be regarded as a low proportion, and one much exceeding 45 per cent. as a high proportion. Now, the average percentage of recoveries of all sorts of insane patients for the last 17 years was 34·03, and in county and borough asylums 35·61; so that when our results are measured by Dr. Thurnam's standard, they yield nothing to boast of. It would be wrong, however, to attribute the lower percentage of recoveries to the ill-success of our present mode of dealing with insanity; it is no doubt owing in great part, if not entirely, to the greater proportion of chronic and incurable cases among those who have been admitted during the last twenty-five years. Formerly acute and violent cases only were sent to asylums, and they would yield a larger percentage of recoveries, as well, probably, as a larger percentage of deaths. Of the admissions, fewer recover and fewer die each year now than then; the result being the steady accumulation of a residue of chronic and incurable insanity beyond what occurred then. It is a question, however, deserving attention 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 well-nigh impracticable, is so much superior to the old system in effecting recoveries as some persons imagine.

Note on the Comparative Mortality of different Classes of Patients in Asylums. By T. A. CHAPMAN, M.D., Medical Superintendent of the Hereford County and City Asylum.

I.—It is well known that the very different death-rates obtaining in different asylums depend much more on the different classes of patients they contain, than on any differences in the hygiene, or other conditions of the asylums themselves. Very little has, however, been done to obtain any accurate measure of the mortality rates that obtain amongst different classes of patients. The statistical tables of this association, which have now been used in the annual reports of asylums for a dozen years, contain much material that may be used for elucidating the matter. It is somewhat surprising that the valuable statistics contained in these tables have not been made use of to any extent either for this or any other purpose; the impediment, probably, is the considerable labour involved in any extensive analysis of their numerous data.

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A number of years ago it occurred to me to obtain from them a measure of the rates of mortality obtaining among the newer and older asylum residents; and below, in Table I., I give the result I then obtained. I have often since expected to find the matter somewhere comprehensively dealt with, but as this has not occurred, I have made a similar abstract from more recent materials, and append the results.

TABLE I.

Showing the Death-rates *per cent.* among patients of different periods of Asylum residence, based on 70 Asylum-years, during the years 1865-1869 inclusive.

Duration of Residence.	Average No. Resident.			Deaths.			Mortality per cent. on Average Number Resident.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	3488	3545	7033	1008	675	1683	28·89	19·04	23·93
1 to 2 years	1955	2136	4091	301	191	492	15·39	8·94	12·02
2 to 3 years	1454	1759	3213	191	145	336	13·13	8·25	10·45
3 to 5 years	2254	2598	4852	188	185	373	8·34	7·12	7·69
5 to 10 years	3477	4475	7952	209	244	453	6·01	5·45	5·67
Over 10 years	3694	4864	8558	186	236	422	5·03	4·85	4·93
Totals ...	16322	19377	35699	2083	1676	3759	12·76	8·65	10·47

It is necessary, in the first place, to explain how I obtain the figures used. In Table VI. of the association tables the deaths are arranged according to the duration of residence in each case, and if we can obtain an average number resident corresponding to each of the durations given in this table, we have the materials for calculating the mortality amongst patients of those periods of residence. The last column of Table IV. of the association tables gives this with sufficient accuracy for the present purpose. An average number resident should be obtained by an average of numerous periodical

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censuses, and these figures being the result of only an annual census would probably be misleading, were they used in the case of any individual asylum, as a true average number resident; but by taking the sum of these figures for a large number of asylums this inaccuracy is largely, and for the present purpose sufficiently eliminated, just as for any one asylum they are eliminated by a sufficiently frequent census. They remain, however, affected by one error, which must be borne in mind in accepting the following figures. The variations in these numbers that may take one direction in one instance, and another in another, by mere chance, are eliminated by taking a sufficient number of instances, but a variation which affects most of these numbers in the same direction will remain. Such a deviation exists in the fact that the number of patients in most asylums is increasing, and that the census used being made at the end of the year, is larger than the true average number resident. The figures obtained are, therefore, somewhat greater than the real average number resident, by the extent of about half the average annual increase. The annual increase occurring in the number of patients in asylums is about 1·6 per cent. The error, therefore, is about 8 per cent. As this increase has been going on with tolerable regularity for a number of years, it will affect the numbers at the different periods of residence about equally, so that for purposes of comparison amongst themselves the rates of mortality deduced from them may be taken as accurate, though absolutely they will be somewhat lower than the true percentages. To obtain an exact measure of the extent to which they are so, I have for the year 1874 placed for comparison the mortality percentage on the figures used, *i.e.* on the numbers resident at the end of the year, against the mortality calculated on the true average number resident for the year of the 25 asylums whose statistics for that year I have used. The difference is barely over a hundredth part, and may be safely neglected.

