sion of muscular action? To us it appears that Dr. Radcliffe has glided into a fundamental error in making, as he does, the conditions of pain identical with those of natural sensation, the conditions of convulsion identical with those of co-ordinate muscular action, and the conditions of rigor mortis identical with those of muscular contraction during life. Convulsions, spasms, pain, are undoubtedly results of diminished vital energy; but that would appear to be just the reason why their conditions cannot be identical with those of healthy vital action. The degenerate display of force implies a degenerate condition of the statical element.

The observations which, in his sixth lecture, Dr. Radcliffe makes with regard to the treatment of convulsions are necessarily of great value. He believes that in many cases of chronic convulsive disorder the diet ought to contain somewhat more than an average quantity of oily and fatty matters, and somewhat less than an average quantity of lean meat; and he has found cod-liver oil to be very beneficial in many such cases. Bromide of potassium he considers an invaluable remedy in many cases of epileptic and epileptiform disorder, and he even has a faith that phosphorus is a very suitable remedy in some cases. Of the advantage of belladonna in epilepsy and other chronic convulsive disorders he has great doubts; but alcoholic stimulants "are very trustworthy antispasmodics in the prevention and treatment of convulsions." In this last observation we, who have ever found gin to be the best remedy for hooping-cough in children, heartily concur.

To say that Dr. Radcliffe has earned the right to our thanks by his very original work would be but an unworthy compliment to his labour, learning, and talent. To hope that his deeply considered opinions may initiate an important advance in physiological thought, and lead to a more successful treatment of disease, is to hope for that result which, we doubt not, would be the most grateful reward their author would desire. H. M.

Hospital Construction and Management.

1. *Notes on Hospitals.* By FLORENCE NIGHTINGALE. Third edition, enlarged, and for the most part rewritten. Longmans, 1863, pp. 176. (With numerous plans.)
2. *Rapport sur les Hôpitaux Civils de la Ville de Londres, au point de vue de la comparaison de ces établissements avec les Hôpitaux de la Ville de Paris.* Par M. BLONDEL, Inspecteur principal et M. L. Ser.-Ingénieur de l'administration de l'assistance publique. Paris, 1862, pp. 238.
3. *Etude sur les Hôpitaux considérés sous le rapport de leur construc-*

tion, de la distribution de leur batiments, de l'ameublement, de l'hygiène et du service des salles de malades. Par M. ARMAND HUSSON, Directeur de l'administration générale de l'assistance publique. Paris, 1862, pp. 607. (With numerous plans.)

We need scarcely apologise for introducing into the pages of this Journal the question of hospital management. An asylum for the insane is essentially a hospital; insanity is one of the diseases of the body, and hence all that concerns hospital management is as intimately related to the successful treatment in our asylums of mental disease as it is to the medical or surgical practice of a general hospital. Moreover, the advance in the treatment of the insane in asylums has been in a direct ratio to our departure from the old asylum traditions, and has progressed through the assimilation of these buildings, in their internal management, to the standard of a general hospital. And there can be little doubt that the day will arrive when all these fortresses with iron windows and high walls, and prison corridors and galleries, in which we now confine the lunatic, will be replaced by the ordinary hospital ward arrangements. Already, in most of our county asylums, the tendency to assimilate the building to a general hospital may be traced in the designs adopted for the enlargements which are from time to time made, and in which, almost uniformly, the prison cell and gallery type is replaced by dormitories and day-rooms on the usual hospital model. It cannot thus be wanting in interest to the members of this Association to learn of the most recent opinions advanced on the question of hospital construction and management abroad.

"The third edition of 'Notes on Hospitals,'" writes Dr. Farr, "is, in my opinion, the most judicious, complete, and masterly treatise that has recently appeared on any subject." This is saying a good deal; yet, allowing a little for the enthusiasm which Miss Nightingale's name involuntarily evokes, we are ready to endorse Dr. Farr's encomium. Her essay will also bear favorable comparison with the more pretentious and elaborate French productions which we have placed beside it at the head of this article. There is a simplicity and charm of style in Miss Nightingale's essay which carries one on with its perusal as if it were a story rather than a dry scientific treatise. It is, without question, the most complete and instructive hospital manual which has ever been published, and it is, moreover, adapted to the capacity of all. Physician and nurse will alike learn much from a perusal of its pages. The first lines of the preface suffice to arrest the attention of the most careless reader.

