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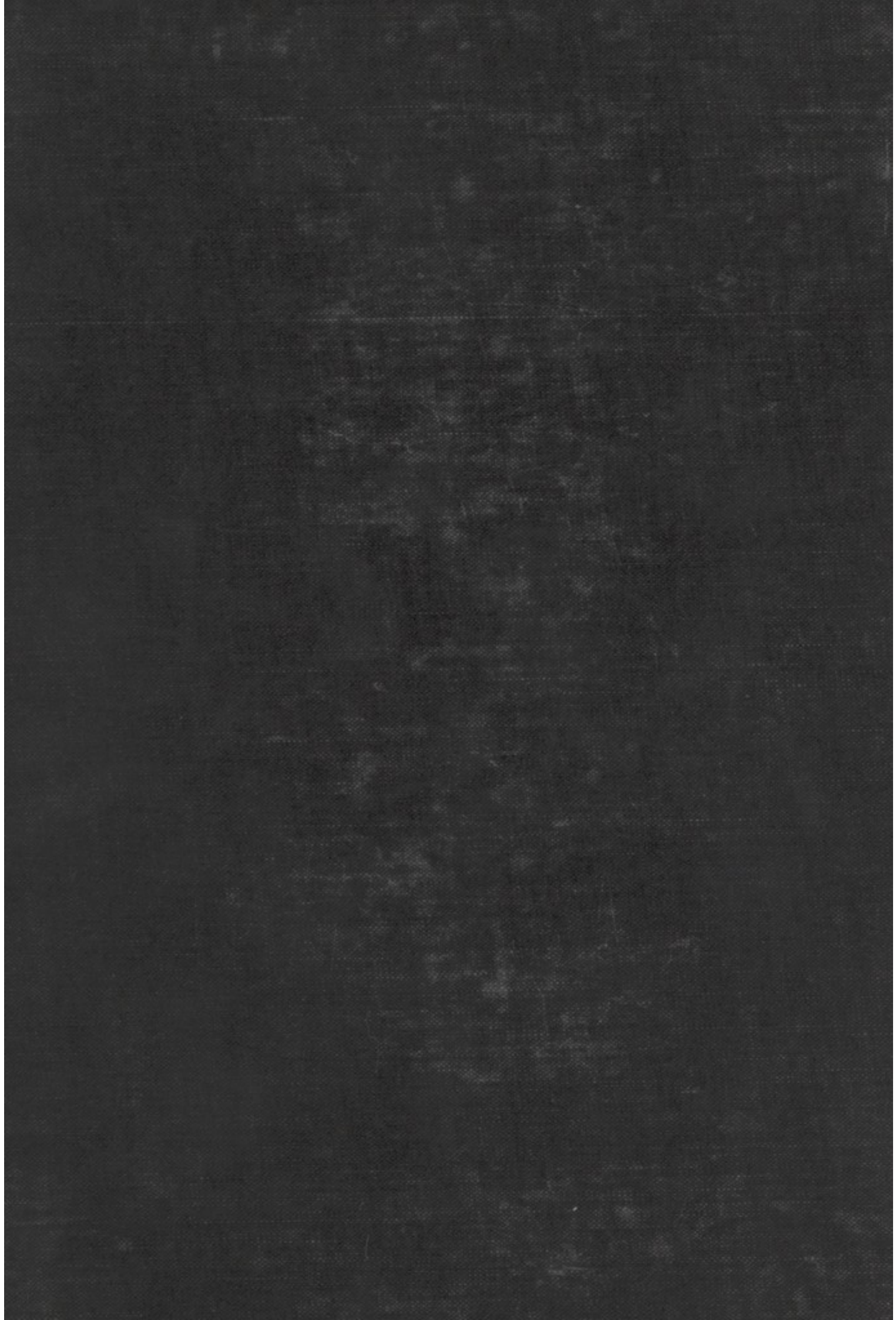
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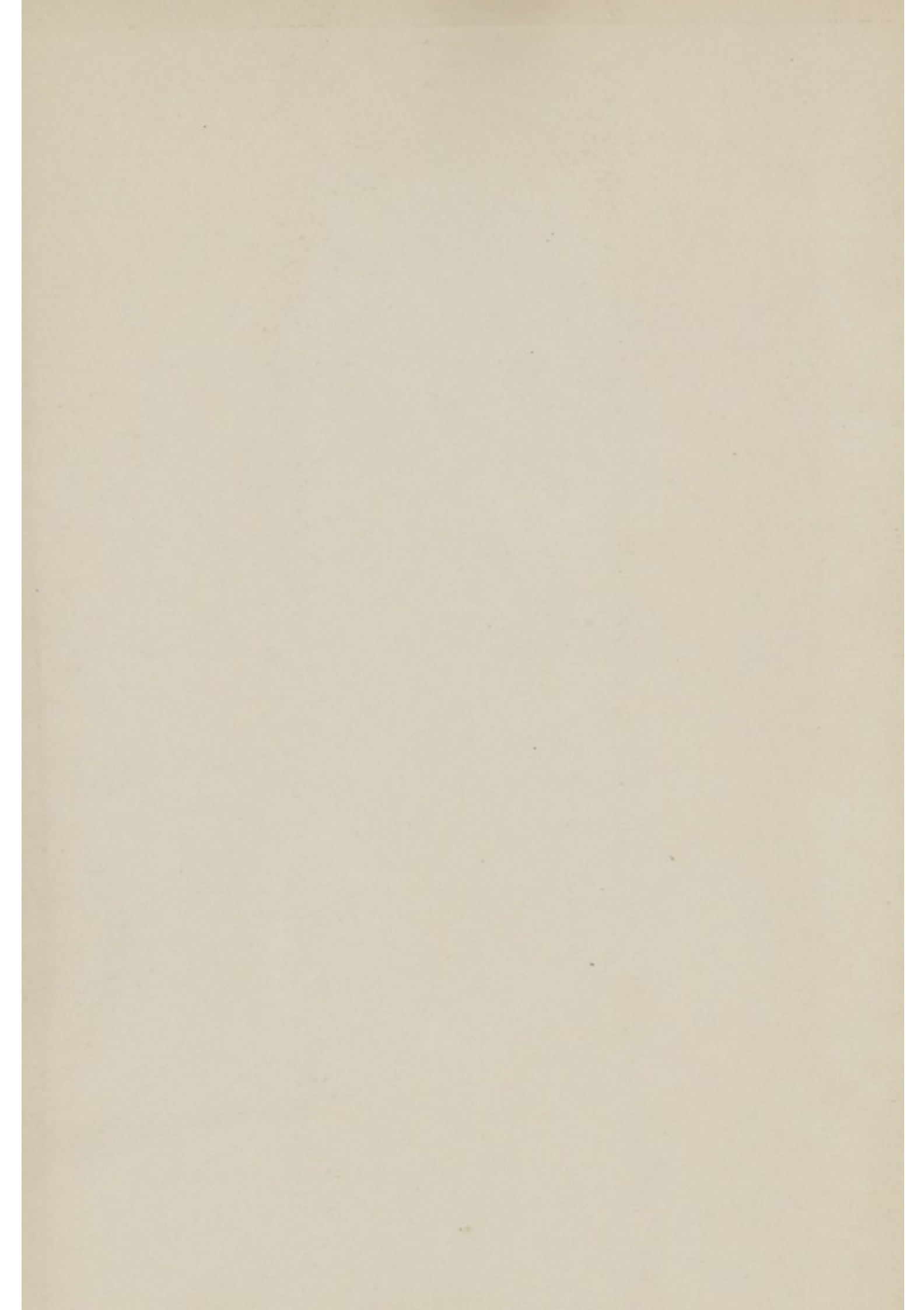
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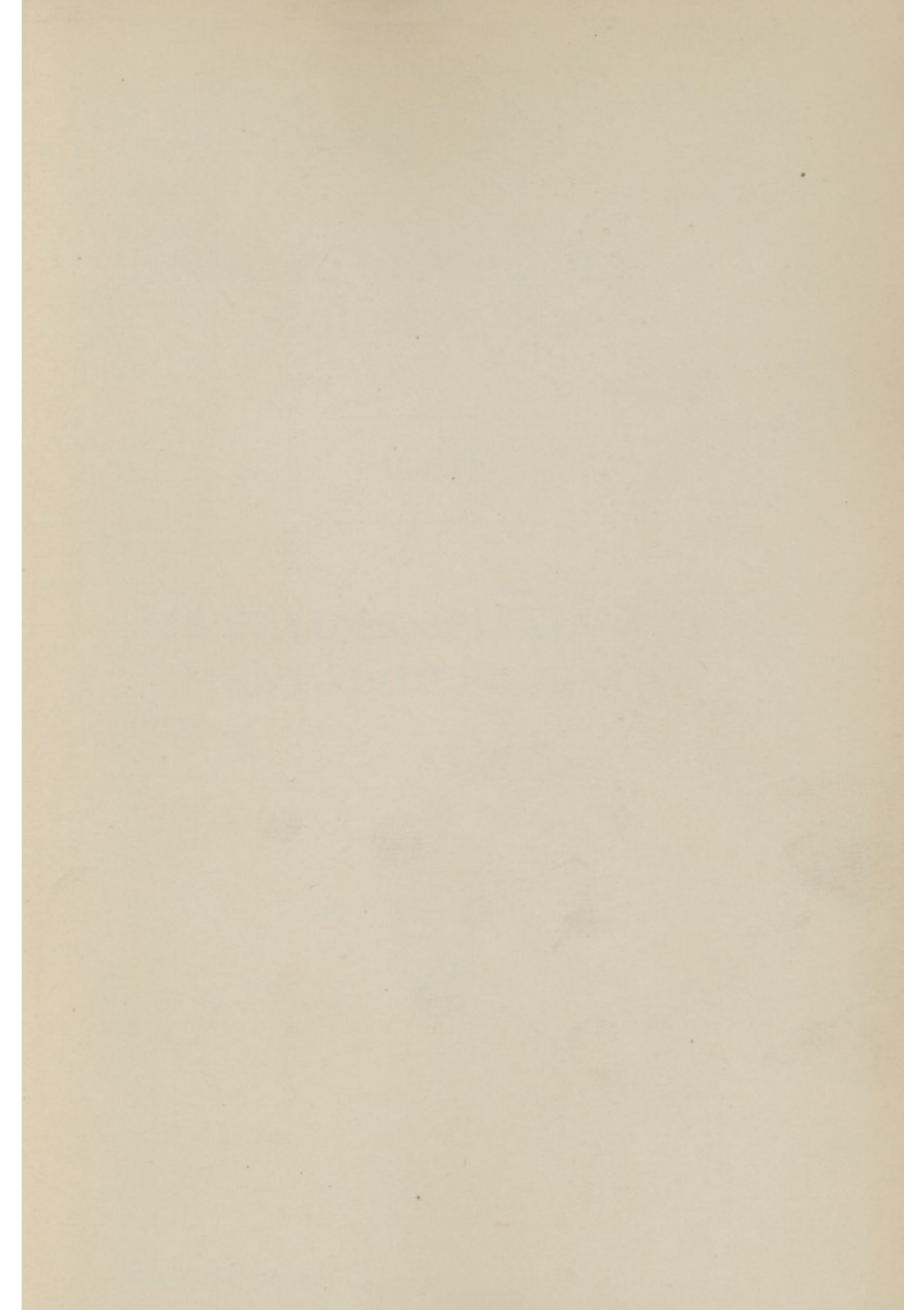
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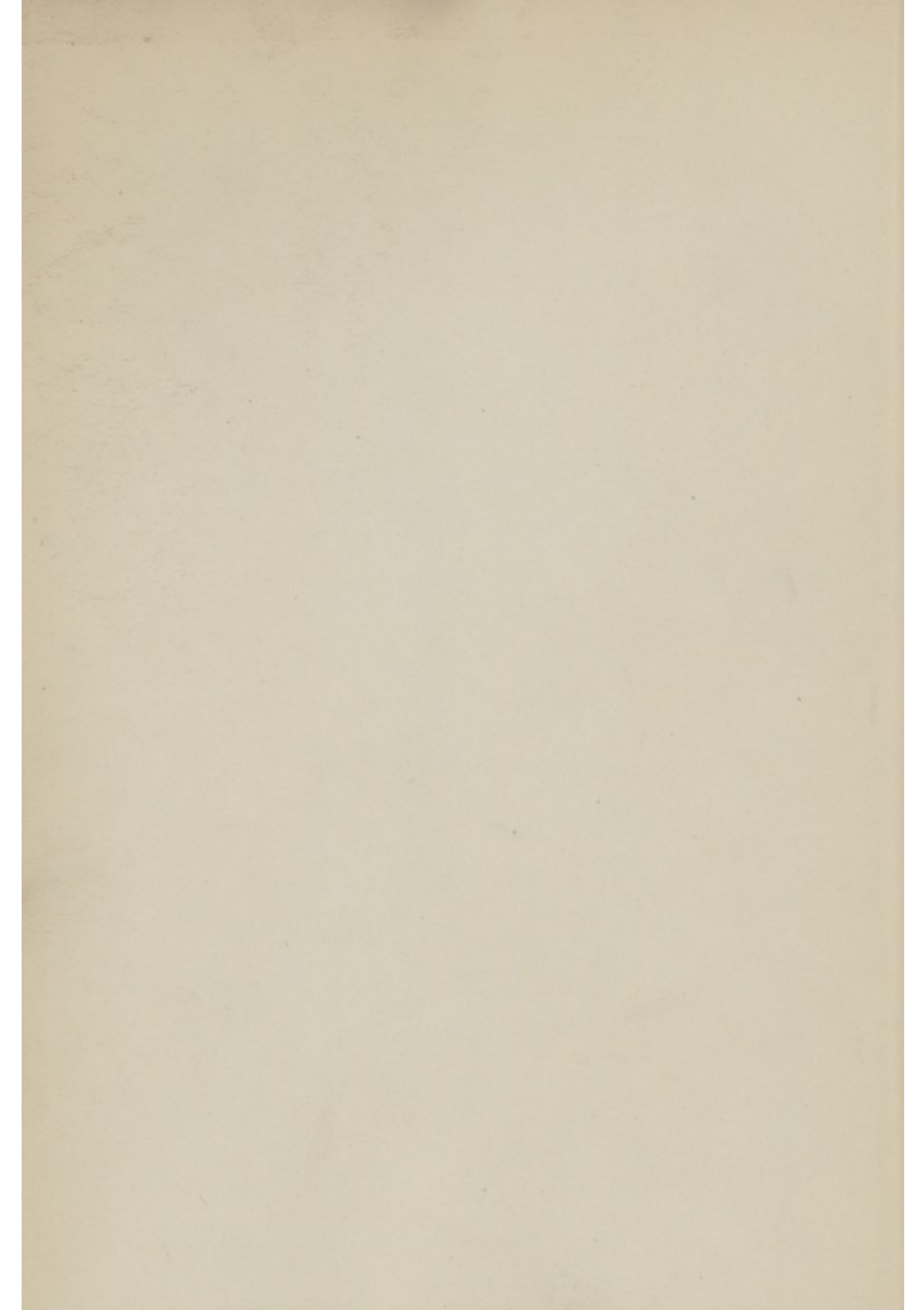


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London County Council.

LCC 37

ANNUAL REPORT OF THE COUNCIL, 1928.

Vol. II.



MENTAL HOSPITALS AND MENTAL DEFICIENCY.



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London County Council.

ANNUAL REPORT OF THE COUNCIL, 1928.

VOL. II.—MENTAL HOSPITALS AND MENTAL DEFICIENCY.

CHAPTER I.

During the year ended 31st March, 1929, the position, powers and duties of the Council in regard to the care of the mentally afflicted have not been altered. A full list of these powers and duties will be found in Vol. I. of the Annual Report for 1926, pp. 29 and 30. The passing of the Local Government Act, 1929, will introduce substantial changes, but these will not become operative until 1st April 1930, and will be matter for discussion, therefore, in a subsequent report.

CHAPTER II.

REPORT OF THE MENTAL HOSPITALS COMMITTEE TO THE LONDON COUNTY COUNCIL.

1. This report, for the year ended 31st March, 1929, is the twelfth annual report of the Committee to which, under section 35 of the London County Council (General Powers) Act, 1915, stand referred all matters relating to the exercise by the Council of the powers of a visiting committee under the Lunacy Acts. It is the thirty-seventh annual report upon the administration of the London County mental hospitals.*

2. During the period covered by this report, meetings have been held as follows:—Mental Hospitals Committee, 11; visiting sub-committees of mental hospitals (ordinarily fortnightly, one meeting being held to transact general business and the next to discharge patients and to make statutory inspections), 259; other sub-committees (dealing with matters arising from the Council's administration of the Lunacy Acts), 31.

Accommodation.

3. On 1st January, 1929, the accommodation at the London County mental hospitals, according to the requirements of the Board of Control as to bed space, was:—

TABLE 1.

Mental hospital.	Beds.		
	Males.	Females.	Total.
Banstead	1,132	1,414	2,546
Bexley... ..	1,043	1,110	2,153
Cane Hill	850	1,260	2,110
Claybury	930	1,279	2,209
Claybury (for private cases only) ...	65	—	65
Colney Hatch	1,052	1,513	2,565
Hanwell	1,018	1,331	2,349
Horton	271	1,655	1,926
Long Grove	1,128	1,005	2,133
West Park	1,128	968	2,096
Ewell Colony	100	329	429
Total	8,717	11,864	20,581
Total (excluding private accommodation at Claybury) ...	8,652	11,864	20,516

* It should be observed that a few of the matters dealt with in this chapter, *e.g.*, under the section relating to superannuation Acts, have an application wider than the mental hospital service and concern also the service under the Mental Deficiency Acts, which, strictly, is matter for chapter III., which follows.

Ewell Colony.

4. The arrangement for the use of the Ewell Colony, after its evacuation by the Ministry of Pensions, as one of the London County mental hospitals in the first instance for two years, referred to in the Annual Report of the Council for 1926 (Vol. II., p. 4, par. 7), has been reconsidered, and it has been decided to continue to use the Colony thus without limit of time. This decision was reached because of the necessity to make further provision for the housing and treatment of all types of insanity, including acute cases. It involved the abandonment of alternative proposals which had been discussed, viz., (i) to use the Colony again as it had been used before the War as a specialised institution for the chronic epileptic insane capable of a colony life with a good deal of liberty on parole, or (ii) to transfer the premises for use as a certified institution for the mentally defective.

Additional
accommoda-
tion.

5. Comparison of Table I. with the corresponding table in the last Report (Annual Report of the Council, 1927, Vol. II., p. 3) shows a net increase in the total measured accommodation of all the hospitals (excluding the special provision for private male patients at Claybury) of 797 beds (285 for males and 512 for females). The chief factors contributing to this result have been (i) the reversion to use as patients' accommodation at Banstead mental hospital of M4 ward, which had been adapted for use as dormitory accommodation for nurses, and the bringing into use at the same hospital of two female wards which temporarily had been out of use for reconstruction, (ii) the opening of a new admission hospital for 50 female patients at Claybury mental hospital; (iii) at Colney Hatch mental hospital the opening of a new admission hospital for 40 male patients, the re-opening of D ward for 40 male patients, the reclassification and remeasurement of the accommodation for female patients and the use for 18 female patients of single rooms which had served as nurses' bedrooms (see Annual Report of the Council, 1927, Vol. II., p. 4), arrangements which together give an additional 66 beds, and (iv) the reconversion to patients' accommodation at Long Grove mental hospital (65 males) of J2 ward, which had been used temporarily as dormitory accommodation for nurses. Not all this accommodation, however, was actually available for occupation at 1st January, 1929. (*See par. 13.*)

6. The accommodation set out in Table I. includes the additional accommodation which was in contemplation at the time of publication of the Council's Annual Report for 1926 (*see table at p. 5, Vol. II.*), except the additional 120 beds for female patients at Horton mental hospital to be set free by the erection of a nurses' home, which has become available, however, since 1st January, 1929. The total measured accommodation available for use at 31st March, 1929, was 20,701 (8,717 males, 11,984 females).

New schemes
for providing
accommoda-
tion.

7. In addition to schemes for providing additional accommodation which already are being proceeded with, particulars of which are given in Vol. II. of the Council's Annual Report for 1927 (p. 4, par. 6), we have approved a scheme for the erection of a nurses' home at Banstead mental hospital setting free accommodation for 30 female patients*. The scheme for the erection of admission villas at Banstead, referred to in the same report (Vol. II., p. 4, par. 7) is still under consideration. We have also under consideration schemes for the erection of a nurses' home at Long Grove mental hospital which will release space at present used for nurses' bedrooms to provide about 33 additional beds for male patients, and the erection of a sanatorium for about 30 female patients at the same hospital, for the erection of a nurses' home at Cane Hill mental hospital which will release space at present used for nurses' bedrooms to provide about 76 additional beds for female patients, for the provision of a second nurses' home at

* In the Annual Report for 1927 (chapter II., par. 7), this number was said, incorrectly, to be 67; that figure represents the number of nurses to be displaced, not the number of patients who will occupy the accommodation vacated.

Horton mental hospital which will release space at present used for nurses' bedrooms to provide about 118 additional beds for female patients, the provision at the same hospital of a special treatment building to accommodate 3 female patients, and the enlargement of C hospital to provide accommodation for 12 additional female patients, and for the erection of additional villas on the Ewell Colony estate to increase the accommodation at that institution from 429 beds to 921 beds.

8. On the basis of schemes at present approved, or in contemplation, the numbers of beds at the mental hospitals which may be expected to be available for use in two or three years' time are approximately as follow :—

	Male.	Female.	Total.
Banstead	1,182	1,494	2,676
Bexley	1,043	1,175	2,218
Cane Hill	850	1,336	2,186
Claybury	995	1,349	2,344
Colney Hatch	1,052	1,513	2,565
Hanwell	1,068	1,381	2,449
Horton	271	1,908	2,179
Long Grove... ..	1,161	1,035	2,196
West Park	1,128	968	2,096
Ewell Colony	510	411	921
	9,260	12,570	21,830

Accommodation expected to be available in the next few years.

9. It will be seen from the foregoing paragraphs that the position as between accommodation and requirements during the next few years has been changed since the date of our last annual report by the proposals to provide further accommodation for future use, and by the excess of the recorded increase (724) in the number of patients for whom the Council was responsible to find accommodation on 1st January, 1929 (*see table 5 post*) above the estimated annual increase (300) which was used as the basis of the forecast of future responsibilities given in the Council's last annual report (*see Vol. II, p. 5, par 10*).

Forecast of numbers of patients to be provided for.

10. The actual annual increase during the five years ended 31st December, 1928 (*see table 5 post*) has averaged 390 (192 males, 198 females). On the basis of a continued annual increase at this rate, the estimated number of patients for whom the Council will be responsible to find accommodation during the next few years will be as set out below :—

	Males.	Females.	Total.
1st January, 1929 (actual) ...	8,692	12,179	20,871
„ 1930 (estimated) ...	8,884	12,377	21,261
„ 1931 „ ...	9,076	12,575	21,651
„ 1932 „ ...	9,268	12,773	22,041
„ 1933 „ ...	9,460	12,971	22,431

11. A comparison of estimated available accommodation (*par. 8*) with estimated future responsibilities (*par. 10*) indicates that, with the contract accommodation shown in table 4, there may be sufficient accommodation to meet current demands during the next few years, if the scheme for the enlargement of the Ewell Colony, which is referred to in *par. 7*, can be realised and carried out without great delay. Nothing in the way of additional accommodation can be hoped for from provincial mental hospital authorities under contract. The accommodation furnished by the Metropolitan Asylums Board for chronic harmless lunatics has been allocated to a substantial degree to cases of mental defect, and is to that extent no longer available to relieve pressure on the London County mental hospitals. So far as we can judge, there is little prospect of substantial assistance from suitable vacant accommodation which may be available when the poor law institutions which are to pass under the Council's direction at 1st April, 1930, have been taken over and reclassified.

Comparison of accommodation with requirements.

Patients—
Number
resident.

12. The numbers of patients resident on 1st January, 1929, were :—

TABLE 2.

