monary artery. This sound was not heard in the carotids or over the back. The pulse was normal. There was not the collapsing pulse which is so characteristic of aortic regurgitation.

In some recorded cases of malformation of the pulmonary artery, there has been a loud double murmur (systolic and diastolic), most distinctly heard to the left of the sternum, not conducted along the aortic vessels, and not associated with the collapsing pulse of aortic regurgitation.

Now, having discussed at sufficient length the physical signs of valvular disease, let me impress upon you the fact that serious *valvular disease may exist without abnormal sound over the heart*. In cases of old disease of the mitral valve with extreme narrowing of the orifice, it sometimes happens that, although the symptoms of impeded circulation are very manifest, there is no audible abnormal sound. Extreme narrowing of the orifice, with thickening of its rigid margins, and the very rapid action of the heart which usually accompanies extreme mitral contraction, are all unfavourable for the production of an audible murmur. On the table are two specimens of extreme narrowing of the mitral orifice. Both cases occurred in my hospital practice. In neither case was a murmur heard, although carefully sought for. When, with incompetence of the aortic valves, the margins of the valves become covered with fibrinous deposit, a regurgitant current may exist without audible murmur. Fibrinous warty vegetations are sometimes found on the surface of the mitral and aortic valves when no abnormal sound has been heard during life. Mitral regurgitation may so lessen the force and volume of the blood in the aorta as to prevent the generation of sound by an obstructive disease at the aortic orifice. Mitral regurgitation may also lessen or quite destroy the characteristic collapsing pulse of aortic regurgitation.

Reduplication of one or other of the heart's sounds, more commonly of the second sound, is sometimes heard. The probable explanation of this phenomenon is a want of synchronism in the action of the two sides of the heart. A narrow mitral orifice, by retarding the filling of the left ventricle, might lead to its contracting later than the right ventricle. In many cases, however, reduplication of the sound is not associated with signs of organic disease, and the want of synchronism is apparently a result of disordered innervation.

I have said that serious organic disease may exist without abnormal sound. I must now tell you *a murmur may exist without organic disease*. The most common and undoubted form of inorganic murmur is a soft systolic blowing at the base of the heart, which may be heard not unfrequently in cases of anæmia. The thin and watery blood passes through the aortic orifice with an audible blowing sound. The sound is more constant and louder when the heart's action is excited and violent; and, indeed, violent action of the heart, whether the result of muscular exertion or of emotional excitement, is not unfrequently attended with a systolic blowing at the base in persons who are not anæmic. I have frequently observed this in examining nervous candidates for life-insurance; and I find that, after waiting for a short time to allow the emotional excitement to pass away, the heart's action becomes quiet, and the blowing sound ceases.

In children with very flexible chest-walls, firm pressure on the stethoscope placed over the aorta will sometimes cause a temporary systolic blowing.

When a systolic blowing sound at the aortic orifice is the result simply of anæmia, a loud humming sound may often be heard when the stethoscope is placed over the veins at the root of the neck. This venous murmur has received the name of *bruit de diable*. It is a continuous murmur, with periodical intensifications of loudness, the intensified sound corresponding with the more rapid current of blood in the vein during the diastole of the auricle. A deep inspiration also increases the sound by sucking the venous blood more forcibly into the chest. An inorganic cardiac murmur is always systolic, and, according to my experience, always at the aortic orifice. Some writers have suggested that an inorganic systolic murmur may originate at the mitral orifice. I doubt this. A systolic murmur at the mitral orifice would indicate regurgitation through that orifice; and this must result from insufficiency of the valve. Such a murmur, therefore, would not be an inorganic murmur.

A murmur apparently originating in one of the heart's orifices may result from organic disease *outside the heart*. Thus, in one of my hospital patients, a cancerous growth in the left lung surrounded and compressed the pulmonary artery, and so caused a systolic blowing at the base of the heart. (Case of John Campbell, aged 41; admitted April 5th, died April 11th, 1862—Hospital Case-Book, xiv, p. 71.)