"It may seem," writes Miss Nightingale, "a strange principle to enunciate as the very first requirement in an hospital, that it should do the sick no harm. It is quite necessary, nevertheless, to lay down such a principle, because the actual mortality *in* hospitals, especially

in those of large crowded cities, is very much higher than any calculation founded on the mortality of the same class of diseases amongst patients treated out of hospital would lead us to expect."

M. Husson's large volume, 'Etude sur les Hôpitaux,' is a perfect encyclopædia on all points relating to hospital management and construction. It contains, also, a large number of drawings and ground-plans, and is furnished with a complete table of contents and an index. MM. Blondel and Ser, on the other hand, confine their observations to the comparison of the London and Parisian hospital system. Their report is drawn up with much ability, and they frankly praise—where praise is due—arrangements which they find better in London than in Paris.

We shall, on the present occasion, briefly consider the several questions involved in the terms "Hospital Construction and Management," according to the arrangement adopted by Miss Nightingale.

I. *Sanitary condition of hospitals.*—An inspection of our large London hospitals will raise, in the minds of those experienced in sanitary arrangements, grave doubts as to whether the sick do not materially suffer from that obvious neglect of the laws of health which meets one at every turn. Impure air, want of ventilation (often from defective original construction), inattention to personal cleanliness and ablution, are the usual conditions under which the sick are there treated. Dr. Richardson, in his 'Medical History of England,' recently ventured to hint at this state of things, in comparing the comparative mortality of the Norwich and London hospitals after severe surgical operations.

Miss Nightingale, with the aid of some statistical returns furnished by the Registrar-General,* boldly meets this same question. She gives the following table as the basis of her argument:

Mortality per cent. in the principal Hospitals of England. 1861.

	Number of Special Inmates on April 8, 1861.	Average Number of Inmates in each Hospital.	Number of Deaths in the Year 1861.	Mortality per Cent.
In 106 Principal Hospitals of England...	12,709	120	7,227	56·87
24 London Hospitals	4,214	176	3,828	90·84
12 Hospitals in Large Towns	1,870	156	1,555	83·16
25 County and important Provincial Hospitals	2,248	90	886	39·41
30 Other Hospitals	1,136	38	457	40·23
13 Naval and Military Hospitals ...	3,000	231	470	15·67
1 Royal Sea Bathing Infirmary (Margate)	133	133	17	12·78
1 Dane Hill Metropolitan Infirm. (Margate)	108	108	14	12·96

* See note at the end of this review, p. 413.

On this table she observes—

It will be seen that the hospitals are grouped according to locality. Now, let us compare three of these groups with each other. We have twenty-four London hospitals affording a mortality of no less than 90·84 per cent., very nearly every bed yielding a death in the course of the year. Next we have twelve hospitals in large provincial towns, Bristol, Birmingham, Liverpool, Manchester, &c., yielding a death-rate of 83·16 per cent. And there are twenty-five county hospitals in country towns, the mortality of which is no more than 39·41 per cent. *Here we have at once an hospital problem demanding solution.* However the great differences in the death-rates may be explained, it cannot be denied that the most unhealthy hospitals are those situated within the vast circuit of the metropolis; that the next lower death-rate takes place in hospitals in densely populated, large manufacturing and commercial towns; and that by far the most healthy hospitals are those of the smaller country towns. These results are quite reliable, and are preferable to those derived from individual hospitals; otherwise it might be stated that the death-rate of certain hospitals situated in large towns is so enormous that every bed is cleared out in the year, and in some of them once in about nine months. Facts such as these (and it is not the first time that they have been placed before the public) have sometimes raised grave doubts as to the advantages to be derived from hospitals at all, and have led many a one to think that in all probability a poor sufferer would have a much better chance of recovery if treated at home.

Miss Nightingale attributes to the following defects in site, construction, and management, this low sanitary condition of our large hospitals:

1. The agglomeration of a large number of sick under one roof.
2. Deficiency of space per bed.
3. Deficiency of ventilation.
4. Deficiency of light.