Mental hospital.	Males.	Females.	Total.
Banstead	1,115	1,394	2,509
Bexley... ..	1,045	1,130	2,175
Cane Hill	862	1,261	2,123
Claybury	938	1,314	2,252
Claybury Hall (private section only)	60	—	60
Colney Hatch	1,070	1,491	2,561
Hanwell	1,024	1,363	2,387
Horton	269	1,671	1,940
Long Grove	1,090	1,023	2,113
West Park	1,133	975	2,108
Ewell Colony	101	335	436
Total	8,707	11,957	20,664
Total (excluding private section, Claybury)	8,647	11,957	20,604

These figures include 35 male and 67 female patients (total, 102) chargeable to parishes and unions outside the County of London.

13. A comparison of table 1 with table 2 shows that at most of the mental hospitals the number of patients continues to exceed the number for which the measured accommodation should provide. Actually, however, on 1st January, 1929, the whole of the measured accommodation shewn in table 1 was not available for occupation, though it became available shortly after that date. Consequently it appears on a comparison of the tables that at Banstead (for both sexes), Colney Hatch (for females) and Long Grove (for males) the number of patients accommodated was less than the measured space could have taken. This was true, for reasons of temporary application, only for the given date and for a short time thereafter. Taking the total figures for all the hospitals, at 1st January, 1929, there were 10 fewer male patients than the measured space would have carried but the female patients were 93 in excess of the number provided for by measured space, giving a net excess of 83.

Patients for
whom the
Council was
responsible.

14. The statutory returns made to the Board of Control by the London boards of guardians, collated with other available information, show that on 1st January, 1929, the Council was responsible for finding accommodation for 20,871 insane persons, who were housed as follows :—

TABLE 3.

	Males.	Females.	Total.
Parish patients in London County mental hospitals	7,579	11,478	19,057
Parish patients maintained by the Council in other mental hospitals under contract	35	234	269
Parish patients in the mental hospitals of other counties and boroughs under arrangements made by guardians	44	55	99
Parish patient in a licensed house	1	—	1
<i>Total Parish patients</i>	<i>7,659</i>	<i>11,767</i>	<i>19,426</i>
Private patients at Horton mental hospital ...	—	131	131
Patients in various London County mental hospitals on the private list (Lunacy Act, 1891, section 3), including ex-soldiers classified as "service" patients and private patients	1,020	281	1,301
<i>Total Private patients</i>	<i>1,020</i>	<i>412</i>	<i>1,432</i>

[Continued over.]

TABLE 3—continued.

	Males.	Females.	Total.
<i>Total parish patients</i>	7,659	11,767	<i>19,426</i>
<i>Total private patients</i>	1,020	412	<i>1,432</i>
Criminal lunatics in various London County mental hospitals chargeable to the Prison Commissioners	13	—	13
	8,692	12,179	<i>20,871</i>

The totals in the last column, printed in italics, appear again in Table 5.

[This table does not include male private patients in the private section at Claybury mental hospital, but it does include female private patients at Horton mental hospital, all of whom have London settlements and are received at a low charge, so that probably, if they were not dealt with thus, the Council would have to provide for them as parish cases. This is true also of the "private list" cases, all of whom are admitted in the first instance as parish cases, and of the majority of the "service" cases.]

15. The number of London parish patients accommodated in London County Parish patients. mental hospitals on 1st January, 1929, exceeded by 745 (292 males, 453 females) the number so accommodated on 1st January, 1928. The number of London patients accommodated in out-county mental hospitals under arrangements made by London boards of guardians, *i.e.*, patients admitted to out-county mental hospitals but subsequently found to be chargeable to London parishes or unions, was 31 (16 males, 15 females) more on 1st January, 1929, than on 1st January, 1928. During the year 1928 the number of such patients transferred from out-county mental hospitals to London County mental hospitals was 131 (36 males, 95 females).

16. The number of patients boarded out under contracts made between the Patients boarded out. Council and the visiting committees of out-county mental hospitals was on 1st January, 1928, 364 (60 males, 304 females). During the year 1928, contracts with the visiting committees of the Three Counties mental hospital (25 males and 25 females) and the Yorkshire (West Riding) mental hospital (50 females) expired, on 10th April and 28th December, respectively, and the patients were removed to London County mental hospitals.

17. On 1st January, 1929, the contracts in force were as follows:— Contracts.

TABLE 4.

Mental hospital.	Number contracted for.		Charge a head a week provided for in the original contract.	Charge a head a week on 1st January, 1929.	Date of commencement.	Full term of contract.	Date of expiry.
	M.	F.	£ s. d.	£ s. d.		Years.	
City of London..	35	5	1 5 0	1 10 11	1st July, 1923	6	30th June, 1929 (or earlier by six months' notice).
Hants County ..	—	1	1 8 0	1 10 4	15th April, 1926	5	14th April, 1931 (or earlier by three months' notice during last four years).
Ipswich Borough	—	1	1 8 0	1 8 0	22nd June, 1926	5	21st June, 1931 (or earlier by three months' notice during last four years).
Leicester City ..	—	100	1 6 10	1 7 5	16th July, 1924	5	15th July, 1929 (or earlier by three months' notice).
Monmouth County	—	70	1 2 8½	1 1 6½	8th January, 1927	3	7th January, 1930 (or earlier by three months' notice).
Oxford County ..	—	20	1 6 10	1 8 0	3rd September, 1923	6	2nd September, 1929 (or earlier by three months' notice during last four years).
Yorks, East Riding	—	40	1 5 6	1 5 6	6th February, 1926	4	5th February, 1930 (or earlier by three months' notice).

Council's
responsibility
for patients
since 1890.

18. The following table shews the total number of lunatics for whom the Council has been responsible to find accommodation on 1st January, in certain years since 1890* :—

TABLE 5.

Date.	Parish and county patients.	Chargeable to Prison Commissioners.	Patients on private list, etc., and private patients at Horton.	Total.	Increase.	Decrease.
1st January—						
1890 ...	10,100	4	—	10,104	—	—
1900 ...	15,061	17	107	15,185	5,081(a)	—
1910 ...	19,288	39	587	19,914	4,729(a)	—
1920 ...	16,243	7	1,046	17,296	—	2,618(b)
1921 ...	16,557	40	1,219	17,816	520	—
1922 ...	17,085	36	1,228	18,349	533	—
1923 ...	17,343	15	1,142	18,500	151	—
1924 ...	17,725	10	1,183	18,918	418	—
1925 ...	17,653	10	1,397	19,060	142	—
1926 ...	17,876	13	1,419	19,308	248	—
1927 ...	18,418	11	1,378	19,807	499	—
1928 ...	18,744	11	1,392	20,147	340	—
1929 ...	19,426	13	1,432	20,871	724	—

(a) In each year of these decennia there was an increase. The average yearly increase was, from 1890 to 1900, 508, and from 1900 to 1910, 473.

(b) During the first 5 years of this decennium there was an average annual increase of 162, the next four years (1916–1919) showed decreases averaging 1,078 a year, the last year (1920) showed an increase of 70.

Patients —
increase in
number.

19. The increased number of patients for whom the Council on 1st January, 1929, was responsible to find accommodation was 724. The number of additional rate-aided patients was 682 (284 males, 398 females). There were 45 additional patients on the private list and 6 fewer service and ex-service patients, an increase of 1 in the number of patients in the private ward at Horton mental hospital, and 2 more male patients chargeable to the Prison Commissioners. In considering table 5 reference should be made to tables 9 to 12 inclusive, and to the corresponding tables in the annual report for 1927.

20. It will be seen that the total number of admissions, both direct and indirect (table 9) was 4,038, as against 4,118 for 1927, a decrease of 80; the recoveries (table 10) were 787, as against 734 for 1927, an increase of 53, and the deaths numbered 1,226 as against 1,356, a decrease of 130. The percentage of total recoveries on total admissions (table 11) was 19.48 as against 17.82 for 1927, and the percentage of total deaths on the average daily number on the registers (table 12) was 6.06 as against 6.92 for 1927. The total number of discharges was 1,657 as against 1,299 for 1927, an increase of 358.

21. It should be pointed out that the total admissions (table 9) include transfers between London County mental hospitals, whereas in the total discharges (table 10) transfers to other mental hospitals are excluded and the figures represent actual discharges from mental hospital care. Excluding transfers between London County mental hospitals, transfers to Claybury mental hospital on private classification, and cases in which chargeability has been adjudicated to out-county parishes or unions, the total number of admissions to London County mental hospitals during 1928 was 3,325. The "exits" of London cases, *i.e.*, discharges, transfers, deaths, etc., numbered 2,538, so that the number of admissions exceeded the total number of exits by 787. The number of London patients under treatment in out-county mental hospitals was decreased by 63 during the year, so that the net increase in London patients was 724 as indicated by table 5. This increase represents an inevitable process of accumulation in the Council's mental hospitals of chronic patients for whom discharge is not practicable.

* The figures for each year up to 1915 will be found in the Annual Report for 1915–1919 (Vol. II., p. 15) and for 1916–1919 in the Annual Report for 1921 (Vol. II., p. 6).

22. Details of the total number of lunatics (excluding male private patients at Claybury Hall) under the care of public authorities in London responsible for dealing with them are as follows :—

TABLE 6.

Date.	Lunatics under reception orders in County or Borough mental hospitals.	Lunatics in M.A.B. mental hospitals.	Lunatics in workhouses or with relatives and friends.	Total number of lunatics.	Annual increase or decrease of			
					Lunatics under reception orders.		Total number of lunatics.	
	(i.)	(ii.)	(iii.)	(iv.)	(v.)		(vi.)	
					Increase	Decrease	Increase	Decrease
1st January—								
1890 ...	10,104	5,566	692	16,362	—	—	—	—
1900 ...	15,185	5,770	562	21,517	5,081	—	5,155	—
1910 ...	19,914	6,676	413	27,003	4,729	—	5,486	—
1920 ...	17,296	5,291	328	22,915	—	2,618	—	4,088
1921 ...	17,816	5,385	326	23,527	520	—	612	—
1922 ...	18,349	5,320	298	23,967	533	—	440	—
1923 ...	18,500	5,101	279	23,880	151	—	—	87
1924 ...	18,918	5,148	312	24,378	418	—	498	—
1925 ...	19,060	4,976	294	24,330	142	—	—	48
1926 ...	19,308	4,975	245	24,528	248	—	198	—
1927 ...	19,807	4,817	239	24,863	499	—	335	—
1928 ...	20,147	4,640	236	25,023	340	—	160	—
1929 ...	20,871	4,525	264	25,660	724	—	637	—
Net increase in 39 years ...					10,767		9,300	
Average increase per annum ...					276		238	

Insane persons within the knowledge of public authorities, 1890-1929.

23. Table 6 shows that the total number of London lunatics increased in the year by 637 (corresponding figure for 1927, 160). Actually the London County Council had to provide on 1st January, 1929, for 724 additional cases as compared with 1st January, 1928 (*see* table 5), but the number of cases in the institutions of the Metropolitan Asylums Board on 1st January, 1929 was 115 less than the number on 1st January, 1928, and the number of cases for whom boards of guardians were providing treatment either in the infirmary or workhouse or with relatives and friends of the patients was 28 more than the number on 1st January, 1928. The number of cases in the institutions of the Metropolitan Asylums Board on 1st January, 1929, is once more the lowest recorded since 1890.

24. During 1928, 37 male and 5 female patients of a kind eligible for detention in the Metropolitan Asylums Board's mental hospitals were transferred from London County mental hospitals to the Board's care. Of these patients, 1 male patient was returned during the year, having proved, after transfer, to be unsuitable for the Board's institutions. In addition to this re-transfer, the London County mental hospitals received, by transfer from the Board's institutions, 12 male and 6 female patients.

Metropolitan Asylums Board's accommodation.

Applications for admission.

25. The applications for beds for cases of lunacy received from the relieving officers in the County of London and dealt with during each month of the period 1918-1929 are shown in table 7 below. This table, as we have pointed out in previous years, is interesting because it gives some indication whether there is any actual increase in the incidence of mental unsoundness in the county. The figures give the total applications made each month, of which a certain number (between 4 and 5 per cent.) were withdrawn for one reason or another. The figures therefore do not represent the total number of cases actually admitted to a London County mental hospital. It will be noted that the number of applications is 127 more than last year.

Applications for beds.

TABLE 7.

	1918-19	1919-20	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29
April ...	282	303	294	242†	267	263	243	256	297	244†	265
May ...	313	347*	303	324*	337*	328	265	329	270	274	308
June ...	271	314	347*	274	275	303	265	266	304	309	306
July ...	316	327	308	323	272	333*	338*	340*	340*	280	366*
August ...	259	317	292	263	300	297	252	238	265	303	318
September ...	256	265	261	257	282	238	237	273	267	283	302
October ...	286	270	298	287	233†	278	275	287	245†	250	275
November ...	343*	217†	231†	242†	261	289	236†	228†	276	260	286
December ...	242†	228	287	286	291	256	300	294	295	291	287
January ...	297	316	302	278	286	297	297	248	320	293	303
February ...	253	286	279	252	287	266	266	314	253	300	254†
March ...	289	336	292	280	302	211†	275	319	276	321*	265
Total ...	3,407	3,526	3,494	3,308	3,393	3,359	3,249	3,392	3,408	3,408	3,535
Monthly average	283	293	291	275	282	280	270	282	284	284	294

* Highest in each year.

† Lowest in each year.

Readmissions.

Former patients readmitted after being discharged "recovered."

26. The total number of patients who were readmitted to the London County mental hospitals during the year ended 31st March, 1929, after having been discharged "recovered" from one or other of the London County mental hospitals, was 329. Of this number 81 were readmitted within twelve months of the date of their discharge.

27. Statistics as to recoveries and readmissions during the past 34 years are as follows:—

TABLE 8.

Mental hospital.	Patients discharged "recovered" between 1895 and 1928	Number of such patients readmitted to any London mental hospital up to 31st March, 1929.	Percentage of readmissions in col. (ii) to discharges "recovered" in col. (i).	Number of patients in col. (i) readmitted to any London mental hospital within twelve months of their discharge up to 31st March, 1929.	Percentage of readmissions in col. (iv) to discharges "recovered" in col. (i)
	(i)	(ii)	(iii)	(iv)	(v)
Banstead ...	5,450	1,799	33.00	652	11.96
Bexley (from 19th September, 1898)	3,258	894	27.44	305	9.35
Cane Hill ...	3,980	1,350	33.91	444	11.15
Claybury ...	6,455	1,989	30.81	735	11.38
Colney Hatch ...	4,925	1,552	31.51	547	11.10
Hanwell ...	5,486	1,862	33.94	667	12.15
Horton (from 3rd March, 1902—out of use from May, 1915, to November, 1919)	1,664	444	26.68	140	8.41
Long Grove (from 18th June, 1907)...	1,985	513	25.84	181	9.11
The Manor (from 8th June, 1899—out of use from July, 1916, to March, 1919; disused entirely as accommodation for cases of insanity since January, 1922)	742	206	27.76	69	9.29
Ewell Colony (from 19th August, 1903—out of use from June, 1918, to February, 1927)	149	24	16.10	9	6.04
West Park (from 23rd June, 1924)...	447	134	29.97	44	9.84
Total ...	34,541	10,767	31.17	3,793	10.98

28. Records have been kept of readmissions since 1895 and the figures relating to the five hospitals which were in existence then are quite consistent. From these it appears that of the discharges "recovered" more than thirty per cent. have relapsed sooner or later after discharge and about eleven per cent. within twelve months after discharge.

Admissions, Deaths and Discharges.

29. The following tables (9 and 10) give particulars of the admissions, deaths and discharges at each of the London County mental hospitals during 1928. In tables 11 and 12 are statistics of the death and recovery rates:—

TABLE 9.

Hospital.	Admissions—1928.									Total number under treatment, 1928.*		
	Direct.			Indirect.			Total.			(iv)		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Banstead ...	276	205	481	6	288	294	282	493	775	1,297	1,536	2,833
Bexley ...	207	167	374	11	6	17	218	173	391	1,232	1,293	2,525
Cane Hill ...	124	125	249	5	3	8	129	128	257	971	1,402	2,373
Claybury ...	138	204	342	13	11	24	151	215	366	1,125	1,480	2,605
Colney Hatch ...	168	167	335	34	36	70	202	203	405	1,215	1,686	2,901
Ewell Colony ...	9	126	135	7	1	8	16	127	143	115	423	538
Hanwell ...	117	200	317†	8	7	15	125	207	332†	1,138	1,540	2,678
Horton ...	—	120	120	13	56	69	13	176	189	280	1,841	2,121
Long Grove ...	175	134	309	7	2	9	182	136	318	1,242	1,149	2,391
West Park ...	270	493	763	24	75	99	294	568	862	1,404	1,537	2,941
	1,484	1,941	3,425	128	485	613	1,612	2,426	4,038	10,019	13,887	23,906

* i.e. Total of column (iii) and numbers of patients resident on 1st January, 1928, given in Table 2 in the Annual Report, 1927, Vol. II., p. 5.

† Includes one male patient subsequently discharged as not "insane."

TABLE 10.

Hospital.	Discharged (excluding transfers to other mental hospitals, but including cases sent for further care in institutions of the M.A.B.)—1928.										Discharges and deaths.		
	Recovered.			To care of friends on undertakings under sec. 79 of the Lunacy Act, 1890.			Relieved or not improved, otherwise than under col. ii.*			Total discharges.	Died, 1928.		
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		M.	F.	Total.
Banstead ...	34	52	86	25	15	40	39	22	61	187	82	45	127
Bexley ...	52	41	93	23	43	66	29	50	79	238	85	56	141
Cane Hill ...	18	37	55	5	11	16	14	16	30	101	57	62	119
Claybury ...	33	46	79	1	6	7	29	25	54	140	58	76	134
Colney Hatch ...	33	49	82	22	52	74	38	61	99	255	63	66	129
Ewell Colony ...	1	43	44	—	3	3	4	9	13	60	6	15	21
Hanwell ...	38	45	83	9	15	24	15	19	34	141	50	83	133
Horton ...	—	29	29	—	11	11	1	29	30	70	8	81	89
Long Grove ...	31	45	76	3	10	13	13	15	28	117	64	42	106
West Park ...	82	78	160	32	43	75	54	59	113	348	109	118	227
	322	465	787	120	209	329	236	305	541	1,657	582	644	1,226

One patient discharged "not insane" is not included.

* "Relieved" or "not improved" for the purpose of this table includes discharges to a workhouse (including an institution provided by the Metropolitan Asylums Board), discharges of patients whom it is intended to deal with under the Mental Deficiency Act, discharges of alien patients for repatriation, discharges of private patients by order of a relative or the person making payment for maintenance (Sec. 72, Lunacy Act, 1890), discharges following escape if a patient is not recaptured within 14 days (and, occasionally, on the expiration of a reception order which is not continued as provided for by sec. 38 of the Lunacy Act, 1890), as well as discharges (made by order of visitors) of patients who, though not recovered, can be cared for outside the hospital, but in whose cases undertakings under sec. 79 of the Lunacy Act, 1890, are not given.

TABLE 11.

Average daily number on registers—
Recovery rate on total admissions.

Hospital.	Remaining on registers 31st December, 1928. (i)			Average daily number on registers, 31st Dec., 1928. (ii)			Percentages of recoveries on total admissions, 1928. (iii)		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Banstead	1,115	1,394	2,509	1,067	1,166	2,233	12·05	10·54	11·09
Bexley	1,045	1,130	2,175	1,028	1,126	2,154	23·85	23·69	23·78
Cane Hill	862	1,261	2,123	851	1,270	2,121	13·95	28·90	21·40
Claybury	998	1,314	2,312	981	1,280	2,261	21·85	21·39	21·58
Colney Hatch	1,070	1,491	2,561	1,041	1,492	2,533	16·30	24·13	20·24
Ewell Colony	101	335	436	100	322	422	6·25	33·85	30·76
Hanwell	1,024	1,363	2,387	1,022	1,360	2,382	30·40	21·73	25·00
Horton	269	1,671	1,940	270	1,670	1,940	—	16·47	15·34
Long Grove	1,090	1,023	2,113	1,061	1,021	2,082	17·03	33·08	23·89
West Park	1,133	975	2,108	1,122	949	2,071	27·89	13·73	18·56
	8,707	11,957	20,664	8,543	11,656	20,199	19·97	19·16	19·48

TABLE 12.

Recovery rate on direct admissions—
Death rate.

Hospital.	Percentage of total recoveries on direct admissions, 1928. (i)			Percentage of recoveries yielded by direct admissions on the direct admissions. (ii)			Percentage of deaths on average daily number on registers, 1928. (iii)		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Banstead	12·31	25·36	17·80	4·34	6·34	5·19	7·68	3·85	5·68
Bexley	25·12	24·55	24·86	11·11	11·97	11·49	8·26	4·97	6·54
Cane Hill	14·51	29·60	22·08	4·83	12·00	8·43	6·69	4·88	5·61
Claybury	23·91	22·54	23·09	10·14	7·84	8·77	5·91	5·93	5·92
Colney Hatch	19·64	29·34	24·47	4·16	10·77	7·46	6·05	4·42	5·09
Ewell Colony	11·11	34·12	32·59	—	12·69	11·85	6·00	4·65	4·97
Hanwell	32·47	22·50	26·18	11·96	17·00	15·14	4·89	6·10	5·58
Horton	—	24·16	24·16	—	2·50	2·50	2·96	4·85	4·58
Long Grove	17·71	33·58	24·59	7·42	13·43	10·03	6·03	4·11	5·09
West Park	30·37	15·82	20·96	14·07	7·50	9·82	9·71	12·43	10·96
	21·69	23·95	22·97	8·55	9·78	9·25	6·81	5·52	6·06

Analysis of statistics.

30. The hospital with the highest number of direct admissions was West Park, the most recently opened institution, followed by Banstead, Bexley, Claybury and Colney Hatch. Including the indirect admissions, the hospital with the highest total number of admissions was again West Park, followed by Banstead and Colney Hatch. The hospitals with the largest number of patients under treatment during the year were West Park, followed by Colney Hatch and Banstead. Excluding the Ewell Colony and Horton mental hospital, which have less accommodation than the other mental hospitals, the hospital with the lowest number under treatment was Cane Hill, followed by Long Grove, Bexley and Claybury.

31. The hospital with the highest number of discharges "recovered" was West Park, followed by Bexley and Banstead. The hospital with the lowest number of discharges "recovered" (excluding Ewell Colony and Horton) was Cane Hill, followed by Long Grove. The hospital with the highest number of discharges to the care of friends was West Park, followed by Colney Hatch and Bexley, and the hospital with the highest number of discharges "relieved" or "not improved" was West Park followed by Colney Hatch and Bexley. On the total number of discharges, West Park was highest, followed by Colney Hatch and Bexley.

32. The hospitals with the highest death rates in proportion to the average daily numbers resident were West Park (10·96 per cent.) and Bexley (6·54 per cent.). The lowest death rate (excluding Ewell Colony and Horton) was at Claybury (5·92 per cent.).

33. The percentage of recoveries on the total admissions for all the mental hospitals was 19·48 as compared with 17·82 for 1927, and the percentage of deaths

on the total average daily number on the registers during the year was 6.06 as compared with 6.92 for the previous year.

Private List, County and Service patients.

34. The usual enquiries have been made as to all patients in respect of whom it appeared likely that there were means, and 177 patients have been found entitled to be classified as private patients in accordance with section 3 of the Lunacy Act, 1891, the cost of maintenance being recovered from the patients' estates or secured by undertakings to pay on the part of relatives or friends. Patients on the "private list."

35. The following statement shows the action taken in regard to the classification of patients during the year ended 31st March, 1929 :—

TABLE 13.

