We have not left ourselves space to refer to many other interesting matters in the Report of the Inspectors, nor to take notice of the Private Establishments for the Insane in Ireland, further than to quote the statement made in regard to them—viz., "We are gratified at being enabled to report that, looking to the general working of private licensed houses during the past year, not a single cause of complaint sufficient to need an official inquiry was preferred to the Executive or to the Inspector; neither was there an instance of improper detention." (p. 110.)

We have only, in conclusion, to say that the statistics are, taken as a whole, remarkably complete; their preparation must have been a most laborious task to both Inspectors and Medical Superintendents respectively; and further, that the entire contents of this blue-book for 1873 evince great care and labour in compilation, and reflect no small credit upon the department from which it has emanated.

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2. *French Retrospect.*

By T. W. McDowall, M.D., Edin., and J. G. McDowall, M.B., Edin.

("Annales Médico-Psychologiques" for 1874.)

On the Influence of Moral Causes upon the Body and specially upon the Nervous System.

This great subject is treated by Dr. Védie by giving very shortly:—

1.—A *resumé* of those psychological facts which bear most upon the subject.

2.—An examination of physiological phenomena connected with the former. Then shall become evident the laws which govern all psychological and physiological phenomena.

3.—The application of these laws to pathology and therapeutics; or, what is equivalent, an examination of the pathological and therapeutical phenomena produced by mental causes. The question of miracles naturally falls to be discussed in connection with this part of the subject.

4.—The reasons why some educated people and even physicians err in their views concerning miracles, and misunderstand the natural laws which regulate these phenomena.

It is unnecessary to reproduce any of the author's remarks on the analysis and synthesis of the phenomena of consciousness, but we may indicate his method of treating of the action of the emotions on the organism. He divides the subject as follows:—

I.—Effects of moral causes upon the cerebro-spinal system and upon the great sympathetic.

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A.—Effects upon the cerebro-spinal system. They are of two kinds; those discovered by observation, and those discovered by experiment.

Facts derived from Observation.—Everyone can prove for himself that the act of reflection, of combining ideas, of experiencing emotions, &c., produces a kind of indefinable fatigue, malaise, even pain, which is chiefly located in the brain.

It has been noticed also that intellectual work is always accompanied, after a certain time, by a distinct sensation of hunger or of the necessity for stimulants. This clearly indicates a loss of nervous force. But if the mental exertion has been too severe, the individual may experience an aversion to food, which shows at least a functional derangement of the stomach.

Facts derived from Physiological Experiment.—When psychological phenomena are in process of manifestation, there is a very considerable afflux of blood in the cerebral arteries. This may be expected to result in a rise of temperature, and increased interchange of material in the nervous tissue. It has been established by Legallois and others that arterial blood is essential to the nervous system, and that its absence involves the abolition of the cerebro-spinal functions. The exhalation of carbonic acid and the temperature of the body are appreciably raised during mental activity. According to Burdach, the heat of the body is increased by hope, joy, anger, and all exciting passions. Martin saw it rise from 35·5° to 37·5° (cent.) in a violent fit of anger. Schiff has shown that that of the nerves also is increased during functional activity. Lastly, Byasson has demonstrated that cerebral as well as muscular work is accompanied by an increased production of urea, which proves a production of heat greater than in the normal state. All these facts indicate that the manifestation of mind is accompanied by an exercise of the nervous system, and, indeed, that this work may be measured by the production of combustions which occur in the cerebro-spinal centres.

B.—Physiological effects produced by moral causes acting upon the great sympathetic. Changes in the colour of the face, and the various disorders produced in all the organs by the influence of violent moral causes, evidence the action of psychological phenomena upon the vaso-motor nerves, and prove that the shock to the cerebro-spinal system is communicated to the sympathetic. As examples, it is necessary only to refer to the well-known action of the emotions upon the heart and circulation. The stomach, however ridiculed by philosophers and moralists, is not insensible to the action of an agreeable emotion; and it is a matter of common observation that a person in whom this organ is sluggish or refractory, feels his appetite return if his dinner is enlivened by the presence of a friend. The removal of an anxiety often produces a greater effect than a glass of spirits or a cup of tea.

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II.—Pathological and therapeutic effects of moral causes. This influence of moral causes upon the vaso-motor nerves easily explains to us all those cases of spontaneous recovery and also of sudden illness which so frequently astonish the vulgar and even physicians.

1st. Pathological effects of moral causes upon the nervous system. It is impossible to classify in a methodical manner the pathological nervous symptoms produced by the action of moral causes. For, according to individual predisposition, one will suffer from headache, another from insomnia, a third from some other nervous disorder. It would be necessary to notice the immense class of the neuroses, to convey an idea of the large number of nervous diseases whose development may be caused or favoured by moral causes. On this subject all writers on pathology are unanimous.

2nd. Pathological influence of moral causes upon the bodily functions. Medical literature is very rich in facts which prove that moral causes have an influence, not only upon the nervous system, but upon all the functions of the economy. They rarely affect a single organ, but generally several at once. In the production of disease they act as in the physiological state, by disturbing the innervation of the vaso-motors, but to a very much greater degree. We can in this manner explain the influence of the emotions, and of the super-excited imagination in resolving or aggravating inflammation, and in favouring or disturbing the process of nutrition. But as certain moral causes have an evil influence, so others have a beneficial action upon the organism. Imagination and powerful emotion have produced remarkable therapeutic results. All cases of paralysis cured by such means belong to the class described as nervous or hysterical. In connection with recoveries regarded as miraculous, it may be remarked that they have occurred in countries in which entirely different religions prevail.

It is unnecessary to follow the author further in his arguments to prove that all so-called miracles have nothing of the supernatural about them. Really, at this time of day, it is difficult to believe that people do live having faith in manifestations of the miraculous. They might succeed in converting unbelievers could they exhibit cases of general paralysis cured by visiting a shrine.

Hypertrophy of the Brain.

