into the asylum, where he remained for some time. He was very extraordinary in his conduct on many occasions, and seemed to have some attraction for other patients. He was rather effeminate in appearance and manner, and they had a difficulty in keeping him separated from the others. He was discharged and returned home. There he shaved, dressed himself as a woman, and met several soldiers and sailors in Plymouth. Eventually it appeared that he and a soldier were found together and apprehended. He was not dealt with by the Criminal Court, having said that he was insane, but was returned to the asylum. Dr. Davis did not believe that he was insane; it was very difficult to draw the line in such a case.

Dr. DEAS said that when they had to form an opinion as to border-line cases they always found that it was very difficult to say whether it was one of hysteria or insanity. Was it worth while, therefore, to keep up this distinction between these disorders. He claimed that the essentials of unsoundness of mind existed just as much in hysteria as in insanity. For the purposes of discussion, the essentials of insanity were want of self-control and the too great proneness of the nervous system to respond to stimuli. These two essentials covered the ground of insanity and hysteria. If this were the case, was it worth while to retain the term of hysteria as a distinct disease? It seemed to him that the so-called cases of hysteria were really cases of moral depravity and mental impairment. In his opinion it would contribute very much to the elucidation of early cases of insanity if they could sweep away all idea of their being merely cases of hysteria. He did not know that he had seen a case of hysteria in which he would not come to it with a more open mind and be more able to get to the heart of the trouble by simply viewing it as one of impairment of mental power. All the principles used in the treatment of hysteria were exactly the same as those used in cases of insanity, and he could not help thinking that it would be a distinct advance if they heard less of hysteria and more of the early symptoms ending in and tending towards insanity.

Dr. MACDONALD said that, while agreeing with much in Dr. Hungerford's paper, he was inclined to support Dr. Deas when he suggested that the term hysteria might with advantage be dispensed with. He was inclined to agree with Dr. Deas that it might be hysteria, but that it might be a great deal more.

Dr. HUNGERFORD, in replying on the discussion, said the manifestations of hysteria were so diverse, that it would be rather hard to classify all as insanity.

The Evolution of Asylum Architecture, and the Principles which ought to control Modern Construction.

By R. H. STEEN, M.D.Lond., Senior Assistant Medical Officer, West Sussex County Asylum, Chichester.

"The recovery of the curable, the improvement of the incurable, the comfort and happiness of all the patients, should steadily be kept in view by the architect from the moment in which he commences his plan."—Conolly, *Construction and Government of Lunatic Asylums*, p. 1.

IN the present day the great increase in the number of certified lunatics has raised the question of asylum architecture to one of primary importance. New asylums are being built and planned in all parts of the country, and the managing authorities are keen to provide the best possible accommodation for the suffering ones under their care.

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In these circumstances it is surprising to find how little literature there exists dealing with the matter, and an authoritative treatise on the subject is much to be desired, although it must be admitted that never before has the treatment of the insane by properly constructed buildings exercised greater attention. New plans, new systems are being introduced and are still on their trial, and several years will be necessary to determine the correctness of the ideas of their respective advocates.

In the following pages the writer does not claim to do more than touch the fringe of this extensive subject: firstly, by describing types of the earlier asylums, and pointing out errors inherent in their designs; secondly, by describing briefly the different systems at present advocated in this and other countries; and lastly, by suggesting what appears to be the most suitable form of structure for the treatment of the insane in this country.

Historical.

The construction of asylums as a definite branch of the art of architecture is one of very recent growth, and may be said to date only from the commencement of the present century.

A short historical survey of the subject can be most conveniently classified under four headings:

1. Period of complete neglect of the insane.

2. Period of transition from one of neglect to one of custody of the insane.

3. Period of curative treatment as distinguished from mere custody, but still hampered by the principles governing the latter.

4. Modern period. One of scientific treatment with comparative freedom.

1. *Period of neglect.*—The presence of insanity in the community can be recognised in the most ancient writings. No attempt seems however to have been made as regards the segregation of the insane till the ninth century A.D., when we find that a Morostan (madhouse) existed in Cairo.

In England up till the latter end of the eighteenth century little care was taken in providing accommodation for the mentally afflicted. Those who were dangerous to the community were shut up in prisons or delivered to the care of

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monks. It is true that such places as Bethlem (founded in 1547), and St. Peter's Hospital, Bristol (founded in 1696), were in use, but these buildings were not specially constructed for the purpose to which they were put. Other institutions undoubtedly existed, and in all the condition of the sufferer was no advance on that of the Dark Ages.

2. *Transition period.*—The opening of the York Retreat in 1796 marks the beginning of the new era in the treatment of the insane in this country, and the lessons taught by this institution combined with the insanity of their King roused the interest of the public at that time in the treatment of this disease.

Parliamentary committees were appointed, and in 1808 an Act of Parliament was passed in which justices of counties were permitted to consider the propriety of erecting asylums. As this Act was permissive only, little was accomplished, till in 1845 an Act was passed making it compulsory on the authorities to provide county and borough asylums.

