

Dr. Boyd Joll in French and by Dr. Deighton of Cambridge, the party was conducted to the Casino, where there was a vocal and orchestral concert, into which the National Anthems of both countries were introduced, and the visitors left next morning by the new train-de-luxe for Paris, with very pleasing and grateful remembrances of their delightful welcome.

Visits to Biarritz, Pau, Caunterets, and Salies.

Another party of medical men and ladies left Paris on the morning of May 14th on a visit to Biarritz, Pau, Caunterets, and Salies. The party, numbering forty, travelled in special cars, and every arrangement had been so carefully thought out that the journey was performed without undue fatigue.

Biarritz was reached in the evening, and the town was illuminated in honour of the visitors, who were taken in carriages to the Casino, passing through cheering crowds. At the Casino the Mayor of Biarritz and the medical practitioners entertained the party to a *vin d'honneur*. The morning of May 15th was spent in driving about the vicinity of Biarritz, and at mid-day a banquet was held in the old palace of the Empress Eugenie.

In the afternoon the guests left for Pau, where they were accorded a cordial reception by the Municipality, and afterwards attended a splendid banquet at the Winter Palace.

Surgeon-General Keogh, in the course of a speech delivered on this occasion, took the opportunity of expressing the thanks of the party for the hospitality and many kindnesses they had received.

On the morning of May 16th the guests were taken in motors to visit the town of Pau and the country round. Shortly after mid-day they left for Caunterets, where they spent some time in making an excursion to the waterfalls on the way to the Lac de Gaube. In the evening a banquet was held in their honour at Caunterets. On May 17th the party left for Lourdes, where they spent one hour and then departed for Salies de Bearn. In the evening a magnificent reception was much enjoyed, and many speeches were delivered. On May 13th Arcachon was reached, and a short time was spent in this noted health resort, after which most of the party returned to Paris.

The courtesy of Dr. Meillon of Caunterets, who accompanied the travellers from Paris, was greatly appreciated.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE FRIENDLY SOCIETY.

THE twenty-second annual general meeting of this Society was held at the rooms of the Medical Society of London on May 18th, under the presidency of Dr. DE HAVILLAND HALL, Chairman of the Executive Committee.

The CHAIRMAN said it was with very great pleasure that he could again present a good account of the work done during the year. The membership of the Society now numbered 2,336, as against 2,274 in the previous year; the death-rate had been rather higher than in former years, but was still very much below the expectation. He had always hoped that the Society would number 5,000, and he urged the members to induce their friends to join, not for the sake of the Society, which was perfectly sound, but for the sake of the profession at large. During the past year £10,566 7s. 1d. had been disbursed in sickness claims; this formed a record for the Society; since its foundation twenty-two years ago over £100,000 had been paid in sickness claims. It was, he thought, almost impossible to exaggerate the amount of good which had been done to the profession by these payments. The sickness fund had grown in the past year from £80,309 12s. 2d. to £85,783 6s. 9d. With regard to the annuity and life assurance branch, there had been a small growth in the funds; no fresh business had been done; the business of the Society under this head had been transferred to the Rock Assurance Company, who treated them as agents. The investment fluctuation fund had increased from £10 483 2s. to £12,126 11s. 8d.; to this fund was transferred all money earned over 2½ per cent. on the sickness fund and 3 per cent. on the annuity and life assurance funds. The Society's funds now amounted to £186,657 19s. 11d., being an increase of £10,010 11s. 9d. on the preceding year, notwithstanding they had paid bonuses amounting to £850 10s. to those members who had attained the age of 65, the age limit for participating in sickness benefits. The cost of management was still only 5 per cent. of the premiums, whereas at the initiation of the Society 10 per cent. was allowed. The Committee had decided that those

members who had not been sufficiently long in the Society to participate in the bonus allotted on December 31st, 1898, were justly entitled to their share of the bonus and had returned them 10 per cent. of their premiums. About 250 members had participated in this bonus. The votes of the Society for Epsom College were being used on behalf of the son of the late Dr. E. P. Norman, of Yardley-Hastings. He wished to thank the BRITISH MEDICAL JOURNAL and the *Medical Press and Circular* for the great assistance they had given the Society. The Chairman concluded his remarks by moving that the report of the Committee and the audited accounts for the twelve months ending December 31st, 1904, be received.

The motion was seconded by Dr. W. WINSLOW HALL and carried.