Number of patients on private list (Lunacy Act, 1891, sec. 3) on 31st March, 1928	...	...	...	...	...	...	...	...	...	384
Number of patients transferred to private list during the year ended 31st March, 1929	...	...	...	...	...	...	...	...	...	177
Of these were—										561
re-transferred to parish list	...	...	...	...	...	...	...	...	...	16
discharged	...	...	...	...	...	...	...	...	...	79
died	...	...	...	...	...	...	...	...	...	38
removed to private section, Claybury hospital (males)	...	...	...	...	...	...	...	...	...	4
removed to private ward, Horton hospital (females)	...	...	...	...	...	...	...	...	...	16
removed to private institutions	...	...	...	...	...	...	...	...	...	14
										167
Number of patients on private list on 31st March, 1929	...	...	...	...	...	...	...	...	...	394

These were located at Banstead (9 m. 21 f.), at Bexley (18 m. 26 f.), at Cane Hill (7 m. 27 f.), at Claybury (21 m. 30 f.), at Colney Hatch (12 m. 28 f.), at Ewell Colony (3 f.), at Hanwell (11 m. 24 f.), at Horton (56 f.), at Long Grove (25 m. 26 f.), and at West Park (22 m. 28 f.).

36. Patients who are chargeable to the county are those who have not acquired a poor-law settlement in any parish of England and Wales or who have no status of irremovability from any such parish. All patients when first received into the mental hospitals are *prima facie* chargeable to the union or parish from which they are sent. The parochial authorities in the case of a patient who is found not to be settled in or irremovable from any parish or union of England and Wales may give notice to the local authority (the Council) of intention to obtain an order of a justice to adjudicate the chargeability to the county. All such cases are enquired into by the acting chief officer of the mental hospitals department, and where settlements can be found elsewhere steps are taken to get the notices withdrawn. The attention of the parish authorities is also drawn to cases in which, from information obtained, it would appear that patients might be chargeable to out-county parishes. County patients.

37. The acting chief officer makes enquiries as to the ability of all patients, who are chargeable to the county, to reimburse either wholly or in part the expenses of their maintenance.

38. During the year under review 77 notices were received from London boards of guardians of their intention to obtain orders adjudicating the chargeability of patients to the County of London. With 2 cases standing over from last year this gave a total of 79 cases to be dealt with. In 19 cases settlements were found and the notices were withdrawn, in 47 cases orders were made on the County of London, and 13 cases are still under consideration.

39. The 47 patients adjudicated to the county appeared to belong to the following countries :—Ireland, 20 ; England, 8 ; Scotland, 6 ; Italy, 1 ; France, 1 ;

Denmark, 1; Guernsey, 1; United States of America, 1; Turkey, 1; India, 1; West Indies, 1; Cyprus, 1; Singapore, 1; Unknown, 3.

40. The number of patients chargeable to the county, as compared with the total number chargeable to London boards of guardians and to the county, for whom the Council was providing accommodation at the commencement of 1929, and of previous years, was as follows* :—

TABLE 14.

Date, 1st January.			Chargeable to the County.	Chargeable to London boards of Guardians and the County.	Date, 1st January.			Chargeable to the County.	Chargeable to London boards of Guardians and the County.
1890	...	...	532	10,100	1923	...	...	459	17,343
1900	...	...	510	15,061	1924	...	...	478	17,725
1910	...	...	564	19,288	1925	...	...	491	17,653
1915	...	...	555	20,882	1926	...	...	515	17,876
1920	...	...	424	16,243	1927	...	...	525	18,418
1921	...	...	436	16,557	1928	...	...	520	18,744
1922	...	...	448	17,085	1929	...	...	522	19,426

41. It will be observed that from 1921 to 1927 the numbers of patients chargeable to the county and to London boards of guardians showed a tendency to increase slightly, and although the number of patients chargeable to the county on 1st January, 1928, was five less than the number on 1st January, 1927, there is an increase of two in this year's number. The total number of patients chargeable to London boards of guardians and the county on 1st January, 1929, was 682 more than the number on 1st January, 1928. In 1890 the number of patients chargeable to the county amounted to 5 per cent. of the total; in 1900, it had fallen to 3.2 per cent.; and is now only 2.7 per cent. This is evidence of the careful investigation always made in cases which boards of guardians seek to make chargeable to the County of London. We may point out, however, that the necessity for this precise investigation will cease after 1st April, 1930, when there will no longer be boards of guardians and settlement will be within the county and not within parishes or unions comprised in the County.

Service
patients.

42. The following table gives particulars of "Service" patients at each of the London County mental hospitals during the year ended 31st March, 1929 :—

TABLE 15.

	“Service” patients at the hospital at 31st. March, 1928.	Admission of patients who have had military service.				Patients classified as “Service” patients during the year.	“Service” patients discharged or transferred during the year.	“Service” patients died during the year.	“Service” patients remaining at 31st. March, 1929.
		Under Section 91 of Army Act.	Under summary reception orders.	Transferred from other mental hospitals.					
				Un- classi- fied.	Service pa- tients.				
Banstead ...	119	—	79	—	1	6	4	2	120
Bexley ...	80	—	63	4	—	6	4	6	76
Cane Hill ...	88	—	41	1	—	2	3	1	86
Claybury ...	147	—	5	1	—	4	5	4	142
Colney Hatch	80	—	28	—	—	3	4	1	78
Ewell Colony	—	—	—	—	—	—	—	—	—
Hanwell ...	125	—	38	3	2	3	5	2	123
Horton ...	—	—	—	—	—	—	—	—	—
Long Grove ...	131	—	74	1	—	5	5	1	130
West Park ...	40	1	6	—	1	6	3	2	42
Total ...	810	1	334	10	4	35	33	19	797

* Figures for 1890-1899, 1901-1909, 1911-1914 and 1916-1919 are given in the Annual Report for 1921 (Vol. II., p. 9).

43. The number of patients who have had military service admitted under summary reception orders (*i.e.*, through poor law parishes or unions) was 32 more than the number so admitted during the previous year. Every such case is considered by the Ministry of Pensions with a view to "service" classification should the Ministry be satisfied that the mental disability is due to or is aggravated by military service during the Great War. The number of such cases to receive "service" classification during the year ended 31st March, 1929, was less by 20 than the corresponding number for the year ended 31st March, 1928. The number of those patients admitted who have had military service has not decreased to any great extent during the past few years, but the number of such patients who are considered by the Ministry of Pensions to be entitled to "service" classification has decreased considerably. Obviously with the passage of time the number of cases in which mental disability is directly due to or has been aggravated by military service during the Great War must diminish.

Alien Lunatics.

44. There has been no change since our last annual report in the arrangements made for the deportation of alien lunatics. Alien lunatics.

45. During the year ended 31st December, 1928, 116 alien patients were admitted to London County mental hospitals chargeable to London parishes or unions or to the county, and there were 647 already in residence on 1st January, 1928. Of the total number of 763, 3 have been discharged to friends for repatriation, 7 have been transferred to other mental hospitals, 37 have died, and 46 have been discharged either "relieved" or "recovered," 93 in all, leaving 670 in residence on 31st December, 1928.

46. The nationalities of these 670 patients were as follows :—American (U.S.A.), 10; American (South), 2; Arabian, 1; Armenian, 3; Asiatic (Country unknown), 1; Austrian, 22; Belgian, 9; Bulgarian, 1; Chinese, 8; Czecho-Slovak, 5; Danish, 2; Dutch, 12; Egyptian, 2; Finnish, 2; French, 53; German, 76; Greek, 5; Hungarian, 6; Italian, 63; Japanese, 1; Latvian, 2; Lithuanian, 5; Norwegian, 3; Persian, 1; Polish, 76; Portuguese, 1; Roumanian, 7; Russian, 246; Serbian, 1; Spanish, 6; Swedish, 6; Swiss, 24; Syrian, 1; Turkish, 5; Unknown, 2.

The Mental After-Care Association.

47. This Association has continued to give valuable assistance in connection with patients discharged or allowed to be absent on trial. Mental After-Care Association.

48. The arrangement whereby a payment of two shillings and sixpence is made in respect of each patient dealt with by the Association on the grant of leave of absence on trial under section 55 of the Lunacy Act, 1890, and for services rendered by the Association in connection with applications made for the discharge of patients under section 79 of the Lunacy Act, 1890, has been continued.

49. During 1928-29 the following cases were helped by the Association in the manner indicated :—

			<i>Home visits.</i>	<i>Placed in cottage homes.</i>	<i>Placed in situations.</i>	<i>Old cases, i.e., before 1928, helped in various ways.</i>
Banstead ...	...	...	125	28	19	12
Bexley ...	...	...	68	15	11	7
Cane Hill ...	...	...	69	10	8	7
Claybury ...	...	...	105	16	9	16
Colney Hatch ...	...	...	7	16	6	7
Hanwell ...	...	...	119	15	9	19
Horton ...	...	...	51	14	8	7
Long Grove ...	...	...	9	13	5	4
West Park ...	...	...	225	34	18	12
Maudsley ...	...	...	—	15	4	—
Ewell Colony ...	...	...	30	8	4	2
Totals ...	...	...	808	184	101	93

Except for the payments indicated, the Association is entirely dependent on voluntary subscriptions and several of the mental hospitals have been enabled to contribute to the Association's funds by making articles for sale and as a result of entertainments.

Queen Adelaide's Fund.

Queen
Adelaide's
fund.

50. Grants have been made from this private fund during the year, for the relief of deserving patients upon their discharge "recovered" from the mental hospitals. The number of cases in which grants were made at each of the London County mental hospitals during the year ended 31st March, 1929, and the amounts expended were as follows:—

		<i>No. of patients receiving grants.</i>			<i>Total amount of grants.</i>								
		M.	F.	Total.	M.			F.			Total.		
					£	s.	d.	£	s.	d.	£	s.	d.
Banstead ...	...	11	9	20	35	16	8	28	15	6	64	12	2
Bexley ...	...	22	12	34	65	0	0	41	5	0	106	5	0
Cane Hill ...	...	6	10	16	18	5	0	33	0	0	51	5	0
Claybury ...	...	18	11	29	52	0	0	33	0	0	85	0	0
Colney Hatch ...	...	7	6	13	22	2	0	15	0	0	37	2	0
Ewell Colony ...	...	—	6	6	—	—	—	12	15	0	12	15	0
Hanwell ...	...	16	10	26	50	0	0	23	10	0	73	10	0
Horton ...	...	—	13	13	—	—	—	38	0	0	38	0	0
Long Grove ...	...	7	7	14	27	12	0	18	10	0	46	2	0
West Park ...	...	25	17	42	41	0	0	72	0	0	113	0	0
Total ...	...	112	101	213	311	15	8	315	15	6	627	11	2

Though the majority of the grants were made at the date of the patients' discharge, a small number were made to ex-patients after they had left the hospital.

Canteens.

Canteens for
patients.

51. We have authorised the establishment of a canteen for use by patients at each of the London County mental hospitals on the understanding that the cost shall not be a charge on the Council's funds.

Affiliation to General Hospitals.

Appointment
of consulting
medical staff.

52. In our last report (Annual Report of the Council, 1927, Vol. II. pars. 54 and 55) we stated that the Council had authorised arrangements for the services of consultants on the staff of two of the London general hospitals (the London and Guy's hospitals) to be available for two of the London County mental hospitals (Claybury and Bexley). During the year under review arrangements on similar lines have been made for the services of consultants on the staffs of Charing Cross, Middlesex, St. Mary's, and the Royal Free hospitals, to be available for Banstead, Cane Hill, Hanwell, and Horton mental hospitals, respectively. In each case the consultants include a physician, a surgeon, a gynaecologist, an ear, nose and throat surgeon, and an ophthalmologist. The services at Banstead and Hanwell mental hospitals of a consulting dermatologist, and at Hanwell mental hospital of a consulting neurologist also will be available. In addition, arrangements have been made for consultants on the staff of University College hospital (a physician, a surgeon, an ophthalmologist, an ear, nose and throat surgeon and a gynaecologist) to be available for Long Grove mental hospital and the Ewell Colony. The limit of expenditure in any one year for the services of consultants is £200 for each of the larger mental hospitals and £50 for the Ewell Colony. An honorarium of £4 4s. is payable for each visit, with an additional allowance of 10s. for travelling expenses.

Scheme for
clinical
instruction in
psychiatry
for medical
students.

53. In the course of negotiations for the services of consultants on the staff of the Royal Free hospital to be available for Horton mental hospital, the authorities of the Royal Free hospital, with which is associated the London School of Medicine for Women, asked for facilities to be given at Horton mental hospital for clinical instruction in psychiatry for their medical students, and for the medical

superintendent of Horton mental hospital to be allowed to hold an honorary appointment on the staff of the London School of Medicine for Women as lecturer in clinical psychiatry. Permission was given for Dr. J. R. Lord, C.B.E., to hold the honorary appointment for a period of twelve months from 1st November, 1928, on the conditions (i) that the appointment should not interfere with the efficient discharge of his official duties, and (ii) that the Council would not be held responsible for views or opinions expressed by him.

Treatment of General Paralysis.

54. The experimental scheme for the co-ordination of the work done at the mental hospitals in connection with the treatment of general paralysis of the insane by induced malaria, to which we referred in our last report (Annual Report of the Council, 1927, Vol. II., p. 19, par. 61.) has produced results of importance as regards both the treatment of individual patients and the investigation of the disease. We have authorised the continuance of the arrangement for a further period of 12 months.

Scheme for co-ordination of treatment of general paralysis of the insane.

Services of Radiologists.

55. In our last report (Annual Report of the Council 1927, Vol. II., p. 19, par. 59), we referred to the employment as an experiment for one year as consultant of an expert radiologist in connection with cases of illness among patients at the institutions under our directions. The experimental period expired on 31st December, 1928. While the experiment with the radiologist met the needs of the hospitals, we came to the conclusion that the appointment of one consultant radiologist to act for all the institutions was no longer advisable, in view of arrangements made between several of the mental hospitals and London general hospitals for the services of consultants on the staff of the latter to be available for the mental hospitals (see paragraphs 52-53). We decided therefore that the arrangement with one consultant radiologist should not be continued but that, as a further experiment for twelve months, the medical superintendents of the London County mental hospitals should be authorised to avail themselves of the services of radiologists on the staff of associated general hospitals for advice and assistance in the taking of difficult radiographs, and for assistance in reading radiographs, when necessary, at a fee (if required) not to exceed, as a general rule, £1 1s. for each case dealt with, and subject to a limit of expenditure for each mental hospital of 20 guineas, i.e., of £210 for all the hospitals together, for the twelve months.

X-Ray services.

Indian Clinical Assistants.

56. We have authorised the appointment (subject to certain conditions) of qualified Indian medical men, nominated by the High Commissioner for India, as unpaid clinical assistants at the London County mental hospitals. At the request of the High Commissioner we have given authority (subject to certain conditions) for an Indian doctor to attend the practice of the Maudsley hospital for six months.

Attachment to mental hospitals of Indian doctors.

Contributions to medical literature.

57. Contributions to medical literature have been made by members of the medical staff of the London County mental hospitals during the year ended 31st March, 1929, as follows :—

Contributions to medical literature.

- Dr. John Brander, deputy medical superintendent, Bexley mental hospital. "Journal of Mental Science," October, 1928.—"The Diagnosis of General Paralysis as a Clinical and Pathological Entity." Proceedings of the Royal Society of Medicine" (1929).—"A contribution to the discussion on the prognosis and treatment of General Paralysis."
- Dr. F. L. Golla, pathologist and director of the central pathological laboratory, Dr. R. G. B. Marsh, eighth assistant medical officer, Claybury mental hospital, and Mr. S. A. Mann, chief assistant to the pathologist. "Journal of Mental Science," July, 1928.—"The Respiratory regulation of Psychotic Subjects."

- Dr. J. R. Lord, medical superintendent of Horton mental hospital. "Proceedings, Royal Society of Medicine (Laryngology)" 1928.—"Sinusitis in the Etiology of Mental Disorder." "Journal of Mental Science," July, 1928.—"Leonardo Bianchi, 1848-1927." Messrs. Adlard & Son, Limited.—"The State Registration of Mental Nurses." "Journal of Mental Science," October, 1928.—"Havelock Ellis." "Women's Employment," February, 1929.—"Mental Nursing." Numerous reviews in the Journal of Mental Science.
- Dr. R. G. B. Marsh, eighth assistant medical officer, Claybury mental hospital, and Mr. S. A. Mann, chief assistant to the pathologist, central pathological laboratory. "Journal of Mental Science," July, 1928.—"The significance of Urinary Reaction in Psychotic Subjects."
- Dr. J. C. Ramsay, eighth assistant medical officer, Claybury mental hospital. "Journal of Mental Science." (to be published).—"Treatment of Idiopathic Epilepsy by Induced Malaria."

Works of improvement, etc., at mental hospitals.

Structural
alterations
and
additions.

58. Alterations and additions to the buildings and fittings, and other structural works which have been carried out at the mental hospitals are set out below. The statement does not include minor works carried out at small cost:—

Banstead mental hospital.

	£	s.	d.
Modernisation of wards E and F	6,313	13	5
Cinematograph installation	419	5	8
Alterations to No. 7 ward	64	2	10
Fencing at Fairlawn Down Farm	45	1	1
Motor-cycle shed	94	0	1
Lavatory for male patients	62	11	5
Road to rain-water tank	41	11	1
Driving gear, etc., for vegetable paring machine	42	17	5
Alterations to padded room	109	11	9

Bexley mental hospital.

Improvements to main store larder	12	3	1
Conversion of window to doorway, D1 ward	14	18	10
Fish fryer, main kitchen	119	8	5
Draining airing courts	143	19	5
Gas hot table, main kitchen	79	9	0
Fence at K ward verandah	12	5	4
Alterations to laundry and provision of two washing machines	595	18	2
Iron fronts to piggeries	136	17	1
Renewal of force pump	80	16	1
Dough mixing machine	56	2	0
Nurses' tennis court	63	9	3
Verandah, G1 ward	10	8	10

Cane Hill mental hospital.

Electric lighting, stage and operating room	299	1	3
Electric lighting, recreation hall	164	3	10
Ultra-violet ray apparatus	52	11	2
Modernisation of sanitary annexes to wards D1 and D2	496	12	1
Fencing at farm	165	17	5
Tennis court, Portnalls	19	12	10
Power-driven hair-carding machine	101	15	2
Boiler and shed at piggeries	16	3	7

Claybury mental hospital.

Rearrangement of laundry steeping tanks	21	0	3
Medical examination room	22	4	4
Verandah, B1 ward	297	15	1
Accommodation for painters' clothing	13	5	6
Adaptation of isolation hospital as cottage home	283	4	5
Poultry house	199	2	8
Screens to visitors' conveniences	19	17	1
Lamp and radiator, light treatment room	40	12	1
Castors to infirmary bedsteads	42	19	8
Milking installation	367	13	3

Claybury Mental Hospital—continued.

	£	s.	d.
Removal of matchboarding in corridors	148	8	8
Shelter and enclosure for breeding pigs	40	0	10
Steampipe and tank at cowsheds	21	7	0
Garden tool boxes	11	0	5
Concrete steps, male general bathroom	23	1	2
Alterations to Claybury Hall	1,266	15	11

Colney Hatch mental hospital.

Alterations to female airing court	80	11	4
Granolithic flooring to corridor	244	8	4
Electric light cable to operating theatre	38	8	6
Deepening of well	458	17	1
Provision of lavatory basins to ward 7	19	10	0
Modernisation of laundry ward	595	11	2
Fire escape staircase, E block	432	19	9
Wash-basins, etc., Inspector's office	19	0	1
Adaptation of farm shed to store implements	39	8	6
Shed for motor mower	13	9	2
Improvement of sanitary accommodation for kitchen staff	67	16	9
Conversion of rooms into cubicles, N block	1,525	6	5
Five additional road lamps	14	3	9

Hanwell mental hospital.

Patients' lockers	332	5	11
Alterations to roof, main kitchen	319	1	4
Accommodation for painters' clothing	61	19	7
Shelter for lawn mowing machine	11	5	8
Conversion of four padded rooms	116	13	4
Alterations to corridors	16	2	11
Accommodation for patients' clothing, 19 ward	65	14	4
Substitution of stove for kitchen range, at medical superintendent's house	13	3	8
Repairs to floor, workroom	73	17	4
Renewal of gas purifiers	481	1	9
Repairs to fencing, Warren Farm	62	14	1
Replacement of two hand wringers	21	7	6

Horton Mental hospital.

Roofing, laundry yard	30	6	10
Occupational therapy building	488	8	10
Removal of corridor screens	22	6	5
Accommodation for clerks, house steward's office	261	17	4
Unloading hatch at stores	24	7	4
Solarium, C hospital	96	7	10
Alterations to padded room	180	19	9
Demolition of farm sheds, etc.	32	2	9
Openings in corridor walls	252	15	8
Enlargement of inspector's house	360	17	8
Automatic drinking bowls for cattle	31	0	11
Fencing orchard	141	10	3
Gas rings and ironing tables, female staff quarters... ..	58	14	7
Cattle shed	362	4	4
Greenhouse stands	24	15	10

Long Grove mental hospital.

Electric carding machine	77	4	2
Steam services for sterilisers	11	19	3
Tennis court	54	12	6
Cattle shed	208	10	6
Concrete greenhouse staging	33	6	9
Land drainage	25	19	1

West Park mental hospital.

Canvas curtains, infirmary verandahs	18	11	2
Doors to pig pens	19	8	6
Bath, etc., medical superintendent's house	60	1	5

West Park mental hospital—continued.

	£	s.	d.
Power hoist for bakery	85	1	2
Sinks, etc., in mess room	29	7	2
Two baths, isolation hospital	10	18	2
Storm blinds, admission hospital verandah	13	3	4
Gateway to laundry	13	11	5

Ewell Colony

Sanitary accommodation, etc.	97	12	0
Shortening cow stalls	28	4	0
Loose boxes for cattle	121	7	0
Fencing orchard	41	18	9
Refrigerating plant	321	19	4
Repairs to medical superintendent's house	25	18	8

Maudsley hospital.

Reading lamps, etc., private patients' flat	39	7	3
Electric fans, bathrooms	29	2	2
Stores shelving	64	6	3
Wireless installation	199	8	1
Refrigerating plant	178	17	9
Four additional nurses' rooms	346	3	11
Cinematograph installation	76	15	1
Recurbing airing court, ward 4	55	13	8

Matters affecting individual hospitals.

59. In the following paragraphs we refer in detail to certain matters which affect, in particular, individual hospitals.

Banstead Mental Hospital.

Nurses' home.

60. The scheme for the remodelling and modernisation of large blocks at Banstead mental hospital was completed during the year. As a result an increased number of wards has been provided, necessitating an augmented staff. The Council, on our recommendation, has authorised the erection of a nurses' home to accommodate an assistant matron, four sisters, and 62 nurses. The plans of the home have been approved by the Minister of Health, and work will be commenced in the ensuing year (*see paragraph 7*).

Cane Hill Mental Hospital.

Grazing of cattle.

61. For some years past cattle from Cane Hill mental hospital have been grazed on two farms. The owner of one of the farms terminated the arrangement from 31st December, 1928. To provide temporarily grazing for the cattle displaced from this farm, we have arranged to take over for nine months from Christmas, 1928, a grazing licence on land at Southern's Farm, Chipstead, on suitable terms.

Claybury mental hospital.

Supply of electricity.

62. We have made an arrangement with the Ilford Borough Council for the supply of electric current to Claybury mental hospital under an agreement for ten years, at the rate of £8 per annum, per kilowatt, of maximum demand, plus 1½d. per unit for all current used, and for a mutual revision of the charge for current every three years from the date of connection of a supply.

Colney Hatch mental hospital.

Construction of north circular road.

63. The route proposed for the north circular road, now in course of construction by the Middlesex County Council, passes through the Colney Hatch mental hospital estate, and we have been in negotiation with the Middlesex County Council for some years as to the line of the road and as to the terms upon which land forming part of the hospital estate is to be surrendered to the Middlesex County Council for the purposes of the road. It has been agreed that, in order to minimise interference

with the hospital grounds, the road shall follow the boundary of the hospital estate as closely as possible, and the Council, on our recommendation, has agreed to surrender to the Middlesex County Council about six acres of the hospital estate necessary for the construction of the road, in exchange for about 15 acres of land adjoining the hospital estate, and to surrender to the Friern Barnet Urban District Council, or to the Middlesex County Council, whichever may be the appropriate authority, a small area of land about 3,050 square feet, forming part of the garden of a cottage on the hospital estate, which is required to enable an adjacent road (Cromwell-road) to be connected with the new arterial road, in exchange for an area of about 7,000 square feet adjoining the hospital grounds. The construction of the new road will involve the severance from the remainder of the hospital estate of about nine acres of arable land on the south side of the road. Access to this land, which will continue to be used for the purposes of the hospital, will be provided by means of suitable gates to be erected in the fencing on each side of the road.