During this period the condition of the insane was one of great discomfort, though not of absolute neglect. It was estimated in 1844 that there were 17,000 insane poor in England and Wales, of whom not more than 4500 were accommodated in asylums.(1) These were placed in licensed houses, which, being old mansions converted into asylums, showed no special form of construction, or in small buildings attached to workhouses; and any asylum especially built for the reception of lunatics differed little in plan from that of a prison, being composed of long galleries lined on both sides by gloomy ill-ventilated cells, with "space for exercise wanting, and means of recreation and cheerfulness unthought of or unknown."

3. *Period of treatment.*—With the legislation of 1845 in England, and 1857 in Scotland, the question of the suitable construction of these institutions came prominently to the front.

The non-restraint principles of Gardiner Hill, carried into practice first by him at Lincoln Asylum in 1837, and later by Conolly at Hanwell, modified the idea that the construction of an asylum and a prison were one and the same, and gave rise to the desire to erect places suitable rather for the treatment of sick people than for mere confinement of the dangerous.

The teaching of Conolly and the publication of his book on

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Construction and Government of Lunatic Asylums (1847) served as a guide to all interested in the subject, and the County Asylum, Derby (for 370 patients), opened in 1851, was the outcome of his work.

This asylum was built on the corridor plan in modified linear form. The main building faces the south, with one ward on each side running north. A corridor connecting the distal wards with the centre runs along the back of the single rooms. The administrative buildings are in the centre. In this building the "prison system" as applied to the insane has not yet lost its hold. This is evidenced in the construction of the wards, which are composed of long galleries open on one side, the other side being made up of single rooms. The single rooms are excessive in number (two thirds of the total accommodation), and thus there is an absence of even moderately sized dormitories and therefore of observation dormitories.

Other defects are :

1. Corridors run immediately adjacent to the single rooms, which necessitates that the latter be lit by windows placed high up and over the roof of the corridor.

2. The unfavourable position of certain wards which are cut off by others from a southern aspect.

3. The approaches are overlooked by the wards.

4. The monotony of the plan, no wards constructed specially to suit the varieties of patients.

5. The small size of the recreation hall (seating 170).

6. Central position of medical superintendent's house.

7. The presence of high walls surrounding "airing courts."

The advances in this plan over other corridor types are :

1. The provision of small day or dining-rooms at the extremities of the wards.

2. The extremities of the wards are not co-terminous.

3. It is possible, by means of the connecting corridors, to reach one portion of the asylum without passing through all intervening parts.

4. The presence of single rooms on one side only of the gallery instead of on both sides, as was so frequent in earlier buildings.

5. The provision of a recreation hall—a structure previously unknown to asylums.

6. The wards are composed of two stories instead of three.

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7. Special ventilating arrangements are provided.

Other types on the corridor system exist and need only be mentioned. These are the quadrilateral ☐, H-shaped, radiating ⏊, and double quadrilateral ☐☐, and in all the same disadvantages are present, viz. the different parts of the asylum are too crowded together, giving rise to an insufficient circulation of air, cheerless aspect of the wards not looking south, and one ward overlooks the other.

The corridor type not having satisfied all requirements, architects proceeded to build institutions modified in various ways from this plan. The plan of the Hereford City and County Asylum, opened in 1872, may be compared with that of Derby County Asylum and is an example of the progress made.

1. The aspect of the entrance is placed on the side opposite to that of the wards, thus preventing proximity of the main approaches to the grounds used by the patients.

2. There is a corridor (covered way) distinct from and not interfering with the lighting of the single rooms.

3. Sanitary annexes with cross-ventilated passages are provided.

4. Day rooms with large bay windows and of fair size are present.

5. Dormitories have been provided, and there is not an excess of single room accommodation.

6. A capacious dining and recreation hall is provided.

7. The medical superintendent's house is placed at one extremity of the building instead of being in the centre.

The defects in this plan are, in the main, those noted in connection with Derby Asylum. It may be remarked, however, that the aspect of the building is bad, and that there is no attempt made to provide wards of special design for the different classes of patients. The chapel is placed above the recreation hall. This is a common plan in the older asylums, and is even yet recommended by recognised authorities ([2]).

The flights of stairs leading to this structure must, however, constitute a danger to the feeble and epileptic patients, and the lower building of necessity be mean in appearance and intersected by supports for the upper part.

The plan of the Barony Asylum, Glasgow (for 600), opened

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in 1875, gives evidence of a distinct advance in construction, and should almost be included in the next period.

The main features are as follows:

1. Differentiation in plan for special use, *e.g.* infirmaries and acute blocks.

2. Day rooms more like private dwellings and on the ground, with sleeping accommodation on the first floor.

3. Southern aspect of blocks, with northern aspect of entrance block.

4. Absence of walled "airing courts."

With regard to (2) it is hardly advisable to have feeble patients such as would necessarily be in the infirmaries ascending flights of stairs on going to bed. The dormitories above these day rooms are not cross-ventilated. It will be noticed also that a chapel, distinct from recreation hall, has been provided, though the corridors leading thereto must have been expensive. There are general bath-rooms.

While the plan of construction of asylums had been gradually developing, the internal arrangements had been progressing *pari passu*. Conolly had recommended tiled floors to single rooms and inspection plates in the doors of all single rooms. Single rooms were now floored, like the rest of the ward, in pitch pine, and no extraordinary fittings were used. The decoration of the interior had also changed from the time of the same authority when he wrote "much ornament or decoration, external or internal, is useless and rather offends irritable patients than gives any satisfaction to the more contented."([3])

4. *Modern period.*—The new ideas introduced by architects into designs for hospitals now began to exert their influence in asylum construction. In 1866 St. Thomas's Hospital, London, on the pavilion type, was commenced, and finished in 1871.