The consideration of these elements of disease leads to the second division of the subject of "Hospital Construction and Management," viz.:

II. *The defects in existing hospital plans and construction.*

The conditions essential to the health of hospitals are thus stated by Miss Nightingale:

1. Fresh air.
2. Light.
3. Ample space.
4. Subdivision of sick into separate buildings or pavilions.

She assigns the following as the principal causes in the usual ward construction which prevent us from obtaining those necessary conditions of health in hospitals:

1. Selection of bad sites and bad local climates for hospitals.
5. Construction of hospitals on such a plan as to prevent free circulation of external air.
8. Defects in ward construction injurious to ventilation, including—defective height of wards; excessive width of wards between

the opposite windows; arranging the beds along the dead walls; having more than two rows of beds between the opposite windows; having windows only on one side, or having a closed corridor connecting the wards.

4. Defective means of natural ventilation and warming.
5. Defects of drainage, waterclosets, sinks, &c.
6. Using absorbent materials for walls and ceilings, and washing floors of hospitals.
7. Defective hospital kitchens.
8. Defective hospital laundries.
9. Defective accommodation for nursing and discipline.
10. Defective ward furniture.

Our limits entirely preclude our following Miss Nightingale into the consideration of these several heads. Her observations on them are full of sound practical sense, and are illustrated by some interesting plans of existing faulty hospital construction.

We pass to the third division of our subject—III. *Principles of hospital construction.*

Miss Nightingale lays it down as the first principle in hospital construction that the sick be divided among separate pavilions, meaning by a hospital pavilion a detached block of building, capable of containing the largest number of beds that can be safely placed in it, together with suitable nurses, rooms, ward sculleries, lavatories, baths, waterclosets, all complete, proportioned to the number of the sick, and quite unconnected with any other pavilions of which the hospital may consist, or with the general administrative offices, except by light airy passages or corridors. This pavilion system is in principle identical with the asylum block system advocated by Dr. Bucknill, and now in course of construction at the new Surrey asylum at Woking.

Miss Nightingale treats in thirteen several sections of the (1) number of floors in a pavilion; (2) the number of wards to a floor; (3) the size of wards, pavilions, and hospitals; (4) the space and area of the bed; (5) the number of beds to a window; (6) material for walls and ceilings of wards; (7) ward floors; (8) nurses' rooms and sculleries; (9) bath rooms and lavatories; (10) waterclosets and sinks; (11) ventilation of wards; (12) ward furniture; (13) bedding; (14) water supply; (15) drainage and sewerage; (16) kitchen; (17) wash-house; (18) operating theatre. Of course, the limited space of this review prevents our noticing these sections in detail; we can but briefly allude to one or two of the more important.

Size of hospital—Miss Nightingale places the utmost limit of a general hospital at 1000 beds. We have always held a similar opinion of the possible ultimate dimensions of our county asylums. From 800 to 1000 patients, sane or insane, can be worked by one

set of officers and on one system. Any number beyond this leads only to increased expense, a multiplied staff and divided authority, with its natural result, discord and mismanagement. We have at least two practical illustrations of the working out of the law that the divided authority, necessitated by increased numbers, materially lessens the efficacy of management in a public asylum for the insane.

Of the ultimate dimensions of a pavilion-hospital, Miss Nightingale thus writes:

> The next point is to determine what ought to be the size of a hospital; in other words, how many beds it can contain with safety. But from what has been said, it will be observed that this question resolves itself into the previous one, viz., what should be the size of each hospital pavilion? Because, if a pavilion of healthy construction is obtained, it is evident that the only limit to the size of the hospital will be an administrative one. An hospital may be constructed for any number of sick, until a point is arrived at when some portion of the administrative arrangements, material or personal, has to be provided in duplicate. Any further extension beyond this ceases to be economical.
>
> Considering each pavilion as a separate unit in the hospital construction, any number of single or double pavilions could be put together up to accommodation for, say, 1000 beds, beyond which it would be difficult, if not impracticable, to have good adminstration with one set of officers. It is to be hoped, however, that few hospitals will ever be built for such a number now-a-days. The fewer hospitals required, and the smaller their number of sick, the better will it be for civilisation. All I submit is, that the pavilion construction may—not should—be safely used up to this extent.