In my next lecture I shall speak of the general symptoms, the prognosis, and the treatment, of valvular disease and its consequences.

IS INSANITY ON THE INCREASE?*

By HENRY MAUDSLEY, M.D., F.R.C.P.,

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THE popular opinion undoubtedly is, that insanity is increasing greatly in this country. The necessity, year after year, of enlarging the existing county asylums; the erecting of a second, or even of a third asylum in some counties, and of special borough asylums for large boroughs; and the still continuing cry for more accommodation, are facts sufficient to account for, and give much show of probability to, the opinion. In the county of Middlesex there are already four vast asylums for pauper patients; and yet the Commissioners in Lunacy have for some time earnestly pressed upon the magistrates of the county, and upon the Home Secretary, the urgent necessity of taking immediate steps to build another large asylum. There can be no question that there are a great many more insane persons shut up in asylums in this country now than there ever were at any other period of its history, or, perhaps, in any country at any period of the world's history. For the last twenty years there has been an increase of upwards of a thousand a year in the registered insane population of England and Wales. Now, whether any, and, if any, what proportion of this great increase is owing to an actual increase in the proportion of lunacy to the population, are questions which may be more easily disputed than decided. There is always a large number of persons who are prompt enough to grumble at the age in which they live, and to believe readily any fault of it; we need not wonder, therefore, if the alleged increase of insanity is accepted without sufficient proof. Once, too, the opinion has gained acceptance, it is no hard matter to discover a multitude of plausible reasons why a greater number of persons should go mad now than in the days of our grandfathers. The fast pace of living, and the strain of eager competition at the present day, are sure to find out the weak members of the community, and to try them severely; the law of the success of the fittest pressing very hardly upon them. Still it seems to me that there is a tendency to overlook the countervailing advantages of modern life. By the exercise of a little ingenuity, it would be possible to adduce as many theoretical arguments to prove that insanity need not, as can be brought forward to prove that it must, increase. Let me give a few illustrations. If it be said, on the one side, that the excitement of financial speculation must injure the brain, it may be replied, on the other side, that the business of a man in the world is activity; and that as mental exercise is an indispensable condition of mental development, such activity is far better fitted than an indolent stagnation to preserve health of mind. Moreover, while the latter will not prevent a person who is exposed to an ordinary cause of insanity from going mad, a mental activity directed into channels outside himself sometimes will. Statistics do not say much in favour of agricultural immunity. In the county of Flint, on the 1st January, 1871, the ratio per 1,000 of the total number of pauper lunatics to the population was 4.64, while in the West Riding of Yorkshire the ratio was 1.42; in the county of Carmarthen the ratio was 3.04, while in the county of Lancaster it was 1.94; in Hereford it was 3.42; in Berks, 3.15; in Gloucester, 3.05; in Wilts, 3.22; while in Chester it was 1.79; in Surrey, 2.34; and even in Middlesex not more than 2.86.†

Again, it may be true, as is sometimes alleged, that the eager passions and interests arising out of the multiplied industries and complex relations of modern life are likely causes of insanity; but it is no less true that these passions are fundamentally the old simple passions inhabiting human nature, savage or civilised, which have undergone more special development; and they are presumably less dangerous, more divided in their energies, and more social in their aims, than when weighing heavily on the heart of the individual who has few or no interests outside himself.

It has been said that the rapid and frequent railway travelling of this age must be injurious to the brain, and predispose to disease of it; but those who say so, while assuming much of what they have no proof, do not sufficiently consider that railways have, by opening up remote parts of the country and facilitating intercommunication between the in-

* Read at the quarterly meeting of the Medico-Psychological Association, on December 6th, 1871.

† These figures are from the last Report of the Commissioners in Lunacy, which contains some valuable statistical tables.

habitants of different parts, prevented intermarriages in families, dispelled dense fogs of ignorance, stimulated mental activity, enlarged and harmonised human interests, and in many other ways promoted the circulation and strengthened the pulse of life; doing more, perhaps, on the whole, than any other single agency to advance human development. The good lessons which teachers and prophets have declared in vain, men learn in spite of themselves as they profit by the practical fruits of scientific discoveries; and the unconscious education which is thus going steadily on, cannot fail to fortify the mind against the inroads of mental degeneration.