In connection with his paper Dr. Brunet gives a large number of references to French papers relating to this subject. He defines hypertrophy of the brain as an increase in the weight of that organ due to a disorder of nutrition leading to an alteration in the nervous substance. Hypertrophy, as well as arrest of development, is much rarer in women than in men, so that the extreme variations in brain weight are met chiefly among the latter.

Cerebral hypertrophy occurs under two forms, according as it is or

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is not accompanied by induration of the nervous substance. In both these forms the cerebellum generally remains normal or almost so.

Cerebral Hypertrophy with Induration.—This disease, in spite of several works devoted to its consideration, is but imperfectly known. It is due to the increase of the connective tissue which leads to atrophy of the nerve cells and fibres, as well as of the capillaries. It occurs indifferently during childhood, adolescence, adult and mature age, but not beyond 50. Saturnine intoxication is the only cause whose power is incontestable.

Its anatomical characters render it easy of recognition. The sinking and flattening of the convolutions, the diminution of the capacity of the ventricles, the induration and discoloration of the grey but specially of the white matter, constitute a set of anatomico-pathological signs which belong to it alone. According to Brunet the brain may increase to nearly double its normal weight; it may have the consistence of dried marsh-mallow paste; its cut surface is clean, pale, polished, glistening, and some empty vessels may be observed which by the appearance of their walls resemble the holes seen in Gruyère.

The principal symptoms of the disease are severe headache, periodically intensified; excitement, alternating with coma; blunting, enfeeblement, or arrest of development of the intelligence; difficulty in walking and moving the joints; epileptiform convulsions. In children these symptoms are less marked than in adults, because the brain is less compressed, the cranial cavity increasing in capacity as the organ enlarges.

Induration of the brain may be met, not only with hypertrophy of that organ, but also with it of normal volume, or atrophied. In paralytic dementia of long duration the white substance is hardened and atrophied, whilst the cortical layer is softened.

Cerebral Hypertrophy without Induration.—Dr. Brunet does not think that this form of hypertrophy has hitherto been described. He has observed two cases of it in idiots. It was complicated by periencephalitis, probably occurring during the last months of life. At the post-mortem examination of one of these cases, an epileptic mute, the following observations were made :—The arachnoid and pia mater are much injected, and present several sanguineous extravasations in their substance. They are not adherent to the cortical substance, except to a slight degree at a few places, as is found in the first stage of chronic periencephalitis. The brain is very voluminous, and forms two well-marked projections posteriorly. The convolutions are compressed, flattened, and the sulci are shallow. They are probably flattened by the pressure of the brain against the bones of the skull; this flattening is specially marked in the anterior third of the external surfaces. The cortical substance is more coloured than normally; the white substance congested. Microscopic examination demonstrated hypertrophy of the connective tissue, and the capillaries numerous and much injected.

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Upon the Progress of General Paralysis.

Dr. Fabre's object in writing this paper is to describe a form of paralytic insanity characterised by alternate excitement and depression. Having given a number of illustrative cases, he concludes as follows :—

"It appears to me useless to discuss the cases I have produced, and to insist at too great length upon the conclusions to be drawn from the examination of these observations, which appear to me sufficient to establish the existence of a variety of general paralysis which may be called *folie paralytique circulaire.*

"This variety is again sub-divided into two varieties, according as the attacks of excitement and depression are or are not separated by a period of remission or intermission. When general paralysis (circulaire) consists of but two phases, one of excitement, the other of depression, it may be called *folie paralytique à double phase.* Each of these periods is characterised by special symptoms. During the stage of excitement, in addition to the maniacal symptoms, there are observed ideas of contentment, satisfaction, and exaltation, combined, sometimes, with those of persecution. In the stage of depression the symptoms of melancholia may be so far advanced as to appear as profound stupor. There may be also a tendency to suicide; but it is particularly important to observe the predominance of melancholic delusions, and specially, hypochondriasis. Excitement and depression in this sub-variety succeed each other suddenly, and without transition. A patient who is violently excited one day may be depressed the next. The delirium changes in the same manner. Ideas of grandeur and riches are suddenly replaced by melancholic and hypochondriacal delusions.

"When paralytic insanity (circulaire) consists of three periods—excitement, quiet, and depression—it may then be called *folie paralytique circulaire à triple phase.* In non-paralytic folie circulaire, when the three conditions of excitement, depression, and lucid interval exist, they generally succeed themselves in the order given. This does not hold good in paralytic insanity *à triple phase.* The periods of excitement and depression in this sub-variety present no character which distinguishes them from those observed in the first; all the difference between the two consists in the existence or non-existence of a remission or lucid interval."

Influence of the Events of 1870-71 *upon the Development of Mental Disease in France.*

During the last two years Dr. Lunier has continued his paper on this subject. It is now finished, and the following are his conclusions :—

1.—The events of 1870-71 caused more or less directly, from 1st

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July, 1870, to 31st December, 1871, the occurrence of 1,700 to 1,800 cases of insanity.

2.—During the same time French Asylums received 1,300 patients fewer than in the corresponding period of 1869-70.

3.—The immediate results of the events of 1870-71 have thus been to diminish considerably the number of admissions into asylums, and, consequently, the total remaining at the end of the year.

4.—The number of lunatics which should have been, in ordinary circumstances, 40,056 on the 1st January, 1872, was only 37,451—a difference of 2,605.

5.—The diminution in the number of admissions from 1st July, 1870, to 31st December, 1871, must be attributed to various direct and indirect causes, among which may be mentioned:

a.—The irregularity in the working of the lunacy department due to the unusual circumstances.

b.—The parsimony of some departmental administrations.

c.—The suspension of certain etiological influences which, during peace and prosperity, frequently produce mental derangement.

6.—The acute character of mental diseases observed in 1870-71, and, consequently, their rapid termination by death, but much more frequently in recovery, also contributed, in a certain measure, to diminish the total numbers remaining at the end of 1870 and 1871.

7.—But from the end of 1871 the total number of admissions tended to resume its gradual increase, and in 1872 it presented quite an exceptional one (2,785); in 1873 it was only 872, which is nearly an average.

