tendency to cramp originality and prevent a careful study of other buildings, and so do harm.

In the following pages I intend throwing out some suggestions for the consideration of those who may be entrusted with the planning of asylum hospitals. Most of these points have been carried out in the one erected in 1886, at the Berry Wood Asylum (ground plan and elevation of which are printed herewith), and of which the Commissioners remark, in their report to the Lord Chancellor, that "it is very suitable for its purpose."

(1). The form of the asylum-estate will usually decide the distance of the hospital from the main building and its relation thereto. Probably about one hundred yards would be found the most convenient distance; but, where this cannot be got,

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very much less would suffice. In one of the old London Small-pox Hospitals the boundary wall was within a few yards of the adjoining houses, and I am assured that the disease was never once known to jump the wall. In nine cases out of ten small-pox is the disease which will have to be treated, as other infectious fevers are but rarely seen in asylum practice.

When possible the hospital should be within sight of the front entrance to the asylum. The superintendent's office is generally in this position, and it is a matter of much importance to have a detached building where it can be commanded from the windows of the medical superintendent's office, whether such building be used for infectious disease, or, as is often the case, for harmless patients when not wanted for its proper purpose.

(2). The size which the hospital ought to be is not a very easy question to settle; but it would seem tolerably certain that it need not bear any close relation to the size of the asylum to which it is to be added. Should the disease be limited to the case first infected, the smallest possible hospital would be enough for isolation of that case, while if the disease spread much, the largest hospital yet built at any asylum, except, perhaps, that at Stafford, would be insufficient to cope with it. This statement is not a reason for unduly limiting the sleeping accommodation, not only because cramped space would prevent the use of the hospital as a cheerful residence for chronic or convalescing lunatics, but also because the administrative department has to be almost if not quite as large for, say, eight cases as it has for double the number. The mere extension of the dormitory does not mean much addition to the cost. For instance, in the plan here given, the accommodation might have been increased fifty per cent. by an expenditure of about twelve per cent. on the whole cost of the hospital.

In the event of the disease spreading the building must be looked on as a centre containing an administrative department and rooms sufficient for the treatment of the first cases—a nucleus around which tents or wooden sheds can be ranged. The latter plan was adopted at the Three Counties Asylum, where the hospital was speedily filled; and also at the Berry Wood Asylum. Here a wooden shed forty-five feet long and sixteen feet wide was commenced on a Friday afternoon and occupied by patients on the following Monday; and, I believe, the additional rooms at the Three Counties Asylum were erected equally as quickly, so that no difficulty need be anticipated in

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that direction. But kitchens, bath-rooms, disinfecting-rooms, laundries, boiler-houses and so on cannot be built hurriedly, so that whatever size the dormitories may be the administration department should be completely equipped and large enough to resist any sudden strain to which it may be subjected.

Probably the most usual size is between twelve and eighteen beds. The cubic space per bed considered necessary varies much. In some cases one thousand or twelve hundred feet only are allowed. In others fifteen hundred are given; but it is manifest that nothing short of two thousand should be thought of, and even this allowance is totally insufficient for severe cases of confluent small-pox. Of course much will depend on the construction of the ward and on the system of ventilation.

The dormitories, of which there must be two, one for men and one for women, may be of almost any length, but never less than twenty-two feet wide. In height fourteen feet would be enough, but fifteen would be better. There ought to be one single room on each side. It should be of larger size than ordinary single-bedded rooms, but otherwise constructed similarly. Rooms for two day-nurses and for two night-nurses should be provided, and also suitable accommodation for the kitchen and laundry servants, so that if need be the hospital can be worked independently of the parent institution. It is desirable to have the ward store-rooms of large size in case it should be necessary at any time to find room for extra nurses.

(3). The bath-rooms should adjoin the dormitories, but ventilating passages must separate them from the latter. It is the more necessary to insist on this as one of the most recently constructed asylum hospitals has its bath-rooms opening direct into the dormitories, in which position they not only block out wall space, which should be used for light and air, but permit steam and noise to find their way from the bath-rooms to the dormitories. The w.c. blocks should also have cross-ventilating passages, and they should never open off the main corridor, as in at least two English asylum hospitals.