Without pursuing further, on this occasion, considerations of this kind, which might be multiplied at will, it may, I think, be safely said that there is scarcely a single theoretical argument in favour of the alleged increase of insanity which may not be met by as strong a theoretical argument on the other side.

Passing by, then, such speculations, let us examine whether statistics furnish any trustworthy evidence of an increase in the proportion of lunacy to the population. They will not, indeed, definitely answer the question; but it may be useful to give the impression which a careful and candid study of them has left upon my mind. At the outset, it is necessary to regret that the records do not extend over a sufficient number of years, and are not full enough for the years over which they do extend, to carry proof; they will do no more than warrant certain inferences. Before 1844 there were no statistical records of the number of the insane in England and Wales making any pretension to completeness; and the returns of that year and the following years were confessedly too imperfect to justify any conclusions from them. However, in the year 1844, there were 20,611 insane persons registered, or 1 in 802 of the population was known to be insane. On the 1st January, 1859, the total number of the insane was 36,762, a proportion of 1 in 535 of the population; in 1865, the total number was 45,950, or 1 in 434 was insane; and on the 1st January, 1871, the total number was 56,755, or 1 in 400 was insane. You will observe that there are very nearly 20,000 more insane persons on the register now than there were in 1859, and that the ratio to the population has been doubled since 1844. A similar large increase in the numbers of registered insane persons has taken place in France: in 1851, 1 in 796; in 1856, 1 in 598; in 1861, 1 in 444 being insane. It is clear that similar causes, whatever they be, have been at work, and to a similar extent, in France and England to increase the registered insane population.*

Now there can be no difficulty in recognising the main cause of this so great increase to lie in the successive regulations made for the better care of the insane. In England, the effect of the Lunacy Act of 1845, which enjoined on counties to build asylums in order to make suitable provision for their insane poor, was to swell largely the number of those registered. Before that Act, they had in most counties been kept at home, or farmed out by their relatives, or in some other way, of which there was no official knowledge, inadequately cared for. The effect of the opening of county asylums was not only to bring the insane under registration, so that they were known, but under proper care, so that their lives were prolonged; for there cannot be a doubt that the insane poor live longer now in county asylums than they did in their former neglected state. Take one only of the conditions of proper care—namely, a liberal diet; and we find that it exercises a material influence on the mortality. In Dr. Thurnam's valuable work on the *Statistics of Insanity*, which is unhappily now out of print, there is an instructive comparison between the mortality of three asylums in which the diet was liberal, and that of four asylums in which it was poor and insufficient; in the former, the mean annual mortality was 9.35 per cent.; while in the latter, it was as much as 14.54 per cent. A still more striking illustration of the influence of proper care and treatment on the mortality of the insane was afforded by the once notorious York Asylum, before and after its reform. For six years before 1814, the year in which the abuses in its management were exposed, the mean annual mortality per cent. resident was 14.8; after the reform, it did not, for more than a quarter of a century, exceed 7.24 per cent. Such facts hardly leave room to doubt that the mortality of the insane poor was much greater when they were insufficiently fed, badly clothed, and miserably housed, than it is now when they are comfortably provided for in well-conducted asylums. To some extent, the numbers have risen, because they have not been kept down so much by death as formerly.

It is certain that since asylums have been open there has been going steadily on an accumulation of those who do not die or are not discharged, which is sufficient to account for a considerable increase in the number of registered insane persons. While the discharges and deaths

are fewer than the admissions, the numbers must of course progressively increase. The following table will serve to show this.