8.—This increase in the total admissions, which must, moreover, be attributed to very various causes, and the chronicity and consequent incurability which the disease presented in a very large proportion of the new admissions, had the effect of increasing, to a great extent, from 1872, the number remaining at the end of the year, which was 40,236 at the end of 1872, and 41,108 at the end of 1873. In all probability this last number differs very little from what it would have been had these calamitous years not come upon us.

9.—The events of 1870-71 moderated for the time, but have not arrested, the progressive increase of the relative number of lunatics placed in asylums. In 1869 the proportion was 1 in 989 of the population, and on 1st January, 1874, 964.

10.—The increase in the number of lunatics since the beginning of 1872 has almost equally affected the whole of France.

11.—Mental diseases caused by the events of 1870-71 were more frequent in men than women. The increase in admissions since the beginning of 1872 appears, on the contrary, to have occurred chiefly among women; but in both cases the difference is small.

12.—Hereditary predisposition plays a comparatively unimportant part in the development of mental diseases determined by the events of 1870-71. It was observed in only 24 per cent., whilst under

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ordinary circumstances its influences, to a greater or less extent, is observed in 63 per cent. of cases.

13.—Among the determining causes of mental diseases attributed to the occurrences of 1870-71, some acted only indirectly by exciting emotions, which are often, in ordinary times, causes of insanity, but which were more numerous and more distinctly marked; others acted directly upon the individual. These last were only observed in the departments occupied or immediately threatened by the enemy; the former, on the contrary, occurred in all parts of France.

14.—The exciting causes most frequently observed were: anxiety at the approach of the enemy; the fear of, or vexation at, being pressed into active service; the departure of a dear relation to join the army; the physical and mental fatigues of the war, and specially of the siege of Paris; emotions experienced during a battle or a bombardment; changes in position or fortune; grief caused by intelligence of our misfortunes; politico-social excitement; occupation of the country by the enemy.

15.—Although the causes which determined insanity in our patients were chiefly of a depressing and debilitating nature, there were observed almost all the forms and varieties of mental derangement ordinarily met with in asylums. The expansive forms were observed even more frequently than the depressed.

16.—If, then, the disorders which physical causes determine in the functions of the brain present almost constantly the same characters, those produced by moral causes have generally no relation, or only a casual one, to the causes which have produced them.

17.—Attentive study of cases of relapse shows that in the same individual:—

a.—The same moral cause may lead to absolutely different forms of delirium.

b.—Entirely dissimilar causes produce sometimes the same, at other times different, forms of insanity.

18.—In many of our patients, nevertheless, particularly those who had been guilty of drinking to excess, and who were exceedingly anæmic, certain symptoms of the disease recalled, up to a certain point the causes which had lead to it. Amongst the morbid phenomena most frequently observed it is necessary to mention stupor, pantophobia, abstinence from food, suicidal impulses, megalomania, hallucinations of hearing, and delusions of persecution.

On Pachymeningitis among the Insane.

In 1864 Dr. Christian wrote a thesis on this subject. Further observation tends to confirm his previous conclusions. In this paper he gives the details of nine cases, but it is only necessary to note his deductions from these clinical and pathological notes.

Pachymeningitis is inflammation of the dura mater. It is characterised anatomically by the production of cellular neomembranes,

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generally vascular, on the internal surface of the dura mater. Investigations, followed in France and Germany, have showed the important part which this inflammation plays in the production of intra-arachnoidean meningeal hæmorrhages, a part so important and constant that it is impossible to separate the history of these two diseases; and it is now generally admitted that they are connected with one and the same affection, of which the neomembranes and the hæmorrhages are equally the result. This was Dr. Christian's former opinion, and he is confirmed in it by his new observations. But, even as the neomembrane may exist and develope without hæmorrhage, so may the blood escape into the cavity of the arachnoid without the presence of the neomembrane. A vessel of the dura mater, a sinus may rupture, and hæmorrhage result, quite independently of all previous inflammation. These hæmorrhages, without neomembranes, are not extremely rare in lunatics. Calmeil has recorded several, but Dr. Christian has met with but one case. Without mental derangement, intra-arachnoidean meningeal hæmorrage has been met with in cases of alcoholism, although in these inflammation of the dura mater is far from rare. The fatty degeneration of the vessels, the consequence of chronic alcoholism, explains the facility of their rupture.

Dr. Christian has published a case of extrameningeal hæmorrhage which followed indigestion in a maniacal imbecile. Cerebral congestion, due to repeated efforts at vomiting, caused the rupture of a vessel on the external surface of the dura mater. The blood escaped between that membrane and the cranium.

It is evident that pachymeningitis is not the only necessary cause of intra-arachnoidean meningeal hæmorrhage; and without speaking of the results of direct examination, which is not always very easy, it is by the progress, symptoms, and antecedents of the patient that we are enable pretty accurately to establish the difference.

The hæmorrhage is a symptom; the pachymeningitis is a disease. Thus, in simple hæmorrhage, we see the signs of intense cerebral congestion, followed suddenly by those of cerebral compression. There is nothing like that in pachymeningitis. The cerebral disorders are of long standing; generally they pursue a chronic, insidious course. The patient experiences anomalous congestive symptoms; attacks of partial hemiplegia which disappear, then return; he falls into a state of marasmus, and when he dies there are found neomembranes more or less developed, and overspread by hæmorrhagic layers of different ages.

Pachymeningitis is not very rare among lunatics; it is principally met with in general paralysis, in which Baillarger observed it in one in eight, Brunet in one in five, Christian in one in three cases. But it is observed in other forms of mental derangement, as mania, dementia, &c. On every occasion in which Dr. Christian met with it, there existed other alterations, either of the brain, or of the membranes, but chiefly vascular lesions, so that he is inclined to believe that

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pachymeningitis may occur as a complication in all forms of insanity accompanied by a chronic lesion of the nervous centres.

Among lunatics it occurs either as a last symptom, when we find only rudimentary neomembranes, accompanied by extravasations of recent blood, or, on the other hand, it pursues a chronic course, and acquires a considerable development, as is shown by the advanced structure of the neomembranes. It then shows itself by symptoms which are peculiar to it, and appears to exercise a considerable influence even upon the progress of the delirium, at least in certain cases.