(4). Although not absolutely necessary small day-rooms are very desirable. They are useful when fever patients begin to leave their beds, or, should the dormitory beds be all filled, they can be fitted up as auxiliary dormitories.

(5). The ordinary double-hung sash windows answer perfectly well provided there are hopper fanlights opening inwards. Without these fanlights there is apt to be a deficiency of cross

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ventilation, as it is not always safe to have asylum windows made to open more than five or six inches. In the dormitories the windows must be placed opposite to each other as in hospital pavilions, and each bed should have a window on either side of it. These admit of no exceptions. The windows are best if made longer than usual so that the hopper fanlight may be as close to the ceiling as possible, and the sills not more than two feet three from the floor. Windows at the end of a dormitory always look well, and when the ward exceeds forty feet they should never be omitted.

(6). For the sake of light, cheerfulness, and facility of observation the upper panels of all the doors should be of glass, and it is a good plan to have the lower panels of trellised ironwork, by which means fresh air can be admitted close to the floor line. In very cold weather these panels may be closed by small wooden shutters. Fanlights, hinged or on swivels, are useful over the doors. There ought to be no mouldings on the doors or architraves, and indeed all projections likely to harbour dust should be reduced to a minimum.

(7). The floors are best made of oak, but pitch pine, or even yellow deal would do. In any case it should be thoroughly well-seasoned to prevent the least shrinking. The boards ought to be tongued and grooved, and when being laid a layer of whitelead or thick paint should be placed between their edges so as to completely fill the interstices. The boards should not exceed four inches in width and they should be skew-nailed. If of soft wood they can be made fairly impervious by the application of two or three coats of varnish. The floor line should be well above the ground level, and the latter should be over-laid with four inches of concrete or asphalte.

(8). The inside of the walls, or at least a dado five or six feet high, should be finished in Parian or Portland cement, or, what is perhaps preferable, the dado may be made of glazed bricks laid and pointed with cement. Either of these permits of frequent washing.

(9). In our English climate open fire-places are incomparably the best means of warming, and in a ward fifty or sixty feet long a fire-place at each end will be quite sufficient provided they are properly constructed. The tubular fire-place and the Manchester grate-back are useful means of introducing a considerable amount of warmed fresh air into the room. There is no reason why the passages should not be warmed by slow-combustion stoves, or by coils of steam or hot-water

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pipes. The single bedded rooms may be so arranged that they can obtain heat from the corridor stoves. This plan has been adopted in the East Riding Asylum Hospital, and it is perfectly justifiable to utilize such heat for single rooms because open fires cannot always be safely employed in them. It is a less evil than excessive cold. But wherever practicable the open fire-place should be relied on in all parts of a hospital habitually used by patients, because the rays from an open fire resemble those from the sun in passing through the air without appreciably warming it, while enclosed stoves or coils of pipes actually warm the air. Hence when the latter system is in use the patients are compelled to breathe the same air which warms their bodies, a proceeding both unnatural and injurious. Doubtless air may be warmed up to a certain point without perceptible injury to those who inhale it. What that point may be I am not aware, but I am inclined to think it is much lower than is generally supposed. Certain it is that healthy men may breathe air of almost any degree of coldness provided the surface of the body be kept warm by clothing or exercise, and the cool sea breeze brings health and life while the hot air from the desert brings disease and death.*

To warm a building is not difficult, and to ventilate it is not difficult; but to both warm and ventilate it at the same time is not always easy; and the presence of the sick and the insane forms a disturbing element in all calculations concerning temperature and fresh air. In many of the insane the nerve-force is low; consequently they are unusually susceptible of the ill effects of low temperature and of vitiated air. The results of the first are soon apparent, and the second, although more insidious, are not, therefore, less destructive.

Many interesting facts concerning asylum hospitals are to be found in a pamphlet, printed I think for private circulation, by Dr. Sheldon, of Macclesfield. It would seem that the smallest hospital contains six beds, and the largest eighty-five, while the cost varies from £820 to £8,000.