On the motion of Dr. BRYDEN, seconded by Dr. BOND, the officers proposed were elected.

Votes of thanks to the Chairman and the Secretary brought the proceedings to a close.

ON THE INHERITANCE OF INSANITY.

By Professor KARL PEARSON, F.R.S.,
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WILL you permit a layman to draw attention to the first part of a paper by Dr. Otto Diem of Herisau, which has recently appeared in the *Archiv für Rassen- und Gesellschafts-Biologie*? This new journal does not yet appear to have been fully noticed in England, but it is doing excellent work in the field where medicine, biology, and sociology meet, and thus of necessity excite the interest of the statistician.

Dr. Diem's paper is entitled *Die psychoneurotische erbliche Belastung der Geistesgesunden und der Geisteskranken*. It is impossible at present to consider at length Dr. Diem's work, for it is not yet complete, but it suggests one or two points which I think are worth referring to at the present time, when there is a considerable movement in the direction of collecting ampler and more reliable medico-sociological statistics.

In dealing from the standpoint of the theory of statistics with the inheritance of any character, say a special form of disease, it is needful to start with a "general population" or a random sample of a general population, which has been determined in absolute independence of the presence or absence of this disease. If we wish to determine the hereditary influence in the case of cancer we must start with a random sample of the general population, or in some manner reconstruct this sample of the general population. We cannot obtain any definite conclusions as to inheritance from the case-books of a cancer specialist or the records of a cancer hospital alone. I venture to think this point is sometimes overlooked in the treatment of inheritance by medical specialists. It is also overlooked by writers on the inheritance of ability, if they tell us only of the able members of certain stocks, and do not refer to the failures and "blacksheep" of these stocks, or enumerate the proportions of able men and blacksheep which are to be found in the population at large.

Now, all those who have worked at family records of any kind know that it is extremely difficult to get moderately-accurate information with regard to 1,000 individuals, and yet this number is by no means too large for an inquiry of this sort; but in the case of even 1,000 individuals those suffering from a special disease will not be very numerous, and accordingly we shall have a large probable error in any result deduced from the small percentage of such individuals which may much distort the true intensity of inheritance.

It seems best accordingly to obtain a random distribution of the population in an entirely different manner, one in which we can make proper use of the experience of specialists. We can proceed in the following way to construct a random sample of the general population:

1. Ascertain the prevalence of the disease or character in the population at large. This may be roughly found from mortality statistics, or more exactly from combined medical experience.
2. Take a sample, say, of 1,000 persons with the disease and record the incidence of the disease among their ancestry and collaterals. This can be done from the case-books of the specialist, or by careful inquiry in the hospitals for special diseases.
3. Take a sample, say, of 1,000 persons without the special disease and investigate the distribution of the disease among their ancestry and collaterals. This may be done by a special inquiry, or very simply from information with regard to per-

sons suffering from other complaints already contained in the general practitioners' case-books.

Too often the medical treatise by a specialist confines its information to (2), and we are wholly unable therefrom to measure the quantitative intensity of inheritance in the case of the disease dealt with.

Now, Dr. Otto Diem's paper gives information corresponding to my heading (3) above, and thus for the first time we are able to obtain some approximate value of the comparative intensity of heredity in the case of insanity. We may hope that in the second part of his paper he may not only amplify his statistics of (2) and (3) but provide some information as to (1) in his own district.

He deals in his family records of sane and insane with parents, grandparents, brethren, uncles, and aunts. It is not possible to make use of his data for brethren, because he does not state how many brethren there were in each case and how many of these were insane. This is a vital point, if we are to determine quantitatively the bearing of cases of fraternal insanity. The same remark applies to the statistics he provides of uncles and aunts. We cannot assume that his 370 sane and 370 insane persons had the same number of brethren and of uncles and aunts; we do not even know yet the relative fertility of sane and insane stocks, but since the insane are often removed for years from family life, it is unlikely that the actual net fertility will be as great in the insane as the sane stocks. On the other hand the sane, as the sane, will always have two parents and four grandparents. The correctness of the record as to the former, however, will usually be greater than as to the latter, especially when the record is that of a working-class case. Few people, in my experience, can state the cause of death of all four of their grandparents, and many have not known personally one or more of them. Written records fall almost entirely for the working classes. I have therefore for the present confined my attention to Dr. Diem's statistics of parentage. Here Dr. Diem tables the data of Dr. J. Koller. He considers the parents of 370 sane and insane under the headings of (1) insane, (2) nervous disorders, (3) alcoholism, (4) apoplexy, (5) dementia senilis, (6) eccentric characters, (7) suicides.