Endless discussion has arisen on the question whether the hæmorrhage has preceded the neomembrane, or whether the latter has been the primary lesion and the cause of the effusion of blood. The opinion that the membrane is formed from the clot is not now common, for neither the fibrine nor the other constituents of the blood are capable of organisation. Then how does it happen that a thin membrane, scarcely organised, is able to throw out a considerable quantity of blood?

The neomembrane is formed on the internal surface of the dura mater; the vessels which are therein developed anastomose with those of the dura mater; but all these vessels of recent formation have, as a rule, but an incomplete rudimentary structure; their walls easily undergo fatty degeneration.

If, then, by any cause, the dura mater becomes congested, there is every probability of a rupture occurring at the point of least resistance, that is to say, in the course of the new vessels, or rather at the point where these vessels inosculate with those of the dura mater. There can then happen but one of two things—either the blood escapes in small quantity, and the thin neomembrane, not being ruptured, confines the clot; or, on the other hand, the hæmorrhage being abundant, ruptures the cellular structure, and escapes into the cavity of the arachnoid.

Dr. Christian is of opinion that the delirium of pachymeningitis is peculiar. There is a kind of *égarement* quite characteristic, which contrasts so distinctly with the more or less co-ordinated delirium of insanity, that every time he saw it appear in a lunatic he considered it an almost certain indication of pachymeningitis. At the same time that this *égarement* appears, marasmus proceeds more rapidly. Lastly, there occur symptoms of incomplete hemiplegia; comatose attacks disappearing in a few days, which are due to successive hæmorrhages. These symptoms remove all doubt. But none of these phenomena are pathognomonic. Their pathological significance is due to their combination, mode of appearance, and more or less rapid succession.

(To be continued.)

Bulletin de la Société de Medecine Mentale de Belgique. Nos. 1-4, 1873.

This is a new journal, and owes its existence to the formation of a new society. How these sprang into being is detailed at considerable length in the first number, and the following scraps of information are

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given in order that it may be seen how our Belgian confrères intend to forward objects in which we have a mutual interest.

Formation of the Société de Medicine Mentale de Belgique.

As the result of an appeal by Dr. Bulckens to Belgian psychologists, there assembled at Ghent, on the 27th June, 1869, seven gentlemen. At this meeting a sketch of the constitution of a society, to be called the Société Phreniatrique, was prepared. At a second meeting in September it was agreed that the aims of the society should be:—1. The improvement of the condition of the insane in Belgium. 2. The perfecting of asylums and the various modes of treatment. It is proposed to effect these objects by examination of the laws relating to lunatics; by acquiring and disseminating facts calculated to advance mental pathology; and by watching over the professional interests of medical men specially engaged in the study of mental disease.

At a meeting in October, after long discussion as to what particular work the Society should first direct its attention, it was resolved that the members should be invited by circular to bring under the notice of the Bureau any defects in their own establishments or in the general administration, along with the measures by which they hoped to see these corrected. From these reports the more interesting and important were to be selected as material for discussion at the next meeting. M. Jaque called attention to the medical certificates, which he regarded as generally brief and incomplete, and suggested that a model should be prepared. He thought that all facts concerning patients should be communicated directly to the physician of the asylum,—and further that the lack of workshops and the insufficient wages of attendants were to be regretted.

M. Van Holsbeck called attention to the heating and ventilation of asylums, and to the dress and diet of patients, all of which he looked upon as defective. He thought that asylum physicians, to insure their authority, should be appointed by government. He objected to patients in an asylum being visited by other medical men without the previous sanction of the Medical Superintendent. The admission of patients should be simplified; special asylums for epileptics should be erected; and chairs of psychology should be founded in the Universities.

Dr. Semal approved that asylum physicians should be appointed by government, with salaries corresponding to the number of their patients. In cases where the physician is also director, he should receive further remuneration from the proprietor. Dr. Semal urged that every asylum physician should be present at the meetings of the local committees of inspection.

Dr. Lentz suggested for consideration the means to be adopted for the improvement of wards occupied by dirty cases.

From among these various subjects two were chosen—1. The posi-

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tion of the physician in Belgian Asylums, what it is, and what it ought to be. 2. Dr. Lentz's proposition.

It was, however, found that the first of these subjects was too extensive, and the discussion was therefore limited to the methods of nomination and remuneration of asylum physicians, and the formation of the local committees of inspection, with special reference to the advisability of the presence of the medical officers at the meetings.

Concerning the improvement of wards for dirty cases Dr. Lentz thought that Belgium had fallen behind. His experience had taught him that while a well regulated diet would do much, careful attendants were indispensable. M. Bulckens wished to form at Gheel a special department for such patients, and thought that the family system of treatment was one of the most advantageous. Dr. Semal pointed out the importance of a sufficient staff of attendants. Though the law insisted on one for every ten patients, it was evaded by including servants other than pure attendants.

On the Management of the Insane in Belgium.

A report on this subject was drawn up by a committee and submitted to the Society. In comparing the French and Belgian laws relating to insanity, it is pointed out that while the former, by insisting on each department providing asylum accommodation for its insane, with officers appointed by government, insure the curative treatment of these patients; the latter, overlooking this principle, merely tend to prevent former abuses, without being provocative of improvement.

At present (1870) government is unable to compel parishes to provide accommodation for their insane, who are thus free to roam about until some act renders them amenable to criminal law. Should any parish propose to build an asylum, government, by enforcing the exactions of the law of 1850, makes such an undertaking so costly that the intention is at once abandoned. Further, government has as yet confined itself to aiding in the erection of large asylums, systematically abolishing small communal refuges. In the opinion of the Committee these ought to be preserved for the accommodation of idiots and dements, whilst large asylums should be built for dangerous and curable cases by the communes. The defective state of the present law is further shown by the large number of chronic lunatics who fill existing asylums, the patients having been neglected until treatment has become useless. To remove these defects the government should restore to the central power the duty of erecting and regulating asylums, and assist in defraying the expense. The Committee considers that chairs of psychological medicine, with courses of practical instruction, are urgently required.