Year.	Admissions.	Discharged Re-covered.	Discharged not Re-covered.	Deaths.	Total Discharges and Deaths.	Accumulations.
1859.....	9,310	3,270	2,850	2,332	8,452	858
1860.....	9,512	2,954	2,671	2,757	8,382	1,130
1861.....	9,329	3,182	2,110	2,657	7,949	1,380
1862.....	9,078	3,342	1,963	2,637	7,942	1,036
1863.....	8,914	3,150	1,958	2,747	7,855	1,059
1864.....	9,473	3,256	1,950	3,174	8,380	1,093
1865.....	10,424	3,290	2,515	3,161	8,966	1,458
1866.....	10,051	3,439	2,229	3,337	9,005	1,046
1867.....	10,631	3,581	2,327	3,377	9,285	1,346
1868.....	11,213	3,707	2,617	3,367	9,691	1,522
1869.....	11,194	3,801	2,304	3,825	9,930	1,264
1870.....	11,620	3,968	2,853	3,805	10,626	1,994
TOTAL ...	120,749	40,940	28,347	37,176	106,463	15,186

We see, then, that at the end of twelve years there remained under care as many as 15,186 of the admitted cases. Of course, if the county asylums had been open, and the registration of lunatics sufficiently complete, for more than a generation, this source of increase would exhaust itself, and this element in the calculation might be disregarded. It would be of no consequence whether the insane were accumulating in or out of asylums, so long as they were included in the returns. But inasmuch as many of them, living in villages and workhouses, were not included in the returns formerly, who, having been gradually collected into asylums and otherwise brought under knowledge and care, are included in the returns now, it is necessary to appreciate the influence of accumulation in swelling the total numbers of the insane.

Another circumstance which, as Dr. Robertson has pointed out, had the effect of considerably increasing the number of registered lunatics, was the passing of the Lunacy Act of 1853, an Act which prescribed a quarterly return of the pauper lunatics not in asylums by the medical officers of the unions. Thus, in about thirty large parishes and unions, only 408 pauper patients were returned as residing with their friends in 1852; while, in 1860, under the quarterly visits of the local medical officers, the number rose to 935. I can find no record in the Report of the Lunacy Commissioners of the total number of pauper lunatics who were registered as residing with their relatives or others in 1851; no doubt it was very small; but in 1871 the number was 7,331, being assuredly a great increase. Now there is no reason whatever to believe that this increase was owing to the fact that more pauper patients are actually residing with their relatives and others now, than were so residing twenty years ago; on the contrary, there are good reasons to believe that fewer pauper patients are thus placed under private care now than was the case then, the whole tendency of recent legislation having been to draft them into asylums. The chief part, if not the whole of the increase, is to be explained by the more complete system of registration which was enforced by the Lunacy Act of 1853.

By the strenuous exertions of the Commissioners in Lunacy, returns of the number of private patients residing with their friends or others have been similarly increased. In 1851, if there were any, the number was so low as apparently to make it not worth while to state it; while in 1871 it was 392. No one at all acquainted with the facts would, I believe, attribute this increase to any other cause than the more rigid enforcement of the statutory provisions of the Lunacy Acts by the authorities.

Thus far, then, we find some cogent reasons to warrant the conclusion, that the very great increase in the number of insane persons now under care is to be accounted for by other causes than a steadily increasing production of insanity. And while there are such sufficient causes of the gradual increase, it is as unnecessary as it is unscientific to assume a greater liability to insanity in the population. Those who would explain the increase by such a theory run no small risk of proving a great deal too much; for if the alleged increased liability is to continue in action in the years to come, as they assume it to have done in the past years, it is quite evident that the population of the country must be so largely infected that the sane people will at some time be in a minority. And if we have difficulty in dealing with the amount of insanity now, how will those that come after us contend with it then? "If thou hast run with the footmen, and they have wearied thee, then how canst thou contend with horses? and if in the land of peace wherein thou trustedst, they wearied thee, then how wilt thou do in the swelling of Jordan?"

* See a paper "On the Alleged Increase of Lunacy," By C. Lockhart Robertson, M.D. (*Journal of Mental Science*, April 1869.) My inquiries have led me to agree with the conclusions of Dr. Robertson's exhaustive paper.