In the case of each one of these divisions much discussion on the nature of the cases to be included may naturally arise,¹ and no doubt the boundaries between different classes are not sharply defined. For our present purpose, let us allow them to pass for what they are worth. Now Dr. Diem's tables show that nervous disorders are more numerous in the parentage of the sane than in that of the insane, and that apoplexy is as common in the parents of the sane as in those of the insane. It is therefore very unlikely that the groups of diseases he has thus constituted are the direct precursors of insanity in offspring. On the other hand classes (1), (3), (5), (6), and (7) are in all cases at least double as frequent in the parents of the insane as in those of the sane. The occurrence of insanity, alcoholism, dementia senilis, "eccentricity," and suicide in parents marks something which is likely to appear as insanity in the offspring. Suppose, for the time being, we classify all these groups together as "want of mental balance," it is clear that each one of them may arise from a variety of conditions, and that our terms may be worth little from the medical standpoint; then Dr. Diem has told us how often "want of mental balance" is to be found among the parents of sane and insane respectively. But he has not told us how often parents with "want of mental balance" produces offspring "wanting in mental balance" otherwise than in the insane class. We cannot, therefore, determine the intensity with which "want of mental balance" is inherited. It may be said, Why not consider the inheritance of insanity proper? The answer is that, whatever be insanity proper, the source of it appears in the parents frequently as "eccentricity" or alcoholism, or a suicidal tendency.

From the standpoint of theory we must have for the problem of inheritance the occurrence of the same range of characters in parents and offspring, but in the present case the parental range is what we have termed "want of mental balance" and the filial range insanity proper. If, therefore, we correlate the occurrence of insanity in the offspring with the occurrence of want of mental balance in the parents we shall not have the full intensity of the inheritance coefficient, but a lower limit to its value.

I have taken Dr. Diem's data given in Table I below and

¹ Dr. Diem gives very full statements as to how his groups were composed.

found the intensity of correlation between "want of mental balance" in the parents and insanity in the offspring, using various values for the ratio of the mentally normal to the mentally abnormal in the population. The values found range from about 0.25 to 0.30.

TABLE I.—Parents of Sane and Insane.

	Parents of 370 Sane.	Parents of 370 Insane.
1. Insanity	17	68
2. Alcoholism	34	63
3. Dementia senilis	1	10
4. Eccentricity	22	67
5. Suicide	2	4
6. Total abnormal	74	212
7. Total normal	666	528
Total of all parents	740	740

Now how does this minimum of 0.25 to 0.30 for the coefficient of heredity compare with other cases of inheritance in man? The coefficient of inheritance, the correlation between a character in parent and offspring, can theoretically take any value between zero, or absolute absence of resemblance, and unity, or complete resemblance of offspring to parent. The following are the values I have found in the case of several physical characters:

TABLE II.—Parental Inheritance.

Stature	0.51
Span	0.46
Cubit	0.42
Eye colour	0.49
Lower limit for insane diathesis, 0.25 to 0.30.	

Now it seems to me that the statistics at present available suggest—I will not at present assert they do more—that we may ultimately find the insane diathesis, or, more roughly, "want of mental balance," is inherited with precisely the same intensity as the physical characters in man. But if this quantitative definiteness could be given to the hereditary factor in the case of insanity, would it not in itself be a solid step in advance in our definite knowledge of inheritance, and ultimately of the medical and social treatment of the insane and the mentally defective?

It appears to me that the time has now come when some definite attempt should be made to obtain reliable family records for the solution of the inheritance of pathological characters. Such an attempt requires, as I have pointed out before, knowledge of three kinds. The rough percentage of the mentally unbalanced in the community can, I think, be found; it makes a sensible but no substantial difference whether we take it, for example, 0.5 or 2 per cent. But the other two kinds of information require the aid of the mental specialist and of the general practitioner. On the one hand, the family history of at least 1,000 individuals wanting in mental balance must be worked out, and, secondly, the family history of the same number of mentally normal individuals. I can fully understand that many objections may be raised to Dr. Otto Diem's individual classification from the specialist standpoint, but we have to remember that the classification must be simple and approximate, for ultimately it is the layman who has to provide the answer to the medical inquirer's questions, and he can only answer from family tradition and lay experience. If we are to determine the intensity of inheritance for a definitely specific type of insanity, we may at once give up the problem, for few laymen can be trusted to give a medically accurate account of the mental illness of an ancestor, and a medical man does not often know personally two or three generations with insane tendency. The solution, since it can only be sought from family records, must be of the broadest kind. Is it not possible, then, to obtain by co-operative effort of mental specialist, general practitioner, and statistician, some more definite estimate of the quantitative intensity of inheritance in the case of want of mental balance? Success in such work in the present case would lead at once to the application of like methods to other special diseases, in particular to cancer and tuberculous disease.