The physician should exercise control over both medical and administrative departments, and reside in the asylum. The attendants should be appointed by him. Care should be taken to exclude individuals bound by the laws of religious societies. The cost of mainten-

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ance should be defrayed by means of taxation. Asylums should not be private enterprises. At present the administrative committees of asylums arrange with certain religious bodies who supply food and all necessaries at a remuneration varying from 70 to 90 centimes per day, per head.

Dr. Semal proposed the formation of a commission, drawn from the legal and medical professions, to which superintendents should send notice of the admission of patients. These commissioners would visit and inspect all asylums at undetermined times. Several matters connected with the admission of patieuts require attention.

Dr. Bulckens thought the erection of public asylums throughout the country too sweeping a measure to be practicable, and proposed the building of one model asylum, the arrangements and rate of maintenance of which would provide a standard up to which the law should compel proprietors to raise their own institutions. He did not approve of separate asylums for incurable or epileptic cases.

The Society ultimately agreed that medical superintendents of private asylums should be proposed by the proprietors, approved by the local authorities, and appointed by government.

M. Van den Abeele said that it appeared to him that the report of reasons for the projected new law did not exhibit one of the most essential sides of the question. He pointed out that since the public had become assured of the well-being of patients committed to asylums, idiots, imbeciles and other incurables were sent in such numbers that the asylums would very soon be filled by them, a condition unfavourable for the treatment of acute cases. He held that ordinary hospitals for incurables should be imitated in asylum practice, and advocated the establishment of farms where the usual stringency of confinement might be much relaxed.

M. Oudart objected to separate asylums, but would add to those already existing a special section for these cases.

M. Semal objected to the proposed separation. He believed that by locating a patient among a large number of incurables, his last hope of recovery was lost, and related an illustrative case. He thought further that the additions proposed by M. Van den Abeele would soon become larger and more important financially than the asylum proper; and that, freed from the exactions of the law, they would become the centres of great abuses. After directing attention to various other difficulties in the proposal, he went on to say that he did not consider it requisite that all classes of curable cases should be separated from the incurable. Patients were generally classed in one of four divisions—the excited, the dirty, the semi-excited, and the quiet. He thought it would not be injurious to a case of acute mania to be associated with incurables, but he would separate the semi-excited and the quiet, believing that it was better for minds naturally feeble, or enfeebled by previous disease, to be brought in contact with the eccentricities of acute maniacs than with the

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quietude of incurables. Of these incurables, cases of sensory illusions, resulting in conversations with invisible beings, should be carefully separated from the semi-excited. He proposed the following arrangement, as a classification founded on the chances of recovery, and not on the relative amount of excitement exhibited by the patients :—

1st.—A section for excited patients, to consist of curables, violent incurables, and epileptics.

2nd.—A section for dirty patients, quiet or the reverse.

3rd.—A section for semi-excited curables and incurables, from which epileptics and cases of hysteria would be removed to form the—

4th.—A section for convulsives.

5th.—A section for quiet incurables, which cases should be kept apart from convulsives.

To this last class he would allow greater freedom, and believed that for them the existence of a farm or workshops would be of advantage. He concluded by proposing as an improvement of M. Van den Abeele's suggestion, that the attention of government be called to the necessity of adding two new sections to asylums, one for convalescents, the other for convulsives; and also to the necessity for erecting an asylum for incurables, in which the rigours of confinement should be relaxed as far as possible.

A discussion ensued, exhibiting much diversity of opinion on the subject.

M. Van den Abeele then called attention to the insufficiency of the certificates of admission. He thought that by increasing the salaries of the poor law physicians they might be called upon to furnish these documents. M. Ingels was of opinion that if patients were refused admission unless the certificates were legally correct, no such reform would be requisite. M. Semal proposed that a model certificate and confidential bulletin be issued by government; that it be stamped, and printed with blank spaces for the required answers; that it be sent to each parish, and be obtainable gratis by the physicians. This was eventually adopted.

Practical Suggestions as to Beds for Dirty Patients.

M. Vermeulen recalled that in 1853 the Medico-Psychological Society devoted several meetings to the consideration of the treatment of these patients, and of the improvement of their wards. But while much had been done to diminish their number, there would always be a certain number of hopelessly dirty patients. Dagonet and Guislain had both recognised the difficulty of providing suitable beds for cases such as general paralytics, and the latter had recommended the use of bare straw.

After seeing this plan in force in various German asylums, M. Vermeulen disapproved of it.

In Belgium chaff or straw, and the husks of oats or rape-seed were

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cheap, and were of some value after use as manure. In asylums situated in the country, and having patients working in the fields, the expense of such bedding was almost nothing. Where rape-seed is abundant, its chaff is to be preferred on account of its oily coat permitting the easy filtration of urine, &c.

He wished to describe a bed which had been in use for thirty years, and which was made up of three compartments, the middle one of which was changed daily. These compartments were filled with oat chaff, and rested on a thick straw mat. In this mat there was an aperture, into which was fitted a flattened funnel of zinc, the tube of which depended over a receptacle placed beneath the bed. This provision was made under the central cushion, and thus allowed the urine to drain away. This mattress at once prevented the irritation arising from contact of sores with the chaff, and obviated the objections of Guislain to the use of linen mattresses, the central cushion being readily removed and emptied. He considered that iron bedsteads were much to be preferred to wooden ones. To avoid the soiling of the floor by the removal of the receptacle by patients, M. Oudart and he have had constructed an iron bed, beneath which the receptacle slips on a groove, and is secured in position by means of a key.

The beds in use at Froidment were manufactured by M. Garnier, of Ghent, who has further improved them by separating the middle cushion and the funnel by means of laths. This prevents the cushion from soaking in the urine.

In 1860 Théotime proposed to replace the funnel, &c., by a spring cushion resembling the seat of a comfortable arm-chair. The depression of this by the weight of the patient's pelvis leads to the urine collecting in it, and draining off by means of an oval aperture in the middle. From this aperture hangs a channel long enough to reach the receptacle beneath. This central cushion is covered with linen cloth coated with several layers of oil paint, to which is added some starch paste, to render the tissue more flexible, and prevent the paint falling off.