Table I. gives the results I obtained six years ago. Tables II., III., and IV. give those obtained for the last four years. I have used in these latter the reports of all English county and borough asylums, excepting one or two, which I had not got, a number that do not give the association tables, or do not give them in their entirety, and some others whose statistics were not of sufficient duration for the purpose.

The close agreement in the results for the several years

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with each other, and with the results calculated in the totals for the four years, shows that sufficient numbers are used to eliminate most sources of error due to individual deviations. The absolute agreement in the percentage for both sexes taken together, during the first year of residence for the three years, 1873, 1874, 1875, is very remarkable. For the year 1872 the asylums, whose statistics are used, appear to have had a very low mortality. The higher mortality of the year 1875 appears to have especially affected patients of from seven to ten years' residence. In 1873 the male mortality of one to two years' residents is large, but with these exceptions any general deductions might almost equally be drawn from the results of either of the years or from the total.

It is hardly necessary to state any of these deductions, as they are sufficiently obvious on an inspection of the tables. The most obvious is the very high rates in the earlier years of residence, amounting during the first year to nearly one-third of the average number resident in the case of males, and to over one-sixth of that number among the females. These rates rapidly diminish, being about half this during the second year of residence, until at the end of five years the sources of excessive mortality appear to be nearly exhausted. The lowest mortality is not, however, reached until the end of seven years, when the rate is about half that obtaining amongst the total asylum population. After ten years there is a very slight but distinct increase of the rate, which would be more obvious, but for what appears to be the somewhat exceptionally high rate of mortality among female patients of from seven to ten years' residence during the year 1875. The difference of the rates of male and female patients obtains almost throughout, the male mortality exceeding the female during the first year, nearly as 2 to 1; during the second as 3 to 2; the difference diminishing until as the period of least mortality approaches, viz., from five to seven years, the female mortality is slightly in excess. This result is shown in the figures of three of the years, as well as in the total, and is probably, therefore, a rule, and not a mere statistical accident. In the following years the male mortality is again in excess, in the ratio of about six to five.

The total mortalities for the several years are so closely proportional to the mortalities for all county and borough asylums, as given in the Reports of the Commissioners in Lunacy, that it would appear that the selection of asylums made has happened to be fairly representative of all.

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TABLE II.

Average Number Resident, distributed according to the Duration of Residence, in the Case of 90 Asylums—years, from 1872 to 1875 inclusive.

	Have Resided less than 1 year.			1 to 2 years.			2 to 3 years.			3 to 5 years.			5 to 7 years.			7 to 10 years.			Over 10 years.			Totals.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
18 asylums, 1872.	1021	1272	2293	739	793	1532	501	592	1093	631	776	1407	494	639	1133	663	901	1564	1444	2075	3519	5493	7048	12541
25 asylums, 1873.	1416	1693	3109	797	1019	1816	779	952	1731	942	1115	2057	718	861	1579	865	1027	1892	2128	2842	4970	7645	9519	17164
26 asylums, 1874.	1470	1611	3081	879	998	1877	635	851	1486	1159	1397	2556	671	802	1473	846	1081	1927	2179	2956	5135	7839*	9696*	17535*
23 asylums, 1875.	1230	1327	2557	634	715	1349	496	547	1043	743	995	1738	566	646	1212	656	747	1403	1622	1909	3531	5947	6886	12833
90 asylums, yrs. 1872–75.	5137	5903	11040	3049	3525	6574	2411	2942	5353	3475	4283	7758	2449	2948	5397	3030	3756	6786	7373	9782	17155	26924	33139	60063

* True average number resident for 1874 for these 26 asylums—Males, 7,725; females, 9,630; total, 17,355—a correction of about 1 per cent.

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TABLE III.

Deaths, distributed according to the Duration of Residence, in the case of 90 Asylums—years, from 1872 to 1875 inclusive.

	Have Resided under 1 year.			1 to 2 years.			2 to 3 years.			3 to 5 years.			5 to 7 years.			7 to 10 years.			Over 10 years.			Totals.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
18 asylums, 1872.	281	184	465	95	68	163	58	42	100	53	50	103	31	35	66	26	39	65	62	86	148	606	504	1110
25 asylums, 1873.	477	301	778	149	104	253	78	68	146	81	59	140	39	53	92	37	41	78	136	147	283	997	773	1770
26 asylums, 1874.	474	297	771	129	100	229	82	68	150	97	95	192	35	60	95	44	50	94	134	134	268	995	804	1799
23 asylums, 1875.	380	260	640	101	56	157	63	57	120	65	65	130	26	31	57	54	52	106	99	109	208	788	630	1418
90 asylums, yrs. 1872-75.	1612	1042	2654	474	328	802	281	235	516	296	269	565	131	179	310	161	182	343	431	476	907	3386	2711	6097

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TABLE IV.