Space and area of the bed.—The usual method of calculating the space per bed is by cubic measurement. In hospitals this measurement gives from 1000 to 1500 cubic feet per bed, while in lunatic asylums it does not exceed 500. The correct principle of measuration is, however, the superficial foot, not the cube. Miss Nightingale thus aptly argues this point:

> Having determined the number of beds per ward, the next point is to ascertain what amount of cubic space should be given to each patient. There is scarcely a point of hospital construction in which there has been so much error as in this. The chief element in the question, and that one which has been very generally overlooked, is the superficial area per bed. If it be—as it is—an essential condition to the healthy state of an hospital that there should be ample facility for the air moving around and in the immediate vicinity of the sick, it is quite clear that, if the beds are placed as close as they can stand, it matters very little whether you give your patient 1000 cubic feet or 20,000 cubic feet. To show the importance of this, it may be sufficient to state that, if a large building, say a church, be selected for a war hospital on account of its spacious light, cheerful aspect, if it be measured to ascertain its cubic contents, its height being no more than 60 feet, in such a building the very liberal war hospital allowance of 1200 cubic feet per bed would render it necessary to place the beds on the floor so close together that not even a pathway would be left between them. Has not this, in times past, been one cause of the frightful mortality in these

hospitals in India? where they give 1000 cubic feet per bed, the superficial area for each patient is only 24 square feet. But then the architect has made such a spacious ward—no less than 42 feet high (!); that it is supposed to make amends.

Let us inquire what is the smallest amount of superficial area we can do with. Hospital beds are generally from 3 feet to 3 feet 6 inches wide, and 6 feet 3 inches long, the bed space being increased to 7 feet by the bed being a little removed from the wall.

The mere surface required to hold the bed is hence from 21 square feet to 24½ square feet. It is quite clear that, whatever surface area is required for ventilation, administration, or for clinical instruction, must be in excess of this amount. There should also be room for free movement of three or four persons, for the use of a night-chair without annoying the next patient, and also for a portable bath, when required. The distance from foot to foot of opposite beds should be sufficient to afford space for a movable dresser or table, benches on either side, and easy passage way. In a well constructed civil hospital in England, occupying a healthy, airy position, it cannot be said that 80 square feet besides the bed space are too much. In round numbers, the superficial area per bed should be not less than 100 square feet.

Ventilation of wards.—Miss Nightingale has no faith in artificial ventilation. "If an hospital (she writes) must be ventilated artificially, it betrays a defect of original construction which no artificial ventilation can compensate; it is an expensive and indifferent means of doing that which can be done cheaply and efficiently by constructing the building so as to admit the pure air around." We concur with Miss Nightingale in her remarks on the injurious results to the sick of attempts at the artificial introduction of warmed air, after the practice of the French hospitals, into the wards. "It strikes me, on examining this process, that it is not in accordance with nature's method of providing fresh air. She affords air both to sick and healthy, of varying temperature, at different hours of the day, night, and season—always apportioning the quantity of moisture to the temperature, providing continuous free movement everywhere, and warming, not by warm water in iron pipes, but by radiant heat. We all know how necessary the variations of weather, temperature, season, are for maintaining health in healthy people.

"Have we any right to assume that the natural law is different in sickness? In looking solely at combined warming and ventilation, to ensure to the sick a certain amount of air at 60°, paid for by contract, are we acting in accordance with physiological law? Is it a likely way to enable the constitution to rally under serious disease or injury, to undercook all the patients, day and night, during all the time they are in hospital, at one fixed temperature? I believe not. On the contrary, I am strongly of opinion—I would go further, and say I am certain—that the atmospheric hygiene of the sick room ought not to be very different from the atmospheric hygiene of a healthy house. Continuous change of the atmosphere of a sick ward to a far greater extent that

would pay a contractor to maintain, together with the usual variations of temperature and moisture given by nature in the external atmosphere, are elements as essential as any other elements to the rapid recovery of the sick in most cases."

Miss Nightingale hardly, however, gives sufficient credit to artificial methods of extracting the foul air out of hospital wards, and for which purpose a system of air-shafts, meeting at a centre where there is heat—be it a hot-water tank or large kitchen flue, on the method advocated by Sir Joshua Jebb—to extract the air, is required. The system she suggests of air-shafts carried up from the ceilings of the wards to above the roof, answers in fine weather, when the air is rarified, but in cold and wet weather becomes the cause of most unpleasant down-draughts. She gives full credit to the ventilating powers of the open chimney, now so general in all our English hospitals. The fire sets it acting, and it takes the air from the ward so successfully that, as has been proved by direct experiment, a single chimney will, in certain states of the wind, remove 60,000 cubic feet of air in an hour, or as much as the French contract system allows for twenty-four patients.