The feet and upper part of the body rest on two cushions of hair and wool, so that the mattress consists of three compartments. To prevent immediate contact with the paint, a cushion of hair is placed under the patient's hips. These beds have the following advantages:—a minimum cost; an efficient mode of draining off urine, &c.; and a great diminution in the trouble of changing the soiled beds.

On the Employment of Means of Restraint, by Dr. Lentz.

He first enumerates the means of restraint, then indicates their use in the various cases which require them, and finally examines the advantages and disadvantages of each. He does not regard seclusion as coming within the list of the means of mechanical restraint.

He says—We will not speak further of the method of non-restraint, because we do not find its introduction desirable in our asylums.

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And we are convinced that non-restraint, in so far as it employs manual strength as a sedative, has prolonged more excitement than it has calmed.

Enumeration of the various means of restraint.—1. Strait-jacket having either the sleeves free or secured. 2. The various forms of fetter: the belt with bracelets and tackle, generally known as the belt of Haslam; simple gauntlets; fetters for the feet, for the hands; the collar of leather; the sheet. Also linen bands attached to the bed and passed round the patient; other beds with bracelets for the reception of the arms and legs. These means are often combined. 3. Restraint chair, resembling the chair of a dirty patient, but furnished with straps to secure his arms and legs.

On the employment of restraint as regulated by the various cases.—*Suicidal Patients.*—For these he advocates the formation of a special ward, with special supervision, and considers mechanical restraint cruel and inefficient, and tending to render supervision less careful. *Homicidal Patients.*—For such of these patients as have the mental power to plan the deeds which they intend to commit, he would propose the formation of a special section, with the requisite arrangements, in some one asylum for the country. Failing this, he advises the use of fetters to the feet, such as are used at Gheel. They consist of well-stuffed anklets, united by a steel chain long enough to allow of walking without much difficulty.

Means of restraint during the night for chronic lunatics.—He speaks here of chronic non-violent patients who leave their beds, and disarrange their own and their neighbours' bedding. He considers forced decubitus, especially in dirty cases among these patients, too severe a measure.

In such as confine themselves to walking about, he does not see much inconvenience in fastening a foot, provided always that such treatment does not occasion excitement. For others, single rooms are requisite. For very filthy patients, he leaves to be determined by discussion whether forced decubitus is advisable or not.

Of means of restraint during the day.—There are various classes of patients requiring temporary restraint during the day. Some epileptics, and cases of recurrent and intermittent mania, liable to sudden attacks of intense excitement, he would secure by fetters to the feet. These should allow of freedom to walk, while they rendered it easy to overpower a patient; they should be constantly worn by such cases, unless there exist well-marked premonitory symptoms of the approaching excitement. Another class consists of patients, as general paralytics, &c., who occasionally require restraint for a time. Where the excitement is increased by the sight of surrounding objects, he advises seclusion.

In other cases, the intensity of the excitement will regulate the severity of the restraint to be enforced. Thus, it may be necessary simply to tie the hands behind the back, or to secure the hands and

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feet. The strongest jackets and most complicated fetters sometimes prove insufficient; when constant seclusion, in which the patient becomes thoroughly emaciated, must be resorted to. Of all systems of treatment of such cases, that by forcible confinement to bed he considers the worst. For them he would like to see introduced single rooms, provided, and directly communicating, with a court or green.

The restraint chair he looks upon as of value in cases of excitement, where seclusion or forced decubitus would be injurious, as in certain attacks of short duration in cases of general paralysis.

Among patients requiring restraint are those who tear, bite, or masturbate. For tearers, the belt of Haslam, leather gloves, or the fastening of the hands behind may be employed. For patients who bite, and tear their clothes to pieces with their teeth, even if their arms and legs be secured, Guislain employed forced decubitus, the leather collar, or even a mask of iron-wire, or else placed them naked in an empty warm room.

For masturbators he recommends the use of a special chair during the day, and forced decubitus at night, only to be used, however, in cases of prolonged sexual excitement. He looks upon the strait jacket as a means of punishment not to be neglected.

On the inconveniences of restraint.—The strait jacket he considers the most defective of all the means enumerated, and liable by compressing the larynx to give rise to accidents. Again, patients undergoing restraint are liable to fall and injure themselves, and are unable to attend to the calls of nature, especially when wearing the strait jacket. Restraint often irritates patients, and increases excitement, giving rise to struggles with attendants. He sums up as follows:—

1.—The introduction of non-restraint is not desirable. All efforts should tend to reduce the amount of restraint as far as possible.

2.—During the day, seclusion should be reduced by restraint, except where it is used as a therapeutic agent.

3.—Restraint—except in rare cases—should be abolished from among suicidal cases.

4.—A special section should be formed for specially dangerous patients, who should constantly wear feet fetters, and when violent, the belt of Haslam.

5.—A chronic lunatic should not be secured in bed at night. A night-watch should be provided, as well as warm single rooms. If necessary, restraint may be used.

6.—Patients prone to sudden attacks should wear feet-fetters constantly.

7.—For excited patients, the best mode of diminishing the amount of restraint is to provide them with plenty of room. Single rooms with a court or green in connection should be erected for cases of prolonged intense excitement.

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On Food in its Application to the Treatment of Mental Disease. By JOSEPH DE SMETH.

As an introduction, the intimate relations of food, organ, and function are alluded to, and their importance insisted on as being of the first order.

The nervous centres, like other organs, take up aliment and throw off waste; and the more they are exercised, the greater will be the supply of nutritive material required, and the greater the waste material excreted.

This has been demonstrated experimentally by Schiff, and Moleschott says "mental effort increases the excretion of urea, raises the temperature, and imposes the necessity of repair."

If such be necessary in the healthy brain, it is still more so in the morbidly active brain, above all when this morbid activity is due to a partial or general disturbance of nutrition.

On such data as the foregoing he has founded his researches on this subject.