Edinburgh Infirmary design was published in the *Builder* in 1870, and since that time many new asylums in this country have been designed on this plan.

It may be here pointed out, however, that the pavilion plan had been known in asylum architecture long before its introduction for hospital use—as, for example, the plan of Kingston Asylum, Jamaica (1847),—but had seemingly been forgotten by English asylum architects.

In the pavilion plan a large corridor of one story only

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connects together the otherwise separate blocks. The benefits thus obtained are:

1. The blocks can be of varied architectural form to suit various classes of patients.

2. The blocks need not be crowded together, and thus there is no interference with the proper air and sun supply to each part of the building. Should a serious fire occur it can be confined to the area of the outbreak.

3. The blocks can be so arranged as not to overlook or disturb one another by noise, etc.

4. Each block, as now designed, is self-contained. It has its own dormitory, day space, dining-room, bath-room, lavatories, store-rooms, and cupboards, and the asylum is thus split up into many units for administrative purposes.

5. In large asylums the depressing effect of crowds of patients herded in one huge building is minimised.

There can be little doubt that this type of asylum is the most suitable for patients in this country and is the one which is being adopted in almost all the newer asylums. One of the chief drawbacks to the system is that on which stress is laid by Sir H. C. Burdett, namely, "the difficulty, if not impossibility, of efficient supervision by the superior officers of the asylum."(4) This drawback, however, does not appear to be seriously felt except in those asylums which are of enormous size and in which whatever plan were adopted the same difficulty would remain.

Pavilion asylums are of many varieties:

1. Linear, in which the connecting corridor is in one straight line. This is the form frequently met with in hospital plans.

2. H-shape, *e.g.* Leavesden Asylum.

3. Echelon plan (*e.g.* Claybury Asylum) and its modifications.

1 and 2. The linear and H shapes may be considered together, as the latter is only a double linear with administrative offices in the centre. Both of these have the disadvantage that the blocks are too closely crowded together and interfere with the proper circulation of air and supply of sunlight, while the greater part of one ward necessarily overlooks another, and there is increased liability to spread of fire.

3. The echelon plan has many modifications corresponding with the different varieties in shape of the main corridor.

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The following are given as examples :

(*a*) The quadrilateral, *e.g.* West Sussex, Hertford. This seems to be the most popular form in smaller asylums.

(*b*) V-type, *e.g.* 2nd, Gloucester Asylum. This form has the disadvantage that the wards at the extremities of the V are at a great distance from the administrative portion.

(*c*) The crescentic, with corridors as sectors connecting different segments of the crescent, seems best adapted to the needs of very large asylums, allowing greater concentration of the huge building, *e.g.* Bexley Heath Asylum.

A description of a pavilion asylum is given below.

Asylum Hospitals.

At the same time as the architecture of asylums in England has been progressing on the lines just mentioned, authorities in Scotland have been providing buildings allowing a still further classification of their patients, Dr. Clouston, at Edinburgh Royal Asylum, having converted the old " separate " buildings into hospitals ; and Dr. Urquhart, at Perth Royal Asylum, having built two attached hospitals. Dr. Howden, at Montrose Royal Asylum, led the way in building a detached hospital. This building has been in use about ten years. This example has been followed by many of the older asylums in North Britain, and the newer Scottish asylums are specially designed with this principle in view. For descriptive purposes that of Gartloch Asylum is most suitable, being one of those the design of which appears to be the best.

The entrance portion is made up of waiting-rooms, surgery, and quarters for the matron and medical officer. The incoming patient is taken to an examination room with bath-room adjacent, and after being seen he is sent to the observation ward, or if old and feeble to the sick and infirm ward. The observation ward is planned for twenty-five, day rooms on ground floor, and dormitory on first floor. Staff required is one to six patients in this ward, and the patients are under continual observation both day and night. The remainder of the block is one story in height. A kitchen and dining-hall placed centrally divide the male from the female side. The sick room is for twenty-eight patients. The feeble and infirm use the

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day room adjacent to the dining-hall and the dormitory next to it. A small day room with single rooms is provided for noisy patients. A noticeable feature is the exercising corridor, which is wide and practically forms a gallery. A small block separated by a cross-ventilated passage is provided for the treatment of infectious cases. The hospital provides accommodation for 150 patients.

The points in this plan that invite criticism are :

1. The observation wards and those for noisy patients face almost due north.

2. The dormitories adjacent to the exercising corridor appear to be faulty in ventilation, as there is neither cross nor longitudinal air circulation.

3. W. C.'s and lavatories, as in all Scottish asylums, are not separated from the day rooms by cross-ventilation.

The hospital is intended for those patients requiring constant medical attention, *e.g.* suicidal patients, generally feeble, wet or dirty patients, and those suffering from intercurrent diseases. The number of these, according to Sir John Sibbald,(6) is one third to one half of the total number of patients. The advantages claimed for this system are :

1. More complete provision for the medical treatment of those requiring it.

2. In a section of the institution where medical treatment is the predominant aim, all concerned will be more zealous in their work.