Percentage of Deaths on Average Number Resident in cases of 90 Asylums—years, 1872 to 1875—calculated separately for each period of duration of residence. (The note to the total mortality for 1874 shows the proportion in which these percentages are too small, owing to the censuses for the average number resident being made at the end of the year.)

	Have Resided less than 1 year.			From 1 to 2 years.			2 to 3 years.			3 to 5 years.			5 to 7 years.			7 to 10 years.			Over 10 years.			Average Mortality.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
18 asylums, 1872.	27·52	14·46	20·28	12·85	8·57	10·64	11·6	7·09	9·14	8·4	6·44	7·32	6·27	5·48	5·82	3·9	4·33	4·16	4·29	4·14	4·26	11·03	7·15	8·98
25 asylums, 1873.	33·65	17·77	25·02	18·69	10·2	13·93	10·01	7·14	8·43	8·6	5·29	6·8	5·43	6·15	5·82	4·27	4·00	4·12	6·37	5·17	5·69	13·04	8·12	10·31
26 asylums, 1874.	32·24	18·46	25·02	14·67	10·01	12·20	12·91	7·99	10·01	8·38	6·80	7·52	5·21	7·49	6·45	5·2	4·62	4·88	6·15	4·53	5·22	12·69*	8·29*	10·25*
23 asylums, 1875.	30·88	19·59	25·02	15·95	7·83	11·64	12·70	10·42	11·5	8·70	6·53	7·47	4·59	4·79	4·70	8·30	6·98	7·55	6·10	5·18	5·88	13·25	9·15	11·05
90 asylums, yrs. 1872-75.	31·37	17·64	24·04	15·55	9·30	12·20	11·24	7·99	9·64	8·50	6·05	7·27	5·25	6·07	5·74	5·32	4·87	5·05	5·84	4·86	5·28	12·57	8·18	10·15

* True average mortality, calculated on true average number resident—Males, 12·89; females, 8·35; total, 10·36.

II.—A further means of throwing a little light on this subject might, it occurred to me, be found in a statistical table, which I have been in the habit of framing each year, to show the general mental state of the patients in the Hereford Asylum. This table is in the form annexed, but I have placed in it for the sake of larger numbers the sums of the figures for the past four years.

Each class in this table forms a well-defined natural group, capable, no doubt, of further sub-division, but clearly marked off from the others, except the two last groups. These are, really, one group, rather arbitrarily divided into two, according to the line separating chronic mania from dementia, a line which hardly exists, as the majority of cases might easily be placed under either head. These groups might, perhaps, have been advantageously divided otherwise, but for the present purpose we must use them as we have them, and ought, perhaps, to take them as one group. They include, in fact, all cases in the Asylum, except those separated under the previous headings; they include many cases that have not been long in the Asylum, many aged and many feeble, and their mental conditions are much more various than a division into chronic mania and dementia only implies.

This classification having been made at the end of each year, and a list of the patients in each group preserved, it occurred to me that the death-rate in each group during the following year would be of interest. In order, so far as my small numbers will permit, to eliminate the variations due to particular years, I have added together the figures for the four years, and added in the third column the percentages they yield. These percentages are not percentages on the average numbers resident, but on the numbers resident on the 1st of January; no notice being taken of the admissions of the year, or the deaths from amongst these admissions, nor of the gradual diminution of the numbers resident on the 1st of January as the year progresses. These rates are, therefore, all lower than if they were calculated on the average number of each class resident for the year. To reduce them to percentages on the average number resident, a correction must be made for the diminution in each class during the year. This I have made and placed in the fourth column of the table. The diminution in the case of congenital cases without epilepsy, and in those of chronic insanity, is so small that hardly any correction is necessary. But in the case of the probably curable and of the general

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TABLE V.

Showing the Number and Percentages of Deaths occurring among Different Classes of Patients in the Hereford Asylum during the four years 1873-76 inclusive.