Could the exact amount of waste in the healthy and diseased brain be estimated, and were the processes of nutrition of the nerve cells known, it might be possible to estimate with certainty the quality and quantity of food required to preserve the healthy and to restore the morbid brain. Thus, a certain element of the cells being wanting or in excess, a knowledge of this would allow of the direct increase or diminution of its supply, and the control of the physician over the disease would be greatly increased.

This exact information is wanting, and should it be obtained, it must be remembered that with few exceptions all nutritives are greatly altered before reaching the nerve cells; and that derangement of the attractive and selective powers of these cells will prevent them from consuming their normal aliment.

Notwithstanding this there are certain data on which conclusions may be definitely founded. Thus, without doubt, deficient food results in impoverished blood, which again must fail adequately to supply the various systems of the body. Of these systems that which first and most evidently exhibits symptoms of impaired nutrition is the nervous. While the supply of food and the entire process of its assimilation are all-important, it is necessary to examine separately the various processes which accomplish this assimilation. Thus deficient blood supply may be dependent on disease of the digestive, respiratory, or circulatory systems respectively, one or more of which may thus be shown to be the primitive cause of the mental disturbance. It then becomes of importance to regulate the functions of these various systems, in order that the nutrition supplied may not fail to be utilized.

Further, that any organ may remain healthy, its cells must possess a certain selective power, which enables them to single out their appropriate food from the blood. We thus see that the histogenetic

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processes of any given organ depend for their due performance, up to a certain point, on all preceding acts of digestion and assimilation, and then on the selective powers of its own cells. If these latter powers be in abeyance, the sufficient supply of healthy blood will fail to sustain the normal functions of the organ, and the mal-nutrition of the nervous centres may thus depend either on their own failure of assimilation, or on a failure of supply induced by disease of some other organ.

For example, by a sudden and powerful mental shock, sustained by the perceptive centres, an attack of melancholia is at once produced. After a period more or less prolonged of unhappiness and painful anxiety, resulting entirely from the condition of the perceptive centres, the patient searches objectively for the cause of a condition purely subjective, thus involving the intellectual powers which as yet are intact.

As the disease progresses, however, these intellectual centres become diseased, and an attack of idiopathic mania is witnessed; this, again, will in time lapse into dementia.

In such a case what is the sequence of events, and in what manner does the moral shock act on the cerebral tissues? Is it not probable that the too powerful impression deranges the nervous element which receives, changes and diffuses it?

If the intimate relations of the constituents of the cell are altered, it is probable that nutrition is interfered with, and it is to repair this altered nutrition that treatment must be directed.

The organic lesion coincident with these progressive morbid phenomena consists, in all probability, of a modification of the cellular connections, giving rise to defective selective power, and thus leading to ultimate degeneration. The disturbances of capillary circulation so often seen are rather to be regarded as the epiphenomena of structural changes than as their cause, though undoubtedly there do exist cases where irregular vascular action gives rise to mal-nutrition, and calls for special treatment. Other facts exist which indicate mal-nutrition to be the origin of the whole evil. Thus, autopsies on recent cases give negative results, while in old-standing cases extensive lesions are brought to light; and again there is the granulo-fatty degeneration so often seen in cases of dementia. As yet treatment has been too exclusively directed to special symptoms, and it is to be hoped that soon a more precise knowledge of organic lesions will show that it is to those agents which modify nutrition that we must look, if our efforts are to prove successful.

The value of the nutritive treatment has already been shown by clinical observation, which has noted how frequently the return of bodily health, under the influence of a regular life and good diet, accompanies the return of sanity.

The importance of diet in the treatment of mental disease has been recognised by many authors. Thus Pinel, Jacobi, Esquirol, and especially Guislain, have dwelt upon the subject; and others, as Nasse,

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Schultz, and Erlenmeyer, have pointed out that in a large number of their cases mental improvement has been associated with increase of weight.

Among the agents which modify nutrition are opiates, and it has been observed by Erlenmeyer and Albers, of Bonn, that in the cases where they have been of undoubted value their administration has been followed by increase of weight. But there are certain cases where large appetite and increasing weight indicate a transit to hopeless dementia, and mark an aggravation of disease.

In recent cases improved bodily condition is rarely unaccompanied by mental improvement, but after a long interval degeneration will have taken place.

In curable cases the body and mind improve together; in incurable cases the latter remains feeble—an evidence that degeneration is present. A large proportion of these latter is made up of General Paralytics.

The careful study of the scientific progress of the times makes it evident that the science of medicine is undergoing a complete change. The advances of physiology are daily tending to the increase of the number of adherents to cellular pathology, and to reduce that of those who cling to the doctrines formerly entertained. It is also evident that as the causes and nature of the lesions become better known the application of drugs becomes more limited, and that of the agents which act on nutrition widened.

While the cellular pathology had greatly aided the study of psychology, yet there remains much which microscopic and analytic physiology has failed to explain.

It is in the nervous system that the results of any dyscrasy may be looked for to become first apparent.

In conclusion, it is of great importance, in certain states of excessive mental excitement, to re-establish the equilibrium between assimilation and waste, as otherwise retrograde changes will produce disorganization of a hopeless description. In melancholia, and certain states of mental depression often seen to be the precursors of various forms of mental disease, it is of special importance to aid the powers of assimilation.

This is also the case in monomania; and even in dementia, though cure is hopeless, the progress of the disease may be retarded.

Classification of mental disease should be founded on the pathological histories of the cases. The purely empirical and artificial are worthy of but little attention.

Duret on the Circulation in the Brain. Abstract, by Robert Saundby, M.B.

M. Duret first describes the general arrangement of the vessels at the base of the brain, and remarks that:—

1.—The communicating arteries are not unfrequently very small or

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defective, and he suggests that this may account for the occasional fatal result of ligature of one carotid.

2.—The origin of the posterior communicating artery is often from the middle cerebral, in which case an embolus impacted at the bifurcation of the carotid would not permanently impede the circulation in the middle cerebral artery.