64. The well at Colney Hatch mental hospital was shut down on 6th June, 1928, in order that it might be deepened, and all water required has been taken from the Barnet and District Gas and Water Company since that date. An agreement with the company for the supply of water to the hospital provides, *inter alia*, for a charge of 1s. 3d. a thousand gallons, if a supply should be needed to meet a temporary breakdown in the supply from the hospital well. As we were advised that the closing of the well in order that it might be deepened did not constitute a temporary breakdown within the meaning of the agreement, we agreed, during the period of deepening the well, to pay at the same rate as other large consumers in the district for such water as was used. At 31st March, 1929, the work of deepening the well was approaching completion and it was expected that early in the ensuing year the supply of water from the well would again be adequate for the purposes of the hospital.

65. To safeguard the Council's position, we lodged a formal objection against a town planning scheme of the Friern Barnet Urban District Council which included the grounds of Colney Hatch mental hospital.

Hanwell Mental Hospital.

66. Hanwell mental hospital, the original design of which dates from the first half of the nineteenth century, hitherto has not possessed an admission hospital, and the Council, on our recommendation has approved the erection on a suitable site at the hospital of an admission hospital villa, designed on modern lines, which will accommodate 100 patients, 50 of each sex. This provision, besides giving facilities for classification and treatment which are now recognised to be essential, will increase the total accommodation of the hospital. Plans which the Minister of Health has approved provide for a building with two wings, one for men and one for women, each of which will contain special treatment rooms in addition to dormitory and day room accommodation, and there will be a central section comprising a kitchen to serve both sides, dining rooms and a recreation room for the independent or joint use of male and female patients. We hope that work will be commenced in the ensuing year.

Horton Mental Hospital.

67. At Horton mental hospital, which was opened in 1902, no provision has existed hitherto in the admission hospital for the segregation of difficult and noisy cases. To remedy this we have authorised the erection of a small building, as an annexe to "A" admission hospital. This annexe will contain three single rooms, and will provide also rooms for special treatment, e.g., electrical and Plombière treatment.

Long Grove Mental Hospital.

Nurses' home.

68. Following the increase in staff necessitated by the reduction in 1919 of the ordinary hours of duty, two wards at Long Grove mental hospital, which originally accommodated 98 male patients, were used to provide accommodation for women nurses. As this accommodation is required for patients' use, the Council, on our recommendation, has approved the erection of a nurses' home to accommodate 83 nurses, with the possibility of extension, if necessary, at a later date to house 100 nurses. Meanwhile, it has been possible, by arranging for some nurses to occupy a building originally used as an isolation hospital and a number of spare rooms which are available in other parts of the hospital, to release one of the two wards to provide accommodation for 65 patients.

The Maudsley Hospital.

69. The Maudsley hospital has now entered upon its seventh year of work and continues fully to prove its value for the treatment on a voluntary basis of early cases of mental disorder.

Number of cases under treatment.

70. The numbers of patients treated at the hospital during the twelve months ended 31st December, 1928, were made up as follows:—

<i>Out-patients.</i>	Numbers treated.			Disposed of in out-patient department during 1928.			Admitted to wards from out-patient department during 1928.			Still attending on 31.12.28.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Number carried over from year 1923-24 ...	—	1	1	—	—	—	—	—	—	—	1	1
Number carried over from year 1924-25 ...	1	—	1	—	—	—	—	—	—	1	—	1
Number carried over from year 1925-26 ...	2	1	3	—	1	1	—	—	—	2	—	2
Number carried over from year 1926 ...	4	8	12	2	6	8	—	—	—	2	2	4
Number carried over from year 1927 ...	75	115	190	49	87	136	—	8	8	26	20	46
Number registered during 1928 ...	620	922	1542	396	664	1060	159	153	312	65	105	170
Total number ...	702	1047	1749	447	758	1205	159	161	320	96	128	224

<i>In-patients.</i>							Males.	Females.	Total.
In hospital on 1.1.28 ...	...	...	...	...	...	...	52	91	143
Admitted from out-patient department during 1928 ...	...	...	...	...	...	...	159	161	320
Admitted otherwise during 1928 ...	...	...	...	...	...	...	151	182	333
Total ...							362	434	796
Discharged during the year 1928 ...	...	...	...	...	...	...	277	313	590
Died during the year 1928 ...	...	...	...	...	...	...	21	16	37
Total ...							298	329	627
Remaining in hospital 31.12.28 ...	...	...	...	...	...	...	64	105	169

Note.—Seventeen male and five female patients admitted during 1928 were, after discharge, readmitted, two male patients being readmitted three times. Of these readmissions two male and two female patients remained in the hospital at 1st January, 1929. The figures given above do not include the second and subsequent admissions and discharges.

Lectures in psychological medicine.

71. We have authorised a further course of lectures in psychological medicine with clinical instruction and demonstrations, subject to the conditions which have applied to previous courses. This will be the twelfth course held at the hospital.

72. When Dr. Edward Mapother was appointed as the first medical superintendent of the Maudsley hospital, it was a condition of his appointment that it would be held subject to the pleasure of the Council and that the Council probably would exercise its pleasure at the expiration of six years at latest. Dr. Mapother completed six years of office on 8th May, 1928, and we therefore, reviewed the appointment. The hospital is the first of its kind to be established in this country and it possesses a number of special features. The work which is carried on at the hospital is still in process of development. This development has reached its present stage under the guidance and largely as the result of the energy and high ability of Dr. Mapother. We came to the conclusion that it was essential for the full realisation of the purposes for which the hospital had been established that its present direction should continue, and that it was undesirable that the Council should exercise the discretionary power to determine the appointment at the expiration of six years' tenure of the office which was retained when the present holder of the position of medical superintendent was appointed on 4th April, 1922. Medical superintendentship.

73. The Council having decided, subject to certain conditions, to accept the offer of the Child Guidance Council (recently formed for the care of maladjusted children) for the establishment of a child guidance clinic in London, to appoint representatives on the Child Guidance Council and on the governing body of the clinic, and to recognise the clinic as an experiment for three years, as a school clinic, the Child Guidance Council selected Dr. William Moodie, the deputy medical superintendent of the Maudsley hospital, for appointment as psychiatrist and director of the clinic. As the clinic was being established in the first instance only for an experimental period, and as the appointment of director of the child guidance clinic was regarded as bringing to the organisation of the new service qualities and experience which, from the Council's point of view, were desirable, the Council, on our recommendation, granted Dr. Moodie leave of absence without pay for a period of twelve months to enable him to accept the appointment. Child Guidance Council—psychiatrist and director of clinic.

74. We have accepted an offer from the Child Guidance Council to lend to the Council for work in the Maudsley hospital for a period of one year the services of one of their staff who would be under the direction of the medical superintendent of the hospital but whose salary would be paid by the Child Guidance Council. Child Guidance Council—loan of social worker.

75. We have entered into a new agreement with the County of London Electric Supply Company, Limited, for the supply of electric current to the Maudsley hospital. The revised terms provide that the company shall supply electrical energy for all purposes at £8 per annum per kilowatt of maximum demand, and a unit charge of 1.25d. (to be reduced from the June quarterly readings to 1.2d.), and that the new conditions shall have effect as from the December, 1927, quarterly readings, shall remain in force for a minimum period of three years, and shall be subject thereafter to termination at three months' notice. Supply of electricity.

Staff.

76. The established staff of the mental hospitals department (including the staff at the central offices), numbered, on 31st March, 1929, 608 officers, 3,590 nurses (male and female) and 931 employees of various grades. Number.

77. Consequent on our decision to use the Ewell Colony permanently as a London County mental hospital (*see paragraph 4, ante*), we have considered as to the appointment in a permanent capacity of the principal officers necessary for the administration of the Colony. For some time during the occupation of the institution by the Ministry of Pensions and for the whole time since, Dr. Leonard Henry Wootton, M.C., deputy medical superintendent of Colney Hatch mental hospital, has been seconded to act as medical superintendent, and the Council, on our recommendation, promoted Dr. Wootton to the substantive position of medical superintendent with effect from 1st February, 1929. Changes in medical staff.

78. The consequential vacancy for a deputy medical superintendent of Colney Hatch mental hospital was filled by the promotion of Dr. J. K. C. Laing, second assistant medical officer at that hospital.

79. Dr. Samuel James Gilfillan, medical superintendent of Colney Hatch mental hospital, who attained the age of 60 years on 17th March, 1929, retired on 16th April, 1929. Dr. Gilfillan entered the service in June, 1897, as an assistant medical officer at Cane Hill mental hospital, where he rose to the position of second assistant medical officer; he was promoted to be first assistant medical officer at Colney Hatch mental hospital in March, 1906, and he was appointed to be medical superintendent of that hospital in October, 1911. He had thus completed over 31 years' service, during more than 17 years of which he had held his present position. We are pleased to record our appreciation of the zealous and efficient manner in which Dr. Gilfillan discharged his responsible duties.

80. Dr. John Brander, deputy medical superintendent of Bexley mental hospital, was promoted to be medical superintendent of Colney Hatch mental hospital in succession to Dr. Gilfillan, and Dr. H. W. Parnis, second assistant medical officer at Claybury mental hospital, was promoted to succeed Dr. Brander at Bexley mental hospital.

81. Dr. A. C. Hancock, M.C., resigned his position as deputy medical superintendent of Horton mental hospital on 31st October, 1928, on appointment as medical superintendent of the Kent County mental hospital at Maidstone. The consequential vacancy was filled by the promotion of Dr. W. D. Nicol, second assistant medical officer of Horton mental hospital,

Hanwell
mental
hospital—
resignation
of resident
engineer.

82. Mr. E. M. Martin, who had been resident engineer of Hanwell mental hospital since 1889, retired on 30th June, 1928, after 39 years of zealous and efficient service. The general rules approved by the Council and by the Minister of Health, for the management of the London County mental hospitals, provided that on Mr. Martin's retirement the mental hospitals engineer should take over his duties, and as from 1st July, 1928, the mental hospitals engineer accordingly undertook for Hanwell the same responsibilities which he exercised already for the other London County mental hospitals. The new arrangement has necessitated the appointment at Hanwell of a foreman engineer and a foreman builder.

Hospital
assistants—
conditions of
service.

83. The Council, in approving the institution of the new grade of hospital assistant in the London County mental hospital service, laid down certain conditions for the position, which are set out in our last report (Annual Report of the Council, 1927, Vol. II., p. 17, par. 53). These provide that the hospital assistants shall be allowed to attend the training lectures and to sit for the examinations for the nursing diploma, and on obtaining the final nursing certificate shall be transferred to the position of staff nurse, either at the minimum of the scale for the latter position or, if at the time of transfer in receipt of a rate of pay in excess of that amount, at the equivalent or nearest point above in the new scale. As, however, (except, perhaps, in the cases of nurses who after training have failed to qualify and have been transferred to be hospital assistants), the medical superintendent will not be able to give for a hospital assistant the certificate which he has to give before a candidate is eligible to sit for the Royal Medico-Psychological Association's examinations, that the candidate has had certain experience in nursing, the Council on our recommendation, substituted a new condition, that only those hospital assistants who have had previous service *as nurses* and *as nurses* have gone through the whole course of training prescribed in the rules for the nursing examinations, shall be able, after further training and study, to sit for the examinations which may enable them to qualify for re-admission to the grade of nurse.

84. We have decided that the age limits for entrants to the London County mental hospital service as hospital assistants (except for those who become hospital

assistants after a term of service as probationer nurses) shall be those laid down from time to time for probationer nurses.

85. Arrangements for night nursing duty at the London County mental hospitals, which are set out in our last report (Annual Report of the Council, 1927, Vol. II., p. 17, par 53) provided that this duty should be undertaken for prescribed periods by staff (certificated) nurses, supplemented by those probationer nurses who are undergoing a tour of training in night duty. Owing to a shortage of staff nurses, it has not been possible at several of the hospitals to adhere strictly to these arrangements. We are satisfied that the arrangements originally approved for night nursing duty are desirable and should operate completely as soon as possible, but it became evident during 1928 that until an adequate number of staff nurses should be available some modification of the arrangements was called for. To meet this need the Council, on our recommendation, authorised until 31st December, 1929, the employment on night duty of (i) probationer nurses, in addition to those who are undergoing training tours of night duty, and (ii) temporary nurses.

Arrangements for night nursing.

Asylums Officers' Superannuation Act, 1909, and Asylums and Certified Institutions (Officers' Pensions) Act, 1918.

86. We continue to deal with matters under these statutes by virtue of powers delegated by the Council.

Superannuation Acts.

87. During 1928-29 seventy-nine superannuation allowances were granted to the amount of £9,995 19s. 1d. a year. This total includes a special superannuation allowance of £127 4s. 4d. granted under the provisions of section 2 (4) of the Act of 1909.

Allowances granted.

88. In three cases where application had been made for the addition of years of service under section 2 (3) of the Act of 1909, the Council, on our recommendation, and with the consent of the Ministry of Health, added in one instance ten years, and in two instances five years to the actual period of service in computing the amount of superannuation allowance.

Additional years of service.

89. In two cases contributions towards pensions granted by the Council have been claimed from other authorities from whose institutions the pensioners had removed after at least two years' service; the contributions as agreed amounted to £15 3s. 4d. a year. Contributions by the Council towards pensions granted by other authorities to three employees who had removed from the Council's service were agreed at rates totalling £351 1s. 3d. a year.

Contributions by other authorities. Contributions by the Council.

90. Claims made by one hundred and seventy-seven officers and employees for repayment of superannuation contributions under section 10 (1) of the Asylums Officers' Superannuation Act were allowed. The total amount so repaid was £2,152 18s. 8d.

Repayment of contributions.

91. Ninety-seven applications from women officers and employees leaving to be married, for return of their contributions, as permitted by section 10 (2) of the Asylums Officers' Superannuation Act, were granted. The sums returned amounted to £2,015 6s. 6d.

92. On the application of two employees who had been dismissed for reasons which amounted to grave misconduct and who consequently had forfeited all claim to any superannuation allowance under the Acts, the whole of their superannuation contributions, amounting to £6 19s. 8d. and £17 14s. 2d. respectively, were returned to them under section 5 of the Act of 1909.

93. In eighteen cases the application for return of contributions could not be acceded to owing to the circumstances in which the services of the applicants had been terminated.

Gratuities. 94. The Council granted, under the provisions of section 4 (a) of the Act of 1909, gratuities, totalling £1,506 17s. 7d., to the dependants of employees who had died in the service.

Deceased pensioners. 95. Thirty-one persons in receipt of pensions under these Acts died during the year 1928-29.

Sanction to remove. 96. Written sanction to remove, under section 6 of the Act of 1909, was given to eight officers and employees who were transferring to the service of other authorities.

Income and expenditure.

Income and expenditure. 97. The income and expenditure on maintenance account upon mental hospitals, etc., during the year ended 31st March, 1929, is shown in the following table in comparison with the amounts for the previous twelve years:—

<i>Year ended 31st March.</i>	<i>Income.</i>	<i>Expenditure.</i>	<i>Year ended 31st March.</i>	<i>Income</i>	<i>Expenditure.</i>
	£	£		£	£
1917 ...	662,312	674,237	1924 ...	1,330,068	1,391,237
1918 ...	670,079	736,347	1925 ...	1,349,319	1,468,820
1919 ...	753,767	889,012	1926 ...	1,473,076	1,565,089
1920 ...	1,270,666	1,314,295	1927 ...	1,644,339	1,581,075
1921 ...	1,868,646	1,641,962	1928 ...	1,653,925	1,588,027
1922 ...	1,872,482	1,564,770	1929 ...	1,667,254	1,609,827
1923 ...	1,508,039	1,381,656			

Statement of accounts. 98. A detailed statement of the accounts for the year ended 31st March, 1929, is shewn with other accounts of the Council in the published Abstract of Accounts (*see* Vol. V.).

Cost of maintenance.

Cost of main-tenance. 99. The charge made by the Council to London boards of guardians on 31st March, 1928, for the maintenance of parish patients in the mental hospitals was 28s. 0d. a head a week. This charge was reduced from 1st October, 1928, to 26s. 10d., at which figure it stood on 31st March, 1929.

100. As the charge for in-county parish patients has exceeded the limit of 14s. a week, prescribed by section 283 of the Lunacy Act, 1890, the same charge has been made for patients chargeable to out-county parishes.

Charges for private patients. 101. The charge made for female private patients in the private ward at Horton mental hospital, which on 31st March, 1928, was 35s. 0d. a head a week, has remained unchanged throughout the year.

102. The charge made for male private patients at Claybury mental hospital (other than those on the "private list") which on 31st March, 1928, was 56s. a week for those having a London settlement and 59s. 6d. a week for out-county patients, was reduced on 1st April, 1928, to 44s. 11d. a week for those having a London settlement and 48s. 5d. a week for out-county patients, the new arrangements for accommodation in the private section (*see* Annual Report of the Council, 1927, Vol. II., p. 23, pars 71 and 72.) having come into operation on that date. These rates have remained unchanged throughout the year.

"Private list" cases. 103. The charges for "private list" patients (those admitted chargeable to a parish, who, having a settlement in or status of irremovability from a London parish, are able to pay the full cost of maintenance (or perhaps a little more, as a contribution to capital expenses which are not included in cost of maintenance) have been, at the minimum, the charge current for parish patients and, at the maximum, 4s. 1d. a week in excess of that charge until 1st October, 1928, when the maximum rate was increased by 7d. a week, to cover increased capital expenses.

R. H. CURTIS,
Acting Chief Officer.

ADRIAN C. MOREING.
Chairman.

CHAPTER III.

ELEVENTH REPORT OF THE LONDON COUNTY COUNCIL TO THE BOARD OF CONTROL.

(This chapter contains the report in respect of the year ended 31st December, 1928, which the Council is required to make by No. 28 of the Mental Deficiency Act Provisional Regulations, 1914.)

Administrative arrangements.

1. The Council's administrative arrangements for the discharge of its duties under the Mental Deficiency Acts, through the Mental Hospitals Committee, remain as described in previous reports (*see Annual Reports for 1915-19, Vol. II., p. 29, and 1920, Vol. II., p. 17.*) Committee and Sub-Committees.

2. During 1928, meetings of the Mental Hospitals Committee and of sub-committees wholly concerned with work under the Mental Deficiency Acts have been as follow :—Committee, 11 ; managing sub-committees of certified institutions for the mentally defective, 59 ; Mental Deficiency Acts Sub-Committee, 10 ; Cases Section, 18 ; sub-committees specially appointed to visit institutions at which London cases are maintained under contract (*see paragraph 46, post*), 26. Meetings.

Staff.

3. The administrative and executive work under the Mental Deficiency Acts continues to be undertaken in the Mental Hospitals department and the Public Health department in accordance with the scheme detailed in the first annual report (*see Annual Report for 1914, Vol. II., p. 280.*) The collection of contributions towards the Council's expenses of maintaining defectives in institutions, or under guardianship (and, in some instances, towards the Board of Control's expenses of maintaining defectives in State institutions for defectives of dangerous or violent propensities) is undertaken in the department of the Comptroller of the Council, and when it is necessary to enforce payment of arrears of such contributions, the Solicitor takes appropriate action. (For particulars as to collection of contributions and as to the result of legal proceedings taken to recover payment from persons liable to contribute, *see paragraphs 84 and 85, post.*) Departmental arrangements.

4. On 31st December, 1928, the staff authorised for employment in the Mental Hospitals department entirely upon work connected with the administration of the Mental Deficiency Acts was :—1 principal assistant (temporary rank) ; 1 senior assistant (temporary rank) ; 2 assistants, first class ; 3 assistants, second class ; 5 assistants, general grade ; 1 record assistant ; 2 enquiry officers (non-pensionable). In the Public Health department at the same date 3 women inspectors were employed entirely for the work under the Acts. Staff employed for central administration.

Mental Deficiency Act, 1927.

5. In the Annual Report for 1927 (Vol. II., p. 40) reference was made to the passing of the Mental Deficiency Act, 1927, and to certain provisions in the Bill as introduced in the House of Commons, concerning which representations had been made on the Council's behalf with a view to amendment. New Act.

6. In the following paragraphs (7 to 12) the more important sections of the Act are briefly discussed.

7. Section 1 revises the definition of defectives contained in the corresponding section of the principal Act of 1913. The two main changes in the definitions are : New definition of defectives.
(i) that mental defectiveness is, for the first time, defined (it now means "a condition of arrested or incomplete development of mind existing before the age of eighteen years, whether arising from inherent causes or induced by disease or injury") ; and
(ii) that for the term "moral imbeciles" the term "moral defectives" has been substituted, with a definition of the new term, which is declared to include "persons in whose case there exists mental defectiveness coupled with strongly

vicious or criminal propensities and who require care, supervision and control for the protection of others." When the Mental Deficiency Act, 1927, was passed, it was thought probable that the revised definitions of defectives contained in the Act would lead to an increase in the number of cases referred to the Council for ascertainment. In fact, during 1928, information as to 753 cases of alleged mental defect was received, as compared with 654 such cases during 1927. It is interesting to note, however, that whereas it had been anticipated that the introduction of the new category of "moral defectives" might lead to a large number of sub-normal criminals being referred to the Council, to be dealt with under the Mental Deficiency Acts, up to 31st December, 1928, only three had been certified by the Council's medical officers as coming within the new category.

Circumstances rendering defectives subject to be dealt with.

8. Section 2 amends the corresponding section of the principal Act, which specifies the circumstances rendering defectives subject to be dealt with under that Act. A defective is now subject to be dealt with if he is a person "with respect to whom a representation has been made to the local authority by his parent or guardian that he is in need of care or training which cannot be provided in his home." During 1928, 32 cases were dealt with on this new ground, though in 30 of those cases other grounds which rendered the cases subject to be dealt with existed. It cannot be said, therefore, that the introduction of the new ground for action by the local authority has as yet appreciably increased the number of cases with which the Council has a duty to deal.

9. Section 2 also provides that, in the notification by the local education authority of "special circumstances" cases, or of cases "about to be withdrawn or discharged from a special school or class," the cases shall be such as would render it desirable that they should be placed under supervision or guardianship or should be sent to an institution. Under the Act of 1913, in "special circumstances" cases the ground for action included only apparent need for supervision or guardianship and not need for institutional care, while in cases "about to be withdrawn or discharged from a special school or class" the ground for action did not include the need for supervision. It was thought that these amendments might lead to a considerable increase in the number of cases notified by the local education authority. There were 351 notifications from that source during 1928, as compared with 280 in 1927—not a very considerable increase.

Defectives found guilty of a criminal offence.

10. Section 5 deals with the procedure to be followed should it be found impracticable to present a petition or should a petition be dismissed in respect of a defective guilty of a criminal offence whom a court has directed to be dealt with by way of petition or to be detained in a "place of safety" pending the presentation of a petition. In such a case a defective is to be removed to a prison (or a place of detention, as the need may be) in order that he may be brought before the court again to be dealt with upon the original criminal charge. The administrative steps which should be taken to give effect to this have been defined by the Board of Control. During 1928, so far as London was concerned, only one petition in respect of a case of the type referred to in section 5 was dismissed. In this case arrangements were made for the defective to be brought before a stipendiary magistrate on the same day, obviating the need for removing the defective to prison following the dismissal of the petition.

Training or occupation of defectives.