M. Blondel, in his very candid survey of the English and French hospital systems, dwells on the extent to which, in the English hospitals, the windows are opened, and how a preference is here universally given to this method of ventilation. He further admits that he failed in the London hospital wards to trace that peculiar odour which greets one in all French hospitals, but he expresses a doubt whether the physicians in France would sanction the exposure of their patients to the frightful currents of air which reign, he says, in the London wards. "Vous ne sauriez, M. le Directeur (he writes), pour vous figurer ce que nous avons vu, donner trop d'extension à cette expression *d'ouvrir les fenêtres ;* vous resterez toujours au-dessous de ce qu'elle signifie en Angleterre. Ce n'est pas çà et là, comme chez nous, une partie de croisée qui laisse entrer l'air du dehors ; ce sont toutes les croisées, toutes les portes des salles qui demeurent ouvertes constamment ; et pour que cela ne suffise pas, on ménage des communications directes ou indirectes avec l'extérieur, à travers les murs, dans les impostes des portes, au-dessus des croisées, quand celle-ci ne montent pas jusqu'au plancher haut ; on en voit aussi dans les plafonds, dans les coffes des cheminées . . . . Quand nous parlions du froid qui devait résulter d'une semblable ventilation, des courants d'air qu'elle occasionne, et dont tous trois habillés et le chapeau sur la tête, nous étions incommodés, ou nous répondait que ces inconvénients valent mieux que le manque d'air pur. Le programme de nos voisins, en fait de ventilation, est donc des plus simples : *De l'air pur, quelle que soit la température, quels que soient les courants.*"

Baths.—The absence of all bathing arrangements in our metropolitan hospitals is deplorable, and is only equalled by the uniform

neglect on the part of their physicians of this great curative agent. We doubt whether one in twenty of the patients either in St. George's or King's College has that essential to health—a daily bath. The personal ablution of the patients in these hospitals is still of the middle-class English type—the application, once a day, of a little tepid water and soap to the face and hands with a weekly foot-bath. M. Blondel reports with truth that the bathing arrangements of the English hospitals are "*très-peu développés.*" There are not (he says) any *salles de bains* in the London hospitals. In one or two hospitals there is in the basement a room with several baths and a furnace, and above one of the baths perhaps a shower-bath apparatus is fixed. This arrangement (he adds) suffices for important establishments like St. George's Hospital. The dismal unused bath-cellar of that hospital is worthy of a visit from the curious in such matters.

M. Husson gives, at page 102 of his large work, a plan of the admirable bath-house at the Hôpital Saint-Louis. It consists of two dressing-rooms and of two large bath-rooms (containing each thirty separate baths), one for each sex; of a plunge bath, a vapour bath, a vapour douche, water douches, and a room for fumigation. Similar arrangements exist at La Charité, l'Hôpital de Beaujon and Necker. The baths are used alike for the treatment of the in- and out-patients of these hospitals. During the year 1861 there were administered in fifteen of the principal hospitals in Paris 174,632 ordinary baths, and 161,685 medicated baths, to the in-patients; and 21,363 ordinary, with 96,301 of the medicated, to the out-patients; making a yearly total of 453,981—*nearly half a million*—baths administered. We doubt much whether the whole hospital population of London had one hundredth of this number of baths. Miss Nightingale, under this head, advises, in her model hospital, a separate bathing establishment, which should contain hot- and cold-water baths, sulphureous-water, hot-air, medicated, and vapour baths, shower baths, and douche. The walls should be of white tiles or cement, the floors of wood. There should also, for the use of the sick who cannot be moved so far, be a small bath-room, with one fixed bath of white glazed terra-cotta, supplied with hot and cold water, adjoining each large ward. She mentions among the requirements for a bath-house a hot-air bath, but without pressing so far, as we are prepared to do, the great therapeutic value of the Roman (hot-air) bath in the curative treatment of disease. We can only ask, again, how long this culpable neglect by the London hospital physicians of the healing powers of baths, in their varied forms, is to continue?

We cannot linger longer on this chapter. No one, in future, building or organizing a hospital or asylum, can study its every section without benefit to himself and to the sick to be treated within its walls.