It may be true, and probably is true, that there is more insanity, and more occurring insanity, in proportion to the population now than at the time when our forefathers followed Boadicea to the battle; but that so many more persons should be yearly going mad now than twenty-five years ago, seems to me a supposition which is, I will not say preposterous, but is certainly not probable in itself and not supported by facts. There is abundant evidence of a gradually improved registration of insanity, and of a great increase in the returns in consequence of that improvement, but there is not yet satisfactory evidence of anything more.

Let us look, now, at the admissions of patients of all sorts during a series of years, as these will furnish better evidence of the number of occurring cases of insanity than we can obtain from looking at the total number under care. From 1859 to 1870 inclusive, there were for each year, as has been already stated, 9,310, 9,512, 9,329, 9,078, 8,914, 9,473, 10,424, 10,051, 10,631, 11,213, 11,194, 11,620.* During the first six years, the numbers did not vary much, the variations certainly not being such as to indicate a steady increase in the rate of production of insanity. In 1865, however, the number suddenly mounted up nearly 1,000—from 9,473 to 10,424: and since then it has risen upwards of 1,000 more. For so exceptional an increase, may there not be discoverable an extraordinary cause? A probable cause of increase there was in the passing of an Act of Parliament in 1861, by which pauper lunatics were rendered chargeable upon the common fund of the union, instead of upon the parishes to which they belonged, as had formerly been the case. The effect of this Act, so soon as its purport was fully realised, was to abolish all desire on the part of particular parishes to spare themselves expense by taking care of their harmless lunatics, imbeciles, and idiots at home; the cost of asylum maintenance falling upon the common fund of the union. The economical motive for keeping them out of asylums ceased to influence the parishes, and the consequence has been that numbers of such patients have been sent to asylums. No sooner is a poor person's mind affected so as to prevent him from following his work and to throw him upon the rates, than he is sent off to the asylum, in order to save trouble or the expense of his maintenance, or from a vague dread of the responsibility incurred by his detention out of an asylum. What with the opening of county asylums, the stringent statutory provisions with regard to the insane, the prosecutions for receiving insane persons without compliance with these, and the official strictures on their management in workhouses—it has come to this, that people now see lunacy in forms of imbecility and illness in which they would never at one time have dreamt of doing so. And the one idea of relieving officers and other parish officers, so soon as the word lunacy is mentioned, is the asylum; the one desire, to get rid of the responsibility attaching to the care and treatment of the patient.

As showing the character of the admissions in the year 1865, when there was the sudden increase, I may point to the fact that the percentage of recoveries on the admissions for that year was evidently below the average; being for all classes of patients 31.56 against an average of 33.95 for the last twelve years. No wonder that complaints have arisen from the superintendents of county asylums who find their wards filled with cases which might well be taken care of elsewhere, to the exclusion of acute and curable cases. Dr. Thurnam says of the supposed increase of insanity, in a recent Report of the Wilts County Asylum: "Part of this increase must be referred to the facilities afforded by recent legislation to the admission of patients, many of whom are sent labouring under slight and transient forms of mental disorder, such as in former days would never have been removed from their homes. Some are brought who ought to be cared for elsewhere—in workhouses, or even in prisons. Not a few superannuated and paralytic old people, when they become troublesome in the wards of the workhouse, are at once removed to the asylum. In other instances, men are brought who should be regarded as offenders against the laws, and punished accordingly. It is an abuse of an asylum to send to it a man who, maddened by drink, assaults his wife or child, or commits some other vagary or act of violence."

Whether, then, the operation of the Act of 1861 will account for the entire increase of admissions during the last six years, it is, of course, impossible to say; but there can be no question that it has produced a considerable increase; and that, but for its disturbing agency, the numbers would have been smaller.