	Numbers Resident Dec. 31st, for four years.			Deaths during the following four years.			Percentage of Deaths on Numbers Resident.			Death-rate corrected to Average Numbers Resident.		
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.
Probably Curable Cases	40	56	96	1	3	4	2·5	5·0	4·2	3·4	7·1	6·0
Congenital Cases — Free from Epilepsy	113	62	175	2	1	3	1·8	1·6	1·7	1·9	1·7	1·8
Congenital Cases — With Epilepsy	38	22	60	3	1	4	7·9	4·6	6·6	8·2	4·7	6·8
Epileptics (non-congenital)	60	34	94	7	1	8	11·6	3·0	8·5	12·4	3·2	9·0
Organic Brain Disease — General Paralysis	18	3	21	9	1	10	50·0	33·3	47·6	75·0	50·0	68·0
Organic Brain Disease — Other forms	18	8	26	4	—	4	22·0	—	15·0	26·5	—	18·0
Chronic Insanity — More or less excited (Chronic Mania)	146	239	385	6	11	17	4·1	4·7	4·5	4·2	4·8	4·6
Chronic Insanity — Quiet (Dementia, Monomania, &c.)	129	162	291	7	12	19	5·4	7·4	6.5	5·6	7·7	6·7
Totals	562	586	1,148	39	30	69	6·9	5·0	6·0	7·5	5·4	6·5
All except Epileptics and Paralytics	428	519	947	16	27	43	3·7	5·2	4·5	3·8	5·4	4·7
Average mortality of the Asylum during the four years, calculated on the Average Number Resident										9·32	6·74	8·00

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paralytics, the reduction amounts during the year to 50 per cent., in the former chiefly by recoveries, on the latter by deaths, so that the average number resident of these is not more than 70 per cent. of the number resident on January 1st.

The average mortality of all patients in the Asylum is added for comparison; this includes the admissions of the year with their higher rate.

A comparison of the figures with those classed according to the duration of residence leads to the conclusion that the high mortality during the earlier years of residence is especially due to the presence among them of general paralysis and other fatal forms of brain disease. Epileptics also appear to have a high death-rate, and as these are not eliminated during the first few years of their residence, there can be no doubt that the mortality of the older residents, apart from the epileptics, would be much less than is shown in Table IV.

The low rate of mortality among all classes of cases, except paralytics and epileptics (excepting also the admissions of the year, but including those that remain of the previous year's admissions) is worth attention. There are included in the numbers on which this is calculated all aged people, and all sick and feeble, provided they be not epileptic or paralytic (these two classes do not include many aged, whereas the whole number resident includes 22 per cent. aged over 60). As one practical application of these figures, I remember a great point in favour of boarding out patients with cottagers was that their mortality there was about 5 per cent., against double that figure in asylums. Now, 5 per cent., with not only epileptics and paralytics excluded, but also the aged and feeble, will not compare favourably with 4·7 per cent., including the aged, feeble, and a fair proportion of recent cases.

It is also worth noting that the mortality of congenital imbeciles, free from epilepsy, and including many miserable idiots, is not very far from that of the general population.

It might, perhaps, be argued from the figures that chronic mania is less fatal than dementia; that patients rust away more often than they wear out; and whilst this may be so, since many patients are never better in health than when suffering from a certain amount of subacute excitement, I think the true explanation of the figures above is that the more aged patients tend to be classed as dementia, the younger as chronic mania. There are various other deduc-

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tions that might be drawn, but the numbers are much too small for much confidence to be placed in them. Among such deductions are such as that acquired is more fatal than congenital epilepsy, and that epilepsy is more fatal among males than females.

These figures are sufficient to give some definiteness to the statement that the mortality of different asylums must depend so much more on the classes of patients it contains, than on its hygienic condition, or on the success of the therapeutic measures employed in it, that the rate of mortality taken alone may really be said to throw no light whatever on these questions.

Two Cases of Homicide in Asylums. By D. YELLOWLEES, M.D., F.F.P.S.G., Physician Superintendent, Glasgow Royal Asylum.

The good order, quietness, and contentment of a modern asylum for the insane are apt to appear to outsiders mere matters of course. Alike at employment, exercise, and recreation, the patients behave so well that it seems as if they could never do otherwise, and the occurrence of any casualty among them is apt to excite surprise and dissatisfaction, as if it could only have resulted from mismanagement or carelessness.

No asylum officer can entertain such a delusion. He knows too well how many elements of danger exist latent under the pacific surface, and how suddenly and causelessly they may explode in dangerous and reckless violence. Such maniacal outbursts can in many cases be neither anticipated nor prevented, and they have found victims alike among patients, attendants, doctors, and commissioners.

The two following cases of homicide have occurred in patients under my care:—

T. G., age 30, single, employed in tinworks, was admitted to the Glamorgan County Asylum, November 20th, 1868. This was the first attack; it had lasted about four months, and the assigned cause was a blow on the head with a glass, which he had received in a brawl. There was no known hereditary predisposition. His habits had latterly been intemperate. He had been dangerous to others, but neither epileptic nor suicidal.

Alteration of appearance and character, refusal to work, wandering about unfrequented places, assaulting his father without cause or

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