I am fully convinced that our knowledge of inheritance and of statistical theory is now such that the time is ripe for the solution of problems in the heredity of pathological characters. The chief essential of success is co-operative effort; the experience of the individual cannot provide the

amount of data requisite for the solution of these problems, but the pooled experience of many men can do so. Is it not time that some organization was created for collecting in bulk and reducing medical statistics bearing on inheritance? I put the question as a layman, and it may seem an impertinence on my part. But an intense interest in the problems of inheritance in man, and a very strong consciousness of how helpless in certain directions investigators in this field must remain without the cordial co-operation of medical men, must be my excuses.

LITERARY NOTES.

A SCHOLARLY physician has called our attention to a slight mistake in a paragraph which appeared in the BRITISH MEDICAL JOURNAL of May 20th under the heading "*Coleridgius bombitans in vacuo*." He says the chimera was "bombinans," and is kind enough to add that "the JOURNAL is immaculate enough to render the error visible. In most papers it would not matter." That it is an error we freely admit, but we may perhaps be allowed to plead, in mitigation of damages, that we were led into it by over-carefulness. Writing *urgente diabolo*—we hasten to explain, lest equivocation should undo us, that we use the phrase purely in a typographic sense—and feeling doubtful about the word, we referred to Forcellini, as we had no Rabelais at hand. In the *Lexicon totius Latinitatis* we found only "bombiſo" and "bombito," and in an unguarded moment we allowed ourselves to be led away by a prosaic lexicographer into profanation of a classic text. By way of making some amends to the great shade of Rabelais, we think it right to give the exact title of the work which Pantagruel found in the "very magnificent library" of Saint Victor in Paris. It runs as follows: *Quaestio subtilissima, utrum Chimaera, in vacuo bombinans, possit comedere secundas intentiones: et fuit debatuta per decem hebdomadas in concilio Constantiensi.*

We have received from the Fine Art Society a copy of Part I of what promises to be a truly magnificent publication, entitled *The Empire's Cricketers*. It is to appear in sixteen parts, at weekly intervals. Each number will contain four portraits by Mr. Chevallier Taylor, reproduced from original drawings in coloured crayons. The price of each part is 1s. Mr. Taylor, who is himself a cricketer, has been assisted by Mr. G. W. Beldam, of the Middlesex Eleven, who has written biographical sketches of the players. Each player is represented in his most characteristic attitude. In Part I portraits of the Hon. F. S. Jackson, Mr. A. O. Jones, J. T. Hearne, and J. T. Tyldesley are given. Part II will contain portraits of Dr. W. G. Grace, Mr. P. F. Warner, Mr. G. McGregor, and W. Rhodes, while Mr. J. Darling, Lord Harris, Mr. R. H. Spooner, and S. Haigh will figure in Part III. The original drawings will be exhibited at the Fine Art Society's Galleries in New Bond Street from the middle of June, and subscribers to the complete series will receive a free pass to the exhibition. Cricket has no direct relation to medicine, except in as far as it is a splendid form of physical exercise and a school of moral discipline, in which control of the emotions is learnt. But an announcement of *The Empire's Cricketers* will probably not be regarded as out of place in the BRITISH MEDICAL JOURNAL, as there are at least as many patrons and active exponents of the noble game among us as in any other profession. Is not the greatest of all cricketers one of us? And have not many other doctors won distinguished places in the cricket roll of fame? To all interested in cricket we recommend the work as a most interesting collection of admirable examples of artistic portraiture.