* Of the 11,620 patients admitted in 1870, 1,372, or 11.8 per cent., were re-admissions; that is, had been some time previously at the same institution. If the re-admissions (1,372) and the transfers to other asylums (1,221) be deducted from the total admissions, the number would be 9,027. But even these would not all of them be cases of insanity occurring for the first time, as there are included patients who, after relapses, may have been sent to other asylums, where they would be reckoned first admissions.—*Report of Lunacy Commissioners for 1870.*

But there is another important consideration. The population in 1859 was 19,686,701; in 1871, it was 22,704,108, being an increase of 3,017,407. I have calculated the ratio of the admissions to the population for the last twelve years, and the results are:

In 1859, 1 in 2,114.	In 1865, 1 in 2,013.
In 1860, 1 in 2,092.	In 1866, 1 in 2,111.
In 1861, 1 in 2,156.	In 1867, 1 in 2,015.
In 1862, 1 in 2,240.	In 1868, 1 in 1,930.
In 1863, 1 in 2,307.	In 1869, 1 in 1,953.
In 1864, 1 in 2,192.	In 1870, 1 in 1,901.

The ratio of the occurring cases of insanity to the population does not by any means look so formidable as the ratio of the total amount of insanity to the population. When it is said that 1 person in 1,901 persons became insane in the year 1870, it sounds less terrible than the statement that in that year 1 person in 400 persons was actually insane. True it is, that the table shows an increase in the proportion of occurring insanity to the population, especially during the last three years; but is the difference between 1 in 2,092 in 1860 and 1 in 1,901 in 1870 greater than may be accounted for by the causes which have undoubtedly operated to swell the admissions? For my part, I think that one might fairly venture a prophecy that, twelve years hence, the ratio of admissions to the population will not be greater, if it be not less, than it is now.

One consideration more, drawn from a regard to the distribution of insane patients. Of the total number of 36,762 insane on the 1st of January, 1859, 31,782 were pauper and 4,980 private persons; and of the total number of 56,755 insane on the 1st of January, 1871, 50,185 were pauper and 6,570 private persons. While the increase of pauper patients, therefore, has been 18,403, the increase of private patients has only been 1,130—an increase which, having regard to the addition of 3,017,407 to the population in that time, must be pronounced a moderate one, being at the rate of 1 in 2,670 of the actual increase of population.

So much for the increase of private patients. Now let us look at the admissions of all sorts of private patients for twelve years.

Year.	Number.	Year.	Number.
1859.....	2,856	1865.....	2,638
1860.....	2,602	1866.....	2,910
1861.....	2,692	1867.....	2,935
1862.....	2,682	1868.....	2,924
1863.....	2,388	1869.....	2,849
1864.....	2,448	1870.....	2,671

Last year, then, the admissions of private patients were actually much fewer than they were in 1859, notwithstanding the increase of population. And in the year in which the number of admissions was greatest—in 1867, when they were 2,935—the ratio of these to the entire population of the country was only one in 7,301, while in 1859 it was considerably more—1 in 6,890. Surely these figures afford no real support to the opinion that, so far as regards private patients, insanity has undergone an increase out of proportion to the increase in the population. They will appear more striking, when it is remembered that the more numerous and stronger causes of insanity which are supposed to be at work in these latter days, would, presumably operate upon the class from which private patients come, to at least as great an extent as upon the pauper class. Still it must be allowed that insanity is a pauperising disease, and that many persons who, while in health of mind, would be above the rank of paupers, are compelled, when struck with insanity, to fall into that rank. But this is a cause of increase of pauper insanity which has always been at work; and I am not aware of any reason to warrant a belief that it is acting now in any considerably greater degree than formerly.

There is an interesting question in relation to the accumulation of insanity which I do not remember to have seen considered, but which well deserves attention. Do as many insane persons of those who yearly become so recover now as formerly? We have already seen reason to believe that in consequence of the better care now taken of them, the mortality is less; but it would be instructive to ascertain whether the influence of the humane system of treatment and of the aggregation of the insane in asylums has been to increase the number of recoveries. There is no proof of such a happy effect. If we refer to Dr. Thurnam's work on the *Statistics of Insanity*, which was published in 1845, just after the non-restraint system of treatment and other reforms had been introduced, and which deals, therefore, with the statistics of asylums under the old dispensation, we find it stated "that, as regards asylums that have been established during any considerable period—say twenty years—a proportion of much less than forty per cent. of the admissions is, under ordinary circumstances, to be regarded as a low proportion, and one much exceeding forty-five per cent. as a high pro-