That the remainder of the asylum can be constructed and administered more economically and effectively with due regard to the needs of the chronic cases.

That this subject has not been neglected in England is seen by the construction of a hospital block in connection with the asylum at Whittingham. The authorities of Wakefield Asylum are also at present engaged in the construction of a hospital block. This is being built at a cost of £68,944. There is accommodation for 100 patients of each sex, with a cottage home at the back for another 100. A complete administrative portion contains laboratories for scientific work. This system cannot, however, be said to have found favour with English architects. The plans of the many new asylums recently constructed or in course of construction do not show a special hospital.

This subject must not be confused with the scheme to found

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a hospital for acute cases of mental disease suggested by a committee of the London County Council sitting in 1889. The Scotch Board lays stress on the fact that chronic, as well as acute cases, should be under one control.

The following seem to be disadvantages in this system :

1. A building constructed mainly of one story must prove expensive, having regard to the accommodation provided.

2. Administration must also be expensive. The staff required is large, owing to the breaking up of the building into comparatively small rooms and the need for two kitchens in the institution.

3. The size of the hospitals appears to be too large. An ordinary county asylum in England of 550 patients would with difficulty find 170 of that number suitable for the "hospital" treatment, yet these will be seen to be the respective numbers at Gartloch Asylum.

4. Though Sir John Sibbald expressly states that many curable cases will be in the asylum blocks, yet there appears to be some danger that the two sections of the institution will be used to separate the curable from the incurable. For example, one writer describes this system as follows:—"The hospital for the reception of all cases and treatment of the sick and infirm, and the asylum for the care and detention of the insane, the majority of whom are incurable."

In this connection the words of Conolly may be recalled: "I believe the absolute separation of the curable from the incurable to be neither practicable nor desirable; and I know that the incurable patients are generally better companions for the curable than other curable patients are." (*Ibid.*, p. 19.)

Dr. Greene, in a paper read in 1890, says, "It is a common observation that association with the quiet chronic lunatic has a most beneficial effect on the acute case, more especially if this association can be combined with steady employment of some kind."

5. When the main attention of the staff is concentrated on the hospital block there is a liability that the chronic patient may be neglected.

It is feared that there is an idea much too common among medical officers that as chronic cases are rarely recoverable they should be put into a large building, housed and fed comfortably, and that then one's duty is at an end. The doctor in an asylum ought, however, to find that some of his best work will

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be done among these cases. This work may not bring him prominently before the public with a remarkable recovery rate, but he will find his reward in the general appearance and tone of the great mass of those under his care. The depraved idiot and the demented epileptic, as examples of two of the most hopeless varieties of mental disorder, are capable of being taught at least good personal habits, and may be raised from a position of helplessness to one of comparative usefulness. Very many of the chronic cases, owing to their deep-seated delusions, are hopeless as regards being discharged "recovered," but they none the less feel the deprivation of their liberty, and, liable as they are to periodical exacerbations, require as close attention medically and generally as the acute cases just admitted.

In an older asylum which has been constructed with its wards all of one pattern it is evident at once how great a help a special building for the treatment of the newly admitted and sick cases must be. But in a modern pavilion asylum it is not understood why the blocks already provided for the different classes of patients should not serve their purpose more usefully and economically than a detached hospital.

The newly admitted patient will always attract attention and be carefully treated in whatever ward he is, owing to the freshness of his case. The feeble and infirm do not like to be shut off from the general cheerfulness of the younger and chronic patients, and many can attend an entertainment in the hall when they have only a short distance to go who could not do so were they confined to a detached building. The wet and dirty cases with proper attention should be few in number, and even were they many it seems undesirable to congregate them in one part of the asylum.

It may be here noted that a small hospital for the reception and temporary treatment of patients mentally afflicted has recently been opened in connection with Lewisham Union Infirmary. This building is designed with two wards, each accommodating eight patients; two padded rooms; the necessary offices; a small acute ward; and separate entrances for the sexes. The idea is an admirable one, as many quickly recoverable cases—for example, those due to alcoholic poisoning—can be sufficiently well treated here, and saved from the expense of certification and the stigma often attached to asylum confinement.

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Several differences between Scottish and English asylums may be now mentioned. In Scotland:

1. The sanitary arrangements often open directly off the wards without the intervention of a cross-ventilated lobby.

2. Dormitories and day rooms, in many instances, are constructed without regard to the cross-ventilation insisted upon by the English commissioners.

3. The absence of chapel accommodation. The recreation hall is frequently made use of for the purposes of religious services.

4. The absence of enclosed "airing courts" is a noticeable advance in the principle of non-restraint, but the number of patients escaping appears to be larger than would be tolerated in a more densely populated country. The annual reports of the General Board of Lunacy state that the proportion of escapes to the number of patients is over 2 per cent. per annum in the asylums of Scotland.

The Villa or Village Type.

It has been seen that the tendency of late years has been to split up the asylum into two separate buildings, and at present there appears to be a movement on foot to do away with the connecting corridors, and have all the blocks of the institution disconnected. That this idea is no new one is evident from the following list of asylums in Germany and America. The dates of opening and number of beds are given in some instances.