11. Section 7 makes it an obligatory duty of a local authority to provide suitable training or occupation for defectives who are under supervision or guardianship or have been sent to institutions. A qualification is added, however, that training or occupation need not be provided for a defective under supervision if a local authority satisfies the Board of Control that there are, in that individual case, adequate reasons for not doing so. During 1928, the Council gave careful consideration to the steps to be taken to give effect in London to the provisions of this section. It was assumed that all cases in institutional care were receiving such training or

occupation as was possible, and suitable cases under guardianship were reviewed, and where possible, steps were taken to arrange some form of training or occupation if that was not already being provided. Particulars as to the steps in contemplation with a view to extending the existing facilities for the training or occupation of defectives under supervision are given later in this report. (*See paragraphs 32 to 37, post.*)

12. Section 9 relates to the determination of residence. If a defective is an inmate of an institution for lunatics, a certified institution, approved home or other public or charitable institution at the time when a detention order is made, he is deemed to have resided in the place which was his place of residence immediately before he was received into the institution or home. The Council had sought, though unsuccessfully, to secure an amendment of this section, to make it plain that responsibility for maintenance should rest with the local authority for the area in which was the *ordinary* place of residence of the defective before reception into the institution from which the transfer took place. But it is recognised that the section, in its present form, has been helpful in certain cases in which, in the absence of the new provision, the Council might have been saddled with responsibility.

13. Sections 3, 4, 6, 8, 10 and 11 are of minor importance and do not call for comment here.

Ascertainment.

14. During 1928, the Council's duty to ascertain what persons in London were defectives within the meaning of the Mental Deficiency Acts, 1913 to 1927, and were subject to be dealt with under those Acts, was discharged as fully as possible.

15. The cases of which the Council received information during the year ended 31st December, 1928, were:—

TABLE 1.

Source of information.							Total.
Miscellaneous sources.	London Association for Mental Welfare.	Education authority.	Poor-law authorities.	Criminal cases.			
				Charged with offences before a court of criminal jurisdiction (Sec. 8).	Prisons (Sec. 9).	Industrial schools (Sec. 9).	
154	101	351	36	88	8	15	753

16. The foregoing table shews that the most fertile source of information of cases of mental defect in London is the local education authority. Co-operation between metropolitan police court magistrates and prison medical officers and the Council secures that most cases of mental defect who are charged with criminal offences are brought to the notice of the Council, to be dealt with under the Mental Deficiency Acts. The miscellaneous sources include almoners of general hospitals, secretaries of various charitable organisations, welfare workers and many private individuals (for the most part parents or relatives). The number of cases of which information is received from poor law authorities is not great. Many cases of mental defect are dealt with by poor law guardians themselves, either under the Lunacy Acts or under the Metropolitan Asylums (Mentally Defective Persons) Order, 1911, and are sent to the institutions managed by the Metropolitan Asylums Board. This state of affairs will be changed when the provisions of the Local Government Act, 1929, come into operation at 1st April, 1930.

17. The total number of cases ascertained by the Council as being subject to be dealt with, or who might become subject to be dealt with, up to 31st December, 1928, was 9,635. This figure, which excludes all cases of mental defect who are

being dealt with by Metropolitan poor law guardians, shows a ratio of 2·14 per thousand of the population of the County of London as estimated by the Registrar-General as at Midsummer, 1928 (4,502,000).

Supervision.

Employment
of the
London
Association
for Mental
Welfare.

Grants made
to the
Association.

18. Arrangements for the supervision in their own homes of those persons ascertained to be defective and subject to be dealt with for whom this measure appears to provide adequate protection or for whom no better means of care can be furnished, continue to be made through the London Association for Mental Welfare.

19. For the financial year ended 31st March, 1929, the Council has paid £2,358 to the Association, for general work undertaken on the Council's behalf (mainly the supervision of defectives in their own homes), an increase of £30 upon the payment for the previous year. This was necessary to assist the Association in meeting normal salary increments of their officers. The payment of £2,358 includes consideration for services rendered by the Association in furnishing (i) reports upon the home circumstances of the relatives of defectives required by the Visitors of certified institutions in which London cases are maintained, to enable the Visitors to perform their duties under section 11 of the Act of 1913, and (ii) reports as to the progress of defectives who may be absent in London on licence from certified institutions, with a view to ultimate discharge.

Friendly
visitation
or after-care.

20. Friendly visitation has again been afforded by the Association in suitable cases for defective persons resident in London, after discharge from institutions or guardianship. No payment is made by the Council for this work as the cases are no longer "subject to be dealt with."

Cases
supervised

21. At 31st December, 1928, the number of cases under statutory supervision in London was 2,071 (986 males and 1,085 females).

Occupations
of defectives
under super-
vision.

22. The variety of occupations followed by the defectives under statutory supervision, on 31st December, 1928, is indicated in the following table:—

TABLE 2.

Occupation.	Number of defectives employed.	Occupation.	Number of defectives employed.
<i>Males—</i>		<i>Females—</i>	
Bakers	2	Artificial flower maker	1
Bottlers and bottle washers ...	4	Bottlers and bottle washers ...	5
Boot makers and repairers ...	4	Cardboard box and paper trade ...	3
Building trade... ..	11	Cigarette maker	1
Cabinet makers	5	Confectionery	4
Coal trade	15		
Domestic work	10	Domestic service:—	
Dustman	1	Daily	48
Errand boys	17	Kitchen	23
Factory hands... ..	48	Resident	18
Firewood bundling	1	Office cleaners	9
French polishers	3	Useful work	
Furriers... ..	2	at home	21
Gardener	1		
Glass blower	1		119
Hawkers	20	Errands... ..	1
Labourers	8	Factory hands... ..	50
Leather work	1	French polishers	6
Metal work	2	Furriers... ..	2
Organ blower	1	Hawker	1
Porters	10	Labeller	1
Printer	1	Laundry	6
		Metal work	6
Carried forward ...	168	Carried forward ...	206

TABLE 2—*continued*.

Occupation.	Number of defectives employed.	Occupation.	Number of defectives employed.
Brought forward ...	168	Brought forward ...	206
<i>Males—</i>		<i>Females—</i>	
Rag sorters	4	Needlework and millinery	6
Shop assistants	9	Packer	1
Street sellers (newspapers, etc.) ...	28	Rag sorter	1
Tailors	5	Shop assistants	2
Timber trade	9	Street sellers	2
Tool maker	1	Tailoring	6
Transport workers	5	Various (odd jobs)	2
Upholsterer	1	Ward-maid	1
Van boy	1		
Various (odd jobs)	21		
Total	252	Total	227

23. During the year consideration was given to the possibility of arranging for cases to be placed under statutory supervision upon the discharge of the orders detaining such cases in certified institutions or placing them under guardianship. Upon this point the opinion of the Board of Control was sought. The Board expressed the view that the course indicated could be followed only if a defective were "subject to be dealt with" at the time of the discharge of the Order, independently of the ground upon which the order discharged had been made. It would seem, therefore, that, except in special cases, a defective on leave of absence from a certified institution with a view to discharge must either remain on licence for an indefinite period or be freed from the order for detention and the reafter afforded friendly (*i.e.*, non-statutory) visitation.

Supervision
of cases
discharged
from institu-
tional care or
guardianship.

Provision of occupation and industrial centres.

24. The use of "occupation centres," *i.e.*, centres organised by voluntary effort with financial assistance from the Council and the Board of Control, which mentally defective children who are unfit for attendance at special schools may attend otherwise than compulsorily for simple occupational training, details of which are given in the Annual Reports for 1923 (Vol. II., pp. 19–21) and 1924 (Vol. II., pp. 27–28) has been continued during 1928.

Continuation of the
scheme of
"occupation
centres."

25. The following table gives particulars of the centres of which use has been made by the Council during the year, and of attendances made thereat by "recognised" cases, *i.e.*, by defectives who are under statutory supervision and are not more than 16 years old (or, in some special cases, 18 years). These are the cases for whom the centres are primarily intended, and in respect of whom the Council makes a financial contribution to the expenses of the centres, and at least 75 per cent. of the places available at each centre are reserved for such cases. The centres are under the management of the London Association for Mental Welfare, except the "Agnes Western," and Willesden centres, which are controlled by the Central Association for Mental Welfare and the Willesden Association for the Care of the Mentally Defective respectively; but all arrangements (including the financial arrangements) in respect of the "Agnes Western" centre are made for convenience through the London Association. The Willesden centre provides for children residing outside the London county area, but it has been found convenient for a few isolated London cases to attend there, and the figures as to Willesden given in the table relate only to these cases:—

Centres in
use, and
attendances.

TABLE 3.

Centre.	Address.	Sessions a week.	Average number on roll.	Average daily attendance.
Agnes Western ...	St. James' Parish Hall, Collier-street, Islington	10	20	14
Hackney ...	Infants' School, Dalston Congregational Church, Middleton-road, Dalston	10	28	18
Southwark ...	St. John's Parish Hall, Bedford-street, Walworth	10	30	21
Battersea ...	Primitive Methodist Church School Room, Grayshott-road, Battersea	5	19	12
Lambeth ...	Kennington Sunday School Mission, Stannary-street, Kennington	5	21	14
Poplar ...	St. Frideswide's Club House, Follett-street, East India Dock-road	5	10	8
Whitechapel ...	Christchurch Hall, Hanbury-street, Spital-fields	5	13	10
Woolwich ...	St. James' Parish Hall, Burrage-road, Plumstead	5	20	11
Willesden ...	Pember Hall, Pember-road, Kensal Green	5	2	2
Total ...		—	163	110

Payment
for use of
centres.

26. The grant made by the Council to the London Association in respect of occupation centres during the financial year ended 31st March, 1929, was £1,924 (the same sum as was paid in respect of the previous year). The grant was apportioned as follows:—for the Hackney and Southwark centres, the actual net cost, not exceeding £465 each; for the Agnes Western centre, the actual net cost, not exceeding £279; and for the Battersea, Lambeth, Poplar, Whitechapel and Woolwich centres, £143 each. The grant made by the Council to the London Association in respect of occupation centres covers the provision at the Agnes Western full-time centre and at each of the part-time centres of one guide, and at the Hackney and Southwark full-time centres of two guides apiece, to assist certain of the children in their journeys to and from the centres. Payment in respect of London children who attend the Willesden centre was made at the rate of £5 a year for each case.

Additional
guides.

27. During 1928, as in 1927, a supplementary payment of £400 was made to the London Association to cover the cost of additional guides. The employment of 15 additional guides escorting 49 defectives was thus made possible.

Per capita
cost.

28. The cost to the Council for each child attending an occupation centre (taking the average of actual attendances) was approximately £21 a year.

Medical
inspection
and treat-
ment, and
personal
cleansing.

29. During the year, with the approval of the Board of Control, arrangements were made for all children under supervision who attend occupation centres in London to be medically inspected periodically and for such children as are found on inspection to require treatment for minor ailments, including skin troubles, blepharitis, minor cases of running ears, etc. (but not cases of tonsils or adenoids or cases in need of dental treatment), to receive treatment at the school treatment centres. The arrangement came into force on 1st September, 1928. An assistant medical officer in the public health department, accompanied by a school nurse, visits each of the occupation centres twice a year to make medical inspection of all the supervision cases who are in attendance, and the nurse visits the centres at other times to see to general personal hygiene or to any minor infectious conditions which the children may present. Such cases as need treatment for minor ailments are treated at the school treatment centres at the end of the ordinary treatment sessions and are not associated there with elementary school children. Arrangements were made for any defective found

in need of cleansing to be sent to a bathing centre to be cleansed. Thus children attending occupation centres in London (almost all of whom have been excluded from the Council's special schools) now enjoy the benefits as to medical overhaul and (in certain cases) treatment to which they would have been entitled had they remained under the control of the local education authority.

30. The cost to the Council's mental deficiency service of providing the medical inspection and treatment which has been arranged will, it is estimated, amount to about £106 a year.

Cost of medical inspection and treatment.

31. In April, 1928, the Board of Control addressed a circular letter to all local authorities under the Mental Deficiency Acts, drawing attention to the duty imposed upon local authorities by section 7 (2) (i) of the Mental Deficiency Act, 1927, to provide training or occupation for defectives under supervision (*see paragraph 11, ante.*). In their letter the Board expressed the hope that local authorities would endeavour by all possible means, to provide such training or occupation, either by establishing, directly or through a voluntary association, sufficient occupation and industrial centres, or by arranging for home training to be given by an experienced peripatetic visitor. At the same time, the Board asked to be furnished with information as to the number of defectives under supervision in London who would benefit by attendance at a day centre or by home training, and as to how the Council proposed to carry out its duty to make provision for such cases.

Training or occupation of defectives under supervision.

32. Following the receipt of the Board's letter, the need for action was closely and carefully considered. The conclusion was reached that some extension might, with advantage, be made of the existing system of occupation centres for children. These centres seemed definitely to serve a useful purpose by providing relief for harassed parents for the whole or part of a day of the responsibility for defective children who, at home, must be a source of endless trouble, by training defective children of low grade in elementary cleanliness, by inculcating some idea of discipline, and by keeping defectives from the dangers of the streets. It appeared, too, that attendance at an occupation centre would spare some parents, at any rate for a time, the pain of parting with afflicted children to whom they were deeply attached.

Proposed extension of existing arrangements.

33. The question of the establishment of industrial centres for defectives over sixteen years of age presented more serious difficulties, the chief of which lay in securing a market for the produce of the limited kinds of industry which could be carried on by defectives. On the whole, however, it was thought that an experiment in this direction might be tried.

Industrial centres.

34. The suggested employment of a home instructor to visit homes and give instruction in suitable cases was not pursued, as it seemed that the expedient of home instruction was designed rather for the needs of sparsely populated country areas than for London.

Home training

35. From an analysis, compiled by the London Association, of all cases residing in London on 31st October, 1928, who were either under supervision or on licence from certified institutions, it appeared that 1,990 such cases were not then attending occupation centres, and that of these the Association thought that 921 would benefit by training or occupation, though in 20 of those cases it would be impracticable, for various reasons, to provide such training or occupation.

Analysis of cases.

36. The Council invited the London Association to suggest in what directions they thought the existing arrangements for the training or occupation of defectives under supervision might be extended. In reply, the Association submitted the following proposals:—(i) to establish two additional part-time occupation centres for children, one at Hammersmith, and one at Lewisham; (ii) to employ 17 guides additional to those already employed; (iii) to employ a home instructor; (iv) to establish two senior classes for older girls and women of any age above 16 years

Proposed establishment of additional centres.

(one to be attached to the Whitechapel occupation centre, and one to the Battersea centre); and (v) to establish two Craft centres (one in the north and one in the south of London) for boys between the ages of 16 and 18 years. In November, 1928, the Council adopted the Association's proposals, except that in respect of a home instructor, for transmission to the Board of Control, who have since approved them. The extension of the arrangements will operate as from 1st April, 1929. The additional cost to the Council will be £1,676 a year.

Possibility
of further
develop-
ments.

37. It is realised that the scheme which the Council has adopted, in fulfilment of its duty under section 7(2) (i) of the Mental Deficiency Act, 1927, will provide training or occupation only for a small proportion of the 901 cases who the London Association consider should be provided with training or occupation and are receiving none at present. It is thought, however, that gradual extension of existing arrangements would be preferable to an attempt to deal exhaustively with the question at once, especially in relation to the industrial training of defectives over 16 years of age. Should the results obtained justify the experiment, consideration will be given to the possibility of extending the scheme further. The matter will be one for discussion in a subsequent report.

Guardianship.

Use of
guardianship.

38. During 1928 the use of guardianship as a means of providing suitable care and control for certain selected cases was continued.

Possibility of
making more
use of
guardianship.

39. Consideration was given to the possibility of the Council making more use of guardianship as a means of protection, in order to relieve, in some measure, the pressure for institutional accommodation for defectives, and particularly as a means of keeping within the provisions of the Mental Deficiency Acts defectives for whom institutional care might no longer be imperatively necessary. Apart from the opportunities which exist (and then only to limited extent) of finding suitable guardians through the agencies of the Brighton Guardianship Society and the Central Association for Mental Welfare, it has been difficult to find private individuals, such as parents, relations or friends, who are willing to become guardians. It is thought that a reason for this may be found in the stringency of the regulations made by the Secretary of State which prescribe the conditions for guardianship, which may prevent some persons, otherwise suitable, from accepting the responsibilities involved. After careful consideration the conclusion was reached that it would be unwise to suggest modification of such of the Provisional Regulations, 1914, as relate to guardianship, seeing that there is probably greater need for strictness in respect of guardianship provided by relatives or friends than in respect of guardianship provided by a stranger, because, in the latter case there is less likelihood of the guardian resenting outside control and supervision, on the ground that natural relationship necessarily sanctions all that he may do. In the circumstances the matter has not been pressed further.

Number of
cases under
guardianship.

40. During the year 25 additional cases were placed under guardianship or were granted leave of absence from certified institutions with a view to guardianship. On 31st December, 1928, 46 males and 27 females were being maintained under guardianship or were on leave of absence from institutions with a view to guardianship. Of these, 31 males and 2 females were in village homes in Sussex, placed through the agency of The Guardianship Society, Brighton, 1 male in Essex and 5 females in Hertfordshire had been placed through the agency of the Central Association for Mental Welfare, 12 males and 11 females were under the guardianship of parents, near relatives or friends, and 2 males and 9 females were in institutional homes in or near London, under the personal guardianship of officers of the homes.

41. Payments as follow are made by the Council in respect of cases under guardianship :—

Charges made for main-tenance, etc.

TABLE 4.

To	At the rate of
Guardianship Society, Brighton	£1 1s. a head a week, made up as follows :— Maintenance, 17s. 6d.; medical attention, 3s.; clothing, 6d. In addition, supervision, 50s. a head a year.
Central Association for Mental Welfare ...	Not exceeding 20s. a head a week for males and 15s. a week for females. In addition, medical examination and treatment, 15s. a head a year; supervision, £5 a head a year; upkeep of outfit, £5 a head a year.
Parents, near relatives or friends	Not exceeding 15s. a head a week (in one case, payment is being made at the rate of 21s. a week).
Other small institutional homes in or near London	From 14s. to 42s. a head a week.

Provision of care in institutions.

(A) *Accommodation under contract.*

42. During the year 1928 the Council was still obliged to make use of accommodation which it had been able to secure under contract to enable it to make provision for those ascertained cases of mental defect for which supervision or guardianship does not make sufficient provision. The following table (5) shows the number of cases for which accommodation was being provided thus at the end of 1928 :—

Accommodation in institutions under contract.

TABLE 5.

Institution.	Males.	Fe-males.	Institution.	Males.	Fe-males.
Besford Court, Worcester ...	3	—	Royal Earlswood Institution, Redhill	11	7
Bigod's Hall, nr. Dunmow ...	1	—	St. Elizabeth's Home, Much Hadham	—	2
Cardiff Poor Law Institution, Ely	—	1	St. Joseph's Home, Sudbury ...	—	3
Crathorne, Finchley, N. ...	—	9	St. Mary's Home, Alton (and ancillary premises)	—	22
Cumnor Rise Home, Oxford ...	—	2	St. Michael's Convent, Streatham	—	20
Dovecot, Liverpool ...	—	1	St. Raphael's, Brentford ...	—	7
Durrant Hill House, Carlisle ...	—	1	St. Teresa's, Lewisham, S.E. ...	—	14
Eagle House Hostel, Mitcham ...	—	8	Stoke Park Colony, Bristol (and ancillary premises)	32	53
Ellen Terry Home, Reigate ...	—	2	The Home, Liverpool ...	—	1
Etloe House, Leyton, E. ...	—	25	Tubwell Farm, nr. Crowborough	1	—
Girls' Village Home, Barking-side	—	8	Walsham How Home, Walthamstow	—	20
Helping Hand Home, Highgate, N.	—	19	Western Counties' Institution, Starcross	1	—
Hillside, Buntingford ...	7	—	Whittington Hall, Chesterfield ...	—	6
House of Help, Bath ...	—	2	Woolwich Poor Law Institution, Plumstead, S.E.	24	8
Littleton House, Cambridge ...	1	—			
London Lock Hospital ...	—	3			
Metropolitan Asylums Board Certified Institution ...	603	543			
Monkton Hall Home, Jarrow-on-Tyne	1	—			
Pield Heath House, Hillingdon ...	—	4			
Pontville, Ormskirk ...	1	—			
Princess Christian's Farm Colony, Hildenborough	1	8			
			Total ...	687	799
				1,486	

Charges
made for
maintenance,
etc.,

43. The class of patient received, and the charges made for maintenance, etc., were as set out in Table 6 :—

TABLE 6.

Institution.	Religion.	Class of defective received.	Charges.					
			By contract.			Supplemental payments.		
			Maintenance (a week).	Burials.	Outfits.	Maintenance (a week).	Burials.	Outfits.
Besford Court, Worcestershire	Roman Catholic	Feeble-minded males, high grade	£80 a year	£10	£10	£10 a year	—	—
Bigod's Hall, nr. Dunmow, Essex	No restriction	Juvenile males, imbeciles and feeble-minded	17/6	£5	—	—	—	—
Cardiff (Ely), Poor Law Institution	No restriction	All grades, adults of both sexes	20/-	£5	—	—	—	—
Crathorne, Finchley ..	Protestant	Mothers (feeble-minded or moral defectives) and their children (no child retained over age 7)	11/6	£5	£3	6/-	—	£3
Cumnor Rise Home, Oxford	Church of England	Feeble-minded females from age 14 (epileptics and fallen women not taken)	12/-	£5	£5	3/-	—	—
Dovecot, Knotty Ash, Liverpool	No restriction	High-grade feeble-minded females, from age 16	£34 a year	£10	—	£31 a year	—	—
Dungates, Horeham Road, Sussex	No restriction	Feeble-minded males ..	21/-	Not to exceed the Poor Law rate for the district	£5	—	—	—
Durran Hill House, Carlisle	Roman Catholic	Feeble-minded adults ..	11/6	£5	—	5/6	—	—
Eagle House Hostel, Mitcham	No restriction.	Feeble-minded women of high grade	20/- (a)	£5	£5	—	—	£7 (for patients entering domestic service)
Ellen Terry National Home for Blind Defective Children, Reigate	No restriction	Imbecile and feeble-minded blind children up to age 12	£90 a year	£5	£5	—	—	—
Etloe House, Leyton	Roman Catholic	Feeble-minded females from age 16	11/6	£6	£6	5/6	—	—
Girls' Village Home, Barkingside (Dr. Barnardo's Homes)	No restriction	Feeble-minded and imbecile girls	14/-	£10	—	—	—	—
Helping Hand Home, Cathcart Hill, N.	No restriction	Feeble-minded females, preferably from age 16	17/6	£6	£8 and allowances for upkeep	—	—	—
Hillside, Buntingford, Herts	Roman Catholic	Educable males ..	11/6	£7	—	7/-	—	—
House of Help, Bath ..	Church of England	Feeble-minded females	12/6	£5/5/-	£3	4/-	£2/15/-	£2
Littleton House, Cambridge	No restriction	Feeble-minded males ..	£72/16s. a year	£5/10/-	£8	—	—	—

For notes see page 38.