We would, in conclusion, say a few words on the ninth chapter of

Miss Nightingale's work, treating of the much debated and much neglected question of *Hospital Statistics*. A uniform system of hospital statistics she pleads for, as urgently as we have done for a uniform system of asylum statistics. Without such a uniform system, it is self-evident that deductions drawn from the numerical results of different hospitals and asylums can lead only to error, and that all the teaching of the past, thus negligently recorded, is made of little or no avail. Miss Nightingale has devoted much care and time to the compilation of one general statistical form (being similar to that in use for many years in the Registrar-General's office for the registration of deaths), and which is divided vertically into columns, containing the ages in monthly and yearly periods, from under one year to five. Above five, the ages are given quinquennially. She proposes that this same form be used for each statistical element. Seven elements are required to tabulate the results of hospital experience, and hence Miss Nightingale recommends that seven separate forms of this table be kept, writing in, as separate headings, these seven elements. They are—

1. Remaining in hospital on the first day of the year.
2. Admitted during the year.
3. Recovered, or relieved, during the year.
4. Discharged incurable, unrelieved, &c.
5. Died during the year.
6. Received in hospital on the last day of the year.
7. Mean duration of cases in days and fractions of a day.

We should thus be furnished with the means of tabulating every fact we require. Provision can be made for different sexes in one of two ways—the column for each age may be subdivided for males and females; or it might be more convenient to have two sets of forms, one for each sex.

Miss Nightingale thus sums up her opinion of the value and adaptability of this form, for the purpose of recording hospital statistics:

> The primary object of these tables is to obtain a uniform record of facts from which to deduce statistical results, among which the following may be mentioned:
>
> 1. The total sick population—*i. e.*, the number of beds constantly occupied during the year by each disease for each age and sex.
> 2. The number of cases of each age, sex, and disease, submitted to (medical or surgical) treatment during the year.
> 3. The average duration in days and parts of a day of each disease for each sex and age.
> 4. The mortality from each disease for each sex and age.
> 5. The annual proportion of recoveries to beds occupied and to cases treated for each age, sex, and disease.
>
> In reducing the data to give the annual results, either per-centages or per-thousands be used.
>
> The number of beds constantly occupied may be obtained by taking the

mean of the numbers remaining at the beginning and end of the year, if the hospital has been fully occupied; or the mean of the numbers remaining at the beginning and end of each quarter; or oftener, if the hospital be irregularly occupied; or, the total number of days spent in hospital by all the cases during the year might be obtained; and by dividing the sum by 365, the mean daily sick would be arrived at. [The total "diets" issued during the year, divided by 365, would give the same result.]

The "sick treated" during the year may be obtained by taking the mean of the admissions, and of the discharges from all causes, including deaths.

With fixed data, arrived at on these principles, we can readily obtain the proportionate mortality, not only of the whole hospital, but of every ward of it, and also the proportionate mortality and duration of cases for each age, sex, and disease.

It need hardly be pointed out of what great practical value these and similar results would become, if obtained over a large number of hospitals.

The laws which regulate diseased action would become better known, the results of particular methods of treatment, as well as of special operations would be better ascertained, than they are at present. As regards their sanitary condition, hospitals might be compared with hospitals and wards with wards.

The whole question of hospital economics, as influenced by diets, medicines, comforts, could be brought under examination and discussion.

The liability of particular ages, sexes, occupations, and classes of the community to particular forms of disease, might be ascertained; other data, such as "married" or "single," previous attacks of illness of the same or of different kinds, birthplace, &c., might be added for comparison, and hospital experience might thus be made to subserve sanitary improvements.

The data for these latter comparisons would have to be kept separately as, indeed, they generally are in all well-regulated hospitals.

The present proposal for improved hospital statistics is confined to those points bearing directly on the welfare of sick admitted to the wards.

The work has been materially assisted by the kindness of the authorities of St. Thomas's, University College, and St. Mary's Hospitals, who have been at great pains in having experimental sheets (sent to them) accurately filled up, and to whom grateful acknowledgments are here expressed.

These forms are now in use in St. Bartholomew's Hospital, and in the London Hospital, and the recommendations of the Statistical Congress have led to a greater uniformity in keeping the records of several other large hospitals.