Berlin State Asylums: Herzberge (1893, 1050 beds); Dalldorf (1881, 1300 beds); Biesdorf (1893, 750 beds).

State Asylum of Saxony: Alt-Sherbitz (commenced 1876, completed 1891, 961 beds).

America: Kankakee; Toledo (1883, 1220 beds); Dakota; Willard; St. Lawrence State Hospital (commenced 1888, 1200 beds); McLean Hospital, Boston (private for 200).

Alt-Sherbitz.

Attention has of late been directed to Alt-Sherbitz, due to the praise given to this institution by Sir John Sibbald, ([6]) and the action of the Edinburgh Board of Lunacy in modelling their new asylum on this plan. Want of space forbids a lengthy description of this place. A detailed account is given

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in the admirable report of a visit paid by a deputation of the Edinburgh Board in 1897.

The asylum is divided into a hospital and a colony portion. The hospital consists of separate blocks containing from 20 to 50 patients each, the colony of cottages holding from 26 to 42 patients each. The asylum has several disadvantages apart from those of the system, *e. g.* want of separate accommodation for staff; small proportion of staff to patients (1 to 10) considering the small size and scattered arrangement of the buildings; absence of internal decoration and primitive sanitary arrangements. One writer describes his visit as a "disappointment," and he found "ten patients locked in seclusion in the only ten single rooms of the asylum."

The advantages claimed for this system of separate buildings as compared with connected asylums are:

1. The cost of construction and management is less.

2. The separate buildings are more home-like and less institutional in character.

3. More extensive classification can be adopted.

With regard to these points:

1. The cost of corridor construction is certainly a drawback to the connected pavilion plan, but might be minimised by devising a less expensive type. In Scotland the corridors in many places are made of lighter material than the usual heavy brickwork, but these are found to be very cold in winter and excessively hot in summer. It must be, however, remembered that corridors, besides acting as means of communication, subserve the useful purpose by means of subways of carrying the various heating, lighting, water-supply, and other plant necessary to a large building. The cost of Alt-Sherbitz is given as £142 per patient inclusive of site; this latter must be taken into consideration, as many buildings already on the estate have been converted to the use of the asylum. But having regard to the absence of proper heating, ventilating, and sanitary arrangements, with the lesser price of German labour, this amount cannot be considered specially moderate. St. Lawrence State Hospital cost £351 per patient exclusive of site. As regards management Alt-Sherbitz rate is quoted at less than £25 per annum per patient, but it is felt strongly that in an asylum built on this principle and administered on English lines the maintenance rate could not possibly be less, and

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would probably be greater, than in a connected pavilion asylum. The experience of the Edinburgh Board will be looked forward to with great interest in this connection.

2. To a visitor such an asylum must very well appear less institutional in character from an external standpoint, but it is open to doubt whether the patients will share the same idea. There is no reason why the pavilion ward holding forty patients should appear less home-like than the detached building with fifty.

3. It is doubtful if this is an advantage. The principle of placing the melancholiacs, the acute, and the noisy, epileptics, and senile cases in separate buildings for each variety is one which is open to criticism. What can be more harmful than the so-called "refractory" block, in which each patient feels he is labelled with a bad name, and therefore tries to live down to his reputation? Melancholiacs exert a baneful influence on each other, and recover much better under the stimulus of the more spirited patient.

The disadvantages of the system are mainly those of administration, and the difficulties connected with this may be shortly summarised as follows :—1. Supervision. 2. Distribution. 3. Association.

1. The control of the staff and the care for the general welfare of the patients during the daytime must, as a rule, give rise to a considerable expenditure of time and labour, and in severe weather efficient supervision by the superior officers must be almost impossible. In Alt-Sherbitz the attendants sleep in the dormitories with the patients, but in this country this principle is rightly thought objectionable, and due attention to the needs of the patients at night could not be managed otherwise without a very large staff, and even then the matter is beset with difficulties.

2. Under this heading are included the distribution of food, of the various classes of stores, medicines, etc., and the circulation of material to and from the laundry, needle-rooms, and workshops. At Alt-Sherbitz the dinners are taken round in specially constructed and heated vans. At St. Lawrence it is found necessary to have five separate kitchens.

3. Weekly entertainments have now become essential in the treatment of patients. How the patients are collected for these entertainments in winter-time in a segregated asylum is difficult

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to understand. The same difficulties will attend the association of the patients for religious services.

Many other points will occur to those accustomed to the ways of a large asylum, but enough has been said to show that it is questionable if the few doubtful advantages obtained from the separation of the components of an asylum compensate for the many disadvantages connected therewith.

It may be noted that none of the disadvantages mentioned apply to an asylum of comparatively small numbers for private patients, where the staff possibly exceeds in number that of the patients. For such no better type of asylum could be suggested. In this paper, however, attention has been confined to the needs of the pauper classes only.

In conclusion the points that attention should be directed to in the construction of a new asylum may now be dealt with.