Institution.	Religion.	Class of defective received.	Charges.					
			By contract.			Supplemental payments		
			Maintenance (a week).	Burials.	Outfits.	Maintenance (a week)	Burials.	Outfits.
London Lock Hospital	No restriction	Feeble-minded and morally defective females	36/- 18/-(b)	£7/10/-	—	6/- 3/-(b)	—	—
Metropolitan Asylums Board Certified Institution—Sections at: Caterham, Surrey Darenth, Kent Fountain, Tooting Leavesden, Herts	No restriction	All grades, both sexes	Actual cost, viz.:— 30/4 27/1½ 37/11 30/4	Reasonable expenses	—	—	—	—
Monkton Hall Home, Jarrow-on-Tyne	No restriction	Feeble-minded males over age 16	19/-	£8	£5	—	—	—
Pield Heath House, Hillingdon, Middlesex	Roman Catholic	Females, feeble-minded and moral defectives (tractable cases up to age 16)	11/6	£7	—	5/6	—	—
Pontville, Ormskirk, Lancs.	Roman Catholic	Feeble-minded males, aged 5 to 16	20/-	£7	—	—	—	—
Princess Christian's Farm Colony, Hildenborough, Kent	No restriction	High grade cases, both sexes	17/-	£5 10s.	£7	—	—	—
Royal Earlswood Institution, Redhill	No restriction.	All grades, both sexes	Not exceeding £63 a year	Reasonable expenses	£5	—	—	—
St. Elizabeth's Home, Much Hadham, Herts	Roman Catholic	Epileptic idiots, imbeciles and feeble-minded, both sexes	12/6	£5	£4	7/6	—	—
St. Joseph's Home, Sudbury, Suffolk	Roman Catholic	Feeble-minded females aged 16 to 20	11/6	£6	—	4/6	—	—
St. Mary's Home, Alton, Hants.	Church of England	Females over age 16, who might have had illegitimate children	14/-	—	£5	3/-	—	—
St. Michael's Convent, Streatham Common	Roman Catholic	Feeble-minded females	22/6	£5	£5	Reduction 1/-	—	—
St. Raphael's, Brentford	Roman Catholic	High-grade feeble-minded girls over age 16	22/6	£5	£5	—	—	—
St. Teresa's, Lewisham	Roman Catholic	Feeble-minded females over age 16	22/6	£5	£5	Reduction 1/-	—	—
Stoke Park Colony, Bristol, and Whittington Hall, Chesterfield	Protestant	All grades, both sexes (males, only such as can be dealt with by a female staff)	High-grade cases 10/6 £3 Low grade cases:— 14/- £3	— £3 —	— — —	} 7/7	3/6	—
The Home, Everton Terrace, Liverpool.	Protestant	Females, feeble-minded and moral defectives over age 16	15/-	£8	£5			
The "Royal" Hostel, nr. Elstead, Surrey	No restriction	High-grade male adults	30/-(a)	£7	£7	—	—	—
Tubwell Farm, Jarvis Brook, Sussex	No restriction	Feeble-minded males aged 16 to 25	21/-	Not to exceed the Poor Law rate for the district	£5	—	—	—
Walsham How Home, Walthamstow	Church of England	Females, feeble-minded and moral defectives	12/-	£3	—	5/6	—	£6

Institution.	Religion.	Class of defective received.	Charges.					
			By contract.			Supplemental payments.		
			Main-tenance a week.	Burials.	Outfits.	Main-tenance (a week)	Burials.	Outfits.
Western Counties Institution, Starcross	No restriction	High-grade cases, both sexes	Actual cost plus 2/6 a head a week as "overhead" charge. For 1928-29 the charges were:—					
			23/-	£5	—	—	—	—
Woolwich Poor Law Institution, Plumstead	No restriction	All grades (adults), both sexes	Average actual cost. Institution. 18/9.54 In-firmary 55/8.18	Not to exceed £6	—	—	—	—

(a) Less earnings of patients which are pooled and refunded proportionately to local authorities.

(b) Charges in respect of each infant born in the institution of a defective if pregnant at time of admission.

44. Seven institutions, viz., the London Lock Hospital, Monkton Hall, St. Raphael's, Royal, Tubwell, Dungates and Cardiff (Ely), appear for the first time in the foregoing table, contracts having been entered into during 1928 with the managers of these institutions for the reception and maintenance there, at the Council's expense, of suitable cases, as accommodation may be available. The London Lock Hospital is primarily an institution for the treatment of persons suffering from venereal disease, but it is certified by the Board of Control to accommodate 7 female defectives. Monkton Hall Home for Lads, Jarrow-on-Tyne, which is managed by the North-Eastern Association for the Care of the Feeble-Minded, is certified to accommodate 79 male defectives. St. Raphael's, Brentford, is a Roman Catholic convent, certified to accommodate 60 female defectives. The "Royal" Hostel, Elstead, was opened in 1928 by the Surrey Voluntary Association for Mental and Physical Welfare; it accommodates 26 male adult defectives suitable for training in outdoor occupations, such as gardening and beekeeping. The Council made a contribution of £50 towards the initial expenses of the establishment of the hostel, in consideration of the managers agreeing to reserve at the hostel at least five places for defectives to be maintained at the Council's expense. Tubwell Farm, near Crowborough, and Dungates, Horeham Road, Sussex, are managed by the Brighton Guardianship Society, each institution being certified for the reception of 7 male defectives. The Cardiff (Ely) poor law institution is approved under section 37 of the Mental Deficiency Act, 1913. Use was made of this institution, merely because it was desired to remove an inmate of The Manor, Epsom, nearer to her parents, who resided in the County of Glamorgan; further use of the institution probably will not be made unless in similar circumstances.

45. On account of the expiration of the lease and of failure to obtain new premises, the Girls' Training Homes, Clapton, closed on 30th September, 1928. The six London patients maintained there were transferred, four to The Manor, Epsom, and two to the Eagle House Hostel, Mitcham.

46. During 1928, 23 of the institutions named in table 6 (par. 43) were visited by members of the Mental Hospitals Committee on behalf of the Council, and the patients who were being maintained there at the Council's expense were seen. In each instance satisfactory reports were made by the visitors.

47. During the year the accommodation available under contract, except that in the Metropolitan Asylums Board's institutions, provided little opportunity for the reception of new cases. 141 such cases were, however, sent to the institutions of the Metropolitan Asylums Board.

48. In the Annual Report for 1927 (Vol. II., p. 36), reference was made to the fact that a substantial part of the accommodation which defectives may occupy in the Metropolitan Asylums Board's institutions was being used for cases admitted under contract at the charge of provincial authorities, and it was stated that steps were in contemplation to secure, if possible, the removal from the Board's institutions of those defectives who are not chargeable to London, so that London cases might replace them. In February, 1928, the Council made representations in this matter to the Metropolitan Asylums Board and to the Board of Control, in the hope that action might be taken to secure for London the full benefit of accommodation originally provided entirely for London's needs. In August, 1928, the Board of Control intimated that they had suggested to the Metropolitan Asylums Board that that body should arrange for the removal of the extra-metropolitan cases from their institutions. Up to the end of the year, no intimation had been received from the Metropolitan Asylums Board that they had decided to act upon the suggestion put forward by the Council and by the Board of Control, but we understand that notices have since been given to determine contracts with out-county authorities.

(B) *Accommodation provided by the Council.*

49. This has continued to be provided at (i) The Manor, Epsom (488 male and 603 female defectives of all classes, including 38 high grade female adult defectives in Hollywood Lodge, Epsom-common (*see par 52, post*)), (ii) the South Side Home, Streatham Common, S.W. (80 females, higher grade cases), (iii) Brunswick House, Mistley, Essex (50 males, higher grade cases), and (iv) Farmfield, near Horley, Surrey (85 adult or adolescent males of criminal experience or intractable disposition). The accommodation at these institutions continues to be reserved exclusively for London cases. A statement of expenditure on the administration of these institutions is given in Appendixes I. and II. At 31st December, 1928, the four institutions were practically full.

The Manor.

50. During 1928 much progress was made at The Manor, and the improved facilities for the classification of patients, following the sub-division of large wards and other structural alterations have resulted in a marked general improvement in the discipline of the patients, who are more contented and happier.

51. Hitherto the buildings of The Manor, which were provided originally for use as one of the London County mental hospitals, with the land which forms the estate of the institution, have been used as an institution for defectives by way of lease, the Mental Deficiency service paying an annual rent to the Lunacy service. In July, 1928, the Council decided, subject to the approval of the Minister of Health, to discontinue the temporary arrangement for rental and to transfer the land and buildings for use permanently for the accommodation of cases of mental defect. At the end of the year, however, the terms upon which the transfer should be accepted had not been settled.

52. In the Annual Report for 1927 (Vol. II., p. 39) mention was made of the purchase by the Council of a property, adjacent to The Manor, which had been renamed "Hollywood Lodge, Epsom-common," and which it had been decided should be used temporarily as an annexe to The Manor for the accommodation of 38 female adult defectives of the best type. Hollywood Lodge was opened for the reception of patients in April, 1928. It is an independent unit for all purposes except the bathing of the patients who are housed there, and forms a very useful bridge between institution care and absence on licence. The inmates are trained in housework, cookery, laundrywork and gardening, with a view to their entering daily domestic service in the neighbourhood. The use of Hollywood Lodge has enabled the medical superintendent of The Manor to select female patients who are likely to be suitable for trial outside the institution and to give them training under conditions more

closely approaching those of a private house than is possible in the institution. Towards the end of the year the Council decided to allocate Hollywood Lodge permanently for use as an annexe to The Manor.

Orthopædic
clinic.

53. The orthopædic clinic which was established on 1st January, 1928, as an experiment for the benefit of those patients at The Manor who needed orthopædic treatment, has given very satisfactory results. During 1928 the visiting surgeon examined, diagnosed and recommended treatment for about 100 cases. He performed 7 surgical operations. In other cases, physical exercises, massage, Swedish remedial exercises, ionization, faradism, or radiant heat-bath treatment were prescribed and carried out under the direction of a masseuse. An average of about 30 cases attended the clinic daily. It has been decided to continue the experiment until 31st March, 1930.

Examination
of patients.

54. During 1928 a systematic examination of all the patients by means of the Wassermann reaction was undertaken.

Patients'
recreation.

55. Much headway was made on the recreational side of the institution's activities. It was only during 1928 that the female patients were induced to take up outdoor games with any degree of keenness.

Industries.

56. During the year the industrial department of The Manor was developed further. In the workshops the following industries were pursued:—carpentry, the making of shopping-nets and baskets, brushmaking, printing, book-binding, the making of kitchen utensils, shoemaking, tailoring, wood-chopping and bundling, weaving by hand-loom, knitting, mending, hair-picking, feather sorting, rug and mat making, the making of blue washing-cubes, needlework, and the making of tooth-brushes and envelopes. During the year ended 31st December, 1928, the sales of articles made in the workshops realised £2,932, as compared with £2,487 during 1927. Some idea of the productive capacity of the institution is shown by the following particulars of articles made and supplied to other institutions during 1928, apart from those made for use at The Manor:—firewood bundles, 17,212; brooms, 2,074; brushes, 12,952; shirts, 1,312; dresses, 212; vests (tweed), 177; trousers (tweed), 626; printed memorandum pads, 1,996; grocery bags, 565 lb.; patients' envelopes, 32,400. A satisfactory trading return, which furnishes an index to the institution's industrial capacity, is of value as shewing to what extent the institution is fulfilling its proper function of furnishing useful and contented occupation for as many as possible of its inmates.

School
department.

57. The school department continued to provide the necessary training for children of school age preliminary to their proceeding to the institution workshops upon attaining the age of 16 years. The average attendance of children at the school during the year ended 31st March, 1929, was 139, a decrease of 4 on the average for the previous twelve months.

New works.

58. The following new works either were carried out completely or were commenced during the year, viz., construction of a recreation room for female nurses, of additional housing accommodation for poultry, and of garage accommodation for motor cars, motor cycles and bicycles belonging to members of the staff. Four wards were improved by the provision of additional equipment.

House
steward.

59. Mr. G. L. Brown, clerk and house steward of The Maudsley Hospital was promoted to be house steward of The Manor, as from 20th August, 1928, in the place of Mr. P. J. Deely, transferred to be house steward of Hanwell mental hospital.

Visits.

60. During the year many persons interested in the care of the mentally defective, from various parts of the world, visited The Manor.

Farmfield.

61. During 1928, good progress was made at Farmfield. The patients, all of them adult or adolescent male defectives of criminal experience or of intractable disposition in their ordinary social environment, have for the most part shown marked

improvement in behaviour and in willingness to submit to discipline and to habits of industry. During the whole year the institution was full.

62. During the year, 27 patients were granted licence. Three returned to the institution because the work found for them proved to be only of a temporary nature, and one was brought back as unsatisfactory. The remainder did well. One or two earned wages as much as £3 a week. As a rule it is the practice at Farmfield to place patients who are thought to be worthy of trial outside, in the first place in local situations as daily workers. Should the experiment prove successful, arrangements are made, if possible, for them to live out of the institution on licence. Thus the patients receive graded trial before they are allowed to try to take a place once more in society. Grants of licence.

63. Early in 1928 a new system of monetary rewards to patients at Farmfield was introduced as an experiment. Monetary allowances, in lieu of allowances of tobacco and sweets, were made on the following scale:—to patients in residence for less than three months, 4d. a week; to patients in residence for more than three months and less than six months, 6d. a week; to patients in residence for more than six months, 9d. a week. Each patient is credited with 24 marks a week, and loss of any of those marks for misconduct means loss of a cash credit by means of which the patients can obtain tobacco, cigarettes, sweets, etc. In many cases, however, the patients have preferred to save their money. The scheme, which has proved actually to be cheaper than making issues of tobacco and sweets, as was done formerly, has led to a general improvement in conduct among the patients. In October, 1928, it was decided that the arrangement should continue indefinitely. Monetary rewards to patients.

64. During the year one of the visiting medical officers continued his courses of instruction to members of the nursing staff of Farmfield for the examinations of the Royal Medico-Psychological Association. It was decided to make an allowance of £5 a year to a charge nurse at the institution who acts as practical demonstrator in nursing and first aid to the candidates for the examinations. Training of nurses.

65. In the Annual Report for 1927 (Vol. II., p. 39) it was stated that the Council had decided to enlarge the institution by adding wings to two of the four blocks. For this work the Council, in July 1928, accepted the tender of Mr. J. Crewdson, Horley, amounting to £5,327, and, at the end of the year the work was commenced. Authority was given for expenditure of £960 for the equipment of the new wings. It was decided also to provide, at an estimated cost of £935, a general bathroom for the use of patients, thus setting free, for the accommodation of extra patients, six rooms hitherto fitted with baths. The effect of the two schemes is to provide accommodation for 48 additional patients at Farmfield, making 133 in all. At the end of 1928 the work of providing a general bathroom had not been commenced. As from the date of the completion of the enlargement, it was decided to increase the fixed staff for Farmfield by one cook and baker (ordinary hand). Enlargement of institution.

66. During the year ended 31st December, 1928, the sale of articles made or repaired in the bootmaker's, carpenter's and tailor's shops realised £134.

Brunswick House.

67. Brunswick House continued to provide accommodation for 50 high-grade tractable adult defectives, chiefly those who have proved, or are likely to prove, suitable for agricultural work, facilities for which exist in the neighbourhood. During 1928, about £460 was received by the superintendent in payment of wages earned by patients in daily employment locally, and was credited to the Council.

68. The holding of a summer camp, at which all the patients were present, was a feature of the year's work. Summer camp.

69. In the Annual Report for 1927 (Vol. II., p. 39), mention was made of the Council's decision to enlarge Brunswick House to accommodate 25 additional patients. Enlargement of institution.

In June, 1928, the Council accepted the tender of Messrs. A. Evans & Co., Clacton-on-Sea, amounting to £3,302 10s., for this work, which was commenced later in the year. Authority was given for expenditure of £750 for the equipment of the additional accommodation. As from the date of the completion of the enlargement, it was decided to increase the fixed staff of the institution by one carpenter-instructor.

Visiting
chaplain.

70. The Rev. W. E. Gardiner (Mistley) was appointed to be visiting chaplain of Brunswick House, with effect from 1st July, 1928, in succession to the Rev. W. H. Doggett.

South Side Home.

Placing of
patients in
domestic
service.

71. During 1928 no alteration was made in the administration of the South Side Home. A number of patients were placed in domestic service. Experience has shown that the most successful cases are those who enter daily employment, sleeping in the institution. These girls use their leisure profitably, for, when they return to the institution in the evening, they can be occupied with country dancing, needle-work etc., in the society of other girls. Moreover, the fact that they leave their work every evening and return to it afresh in the morning, tends to keep their interest in it alive, for it is notorious that steady application to a routine task is frequently one of the most difficult lessons for a high grade defective to learn.

Industries.

72. During the year there was a steady output of handwork by the patients. Sums amounting to £48 were received from the sale of the articles made.

(c) Prospective Accommodation.

Proposed
extension of
the Manor.

73. In October, 1928, plans for the erection at The Manor of three detached villas for 60 patients each, two for male patients of the trainable and tractable type, and one for female adult or adolescent defectives of intractable temper and criminal antecedents were approved and were submitted for the approval of the Minister of Health. This scheme for enlargement, together with the schemes in hand at Farmfield and Brunswick House (*see pars. 65 and 69 ante*) will provide 253 additional beds (193 for males and 60 for females).

New
institution.

Hollywood
Lodge,
possible
extension.

74. Allowing for this additional accommodation and for the possibility later on, when some experience should have been gained of the use of Hollywood Lodge as a hostel (*see par. 52 ante*), of adding to the accommodation on the Hollywood Lodge estate, and having due regard, also, to the fact that the Metropolitan Asylums Board's accommodation at present used for defectives was expected to pass into the Council's direct control, as a result of legislation (the Local Government Act, 1929), then in contemplation and since passed, careful consideration was given during 1928 to the necessity for making still further provision for the cases of mental defect for whose maintenance in institutions it was probable that the Council would have to accept responsibility. The Mental Hospitals Committee received an exhaustive report in the matter in June, from which it appeared that the total number of defectives for whom the Council was then responsible under the Mental Deficiency Acts was just over 4,900, of whom 2,828 were on the books of institutions (1,410 in the Council's own institutions, 1,418 under contract), 47 under guardianship, and some 2,010 under supervision. The number of supervision cases included a considerable number for whom institutional care was desired and was to be provided when suitable accommodation could be found. The total number of supervision cases had increased by 445 during five years—an average of 89 a year. There had been no substantial increase in the number of guardianship cases. About 200 cases were awaiting institutional care, either in places of safety or under supervision in their own homes. The proportion of males to females in that number was roughly 9 to 11; the proportion of adults to juveniles 5 to 2. Nearly one-half of these outstanding cases were trainable and tractable adults.

75. It appeared that the average age of defectives on admission to institutional care was 18 years. The cases maintained in institutions at the Council's charge had been so maintained for an average term of three years. The statistics in the Council's possession did not as yet justify an assumption of what might be expected to be the total duration of stay of a defective who was admitted to institutional care. But it appeared that, so far, the death rate had been low (between two and three per cent. on average institution population), and the discharge rate (*i.e.*, the number of cases for whom detention orders had been discharged absolutely, omitting cases of long leave of absence) was rather less. On the assumption that the average duration of life of mentally defective patients in a large mixed institution would be 40 years, it seemed probable that there was an expectation of continued detention of the numbers resident in institutions at the Council's charge without substantial diminution from death or discharge for at least another 16 years, and although after 1944 there might be an increase in the existing rate which would relieve the pressure for further accommodation, no such relief was likely before that date.

76. During the six years, 1922-1928, the net annual increase in the number of cases for whom institutional care had been afforded had been 285. Had the Council possessed the accommodation to keep fully abreast of all demands, the number of additional beds occupied each year would have been nearly 350. In the absence of new legislation or a change of policy, it seemed unlikely that during the next few years the rate of increase would diminish. During the next five years it seemed probable that some 1,500 additional beds would be required. Upon the basis of an anticipated annual increase of 300 cases to be dealt with by way of institutional care and assuming that no relief worth speaking of would be available from contract institutions, it appeared that the Council could now depend upon some 2,750 beds being available for the cases for whom it had to provide, the total which would increase in the course of 1929-30 to 2,997, and might thereafter further increase to perhaps 3,297. This assumed that contract accommodation to the extent then available would continue to be available. Against this total had to be set responsibility to provide at the present time for 2,950 patients, *i.e.*, 200 more than the total beds then available, with the anticipation that this number would increase at the rate of 300 a year to, say, 4,600 by December, 1933. To meet this increased demand it was possible to rely upon, at the outside, 547 additional beds in the Council's own institutions, which meant that, at the end of 1933, accommodation would be short of demands by 1,300 beds or thereabouts.

77. To meet this shortage it seemed obvious that the Council must contemplate provision of a large new institution. Consideration was given to the possibility of providing such an institution on the vacant land attached to Farmfield, not at present occupied by the Council but let on an agricultural tenancy. This land, however, proved not to be suitable for the purpose proposed. Enquiry, therefore, is now being made for a site suitable for the erection of a specially designed institution.

78. In this connection, it has not been forgotten that at 1st April, 1930, the Council is to take over the whole of the accommodation at present allocated to various uses for the poor law needs of London, and that this accommodation will have to be reclassified. It seems highly improbable, however, that such a reclassification will set free any substantial block of poor law accommodation which will be suitable, either with or without material alteration, for use as institutional accommodation for the mentally defective. It has to be remembered that the need is for an efficient mixed institution for the mentally defective, and this calls for a specialised type of accommodation. What is wanted is a vacant site upon which can be planned a colony institution of the type required, which can be erected to some extent in sections to keep pace with increasing requirements.

Poor law accommodation—Possibility of securing a section usable for defectives.

Scouts and Guides.

Scouts and
guides.

79. During 1928, the scout and guide movement continued to form an important part of the training of patients at The Manor, at Brunswick House, and at the South Side Home. At each of these institutions membership of the movement has become, with few exceptions, an essential qualification for a trial in the outside world. To become a scout or a guide is a coveted honour among the patients. Only selected cases become members and they have privileges not allowed to other patients. At The Manor there are two companies of scouts (100 boys in all), four companies of girl guides (120 rangers and guides), 24 cubs and 24 brownies. At Brunswick House, there is one scout troop, composed of 18 patients, and at the South Side Home there is one company of girl guides, composed of 21 patients.

Male hospital assistants.

Male
hospital
assistants.

80. During 1928 it was decided to extend to the Council's institution for the mentally defective, as necessity might arise, and so far as the male staff only were concerned, the arrangement authorised in the previous year for application in the mental hospital service for the employment of "hospital assistants" (see Annual Report of the Council, 1927, Vol. II., Chapter II., par. 53, and par. 83 of Chapter II. of the present volume), *i.e.*, of persons employed in the care of patients, other than strictly nursing care, and possessed of natural qualities of temperament and physique fitting them for that work, but unable to secure the recognised diploma of proficiency in mental nursing required from those who are to remain as members of the recognised nursing staff.

Detention of Poor Law cases in "places of safety."

Defectives
maintained
in poor law
institutions.

81. In a circular letter (No. 712), dated 1st October, 1928, the Board of Control drew the attention of officers of local authorities to the Board's view that local authorities are precluded from using the provisions of section 15 of the Mental Deficiency Act, 1913, for an alleged defective who is already being maintained by poor law guardians in a poor law institution in which it is suggested the defective shall be detained as in a "place of safety," since section 15 requires that a defective shall be "found neglected, abandoned or without visible means of support," and shall be "taken" to a place of safety, which indicates the need for physical absence, however brief, from the poor law institution, before action under section 15 can be contemplated. Instruction, therefore, was given to those officers of the Council who were duly authorised to take alleged mentally defective persons to "places of safety," subject to certain conditions, to discontinue the practice, which had been followed for some years, of meeting a defective upon his preparing to take his discharge from a poor law institution, of which he had been an inmate, and immediately returning him for "place of safety" detention to the same institution. Though the Council had no alternative but to accept the Board's view, it was thought that the change of practice might make it impossible for some cases for whom institutional care seemed desirable to be dealt with, because of the difficulty of keeping in touch with the defective and of securing effective ground for action by way of petition after the defective had left the poor law institution. The result of the change in procedure may be the subject of comment in the next Annual Report.

Segregation and Marriage of Defectives.

Segregation
and marriage
of defectives.

82. During 1928, consideration was given to resolutions passed by the Leicester-shire, Southampton, Derbyshire and Cornwall County Councils expressing opinions (i) that segregation of mentally defective persons, unless accompanied by active measures for prevention of the propagation of the mentally unfit, is likely to impose an unfair and continually increasing burden on the public, and (ii) that legislation

should be promoted to make illegal the marriage of any certified mentally defective person and to legalise a system of voluntary sterilisation, with subsequent super- Sterilisation. vision, for mentally defective persons. Consideration was given to resolutions in somewhat similar terms, but expressing no opinion as to the advisability of voluntary sterilisation, passed by the Holland (Lincoln) County Council, and to a resolution passed by the Warwickshire County Council expressing the opinion that the burden of providing institutional accommodation for the mentally defective should be borne by the State, and, further, that legislation should be promoted in order to make illegal the marriage of any mentally defective person. It was decided to take no action on any of these resolutions.

Legal Proceedings.