In addition to the chapters whose contents we have thus too briefly noticed, there are others on *Improved Hospital Plans; Convalescent Hospitals; Children's Hospitals; Indian Military Hospitals; Hospitals for Soldiers' Wives,* &c. &c.; with an Appendix on *Different Systems of Hospital Nursing.* Our limits, unfortunately, confine us to this bare enumeration.—C. L. R.

Note.

As a further aid to forming a just opinion on the debated question of the comparative mortality in the metropolitan and country hospitals, we reprint here entire the portion of Dr. Farr's letter referred to in the text by Miss Nightingale.

EXTRACT FROM DR. FARR'S LETTER TO THE REGISTRAR-GENERAL.—APPENDIX TO REGISTRAR-GENERAL'S TWENTY-FOURTH REPORT.

Public Institutions.

The great majority of the people of England live in detached dwellings; and a certain number reside in barracks, asylums, workhouses, hospitals, lunatic asylums, and prisons, or in public institutions, as they have been called, of various kinds. The mortality of the inmates of some of these institutions is, for various reasons, much above the average; so the inmates having been returned at the census, it was thought right to pick out the principal institutions in which the mortality was likely to be so great as to affect the mortality of the sub-district in which the institution is situated, The list has been compiled on this principle, and does not include a great number of institutions of various kinds. It includes all the principal hospitals and workhouses. The Commissioners in Lunacy, the Inspectors of Prisons, and the Poor-law Commissioners, publish in their annual reports accounts of the respective institutions which come under their cognisance. The statistics of the hospitals of the country are not given at all, or are not given upon a uniform plan. Miss Nightingale, who perceived all the importance of this information, suggested that the hospital statistics should be collected in forms, of which the members of the Statistical Congress in London approved; and if the hospital boards carry out the plan, they will place the hospital statistics on a level with those of the other institutions of the country.

TABLE XIV.—*England: Public Institutions.*

England.	Number of Inmates on April 8, 1861.	Deaths in the year 1861.			Annual Rate of Mortality per Cent.
		Persons.	Males.	Females.	
In 853 Public Institutions	154,602	32,437	19,137	13,300	20·98
„ 690 Workhouses.....	119,984	22,785	12,822	9,963	18·99
„ 106 Hospitals	12,709	7,227	4,950	2,277	56·87
„ 57 Lunatic Asylums...	21,909	2,425	1,365	1,060	11·07

The number of institutions in the Table XIV is 853, which held 154,602 inmates on the day of the census, exclusive of the officers and servants. 32,437 inmates died in the year; and, assuming that the average is represented by the enumerated population, the mortality was at the rate of 20·98 per cent., or 210 per 1000; while the mortality of the population of all England was at the rate of 22 in 1000, or 2·163 per cent.

The mortality in these institutions was ten times as high as the mortality in the population generally.

The annual rate of mortality in the lunatic asylums was at the rate of 11 per cent.; in the workhouses, 19 per cent.; and in the hospitals, 57 per cent.

With respect to hospitals, then, while the annual mortality of the general population was 2·16 per cent., the mortality of their inmates was at the rate of 56·87 per cent., or 26 times as high. The inmates of 6 hospitals are, it is scarcely necessary to say, all suffering from diseases which tend, generally, to increase the risk of death.

The hospitals are filled by a succession of inmates, who remain for a time varying from a day to a month or a year; and the mortality is often given

as so many deaths per cent. on the cases treated. The mean term of treatment varies in different hospitals; in many it averages 36·5 days, or the tenth part of a year. Assuming that term of treatment to be applicable, the mortality of the cases in these hospitals was 5·687 per cent. in 36·5 days; or the hospitals, to every 100 beds occupied, had nearly 57 death annually.

Hospitals enable the charity of the country to supply the sick with skilful medical advice upon the cheapest terms, and this has led to the establishment of the institution upon the voluntary principle in every county. An eminent physician or a surgeon can visit his patients in a short time as they lie in the same or in contiguous wards; and he often consents to attend them without any fee or salary. The collection of the sick under one roof conduces also to economy in the nursing department, in the kitchen as well as domestic service, and in the pharmacy, as the drugs can be purchased and dispensed at a cheap rate. A resident medical officer can attend to all the urgent cases.