1. *The site.*—The site chosen should possess a subsoil of porous nature, such as sand or gravel. It should be slightly elevated, but not exposed in position, with slight slope towards the south. It should be in a central position in the district, easy of access, and near some large town. It is a mistake to build on a high hill, and banished by distance from the haunts of men, as seems to be so frequently done. The patients like to see their friends, and the staff should be in a position to enjoy outside associations when off duty. The asylum should have its own water-supply and a sufficiency (at least forty gallons per patient per day) should be assured before building operations are commenced. If a well be the source of supply the sides must be rendered proof against surface contamination. The water from the well should be pumped into tanks placed either in a water-tower or on a neighbouring eminence; if the water is taken from the chalk some softening apparatus will be required. The well should have underground reservoirs in which the water can collect in the intervals of pumping. A complete system should provide for an adequate supply of the whole asylum and detached buildings for the following purposes:—(1) Drinking. (2) Washing. (3) Hot water. (4) Culinary purposes. (5) Cleansing. (6) Flushing. (7) Fire. (8) Watering.

The fire arrangements should include—

External hydrants off the main to command each block, hall,

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kitchen, stores, shops, and detached buildings from at least two sides.

Internal hydrants of a 2½-inch pipe to command all the wards, administration blocks, and places occupied by patients.

Every asylum nowadays has its farm, and the size of the estate should be liberal, to allow extensive farming. An estate of 200 acres is ample for an asylum of 800 patients.

2. *The plan.*—The plan of the asylum will necessarily require some modification to suit the peculiarities of the site. It is assumed, however, that the site is a level and extensive plateau, and that the size of the asylum is to be one for 800 patients.

Following the plan of the West Sussex Asylum, an entrance block placed on the north side will have rooms on the ground-floor for porter and telephonic exchange, medical superintendent's office, with clerk's office adjoining or near at hand, committee room and luncheon room, assistant medical officer's office, and lavatory accommodation. An admission room with weighing machine and height measure, and a studio lighted from the north should be provided. At the entrance a small waiting and visiting room is sufficient, The main corridors are now in many places (*e.g.* Bexley) being constructed with bays for use on the regular visiting days. The recreation hall is often used for the same purpose. The first floor should provide accommodation for the assistant medical officers and the matron, two staircases and a partition wall being constructed. A second floor would be of advantage to provide accommodation for housemaids and night nurses. Many of the newer asylums have their entrance block on the north, and a small block on the south corridor for the medical officers. The advantage of this is that the doctors are near the wards, but in practice it will be found that the medical officer will be so frequently required in his office, either to attend to his case-books or interview the friends of the patients, that it will prove a severe hardship if his rooms are, as in one case, one sixth of a mile distant from the front entrance. The entrance block is in many cases placed on the south in a central position, and has the disadvantage that the main approaches are in proximity to the wards. This defect can be largely minimised by the generous planting of trees and shrubberies, but in the early days of a new asylum it must give rise to serious inconvenience. There are, however, many advantages in this situation

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1. The main approaches are of more striking appearance.

2. The medical officers' quarters are near the principal departments of their work, *i. e.* offices, surgery, and infirmary wards.

3. The planning of the stores, workshops, engineering buildings (which must be situated to the north), with their approaches, will be simplified.

As an example of the southern entrance block that of Cheddleton Asylum may be mentioned.

In an asylum of the type under consideration (pavilions connected by corridors) it will be found that the main corridor can be described as consisting of four portions corresponding with the points of the compass. The central axis of the building separating the male and female sides will be given up to the stores, kitchen, recreation hall, and chapel (if attached).

The stores should be placed to the north of the north main corridor to facilitate the delivery of goods. It will be found useful to have a subway from the outside communicating with a basement in the stores. Communication with the kitchen court should be rendered easy. A covered unloading shed will be valuable in damp weather. Two serving hatches opening on the corridor will be necessary.

The kitchen, with its court and offices, and the recreation hall, will be placed between the north and south corridors, and bounded on each side by a connecting corridor. On these connecting corridors will be placed on each side recreation, mess, and bed rooms for the staff. The matron and head attendants will also have their offices most suitably situated on these corridors. Leading to the kitchen serving counters will be two short corridors, one for each side. A serving counter, for use on entertainment nights, ought to be provided between the kitchen and the hall.

In many cases a central dining-hall is provided. The advisability of this is a subject much discussed. The advantages claimed for a general dining-room are—

1. It helps to relieve the monotony of the daily life and clears the wards for a time so that they can be ventilated.

2. The food is more easily distributed from the kitchen.

As regards this question, the patients who go to the dining hall are those who can go out, either to work or to the gardens, and there will thus be sufficient time to thoroughly ventilate

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the wards. The patients who most require change are those who are unable to go to the general dining hall. The great aim and object of modern asylum construction is to render the life of the patients as little institutional as possible, and it is most disastrous to the home feeling to have gangs of patients from the different wards merging into one huge herd in the dining hall. The patients do not like this system, and the shock to the newly admitted one is such as to deprive him of appetite till accustomed to the crowd. The full staff ought to be present at meals, but this is impossible with the dining-hall system, as many of the attendants have to remain in the wards with those patients unable to attend. The question of facility of distribution of food is not a great matter when the true interests of the patients are at stake. It may be doubted, however, whether it is easier to transport the patients to their food than to transport the food to the patients. It is a very simple matter to distribute the food in properly constructed tins to the various blocks. The recreation hall, if made use of as a dining hall, is lessened in efficiency for the purposes of entertainment. To remedy this in the newer Scottish asylums the recreation hall is built above the dining hall. This is costly, and an upstairs hall will suffer from the disadvantages above described in connection with an upstairs chapel, and in the case of a panic from an alarm of fire it is to be feared that the exits usually provided would not be sufficient.