In comparing the cost of different hospitals the mere number of beds is a most fallacious criterion, not only because the cubic space per bed differs so much, but also because the administration departments and the adjuncts are not alike in any two hospitals. Therefore, before any just comparison can be made, it is necessary to know the entire cubical contents and also to have some idea of the specification.

* See Stevenson's work on architecture.

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That at Berry Wood cost £2,700, and it cubes out at a little under fourpence per cube.*

It consists of a centre and three blocks. The east block is for men, the west for women, and the north block contains the administration offices. The centre is formed by a porch, ten feet by nine; the connecting corridors, seven feet wide, and at the union of these springs a tower, fifty feet high. This tower is chiefly ornamental, but is useful to some extent as a ventilating shaft, and it contains an alarm bell. It is also fitted up with dials for showing the direction of the wind, and a lightning rod is attached to its highest point.

The east wing can be shut off from the rest by a door having master locks. It contains a store-room, twelve feet by eleven feet three, a single-bedded room, twelve feet by twelve feet, a nurse's room of the same size, a day room, twenty-two feet by twelve, without the bay, and another nurse's room, twelve feet by twelve. The dormitory is forty feet long by twenty-two feet wide, and is fourteen feet high. It is intended for six beds, and provides rather more than two thousand cubic feet per bed. The bath-rooms and w.c. blocks project from the extreme corners of the dormitories. The connecting passages are cross-ventilated, and open louvres in the roofs of bath-rooms and w.c.'s increase the means of ventilation, as also do small gratings on the floor line.

The dormitories are warmed by open fire-places having tubular backs, and similar grates are fitted up in the two rooms adjoining, the warm air being delivered into the dormitories. The rooms are ceilinged as in an ordinary house at the level of the upper edge of the tie-beam, this plan seeming preferable to the other, which is likely to be somewhat cold in winter and warm in summer. The roof space is, however, utilized by four gratings in the ceiling of each dormitory, and a Boyle's extractor is placed in the roof with the object of drawing off the vitiated air. Sun-burners are used for lighting the day-rooms and dormitories, and four-inch pipes connect the burners with the chimney flues.

It should be stated that the piers between the windows are hollow. The fresh air is admitted from the outside by large "hit-and-miss" gratings, and openings in the cornice permit it to fall in a gentle spray in similar manner to that of a Tobin's tube.

* The lowest tender was £2,649, but the extras brought the total up to the sum named.

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A dado of glazed bricks surrounds the dormitories, bath-rooms, closets, and the passages leading thereto.

The west wing is in all respects a copy of the east.

The north block contains rooms for the laundry-maids, ironing room, drying closet, and wash-house. At the opposite side are the cook's room, kitchen, larder, back kitchen, scullery, and coal place. These form the east and west sides of a square; the south side being formed by the cross-corridor and the north by the disinfecting room, boiler house, and dead house.

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*Some remarks on the relation of Epilepsy and Crime.* By John Baker, M.B., C.M., Assistant Surgeon H.M. Convict Prison, Portsmouth, late Junior Assistant Medical Officer Broadmoor Criminal Lunatic Asylum.

The question of the relation of epilepsy and crime acquired considerable prominence in the early part of the present year in connection with the trial of "Regina v. Hitchins."* The defendant in this trial, the epileptic lad, who fatally shot his sister at Weston-super-Mare, is now an inmate of Broadmoor Asylum. A short time after his admission three other male patients were received who were also the victims of epilepsy; they, too, had committed acts of homicide which had engrossed a considerable share of public attention.

This somewhat unusual influx of epileptic cases arriving within so limited a period of one another, and all guilty of, but irresponsible for the criminal catastrophes with which they were associated, suggested to me that some information regarding the nature of the offences of the epileptic patients, now and formerly included amongst the criminal insane population of Broadmoor Asylum, might prove of some interest; with this view the following tables have been constructed. This asylum was opened for the reception of female patients in May, 1863, but it was not until February of the following year that male patients began to be admitted. It will be convenient to regard the latter date (February, 1864) as the true opening of the whole asylum, and it is proposed to consider the cases recorded in the casebooks as epileptic, from that date until February, 1887, a period of 23 years.

* "Lancet," March 3rd, 1888.

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