83. It was necessary, during 1928, to institute legal proceedings, under section 53 of the Mental Deficiency Act, 1913, against the relatives of two patients, one at Farmfield and the other in the Caterham section of the Metropolitan Asylums Board certified institution, for knowingly assisting the patients to escape. In each case a conviction was secured. The defendants in the case of the Farmfield patient were bound over; in the other case, the defendant was sentenced to two months' imprisonment in the second division. Legal proceedings.

Contributions towards expenses of maintenance of defectives in institutions or under guardianship.

84. The following statement shows for the year ended 31st December, 1928, how the Council discharged the duty of making recovery, where possible, of such contributions as were available in relief of the expenses of maintaining defectives in institutions or under guardianship :— Number of cases under contribution and amounts collected.

TABLE 7.

(1) Cases under contribution.	(2) Sum accrued.	(3) Sum collected.	(4) Percentage of (3) to (2).	(5) Sum written off.	(6) Sum outstanding.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
1,690	10,710 13 11	9,963 13 11	93·03	710 9 10	36 10 2

85. Legal proceedings had to be taken during the year for the recovery of payment from persons liable to contribute with the following result :— Legal proceedings to enforce payment.

TABLE 8.

In 7 cases, orders made to pay amounts totalling :—		17 cases adjourned upon undertaking to pay being given.	In 6 cases, amounts paid at Court before proceedings, totalling :—		In 3 cases summons adjourned, <i>sine die</i> .
Arrears.	Costs.	Arrears.	Arrears.	Costs.	Arrears.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
32 17 8	— 18 0	103 15 6	25 15 1	1 0 0	16 7 —

Presentation of Petitions.

86. During 1928, petitions for orders sending defectives to institutions or placing them under guardianship were presented in 264 cases. In 256 cases orders were made; in only 8 cases was the petition dismissed. Petitions.

London cases granted leave of absence from certified institutions.

87. The following statement furnishes some interesting particulars as to London cases to whom leave of absence from certified institutions has been granted with a view to discharge at some later date :— Leave of absence on trial.

TABLE 9.

Name of institution.	On leave of absence on 1st Jan., 1928.		Granted leave of absence during 1928.		No. of licences revoked during 1928.		No. of cases on licence whose orders were discharged during 1928.		No. of cases on licence transferred to guardianship.		Died whilst on leave during 1928.		No. of cases still on licence on 31st Dec., 1928.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
The Manor, Epsom ...	59	49	33	33	18	7	2	2	—	1	—	—	72	72
Farmfield, Horley ...	18	—	22	—	8	—	3	—	2	—	—	—	27	—
Brunswick House, Mistley	7	—	2	—	1	—	—	—	—	—	—	—	8	—
South Side Home, Streatham	—	6	—	2	—	1	—	—	—	—	—	—	—	7
"Contract" institutions	24	34	21	18	5	6	4	7	2	2	—	1	34	36
Total ...	108	89	78	53	32	14	9	9	4	3	—	1	141	115
	197		131		46		18		7		1		256	

Leave of absence in daily employment.

In addition, the following were on leave of absence in daily employment on 31st December, 1928 :—from The Manor, 8 females ; from Farmfield, 1 male ; from the South Side Home, 8 females.

88. The proportion borne by the number of cases to whom licence was granted with a view to ultimate discharge to the total number of cases receiving institutional care was about 1 to 9, as compared with 1 to 10 during 1927, 1 to 12½ during 1926, and 1 to 15 during 1925. During 1928, 14 per cent. of the cases on licence failed to make good, and the licences had to be revoked. In 1927, there were 18 per cent., and in 1926, 19 per cent. of failures. It will be seen, therefore, that the experiment of granting licence is becoming more successful year by year.

Occupation during leave of absence.

89. The following statement shows the various occupations of defectives on leave of absence from institutions with a view to discharge who were residing within the London area on 31st December, 1928 :—

TABLE 10.

Occupation.				Number of defectives employed.	Occupation.				Number of defectives employed.
<i>Males—</i>					<i>Females—</i>				
Box making ...	...	...	...	1	Domestic work ...	...	...	...	17
Building trade ...	...	...	...	4	Dressmaking and millinery ...	...	...	...	1
Coal trade ...	...	...	...	3	Factory work ...	...	...	...	1
Dairy work ...	...	...	...	1	Kitchen work at restaurant ...	...	...	...	3
Decorating trade ...	...	...	...	1	Laundry ...	...	...	...	1
Domestic work ...	...	...	...	7	Metal work ...	...	...	...	1
Errand boys ...	...	...	...	3					
Factory work ...	...	...	...	4					
French polisher ...	...	...	...	1					
Hawking ...	...	...	...	1					
Metal work ...	...	...	...	1					
Motor driving ...	...	...	...	1					
Motor repairs ...	...	...	...	1					
Parcels clerk ...	...	...	...	1					
Pastry cook and under-chef ...	...	...	...	1					
Plumber ...	...	...	...	1					
Porters ...	...	...	...	3					
Potman ...	...	...	...	1					
Street sellers ...	...	...	...	2					
Rag sorter ...	...	...	...	1					
Shop assistants ...	...	...	...	3					
Tailoring ...	...	...	...	3					
Total ...	...	...	...	45	Total ...	...	...	...	24

Analysis of types of cases dealt with during the year.

90. The following statement furnishes an analysis of the various types of cases notified during the year 1928, which were dealt with by way of institutional care, guardianship or supervision during the year:—

TABLE 11.

	MALES.						FEMALES.						TOTAL.
	ADULT.			JUVENILE.			ADULT.			JUVENILE.			
	Super- vision.	Institu- tion.	Guardian- ship.	Super- vision.	Institu- tion.	Guardian- ship.	Super- vision.	Institu- tion.	Guardian- ship.	Super- vision.	Institu- tion.	Guardian- ship.	
HIGH GRADE, TRAINABLE, <i>and</i>													
1. Tractable	25	43	1	44	21	1	24	38	3	53	22	—	275
2. Troublesome	1	4	—	6	3	—	2	3	—	4	3	—	26
3. Had immoral relations	—	—	—	—	—	—	—	2	—	—	—	—	2
4. Had illegitimate child- ren	1	—	—	—	—	—	1	3	—	—	—	—	5
5. Epileptic	1	3	—	3	3	—	1	4	1	1	2	—	19
MIDDLE GRADE <i>and</i>													
1. Tractable	2	—	—	69	9	—	2	1	—	70	10	—	163
2. Troublesome	—	—	—	3	4	—	—	—	—	1	4	—	12
3. Epileptic	—	—	—	2	—	—	—	—	—	1	2	—	5
4. Dumb... ..	—	—	—	—	3	—	—	—	—	1	—	—	4
5. Blind	—	—	—	1	—	—	—	—	—	—	1	—	2
LOW GRADE (Idiots.)	—	—	—	4	1	—	—	—	—	7	3	—	15
POST-ENCEPHALITIS LETH- ARGICA CASES	—	2	—	1	4	—	—	1	—	—	—	—	8
Total	30	52	1	133	48	1	30	52	4	138	47	—	536

Deaths.

91. The following statement furnishes particulars of the causes of death during 1928, of defectives with whom the Council had a duty to deal. The average ages of cases who died while in institutions or under guardianship were, 12 years 3 months on admission, 15 years 5 months at death. The average ages of the cases who died while under supervision were, 10 years 2 months when placed under supervision, 15 years at death:—

TABLE 12.

Cause of Death.	MALE.						FEMALE.						TOTAL.
	SUPERVISION.			INSTITUTIONAL CARE.			SUPERVISION.			INSTITUTIONAL CARE.			
	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	
Tuberculosis	1	—	—	5	1	—	2	—	—	2	3	—	14
Tubercular peritonitis ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Chronic internal hydrocephalus	—	—	—	—	1	—	—	—	—	—	—	—	1
Cancer	—	—	—	—	—	—	—	—	—	1	—	—	1
Pneumonia	—	3	—	4	4	—	1	3	3	—	4	2	24
Do. and congenital brain disease	—	—	—	2	3	1	—	—	—	—	1	—	7
Cardiac failure	—	1	—	1	1	—	—	—	—	—	1	—	4

Cause of Death.	MALE.						FEMALE.						TOTAL.
	SUPERVISION.			INSTITUTIONAL CARE.			SUPERVISION.			INSTITUTIONAL CARE.			
	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	Feeble-minded.	Imbecile.	Idiot.	
Congenital brain disease ...	—	1	—	1	3	1	1	1	—	—	1	1	10
Hæmorrhage	—	—	—	—	1	—	—	—	—	—	—	—	1
Chronic parenchymatous nephritis	—	—	—	—	1	—	—	—	—	—	—	—	1
Kidney disease	—	—	—	—	—	—	—	1	—	—	—	—	1
Bronchitis	—	—	2	1	—	—	—	—	—	—	—	—	3
Meningitis	2	—	—	—	1	1	—	—	1	—	—	—	5
Epilepsy	—	1	—	1	5	1	1	2	1	1	1	1	15
Heart disease	1	1	—	—	1	—	—	—	—	—	—	—	3
Bulbar paralysis and idiocy ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Encephalitis lethargica ...	—	—	—	—	—	—	—	—	—	1	—	—	1
Influenza	—	—	—	—	—	—	—	1	—	—	—	—	1
Peritonitis	—	—	—	—	—	—	—	1	—	—	—	—	1
Paralysis of the throat ...	—	—	—	—	—	—	—	—	1	—	—	—	1
Causes not known	—	3	—	—	—	—	—	1	—	1	—	—	5
Total	4	10	2	15	24	4	5	10	6	6	11	4	101

Statistics.

Statistics of cases dealt with.

92. In the absence of any directions by the Board of Control as to the form in which statistics required by No. 28 of the Mental Deficiency Act Provisional Regulations, 1914, shall be submitted, the Council submits the following tables, which continue, for the year ended 31st December, 1928, the information tabulated on p. 44 of the last Annual Report (Vol. II.) :—

TABLE 13.

SOURCES FROM WHICH INFORMATION HAS BEEN RECEIVED OF CASES OF ALLEGED MENTAL DEFECT.

Source of information.	Period.	
	From 1st Apr., 1914, to 31st Dec., 1928.	During 1928 only.
London Association for Mental Welfare ...	1,046	101
Local education authority ...	4,530	351
Poor law authority ...	469	36
Police authority (Section 8) ...	907	88
Transfers from prisons (Section 9) ...	158	8
Transfers from industrial schools (Section 9) ...	383	15
Miscellaneous ...	1,972	154
Total number of cases of which information was received	9,465	753

ACTION TAKEN ON ABOVE CASES.

(a) Position at 31st December, 1928, with regard to the 9,465 cases referred to in the first column of the preceding table—

Detained—

In institutions provided by the Council ...	1,471
In institutions under contract ...	1,486
Under guardianship ...	57
In places of safety awaiting the presentation of a petition for an order ...	30

Total number of cases detained	3,044
Under statutory supervision...	2,071
Still under consideration ...	166
Total remaining on the active list	5,281

Removed from active list—

Discharged from institutional care	300
Removed to a mental hospital under Lunacy Acts	215
Removed to a State institution (violent or dangerous cases)	57
Dealt with through the poor law	652
Ascertained not subject for action	2,298
Died	662
	<hr/>
	4,184
Total	<hr/>
	9,465

(b) Summary of action taken during the year 1928 :—

Placed in institutions provided by the Council	139
Placed in institutions under contract	182
Placed under guardianship	5
Placed in places of safety until the presentation of a petition for an order	66
Placed under statutory supervision	407
Discharged from institutional care... ..	41
Removed to a mental hospital	20
Removed to a State institution	7
Dealt with through the poor law	67
Ascertained not subject for action	236
Died	101

Financial statement.

93. No. 28 of the Regulations provides also for the submission of financial statements for the year ending 31st March. Such a statement (prepared by the Comptroller of the Council) showing the cost to the Council of the administration of the Mental Deficiency Acts, from 1st April, 1928, until 31st March, 1929, forms Appendix I., and particulars of the Council's expenditure on the maintenance of defectives in its own institutions are given in Appendix II.

APPENDIX I.

FINANCIAL STATEMENT SHOWING THE COST OF ADMINISTRATION OF THE MENTAL DEFICIENCY ACT DURING THE YEAR ENDED 31ST MARCH, 1929.

(As appearing in Council's grant claim upon Board of Control).

	£	s.	d.	£	s.	d.	£	s.	d.
<i>Expenditure—</i>									
(1) Ascertaining numbers, supervising and dealing with defectives—									
(a) Salaries, etc., of officers	12,998	10	1						
(b) Travelling expenses	322	4	11						
(c) Costs and charges in legal proceedings ...	60	3	8						
(d) Temporary detention in places of safety, including expenses of conveyance, removal, etc.	2,664	13	1						
(e) Grants to voluntary societies	4,684	7	4						
(f) Other expenses (stationery, furniture, office expenses, etc.)	5,854	15	9						
						26,584	14	10	
(2) Institutional treatment under contract—									
(a) Accommodation and maintenance	99,298	11	1						
(b) Conveyance, removal, etc.	432	2	1						
(c) Other expenses	100	8	3	*					
						99,831	1	5	
(3) Guardianship—									
(a) Maintenance	2,687	10	9						
(b) Conveyance, removal and other expenses ...	166	19	8						
						2,854	10	5	
									129,270 6 8
(4) Maintained in institutions provided by the local authority—									
Brunswick House, Mistley (a)	3,882	18	7						
South Side Home, Streatham (a)	4,972	4	—						
The Manor, Epsom (a)	91,639	—	7						
Farmfield, Horley (a)	11,251	9	11						
									111,805 13 1
									241,075 19 9
<i>Income—</i>									
Contributions towards maintenance of defectives and costs recoverable						9,659	13	6	
Superannuation contributions, Central Office staff ...						23	5	—	
Charges to staff in Council's institutions for board and lodging, superannuation contributions, and miscellaneous income—									
Brunswick House	681	2	4						
South Side Home	882	18	5						
The Manor	12,725	7	4						
Farmfield	1,767	3	—						
						16,056	11	1	
Grant from Board of Control (b)						107,746	10	—	
									133,485 19 7
Net cost to the Council									107,590 — 2

(a) Including debt charges.

(b) Including gratuities in respect of criminal defectives.

APPENDIX II.

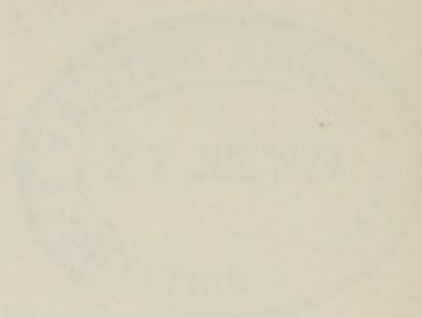
RETURN OF EXPENDITURE (AND COST PER HEAD) DURING THE FINANCIAL YEAR ENDED 31ST MARCH, 1929, ON MAINTENANCE OF DEFECTIVES AT INSTITUTIONS PROVIDED BY THE COUNCIL.

Heading.	Cost per patient weekly.								
	Brunswick House.		South Side Home.		The Manor.		Farmfield.		
Number of patients (average) ...	53.0		78.0		1,051.1		89.0		
Salaries and wages (excluding farm and repairs)—	s.	d.	s.	d.	s.	d.	s.	d.	
Medical staff		8.8		3.5		10.9	1	0.5	
Other institution staff	9	2.2	10	5.9	12	8.2	20	6.9	
Superannuation, insurance and travelling expenses of staff		.9		.6		1.0		2.2	
	9	11.9	10	10.0	13	8.1	21	9.6	
Less income from staff for board, lodging, etc.	1	1.8	3	4.2	3	0.8	3	9.3	
Net cost of staff... ..	8	10.1	7	5.8	10	7.3	18	0.3	
Provisions (including staff meals and net cost of farm produce, if any)	6	3.1	6	7.7	5	10.3	7	2.7	
Clothing and staff uniforms	2	5.1	1	2.8	(a) 1	6.4	(a) 2	7.7	
Medical requisites and drugs ... ..		.4		2.3		2.7		1.7
Fuel, light and water		11.0	1	4.6	2	6.2	3	5.0	
Washing and cleaning materials, etc. ...	1	10.9		4.8		7.7		11.6	
Furniture and bedding		4.2	(a)	7.4	(a) 1	3.6	(a)	9.9	
Removals, burials, etc.		1.0		0.1		0.4		2.5	
Rates, taxes, and insurance		4.8		8.9		11.7	1	11.9	
Stationery, postage and sundries		6.3		4.5	(a)	5.1		5.4	
Miscellaneous		4.6		2.9		2.8	1	2.1	
Rent of land and buildings		1.6	—		3	2.9	—		
Debt charges—interest and redemption	3	3.3		9.7		3.0	3	9.2	
Repairs and upkeep of buildings, etc. ...		9.7		8.4	1	5.9	3	2.2	
Additional equipment and special expenditure		4.7		0.8		8.5		1.7	
	26	8.8	20	10.7	30	0.5	44	1.8	
Less miscellaneous income (other than for maintenance of patients)	3	6.8		9.5	1	2.7	3	3.7	
Total cost per patient weekly... ..	23	2.0	20	1.2	28	9.8	40	10.2	
	Brunswick House.		South Side Home.		The Manor.		Farmfield.		
	£	s.	d.	£	s.	d.	£	s.	d.
Actual figures used in preparing above table—									
Expenditure (b)	3,694	19	4	4,249	13	5	82,333	19	2
Less income other than contributions towards maintenance of patients (b)	493	3	1	160	7	10	3,360	5	11
Net expenditure at institutions	3,201	16	3	4,089	5	7	78,973	13	3
	9,484	6	11	95,749	2	—			

(a) Including cost of materials for industries.

(b) The figures are less than those shown in Appendix I., because to meet the requirements of the Board of Control only the net financial result of the farming operations is included for cost purposes and superannuation contributions are deducted from wages. The net expenditure is the same in both tables.

London County Council

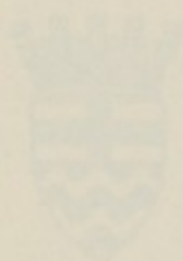


ANNUAL REPORT OF THE COUNCIL, 1928

Vol. III

PUBLIC HEALTH.

(Including the Reports for the year 1928 of the County Medical
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London County Council.

ANNUAL REPORT OF THE COUNCIL, 1928.

VOL. III—PUBLIC HEALTH.

CHAPTER I.

REPORT OF THE COUNTY MEDICAL OFFICER FOR THE YEAR 1928.

By F. N. KAY MENZIES, M.D., F.R.C.P. (Ed.), D.P.H., F.R.S.E., County Medical Officer of Health and School Medical Officer.

VITAL STATISTICS.

The population of the County of London at the census of 20th June, 1921, was 4,484,523 including members of the armed forces in London but excluding Londoners on active service and elsewhere. It is estimated by the Registrar General that the population resident in London at the date of the census was about 4,524,000, allowance being made in this estimate for persons absent on holiday when the census was taken. The Registrar General estimates the total population in the middle of 1928 to have been 4,469,000 including 10,800 non-civilians. The estimated populations of the metropolitan boroughs in 1928 are shown in the table on page 30.

The marriages registered in London during 1928 numbered approximately 41,392, being 18·9 per thousand of population, the rate for the preceding year being 18·2.

The births in London during 1928 numbered 72,352, as compared with 73,263 in the preceding year. The birth rate was 16·2 per thousand as against 16·1 in 1927. The lowest birth rate recorded in London was that for the year 1918, when the effects of the war were at their maximum. In that year, there were 70,976 births, this being only 1,377 less than in 1928. In the last quarters of 1927 and 1928, the births fell below the lowest number recorded for these quarters even during the war.

The birth rate for each metropolitan borough will be found in the table on page 30.

The fertility of married women of the better class must necessarily be considerably below that of the poorer class owing to higher age at marriage, and the consequent reduction in the length of their child-bearing period: but it can be shown that only a relatively small proportion of the difference in the extremes of social class is attributable to difference in the actual ages of the mothers.

In Vol. XIII of the census for 1911, Part II, page 21, the number of children born to married women living at the date of the census whose husbands' occupations form the lower of five "social groups" is shown to be about $1\frac{1}{2}$ times the number born to women whose husbands' occupations were classed as belonging to the highest of these social groups. The grouping is, however, faulty owing to the fact that the occupations include a number of persons of different social status: bank managers are included in the highest social group but so also are other bank employees: and in the lowest social group brickmakers for instance include persons of all grades whose occupation is concerned with the manufacture of bricks. The fertility of married women in relation to social conditions in London has been discussed from time to time in the Medical Officer's reports, and in that for 1909 (p. 10) it is shown that where allowance is made for the difference in ages of the married women the fertility of a group of metropolitan boroughs of the poorer class populations is about

1½ times that of a group of the boroughs having the highest proportion of well-to-do residents. The degree of contrast afforded by the two extremes of metropolitan borough populations is thus much about the same as that of the Registrar General's extremes of social groups according to occupation. More than three-fourths of the children of the better class group of boroughs are scheduled as of the elementary school class and consequently this group is not at all representative of the well to-do class.

An attempt has been made to assess the relative fertility of the mothers of children of the elementary school class and that of other mothers in the County, and the result indicates that the effective fertility of mothers of the elementary school class is 4·4 times that of other women actually, or, if allowance is made for difference in ages due to later marriage, etc., of the well-to-do, the proportion becomes reduced to 3·6 to 1.

As a consequence of the lower fertility of the well-to-do, their proportion of sterile marriages and of one and two child families must be much greater than among the poorer class. It will, therefore, necessarily follow that in any statement of the mortality rates among small as compared with large families for the population as a whole, the small families will contain a far greater proportion of well-to-do children with low mortality, while the large families will consist almost entirely of the poorer-class population with high mortality. It is this fact which renders almost useless for many purposes the mass of detail contained in the census volume of fertility of 1911. *The point is worthy of being stressed at the present time since an inquiry into the conditions of fertility is far more urgent now than in 1911 and it is imperative that the necessary details be again obtained in the census of 1931.* Better social class grouping will then be available and a clearer view of the relation of class to size of family and loss by mortality will be made possible if detailed analysis is made separately for each social group.

Deaths.

The deaths in the civil population of London during 1928 numbered 53,895, giving a death rate of 12·1 per thousand, this being the same as in 1927. The distribution of death by ages in 1928 and recent preceding periods is shown in the following table:—

Year.	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65+	All ages.
1919-22 ...	7,836	2,131	1,919	1,376	853	1,175	1,318	3,103	4,238	6,414	8,265	19,828	58,456
1923-26 ...	5,546	1,611	1,453	828	637	1,013	1,220	2,479	3,659	6,080	8,456	21,004	53,986
1927 ...	4,357	1,181	1,152	788	527	992	1,254	2,420	3,620	6,434	9,073	23,372	55,170
1928 ...	4,879	1,556	1,278	863	484	1,042	1,215	2,362	3,375	5,869	8,705	22,267	53,895

The reduction in the number of deaths in 1928 upon the figure for 1927 is distributed generally among the various causes of death, but, as would be expected in an ageing population, there was an increase in the recorded deaths from diseases of the heart and circulatory system and from old age. Measles was epidemic during the winter and the deaths from this cause numbered 1,358 as against 181 in the preceding year. Some increase also occurred in the deaths from whooping cough and enteric fever.

Fatal street accidents continued to increase in number, the total being 747 in the 52 registration weeks of 1928 as against 669 in 1927. Among children under 15 years of age, the deaths numbered 149, this being the same as in the preceding year.

The death-rates from all causes and from certain specified causes in each metropolitan borough and in London as a whole will be found in the table on page 30.