portion." Now if you refer to the last Report of the Commissioners in Lunacy, you will find that the average proportion of recoveries of all classes of patients to the admissions was, from 1859 to 1870, 33.95 per cent.; the proportion for county and borough asylums, 35.61 per cent. It would appear, then, that only about one out of three persons who enter an asylum leaves it recovered, which is a considerably lower proportion than under the bad state of affairs before 1845. No wonder that, though there may have been no increase in the proportion of occurring cases of insanity, the number of insane persons in the country has increased. I am not prepared to say that it would be right to attribute this low percentage of recoveries to the ill success of the present mode of dealing with insanity; on the contrary, it is probably owing, in great part, if not entirely, to the hopeless character of the disease in many of those who have been admitted during the last twenty-five years—a great proportion of acute cases, such as could not be managed out of an asylum, and which were more likely to recover, having been admitted before 1845. Still it is a question deserving more attention than it has yet received in this country, whether the present practice of crowding the insane of all sorts into large asylums, where the interests of life are extinguished, and where anything like individual treatment is wellnigh impracticable, is so much superior to the old system in effecting recoveries as some persons imagine. There is a strong tendency to identify the improved and humane system of treating insanity with the asylum system which has so rapidly grown up. It is forgotten that the worst abuses of the old system occurred in asylums; and it is not sufficiently considered that the better principles and the careful supervision which have altered the character of the asylum have never yet been systematically applied in the country to the treatment of the insane outside the asylum. No one can deny that our vast asylums are well conducted institutions for the detention and care of the insane; but it is yet to be proved that they afford the best conditions of recovery for all those among them—and sadly few they are*—who are curable.

The conclusions, then, to be derived from the foregoing considerations may be thus summed up.

1. There is no satisfactory evidence of an increase in the proportion of occurring cases of insanity to the population; and no evidence, therefore, of an increased liability to insanity.

2. It is not necessary to assume such an increase in order to account for the undoubted great increase in the number of registered insane persons.

3. The difference between one insane person in 802 of the population in 1844, and one in 400 in 1870, is mainly, if not entirely, owing to the fact that in the former year the returns included only half the existing insane persons in the country, while in the latter year nearly all of them have been registered.

4. Some part of the difference is owing to the fact that certain patients are registered as lunatics now who would never have been thought so in times past.

5. A lower rate of mortality and a lower percentage of recoveries may account for a part of the increase in the total amount of insanity.

6. The proportion of admissions to the population, which represents approximatively the occurring cases of insanity, does not, when the necessary allowances are made, yield evidence of any serious increase.

ABSTRACT OF A CLINICAL LECTURE ON A CASE OF INJURY OF THE HEAD.

Delivered at St. George's Hospital on November 14th, 1871.

By PRESCOTT G. HEWETT, Esq., F.R.C.S.,

Surgeon to St. George's Hospital; Surgeon-Extraordinary to His Royal Highness the Prince of Wales; etc.

WE have a case in the hospital, gentlemen, in which I was told that the base of the skull was fractured, because blood was extravasated under the ocular conjunctiva—blood in this position being held to indicate fracture of the anterior fossa of the skull. But in order to diagnose a fracture, the blood must be beneath the conjunctiva under peculiar circumstances. Having examined the part of the head where the blow had been struck by a cart, I found that that part of the forehead, the eyebrow, and the upper left side, were much damaged. I found also a large extravasation of blood in the upper eyelid; and, on lifting it up to see if there were blood under the ocular conjunctiva, I found it so. But this blood was to the outer side, and mainly at the upper