The patients' blocks will be next considered. These are usually of four varieties: infirmary; epileptic block; that for noisy patients; chronic class. To these should be added a fifth, the hospital.

The infirmary ward is used for the aged and infirm. It usually consists of two parallel wings connected by a gallery at right angles to these. One wing is composed of a small dormitory and adjoining day room, the other wing is a large dormitory. Single rooms are placed on the north side of the gallery. The large dormitory should be easily controlled from the gallery, a glazed partition being used in place of the more customary brick wall. A combined day room and dormitory is frequently provided, but is hardly necessary except in very large asylums. A verandah in connection with the infirmary is a useful feature in many of the newer asylums.

The hospital.—The best position for this block is in the

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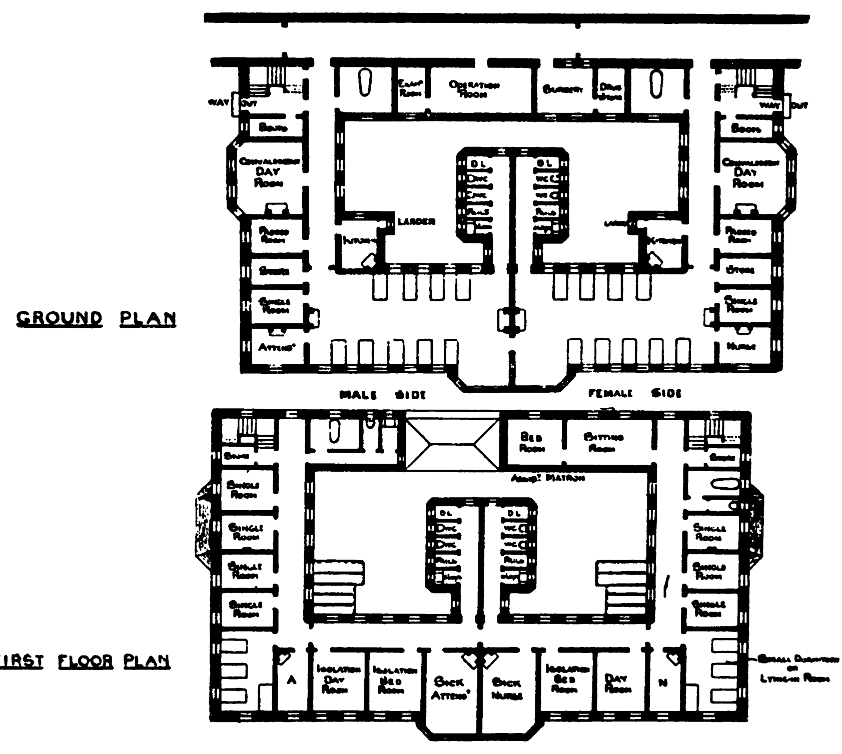
centre of the south corridor between the male and female sides. A plan designed by the author for the purposes of this paper is given. The block will be seen to be almost symmetrical on

HOSPITAL BLOCK



SCALE FEET

each side. On the ground floor is a hospital ward for nine patients with a sanitary annexe. A short gallery connects the main corridor with the ward. Off this gallery are a small convalescent day room, single rooms, padded room, stores, scullery, and attendant's room, and a bath-room is provided at the entrance to the ward. In the space enclosed by the ward and with doors on the main corridor are operating theatre, room for ophthalmoscopic or other examination, surgery, and drug store. On the first floor on both sides are isolation rooms, sick attendants' room, and a small dormitory. On the female

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side there are added rooms for the assistant matron and a lying-in room. The advantages of having a block such as this may be stated as follows :

1. Its central position will enable the nursing arrangements to be undertaken by female nurses. Should it, however, be found necessary to employ male nurses on the male side, it will be seen that the two sides can be made absolutely separate.

2. Night supervision of the ground-floor can be effected by one nurse.

3. The surgery and operating room, besides being in close proximity to the ward that most requires them, are centrally placed as regards the rest of the asylum.

4. A case of infectious disease can be isolated speedily and effectively without undue expense. The elaborate detached isolation buildings could then be constructed on a much smaller scale, and would rarely be required.

5. The block will form a valuable training school for the junior nurses, and the assistant matron can effectively supervise the work done.

Each newly admitted patient will be sent to this block, placed in bed, and kept under observation as long as may be thought necessary. A case of illness occurring in the wards can be also sent to the hospital, and more carefully treated than if remaining in the ordinary ward. A patient deemed suitable for any special line of treatment will be under supervision day and night. The sick members of the staff can be treated in quietness, and separated from the noise and bustle associated with their ordinary room. This hospital it is suggested will supply all the requirements of the hospitals connected with the Scottish asylums, and will not suffer from the many disadvantages of detached buildings. The size of the block will depend partly on the size of the asylum, and partly on the liability to illness of the inmates ; one factor in the latter being the climatic conditions of the district in which the asylum is situated.

