

under certain circumstances eminently fulfil this condition.). Open air wards, sun rooms, day rooms, and balconies, should be placed to face the sun at its meridian as nearly as possible, the flanks of the balconies being screened off to protect the patients from the winds. Sanitary annexes should be arranged in projecting spurs or towers cut off by cross ventilated passages from the wards; they should be as few as possible and placed in such a position as will as little as possible obstruct the sun and the main currents of air, or as will throw the minimum shadow on the ward windows; for the same reasons, few projections should be built along the side walls of the pavilions. In infectious diseases blocks the air should circulate under as well as around the block.

The axis of every closed ward pavilion should be so placed that the sun will play on each side and one end during the day. No ward should have more than two rows of beds, and the sun should be able to shine into every one of those wards also for an appreciable time every day.

There should be sufficient small wards to keep all types of cases of acute specific diseases in various stages from aggregating at one time in the large wards.

The operating theatre should be placed where the surgeon can work in strong light quite devoid of any shadow and should not be chilly and uncomfortable.

It is most important that the outpatients' department shall not be contiguous to any of the wards; the "casualties" should have a separate entrance.

The administration block, generally the highest building, usually forms a part of the principal frontage next the main road. The rooms being official and in some cases only occasionally occupied, it is well to place the block on the cool side, leaving the sunny aspects for the hospital pavilions and grounds—the sitting rooms of the block, however, would face the sunny aspect.

Finally, the special considerations to be taken into account in hospital planning are, the medical requirements and the hygienic conditions; ventilation, aeration, drainage, water supply, heating and artificial lighting, fire extinguishing and escape, telephoning and other means of inter-communication, transport and commissariat; and, not least, that a hospital, like a church, should be worthy of the city; and, when permanent, its stones likewise will express to those who come hereafter the character of its founders and builders—their generosity, thoroughness, and such like traits.

To cut down the cost of a hospital, do not reduce the quality of the building; but rather by good planning cut down the cube required per bed; by this last process only, much capital cost is avoided and not at the expense of efficiency.

#### IV.—SIZE, ACCOMMODATION AND DISTRIBUTION

In normal times, the Local Government Board limit for a single Poor Law Infirmary was 800 patients; and for an Infectious Disease Hospital 500 patients; and one would take these figures as the limit for general practice in normal times; but, provided always that the site and locality are suit-

able in every respect and that the organization is adequate for perfect general supervision over the whole, the hospital being split up into self-contained and separately directed sub-divisions, there need practically be no limit as to size. Since the war began, emergency hospitals have been standardized upon a basis to provide as many as 1,500 beds; and even in cities, by placing storey over storey and including 4 row wards, in some cases they have approached to no less than 2,000 beds; but the last types are in many respects theoretically bad, and were only adapted for the great emergency.

The model plan of the War office Emergency Hospital—the wards being ground floor high only—accommodates 500 beds; and the space per patient works out at 840 cubic feet in the wards. The space per patient demanded for scarlet fever and small-pox was 2,000 cubic feet and for diphtheria and enteric 2,500 cubic feet; there is no fixed consumption standard because the open air treatment has discounted the figure of 1,960 cubic feet fixed by one expert. Given perfect ventilation and thorough change of air, the chief desideratum under the latest modern conditions now appears, above all, to be ample floor space for convenience of service and all other purposes; and the minimum cube laid down for poor law patients would do for all, always remembering that something more is desirable.

The number of patients required to be accommodated should be calculated for normal times and it depends upon the size and class of the population served by the hospital. The Medical Officer of Health and the local medical staff can give the best opinion in consultation, the former especially will have data as to past numbers; and collectively, provision for the future can almost be definitely settled.

It is not wise to build permanently to the full extent necessary to house the larger number of beds required to cope with abnormal condition of sudden epidemics; these come in cycles and claim an uncertain quantity of victims; furthermore, the medical treatment changes from time to time, and its method often remains indefinite; and therefore money would probably be wasted in building permanently. The soundest procedure is to limit the permanent building to an accommodation only equal to the normal requirements; but, nevertheless, quite perfect in equipment, and with complete and ample administrative and staff buildings sufficient to serve a considerable expansion, and so planned that "concertina-like" the accommodation can be drawn out beyond the permanent nucleus upon sites prepared ready for the rapid erection of such temporary buildings and tents as may be required.

For the disposition of the bulk of the patients the Metropolitan Asylums Board generally adopts the two-storey type of ward with external staircases; and this should be the type for the usual general hospital unless it be small; but some special blocks such as fever or infectious diseases hospitals, operating block, installation block and other minor buildings should be one storey high as should be the open-air wards, which latter may have under certain circumstances, a flat roof which can form a floor for another storey of open-air wards, in which case the lower stage would be permanently constructed.