part. There was a little at the lower part, but a very small quantity. With such appearances, I told you that one could not by any means be sure that there was fracture of the anterior fossa of the skull. You may have blood under the conjunctiva without any proof of fracture of the anterior fossa of the skull. A man getting a hard blow on the eye will not only have a black eye, but he may have blood under the ocular conjunctiva. There is here no fracture of the anterior fossa. We ought to have the blood extending towards the back part of the eyeball in order to enable us to diagnose thereby a fracture; and on separating the lids we should not be able to see the extent of the effusion. The blood comes from the back part of the orbit in a fracture, and it will run forward; therefore, you have the track of the blood from the back of the orbit to the front. At first, we could not distinctly say whether this was the case or not in the patient before us, on account of the quantity of blood effused. From the situation of the blow, I told you that the anterior fossa was in all probability not broken, but that in a few days we should be able to ascertain this, when the blood had been absorbed from the eyelids. In a few days the blood was absorbed; then we could open the eyelids, and found only a trace of blood, the limits of which were all within sight; there was not a trace of blood extending towards the back part of the orbit.

At one time I examined every case of damaged head for ten years occurring in this hospital, with this result—that, correctly to diagnose a fracture of the anterior fossa of the skull, the extravasation of blood under the ocular conjunctiva must come from the back of the orbit. You cannot possibly, under any circumstances, say that a fracture exists if the blow have been over the orbit. But if the blow have been on the top, or side, or back of the head, and if in consequence of that blow there be extravasation of blood in the situation I have mentioned, you are warranted in stating that there is a fracture of the anterior fossa. Such an extravasation indicates a fracture. As time went on, the blood in this man gradually became absorbed, and then it was clear that there was no fracture. He was insensible some hours after the accident, and the brain was evidently in the condition termed concussion.

Now what are the pathological conditions of a concussed brain? Here was a man who met with an accident at nine o'clock in the morning of the 24th September last, and remained unconscious until three o'clock next morning. Was his brain simply in a state of concussion? In older times this meant that the brain had merely been shaken, not that there was any damage done to the parts within the skull. But by *post mortem* examinations it has been clearly proved that, whenever there is concussion of the brain, and insensibility even for a short time, there are always *palpable marks of damage*. I have never seen a case yet which has died, after what is commonly called concussion of the brain, without finding some visible marks of the injury within the skull.

You may say that I have only seen the brain after death when the injury has been great. Not so, gentlemen. Some of these cases were very simple accidents. But how came I, then, to examine the brain? In a case of this kind there may be a scalp-wound; this may lead to erysipelas, which may cause death: then there is the chance of examining the brain. In one such case I examined the brain: the patient, having been but slightly stunned, had immediately walked to the hospital; yet there were distinct marks of damage done to the brain. In another case the patient had slight concussion, and recovered in a few minutes. He walked to the hospital: there was a wound on the back of the hand; that wound became erysipelatous; diffuse inflammation spread up the arm, and led to the patient's death. On examining the skull, there were visible marks of injury to the brain. What are the marks thus met with? You either find slight extravasations of blood in the cavity of the arachnoid or in the pia mater and sub-arachnoid tissues, or the surface of the brain itself at one part is more or less dotted with small spots of blood, exactly as if you had pricked it with a pin. This is the common form of concussion of the brain. In all these slight cases patients recover perfectly; but in after years you might still trace the injury in the thin film of gossamer-like tissue, the remains of blood extravasated in the cavity of the arachnoid.

Supposing the injury has been more extensive, and the patient has been for some time insensible, then a part of the brain is broken up and lacerated, and all around you will find points of blood. But even in such a case there may be recovery and life for a long time, as I have known. When I was house-surgeon at this hospital, houses were being extensively built about Eccleston Square. Fourteen men fell down from a scaffolding, and nine (more or less severely injured) were brought to St. George's Hospital. Some of them died in a few days, but one man lingered and lay insensible for fourteen days. He had, in addition to the injury of the head, a fracture of the arm, and from his constantly rolling about in bed it became compound; the bones kept con-

* About ten per cent. In asylums, hospitals, and licensed houses, there were, on the 1st of January 1871, 36,871 patients, of whom only 3,728—1,614 males and 2,114 females—were deemed curable.