TABLE XV.—*Principal General Hospitals in England and Wales*, 1861. (*Special Hospitals are excluded from this Table.*)

	Number of Hospitals.	Inmates.	Average Number of Inmates in each Hospital.	Deaths.	Mortality per Cent.
Total Hospitals	80	8535	107	6220	72·88
Hospitals containing—					
300 inmates and upwards	5	2090	418	2101	100·53
200 and under 300	4	913	239	838	91·78
100 and under 200	22	2898	132	2041	70·43
Under 100	49	2634	54	1240	47·08

The cost of the building is generally so great as to make the lodging much dearer than the best cottage accommodation.

One great evil has often counterbalanced all the advantages. The collection of a number of persons, exceeding those of an ordinary family, under one roof, has hitherto always had a tendency to increase the dangers of disease; for several diseases are, like fire and ferments, diffusible. The danger is increased when all the inmates are sick, for their breath and excretions spread through the wards. The dangers, too, are likely to increase in a faster ratio than the numbers, and the patients are less likely to recover health in the sickly atmosphere of a large building in a city than in pure country air.

These institutions were, accordingly, at one time, infested by hospital gangrene, and by erysipelas; the lying-in hospitals were depopulated by fever (metria); infants perished by hundreds in the Foundling Hospitals; and even in the present day patients often die of hospital pyæmia so frustrating the hopes of the skilful surgeon. It must be stated that nothing can scarcely be worse than the ventilation and all the arrangements of the old hospitals. The classes of cases which are admitted into particular hospitals, and the reason for which patients are discharged, differ largely, so that the investigation of the effects of hospital air, and of treatment in the various establishments, requires great care and skill. It is so importaut, however, that it should be undertaken for the sake of the sick, and for the sake of medical science. A careful comparison of the duration and of the rate of mortality of certain well-defined diseases in hospitals and in private practice would

settle the question. In the mean time, it is evident from the tables that the mortality of the sick who are treated in the large general hospitals of large towns is twice as great as the mortality of the sick who are treated in small hospitals in small towns. It remains to be seen whether the mortality in small hospitals is not twice as great as the mortality of the same diseases in patients who are treated in clean cottages. Should this turn out to be the case, the means of realising the advantages of the Hospital system, without its disadvantages, will then be sought and probably found, as the problem is not insoluble.

PART III.—QUARTERLY REPORT ON THE PROGRESS OF PSYCHOLOGICAL MEDICINE.

I.—*Foreign Psychological Literature.*

By J. T. Arlidge, A.B. and M.B. Lond., M.R.C.P. Lond., &c.

Archivio Italiano per le Malattie Nervose.—The first four parts of this Journal, which we introduced to our readers in our number for April last, are now before us. The original memoirs they contain are, "On Phrenopathy considered Pathologically in its Genera and Species," by Professor Carlo Livi; "On the Relations of the Sulphocyanide of Potassium in the Saliva to the Poisons of Hydrophobia and Curara," by Dr. Filippo Lussana; "On the Asylum of Ancona," by Dr. Filippo Cardona; "On the Influences of Soil, Climate, and Grade of Civilisation upon the Character of Insanity and on Idiocy, studied in relation with Sicily and the Department of the Loire in France," by Professor Pignocco; "On the Therapeutical Action of Arnica on certain Neuroses," by Dr. Brizio Cocchi; "On the Cerebellar System as the Organ of Physical and Moral Excitation, and on Certain Abnormal Varieties of Sensation causing Insanity," by Dr. G. Clerici; "An Introductory Lecture to a Course of Clinical Psychiatry at Venice," by Dr. Berti; "On the Statistics of the Asylum of San Servili at Venice," by Dr. Biffi; and "On the Remembrance by the Insane of the Circumstances befalling them, with especial Reference to Legal Medicine," by Dr. F. Bonucci.

The first essay named, by Professor Livi, appears as a serial in two numbers, and is to be continued. It is devoted to a theoretical inquiry respecting the pathology of insanity, well written, but replete with little practical matter, to be reproduced in an analysis such as we undertake to prepare. He recognises four primary faculties of the mind, viz., the sensational, emotional, perceptive, and volitional, and teaches that disorder may manifest itself in one or more of these, and that when restricted to one, it constitutes monomania. His second paper is chiefly occupied with a review of the modes in which the sensational faculty may be affected, and, consequently, is largely taken up with the consideration of hallucinations and illusions. Near the close of this essay the consequences of lesions of volition are undertaken, including impulsive or instinctive madness, dipsomania, &c.