The epileptic block is best constructed with one large day room with dormitory adjoining, and of such form that all parts of the day room can be seen from any one portion. The communications between the day room and dormitory should be by means of large glazed doors, so that the patients in bed during the daytime can be under the observation of the nurses

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in the day room. With this form of ward one sanitary annexe can be made to serve its purposes both by day and night. The plan of having the day room on one side and the dormitory on the other side of the main corridor, as is so frequent, is open to many objections.

Blocks for noisy cases are usually of the gallery type, with a larger single room and smaller dormitory accommodation, as compared with the rest of the asylum.

The chronic and workers' blocks usually consist of large day rooms on the ground-floor with large dormitories on the first floor ; a small proportion of single rooms being necessary only for the few who are likely to be restless at night.

In the planning of any one of the blocks the following details should be borne in mind :

1. Southern aspect of the block.

2. Thorough cross-ventilation of every dormitory.

3. Ventilating and heating arrangements for the single rooms, and padded rooms.

4. Each dormitory to have one attendant's room overlooking it.

5. Sculleries of ample size with larder provided for the staff.

6. Sufficient lavatory and bath-room accommodation, all w.c.'s, slop-sinks, and dirty linen closets being separated from the ward by cross-ventilated corridors.

7. Ward stores placed near the day room.

8. Clothes room placed adjacent to the dormitory. In the epileptic blocks this can be connected with the sanitary annexe.

9. Boot rooms of good size placed near the entrance to the patients' garden.

10. Sufficiency of closets for brooms, pails, and coals.

11. Fireproof staircases, and at least two in each block.

12. Fire hydrants commanding the ward from within, and on the outside from two standpoints.

The chapel, according to the wishes of the Commissioners in Lunacy, is now frequently a separate structure. The advantages usually claimed for a detached chapel are—

1. It is more pleasing to the patients, being in accordance with their previous habits of "going to church."

2. It is desirable to separate worship, as far as possible, from asylum associations.

1. As regards the first mentioned, it is undoubtedly pleasant

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in fine summer weather for the patients to have a short walk before entering church, but in severe weather it is unpleasant, and even dangerous, for them to remain in damp clothes throughout a service, however short. In dark winter evenings it is a serious responsibility to keep under observation large numbers of patients, many of whom are suicidal and others epileptic. The feeble, deformed, and aged, who much enjoy the services, will be unable to attend if the distance to be traversed is great.

2. The presence of the asylum staff alone will militate against forgetfulness of the asylum associations.

The chapel is often used for choir practice, sacred concerts, organ recitals, morning prayers, and other purposes. If detached it will be found that the recreation hall will have to take its place on week days, and the chapel will therefore be only for Sunday use.

The chapel usually contains two small retiring rooms for epileptics. These are rarely used, and a spacious porch would prove convenient for this purpose and be an ornamental addition to the structure.

The house of the medical superintendent is in most cases connected with the asylum. This is according to the rules of the English Commissioners. The Scottish Board insist on this house being detached. It seems to be only right that the medical superintendent should be able at times to be completely separated from his duties, and as he is frequently a married man it is undesirable that young children should be exposed to the sights and sounds inseparable from an asylum.

Engineering works.—Heating and ventilating.—Many different systems have been introduced of late years, but it is doubtful if any one of them surpasses in efficiency the old-fashioned system of open fires.

Lighting.—Electric light has now established itself as the most suitable means for this purpose.

Sewage disposal.—The best method of dealing with the sewage of an asylum is a matter still under discussion.

The above subjects are of an extensive nature and much beyond the scope of the present paper. Want of space also forbids a description of laundry, workshops, mortuary, isolation hospital, farm, and the detached buildings for the staff which are essential to every asylum.

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The following are the conclusions which have been arrived at by the writer:

1. Plans upon the villa system and those consisting of detached blocks placed at a distance from the main building present disadvantages which outweigh the advantages claimed for them; and such systems are not likely to become popular in this country and under the existing conditions as to management.

2. The division of an asylum into two portions—the acute and the chronic—almost equal in size, is open to objection.

3. The most suitable plan for an asylum in this country is one made up of distinct pavilions, each complete in its details, connected together and with the administrative offices by means of corridors.

(1) *Report of Metropolitan Commissioners in Lunacy*, 1844.—(2) *Hospitals and Asylums of the World*, Sir H. C. Burdett, p. 18.—(3) *The Construction and Government of Lunatic Asylums*, Conolly, p. 13.—(4) Burdett, p. 99.—(5) *On the Plans of Modern Asylums for the Insane Poor*, Sir John Sibbald, p. 15—(6) *Ibid.*, p. 20.

Clinical Notes and Cases.

Cases of Communicated Insanity. By E. W. GRIFFIN, M.D., Assistant Medical Officer, District Asylum, Killarney.

THE following cases are of interest as being of somewhat rare occurrence. A careful, if incomplete investigation reveals the fact that a sister's son, after "sunstroke," was treated to recovery in an American asylum, and remains well. But, as in so many similar instances here, nearly all the brothers and sisters emigrated to America, and have been lost sight of. However, Mrs. M— assured me that no case of insanity had occurred among her progenitors as far back as her grandparents, to her knowledge. Nor was there evidence of paralysis, epilepsy, hysteria, alcoholism, or phthisis. The mother is alive and well at the age of seventy. The father died a few

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