3.—There are no anastomoses between arteries of opposite hemispheres in the middle line, and scarcely any between arteries of the same side ; which may account, he says, for the frequency of complications when obstruction does occur. He explains the absence of anastomoses by reference to the development of the hemispheres.

He then describes the vascularization of special parts of the brain :—

1.—The corpus striatum derives its vascular supply in the following manner:—The intraventricular part from branches of the anterior cerebral artery and choroid plexus ; the extraventricular part from branches of the middle cerebral artery, which proceed in a direction from below upwards and from within outwards, corresponding to the frequent form of softenings in this locality. They do not anastomose with any other vessels, and terminate by breaking up into pencil-like tufts of capillaries. The veins are relatively small, hence an increased supply of blood easily produces congestion, and rupture of the vessels if their walls are diseased.

2.—The optic thalamus is supplied by branches of the posterior communicating and posterior cerebral arteries, which go to the intraventricular part ; also by branches of the choroid arteries. The extra ventricular part is supplied by branches of the posterior cerebral artery rising near the corpus geniculatum of the same side.

3.—The ventricles contain two orders of arteries :—

a. Those of the choroid plexuses which are the remains of the vessels ramifying in the membrane lining the ventricle in the early months of development, but which by contracting on itself lies now only in contact with a small part of the wall, the function of these vessels being to supply the ventricular fluid.

b. The vessels derived from the arteries of the velum interpositum, which ramifying on the ventricular walls penetrate them and break up into capillary pencils. These are all derived from the posterior cerebral arteries. The veins corresponding to them are relatively larger in size but fewer in number, and empty themselves into the venæ Galeni, which also receive the blood from the corpora striata, optic thalamus, corpus callosum, septum lucidum, and optic tract.

He compares the vascular arrangement of the brain with that of the cord. In both there are two sets of vessels—one mesial, the other external—and he shews that in cord and brain respectively the mesial and external sets of vessels supply analogous parts. He describes the distribution of the arteries to the convolutions of the hemispheres in detail. Thus :—

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I.—*Anterior Cerebral.*

a. The anterior internal frontal arteries, small branches given off from which before its division into the three following trunks supply the first superior frontal convolution, the olfactory nerve and its groove, and the olfactory triangle.

b. The internal anterior frontal artery supplies the inner and outer sides of the first superior frontal convolution and the outer side of the second superior frontal convolution.

c. The internal middle frontal artery supplies the convolution of the corpus callosum and the fissure of Rolando.

d. The internal posterior frontal artery supplies the parts adjacent to the calloso-marginal and parieto-occipital fissures in which it lies, and it gives an artery to the corpus callosum.

II.—*Middle Cerebral Artery.*

a. The internal inferior frontal artery supplies the third frontal convolution.

b. The anterior parietal artery supplies the fissure of Rolando and two adjacent convolutions, and often the first parietal convolution.

c. The posterior parietal artery supplies the inferior parietal convolution and the first temporal convolution.

III.—*Posterior Cerebral Artery.*

a. The anterior temporal artery supplies the Gyrus Uncinnatus.

b. The posterior temporal artery supplies the convolution of the Hippocampus, the third temporal convolution, and the middle occipito-temporal convolution.

c. The occipital artery supplies the occipital convolutions, the hippocampi, major and minor, and the quadrate lobe.

He says the arrangement of the vessels in the pia mater is in arborescent groups of capillaries, which groups do not as a rule anastomose with one another, though slight injections have been made from the middle to the posterior cerebral artery of the same side, and from one posterior cerebral artery to the corresponding artery on the other side. Each convolution is not supplied by a special artery. The arteries in the adult are the same as those which existed in the embryo before the convolutions were formed. The increase in the vascular supply is due simply to the growth of the capillary network, and anastomosis is rendered difficult by the formation of the sulci. The veins of the convexity anastomose freely with those of the base, but not very freely with each other. The mode of termination of the vessels in the cerebral substance is thus described:—The vessels are divided into two orders—cortical and medullary.

The cortical arteries are small vessels which ramify in the grey matter, or in the boundary zone between the grey and white matter.

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The medullary arteries are large and ramify in the white matter. They are straight, and penetrate at right angles to the surface of the convolutions; when they reach the white matter they curve, so as to run parallel to the bundles of nerve fibre, and give branches to form a pencil-like capillary network.

The cortical arteries penetrate the grey matter only, or as far as the boundary zone, and there break up into a capillary network, which, if exposed by sections parallel to the surface of the convolutions, will be seen to consist of—

a. A layer, a demi-millimetre in depth, of a large rectangular network parallel to the surface.

b. Two millimetres' depth, of a fine polygonal network.

c. One millimetre's depth, of a large network; not so large, however, as that of the white matter.

The capillary network of the white layer consists of fine but elongated meshes three or four times the diameter of the meshes of the grey matter. The veins are also divided into cortical and medullary. He denies the direct anastomosis of veins and arteries which has been stated to occur by Ecker. The veins here, as in other parts, are relatively large, but less numerous than the arteries.

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3. *Italian Psychological Literature.*

By J. R. Gasquet, M.B.

The *Archivio* for 1873 and 1874 contains fewer original papers than usual, though some of them are of particular interest and importance. Professor Verga continues his very detailed and careful account of *General Paralysis*, from which I can only find space to extract the following points. He remarks that inequality of the pupils is not peculiar to that disease, but occurs in all other varieties of insanity connected with organic affection of the brain. Some stress is laid upon the occasional loss of power over other involuntary muscles, of the bladder and intestine, causing ischuria and constipation, which are often relieved by the use of strychnia. It is singular to observe that some paralytics in Italian Asylums cease to open their mouths freely when they speak, as is the custom of their countrymen; but "speak between their teeth, like the English." In other cases, Dr. Verga has noticed that these patients always shout, as if they were speaking to deaf persons, either from not being able to regulate, or from not observing the loudness of their voice. He has also observed that, in the early stage of the disease there is occasionally genital excitement with persistent priapism. He sums up all the causes of general paralysis under the head of abuse of the moral and intellectual powers, or of the cerebral functions. It appears to be increasing in frequency in Italy as elsewhere, taking the place of other forms of insanity, especially in

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