The first number of the *University Review* presents a handsome appearance, which is not belied by its interior, as its contents are of quite exceptional interest and importance. An introductory note on the University Movement is contributed by the Right Hon. James Bryce, the concluding passage of which gives the keynote of the new periodical. He says there is at this moment not only a far larger public in Britain directly interested in University matters than ever existed before, but also a greater need for the exchange of ideas and suggestions between those who are at work in different centres, and a greater need for all the help that can be drawn from a knowledge of what is passing in other countries. The aim of the *University Review* is both to supply information as to what is passing here and abroad and to express University opinion, focussing the views of those who think upon questions of the higher education. Professor Arthur Schuster of Manchester deals with uni-

versities and examinations. Professor Sonnenschein, of Birmingham, in an excellent paper on Shakespeare and Stoicism, shows cause for believing that Portia's famous speech on the "quality of mercy" is "neither more nor less than a beautiful rendering of the leading ideas" of the treatise *De Clementia*, written by Seneca by way of teaching mercy to the youthful Nero! Sir Oliver Lodge discusses the best time for examinations, inclining to the opinion that it is not the end of the summer term or session, but just before the beginning of the new session in October, when candidates have been "given time for revision and digestion, and perhaps oblivion." In an article entitled *Malaria and a Moral*, Professor Ronald Ross confesses that his own experience in research has left him with some most unchristian grudges, which he says he keeps carefully wrapped up in cotton wool in his soul, ready for use at the proper moment. This intimation that he has more rods in pickle will doubtless be alarming news to those official Gallios whose misdeeds he is now exposing in the *Journal of the Royal Army Medical Corps*. Even in the article under review not a few grudges find expression. Thus Professor Ross tells us that in 1899 immediately after the mosquito theory was established, he advised "earnestly and repeatedly that every malarious municipality should at once take steps to drain or fill up mosquito-breeding waters within its limits, at least as quickly as means allowed." He can say without vanity that his advice was at least worthy of consideration, because at that time he was certainly the only man who possessed a really intimate personal knowledge of malaria and mosquitos; and withal, he had had an opportunity of becoming very well acquainted with practical tropical sanitation in general. He even preached a crusade against malaria in Sierra Leone and elsewhere, but nothing approaching adequate general action has been attempted by his countrymen. He does not know who is to blame. His advice was never asked for, and certainly seldom followed. He suggests that perhaps the cause of failure lies in the multitude of councillors. The number of people, he says, who have studied malaria and mosquitos (in England) is quite large—and they all have their own schemes. This is surely very unreasonable of them, particularly as we gather that they generally condemn Professor Ross for what Sir Toby Belch would call the exquisite reason that it is impossible to reduce mosquitos in a town by stopping their propagation! So much for malaria. The "moral" of the paper is that if we do not take care we shall follow Spain. If we ask why we are doomed to this terrible fate, we are told that "we as a nation seem to have lost the power of prompt and resolute action; we ponder too much; are too much ruled by vacillating committees consisting of partially-informed gentlemen anxious to get home to tea; are too conceited to take the advice of the men of experience; are quite above getting to the bottom of the business; and, above all things, dislike and despise anything of practical utility." To all this we reply, with Falstaff, by denying the major—not, of course, the military title of the distinguished author, but the first term of the syllogism to which his paper may be reduced, and which may be stated as follows: All Governments are hostile to deserving scientific investigators; *atqui*, the learned professor is a deserving scientific investigator; *ergo*, etc. To speak seriously, Professor Ross undoubtedly suffered a good deal from the pedantry of Indian officialdom. But he has received ample recognition since, and if authorities are not yet prepared to take counsel of him as of an oracle, he may comfort himself with the reflection that nothing great was ever accomplished in this world save in the face of strenuous opposition. In conclusion, we heartily congratulate all concerned in the production of the *University Review* on the result of their labours.

Dr. P. Just Navarre has unearthed some records of an old Medical Dinner Society which feasted in Lyons at the dawn of the nineteenth century. By the statutes of the Society the membership was never to exceed fifteen, and two black-balls excluded candidates for vacancies. The dinners took place on the first duodi of each month. Among the members were numbered most of the leading Lyons physicians and surgeons of that day. The dinners were doubtless triumphs of gastronomic science, as well as feasts of reason and flows of soul. One rule, however, opens up appalling possibilities to the modern mind: it was to the effect that every member might at dessert read a literary composition of his own in French or Latin, as he chose. The banquet always ended with the singing of the "foundation song" by Dr. Martin, sen. The first stanza will serve as a specimen both of the sentiments,