The weather conditions in the summer of 1928 were not so favourable to infant life as in 1927 and the deaths under one year of age per thousand births increased to 67 as against 59 in the preceding year; the latter rate, however, was the lowest

Infant mortality

recorded in London. It will be seen from the following table that the principal cause of the higher rate was an increase in the mortality from Diarrhoea and Measles :—

Cause of Death.	1911 to 1914.	1915 to 1918.	1919 to 1922.	1923 to 1926.	1924.	1925.	1926.	1927.	1928.
Measles	3.40	3.84	1.64	2.02	3.37	0.87	2.88	0.63	3.93
Whooping-cough ...	3.63	4.45	2.50	2.60	2.30	4.58	1.29	3.08	2.45
Influenza	0.27	1.10	0.81	0.38	0.62	0.38	0.34	0.46	0.23
Tuberculosis	3.40	3.20	1.52	1.26	1.20	1.48	1.14	1.05	0.95
Bronchitis	6.41	6.72	4.42	2.91	3.62	3.02	2.59	2.12	2.56
Pneumonia	12.28	14.96	12.60	11.51	14.13	12.27	10.59	11.37	13.03
Diarrhoea	24.28	16.10	12.16	9.36	7.89	9.72	10.78	6.97	9.52
Premature birth ...	18.16	17.42	17.00	14.74	15.89	14.31	14.11	13.94	14.22
Congenital defects ...	14.69	14.66	11.26	8.39	7.96	8.70	8.12	7.17	7.60
All causes	108	103	79	65	69	68	64	59	67

INFECTIOUS DISEASES.

The attack rates and death rates of the principal infectious diseases in London and the constituent metropolitan boroughs are shown in the table on page 30.

During 1928, London was invaded by smallpox of the mild or Western type Smallpox. which has been prevalent in the Midlands and the North of England for some years. A table is appended shewing the total number of cases and the boroughs in which they occurred. The infection was brought to the South of England by a man who had tramped from Lincolnshire to the East Preston Casual Ward, Sussex, where he arrived in a collapsed condition in December, 1927. His illness was not recognised as smallpox until secondary cases occurred a fortnight later and were then suspected to be smallpox. The Council's smallpox consultant was asked to see the cases at East Preston Casual Ward, and he confirmed the diagnosis. By this time large numbers of vagrants who had been infected in the casual ward had already left the institution and were scattering the disease over the countryside. During January, cases were reported in the casual wards at Edmonton, Barnet, Isleworth, Ware and Guildford. In several instances the services of the Council's consultant were utilised to confirm the diagnosis.

In the first two cases which occurred in London in 1928 the source of infection could not be traced. In the next case, however, which occurred in Southwark, the patient had just been discharged from the Southwark Hospital, which is situate in Camberwell, and on enquiry it was discovered that he had been infected in the hospital by a vagrant who was admitted from the Salvation Army Shelter, Blackfriars, on 1st January. This man was at first thought to be suffering from influenza and afterwards chickenpox. The real nature of his illness was realised when secondary cases occurred and he was removed to the smallpox hospital. Eight direct contacts developed the disease, and one of these, a cleaner employed at the hospital, gave rise to four other cases in her family.

The Holborn and Finsbury Hospital, Islington, was invaded by the disease in February, but prompt and vigorous measures reduced the outbreak to five cases. One man who was infected in the Holborn and Finsbury Hospital developed the disease in the Metropolitan Asylums Board Hostel, Holborn, but there was no spread from this particular source.

A more serious outbreak occurred in an institution in Wandsworth in March, when cases were discovered in the Springfield Mental Hospital, belonging to the Middlesex County Council. It is probable that the infection was introduced by a visitor from Middlesex where a number of cases had been occurring, with the result that 12 cases occurred in the Mental Hospital, including one female nurse. Owing

to the difficulty of dealing with insane patients it was decided to isolate the cases of smallpox at Springfield Mental Hospital instead of sending them to the smallpox hospital.

In April and May, 9 cases occurred in connection with Lambeth Hospital, but the original source of infection was never discovered.

In April, the outbreak amongst the general population commenced with cases in Wandsworth and Poplar. The source of infection in Poplar was not traced but in Wandsworth there is no doubt that the infection spread from the Springfield Mental Hospital. The outbreak in Wandsworth lasted until July, and produced 88 known cases, including those at the Mental Hospital. During the outbreak the Council's schools, and also business firms became involved. At one factory, in Balham, a "missed" case gave rise to 8 other cases and eventually the firm made vaccination a condition of employment with the result that they had no more cases of smallpox. The local sanitary authority decided to draw the attention of the public to the menace of the disease and the need for more stringent preventive measures. Over 90,000 letters urging vaccination were sent by the medical officer of health to householders in the borough with the result that over 13,000 vaccinations were performed within a few weeks. Notices urging people to be vaccinated were exhibited at cinemas and were also read out in places of worship in the borough.

Smallpox appeared in another institution, the St. Marylebone Workhouse, in June, where 29 cases occurred, including two cases which were transferred to the St. Marylebone Hospital, which is in the borough of Kensington.

During June and July, a few cases occurred in South Lambeth and were undoubtedly associated with the Wandsworth epidemic. The main outbreak in Lambeth was traced to a girl who lived in Wandsworth and whose mother was an in-patient at St. Thomas's Hospital in North Lambeth. The girl visited her mother at the hospital on 1st, 4th and 8th July. She was absent from school from 18th June—9th July and on her return was examined by the school doctor and found to be suffering from smallpox, the rash of which had appeared on 22nd June. As a result of her visits to her mother in St. Thomas's Hospital, a series of "missed" cases occurred in the neighbourhood of the hospital and the infection was taken to the hopfields in September by one of these "missed" cases. Hop pickers who had been infected returned to London and spread the infection in Poplar and North Lambeth. Cases of smallpox had occurred in Poplar earlier in the year but the infection appeared to have died down during the summer months until it was re-introduced by the returning hop pickers. In both Poplar, where 68 cases were notified during the year, and Lambeth, 52 cases, the unvaccinated school population was heavily attacked. The disease was aided in its spread by its mildness and by the frequency with which it was mistaken for chickenpox. In Lambeth also, there were several cases of deliberate concealment of contacts and a general unwillingness to submit to vaccination. In both boroughs the outbreaks were brought under control when chickenpox was made a notifiable disease under Section 55 of the Public Health (London) Act, 1891.

In October, cases of smallpox occurred in a dressmaker's establishment in West Ham, where the proprietress had suffered from an unrecognised attack. The disease spread rapidly amongst the unvaccinated population and by the end of the year an outbreak had become established. Up to May, 1929, some 500 cases had been reported. This serious outbreak on the eastern border of London has been a serious menace to London as many of the patients and their contacts are employed in, or visit, London daily. This applies particularly to the borough of Poplar which adjoins West Ham and where the intercourse with the heavily infected area is free and continuous.

On a review of the year's cases, it is seen that the present type of smallpox conforms very closely to previous experience in selecting the unvaccinated. It is

quite evident that vaccination protects equally against the mild and the more virulent forms of smallpox. A table shewing the vaccinal condition of the patients is appended.

Among the administrative measures taken during the year may be mentioned the order of the Ministry of Health by which it was directed that all casuals who were admitted to casual wards should be examined by the medical officer with a view to detecting any cases of smallpox. The order stated that, to facilitate examinations, the casuals should be stripped to the waist. This strict medical supervision made it unnecessary to close casual wards when a case occurred and soon resulted in stamping out the disease amongst casuals.

Strict precautions were taken to obviate the introduction of the disease into the Council's mental hospitals. The menace to these institutions was constantly arising as a result of outbreaks which occurred from time to time in poor law institutions where mental patients are kept under observation for certification under the Lunacy Acts before being drafted to a mental hospital. It became necessary, therefore, from time to time, to postpone the admission of patients to mental hospitals from the affected Poor Law institutions.

Other preventive measures consisted of the notification of chickenpox in Lambeth and Poplar and an intensive system of interchanging information concerning smallpox in London and the counties and county boroughs in the south-east of England and the Midlands. During the year the Council's public health department issued 389 circular letters containing information of cases of smallpox, movements of patients and contacts.

As in previous years the services of the Council's consulting staff were freely placed at the disposal of medical officers of health both in London and in areas contiguous to London. In London, 382 consultations were held and in 139 cases a diagnosis of smallpox was made. Consultations outside the County totalled 114, in 58 of which smallpox was diagnosed.

The following table shows the incidence of smallpox in England and Wales and London. It will be seen that the striking immunity which London had enjoyed up to the end of 1927 has ceased to operate. How long it will take to clear smallpox out of London is a matter for conjecture and depends largely on the response to appeals to the unprotected to be vaccinated.

Year.	England and Wales (including London).		London.	
	Cases.	Deaths.	Cases.	Deaths.
1919	311	28	24	6
1920	280	30	18	4
1921	336	5	2	—
1922	973	27	65	20
1923	2,504	7	11	1
1924	3,797	8	4	—
1925	5,354	6	10	1
1926	10,141	11	5	1
1927	14,787	36	5	2
1928	12,420	53	285	1

The following table shows the corrected number of notifications of smallpox in each metropolitan borough for the 52 weeks ended 29th December. (The figure quoted in the Annual Report of the School Medical Officer, p. 140, was provisional.) There was in addition a certain number of mild cases which passed unrecognised and escaped notification. This leakage was inevitable in view of the benign type of illness which generally prevailed and the liability in some instances of mistaking the disease for chickenpox.

London Smallpox Notifications for the 52 weeks ended 29th December, 1928.

Metropolitan Borough.	No. of cases Notified.	Not confirmed.	Total (Confirmed cases).	Metropolitan Borough.	No. of cases Notified.	Not confirmed.	Total (Confirmed cases).
Battersea ...	1	—	1	Poplar ...	68	3	65
Bermondsey ...	1	—	1	St. Marylebone ...	30	1	29
Bethnal Green ...	4	—	4	St. Pancras ...	2	1	1
Camberwell ...	2	—	2	Shoreditch ...	3	—	3
Chelsea ...	1	—	1	Southwark ...	21	2	19
Finsbury ...	1	—	1	Stepney ...	4	—	4
Fulham ...	1	—	1	Wandsworth ...	88	—	88
Hackney ...	1	—	1	Westminster City	2	—	2
Holborn ...	1	—	1	Woolwich ...	3	—	3
Islington ...	4	3	1				
Lambeth ...	53	—	53	Total ...	296	11	285
Paddington ...	5	1	4				

The vaccinal condition at the time of infection of the 285 confirmed cases was as follows :—

Vaccinal condition.				Ages.										
				0—	3—	5—	10—	20—	30—	40—	50—	60—	70—	80+	Total.
Successfully vaccinated ...	...	—	—	—	1	5	6	12	22	23	6	—	75
Successfully re-vaccinated	...	—	—	—	—	—	1	—	2	1	—	—	4	
Unvaccinated	8	8	52	80	30	12	5	4	3	2	—	204
Doubtful	—	—	—	—	—	1	—	1	—	—	2

Measles.

The deaths from measles totalled 1,358, this being the highest number since 1922. The death rates in the metropolitan boroughs are shown in the table on page 30.

The Medical Research Council published during the year the results of "An Inquiry into the Relationship between Housing Conditions and the Incidence and Fatality of Measles" undertaken by Dr. James L. Halliday in Glasgow (Special Report Series No. 120). The higher mortality and earlier age incidence of deaths in the poorer class areas compared with areas of better class populations observed in London are also shown in the Glasgow figures.

While stressing the difficulty of determining the general case mortality for various age groups, Dr. Halliday states that taking the case mortality at age 5–10 years as unity, the figure for other ages appears to be :—

Age.	Case mortality (Ages 5–10 as the unit standard).
0 – 2	10 to 20
2 – 3	8 to 11
3 – 4	3½ to 4½
4 – 5	1½ to 2

Dr. Halliday observes :—

"The special inquiry into the tenements demonstrated that a large number of children who had *not* had measles, who were presumably exposed, did not develop measles. The early cases of measles introduced into the tenements in September and October were followed by a considerable number of directly subsequent cases ; but first cases introduced during November to March were not succeeded by secondary cases, although measles at that time was at its highest in other parts of the city. The tenements which were first infected showed the largest attack-rate among susceptibles. The samples dealt with are small but they suggest that the development of a partial and probably temporary immunity is one of the causes in the decline of an epidemic." (p. 33.)

These results are admittedly based upon an inquiry too limited in scope to serve as a basis for anything but a tentative conclusion, but they open a question of considerable importance in their bearing upon school measures of control of measles outbreaks.

There is no evidence that the sudden addition of "susceptibles" owing to the high birthrate of 1920 resulted in any increase in the severity of the type of measles in London, the deaths showing no excess over the number in 1928, if the decline in the birthrate is taken into account.

In a paper read before the Royal Statistical Society in December, 1928 ("The Interpretation of Periodicity in Disease Prevalence") Mr. H. E. Soper endeavours to find a mathematical expression for the periodicity of measles epidemics in terms of "exhaustion" and "replenishment" of susceptibles in the population of Glasgow. He observes "although the course of epidemic measles in Glasgow during 40 years is far from yielding obedience to the simple law of infection that is modelled on mass action in a perfect mixture, yet the over-riding waves possess features similar to those shown proper to such an action."

Measles was prevalent in London both in 1917 and 1918 and since then has been epidemic in alternate years; it is therefore due next winter, and observation of the records suggests that it is likely to be accompanied by a prevalence of whooping-cough above the average.

There were 405 deaths from whooping cough in London during 1928 as compared with 548 in 1927. The present prevalence of whooping cough was foreshadowed by the marked increase towards the end of 1928, and during the first quarter of 1929 the deaths recorded have been in excess of any first quarter since 1918. The distribution of the mortality in the various metropolitan boroughs in 1928 is shown in the table on page 30.

There were 15,297 cases of scarlet fever notified in 1928 (52 weeks), the corresponding figure for 1927 being 13,178. The attack rate was 3.5 per thousand as compared with 2.9 in 1927. The deaths numbered 81 giving a death rate of 0.02 per thousand, and the case mortality was 0.5 per cent.

The notified cases of diphtheria numbered 12,155 in 1928 (52 weeks) as compared with 12,183 in 1927. This gives an attack rate of 2.7 per thousand, being the same as in the preceding year. There were 399 deaths as compared with 397 in 1927. The case mortality was 3.3, as in 1927.

Diarrhoea and enteritis caused 747 deaths among children under two years of age in London during 1928, this being 10.32 per thousand births. The corresponding rate in 1927 was 7.59.

There were 294 notifications of puerperal fever and 768 of puerperal pyrexia in 1928 (52 weeks) as compared with 261 and 892 respectively in 1927. The death-rates from puerperal fever and other accidents of childbirth per thousand births in each metropolitan borough, and the percentage of illegitimate births, in 1920-1927, together with the deaths in childbirth in 1928 are shown in the following table:—

District.	Puerperal Fever.	Other Causes.	Total.	Illegitimate births per cent. of total births.	Deaths in Childbirth, 1928.	
					Puerperal Fever.	Other Causes.
<i>West—</i>						
Paddington	1.48	1.81	3.29	8.3	3	4
Kensington	1.93	1.65	3.58	6.9	3	4
Hammersmith	2.09	1.75	3.84	5.4	5	5
Fulham	1.95	1.55	3.50	4.9	5	1
Chelsea	1.84	2.93	4.77	7.7	—	3
Westminster, City of ...	1.51	2.87	4.38	10.0	9	9

District.	Puerperal Fever.	Other Causes.	Total.	Illegitimate births per cent. of total births.	Deaths in Childbirth, 1928.	
					Puerperal Fever.	Other Causes.
<i>North—</i>						
St. Marylebone ...	2.07	2.60	4.67	10.2	4	5
Hampstead ...	1.74	1.63	3.37	6.7	1	5
St. Pancras ...	1.40	1.66	3.06	5.9	4	3
Islington ...	1.39	1.50	2.89	3.8	9	15
Stoke Newington ...	2.55	1.88	4.43	3.0	2	3
Hackney ...	1.75	1.50	3.25	2.8	4	11
<i>Central—</i>						
Holborn ...	2.87	0.61	3.48	8.7	1	—
Finsbury ...	0.95	1.36	2.31	3.7	4	1
City of London ...	2.01	1.00	3.01	8.9	1	—
<i>East—</i>						
Shoreditch ...	1.11	1.24	2.35	3.4	3	4
Bethnal Green ...	0.88	1.66	2.54	2.2	3	—
Stepney ...	1.04	1.41	2.45	2.5	5	4
Poplar ...	1.20	1.75	2.95	2.1	—	8
<i>South—</i>						
Southwark ...	1.26	1.43	2.69	3.9	6	5
Bermondsey ...	1.15	1.76	2.91	2.0	1	4
Lambeth ...	1.77	1.36	3.13	5.2	4	7
Battersea ...	0.91	1.88	2.79	3.4	3	4
Wandsworth ...	1.60	1.67	3.27	3.8	6	13
Camberwell ...	1.75	1.47	3.22	2.9	8	10
Deptford ...	1.63	1.74	3.37	2.6	7	4
Greenwich ...	1.01	1.37	2.38	3.0	3	4
Lewisham ...	1.05	1.91	2.96	3.3	4	3
Woolwich ...	1.16	1.64	2.80	3.0	8	5
London County ...	1.46	1.63	3.09	4.2	116	144

The table shows that during the period 1920-27 the boroughs with the lowest maternal mortality per 1,000 births were Finsbury, Shoreditch, Greenwich and Stepney, where the proportion of illegitimate births was also low; and that the highest mortality occurred in Chelsea, St. Marylebone, Westminster and Stoke Newington, in which areas the percentage of illegitimate births was generally high. The deaths per 1,000 births in 1928 are shown in the table on p. 30.

In considering maternal mortality rates from the statistical point of view, the most striking feature is the rapid decrease in deaths per 1,000 births down to 1901-10 and the small subsequent fall, notwithstanding increased administrative action directed to improvement of conditions associated with childbirth.

The Central Midwives Board was constituted in 1902 and gradually all practising midwives came under the supervision of the Board, so that since about 1910 in all except comparatively few cases mothers have had the help of properly trained nurse attendants, the Sarah Gamps of other days being by then practically extinct in London. The maternal mortality rate was already falling before 1900, but the rate of decrease was considerably greater during 1901-10, when the activities of the Central Midwives Board developed.

It may be that the result of the complete replacement of untrained by trained midwives effected improvements among the class of the population which was chiefly contributing towards the high maternal mortality rate; the reduction of the mortality in this class to a figure approximating to that of the class already well provided for would lessen the scope and rate of further decline.

In the following table the maternal mortality in London at various periods since 1860 is stated, (1) per 1,000 births, and (2) per 1,000 married women. Three assump-

tions have been made in arriving at these rates, (1) that all unmarried mothers are primiparae, (2) that the mortality among unmarried mothers is twice that of married, and (3) that nearly all unmarried mothers are under 25 years of age. These assumptions enable the effects of illegitimacy upon the maternal mortality rate to be approximately eliminated.

London.—Calculated deaths in childbirth (i) per 1,000 married women, (ii) per 1,000 births, at stated age periods 1861–1927; also fertility rates (legitimate births per 100 married women 15–45) and death rates from all causes among females 15–45:—

Period.	Mortality per 1,000 married women.				Mortality per 1,000 live-born children.				Fertility rates.	Death-rate all causes.
	15 –	25 –	35 –	15–45	15 –	25 –	35 –	15–45		
1861–70 ...	1.52	1.29	1.00	1.18	3.03	4.08	8.73	4.43	26.7	8.61
1871–80 ...	1.49	1.20	.92	1.12	2.93	3.71	7.93	4.08	27.3	7.86
1881–90 ...	1.39	1.07	.79	.99	2.81	3.44	6.99	3.78	26.2	6.79
1891–00 ...	1.21	1.02	.71	.90	2.61	3.50	6.80	3.76	24.1	5.95
1901–10 ...	.91	.72	.51	.65	2.09	2.65	5.12	2.93	22.0	4.70
1911–20 ...	.67	.58	.41	.50	2.29	3.00	5.89	3.35	15.7	4.69
1921–27 ...	.55	.48	.33	.42	1.89	2.67	5.03	2.91	14.9	3.45

The fact that so many assumptions have had to be made to arrive at a statement of the elementary facts relating to maternal mortality shows the difficulty with which statistical consideration of the subject is attended owing to the incompleteness of our records. *In order to define and direct measures for the improvement of maternal health it is essential that greater attention should be given to records bearing upon maternal conditions.*

The point of particular interest in the rates shown in the table is that, while the mortality per 1,000 married women in the period 1911–20 showed the continued decrease apparent in preceding years, the mortality calculated per 1,000 births *increased* during this period; and the rates for 1921–27 show insignificant decrease upon those for 1901–10. In short, the period of least improvement in maternal mortality is that in which the decline in fertility has been greatest.

Figures for the more recent periods, selected according to fertility as shown by the number of births, may serve to illustrate the inverse relation of fertility and maternal mortality per 1,000 births. Omitting the years of great influenzal epidemics and selecting those of high and low fertility since 1910, the deaths in childbirth from causes other than puerperal fever per 1,000 live births in London are as follows:—

Period.	Births (annual average).	Deaths from accidents of child birth (per 1,000 births).
1911–15	109,184	1.56
1916–17	89,943	1.70
1920–21	110,184	1.58
1926–27	76,044	1.67

It will be seen that *as the birth-rate falls maternal mortality, stated as a rate per 1,000 births, tends to increase.* Herein lies in large part the explanation of the apparent lack of improvement in maternal mortality, *as judged from such rates*, in spite of the ever-widening scope of administrative effort to improve the conditions of childbirth.

The deaths from puerperal fever have been excluded in the above table because the mortality from this cause is subject to periodical fluctuations which are closely related to the variations in the mortality of erysipelas, and, though in a less degree, of scarlet fever. See page 23.

It is impossible to state accurately the rates of maternal mortality, or, what is more important, the changes in the rate of fertility of women, without a knowledge of the age of the mother at each confinement. There is no requirement on registering or notifying a birth that the age of the mother should be stated; this defect in the records was referred to by Dr. T. H. C. Stevenson in his evidence before the National

Birth-rate Commission ("The declining birth-rate, its causes and effects," p. 367) as follows:—

Q. But is not this one of the arguments for a reformed Registration Act?

A. There are any amount of arguments for that.

Q. The Commission could help in that respect, surely?

A. I should be very glad if it would. If we only had the age of the mother recorded in the birth registers it would be of great use.

Q. And how little trouble that would be.

A. Yes.

Q. Might I ask you as a witness before this Commission whether in your judgment the Commission ought to press for a reformed Registration Act?

A. Yes, I think it is a matter which is quite urgent; we are pressing in that direction ourselves; but we should naturally welcome any pressure from any other source.

Q. Does it involve much expense?

A. It involves legislation, and the difficulty is for the Government to find time to deal with it.

This was in December, 1914, and nothing has been done.

It is as well to observe that the remarkable decrease of childbirth mortality per 1,000 married women in 1901-10 upon that of 1891-1900 is not entirely the result of a diminished risk in childbirth brought about by improved midwifery, etc. That will be clear from the accompanying figures:—

Decennium.	Death rates from all causes per 1,000 living at each age period. London.							
	Males.				Females.			
	20—	25—	35—	45—55	20—	25—	35—	45—55
1881-90	5.4	8.6	15.0	23.9	4.4	6.8	11.4	17.2
1891-00	4.6	7.4	14.2	23.1	3.5	5.6	10.7	17.1
1901-10	3.8	5.7	10.9	19.1	2.8	4.2	8.0	13.7

The decrease in the general mortality in 1891-1900 would have been greater but for the repeated epidemics of influenza and the associated higher mortality from diseases of the heart and respiratory system. The greatest improvement, however, in the mortality of married women per 1,000 births is shown in the table on p. 13 to have occurred at the younger ages, when influenza mortality played a relatively smaller part.

In considering the incidence of mortality according to age of mother during pregnancy and childbirth it is necessary to use the data for England and Wales as a whole in order to get numbers large enough to afford representative rates. During the period 1911-21 there were 35,824 deaths, classed to the following causes:—

Pre-natal causes—

Abortion	1226	3.4%
Ectopic gestation	769	2.2%
Other accidents of pregnancy	1,482	4.1%
	<u>3,477</u>	<u>9.7%</u>

Post-natal causes—

Phlegmasia alba dolens ...	615	1.7%
Puerperal embolism ...	2,675	7.5%
Convulsions and albuminuria	6,922	19.3%
Insanity, etc.	351	1.0%
Disease of breast	103	.3%
	<u>10,666</u>	<u>29.8%</u>

Natal causes—

Puerperal Hæmorrhage ...	4,858	13.6%
Other accidents of childbirth	3,913	10.9%
Puerperal sepsis	12,910	36.0%
	<u>21,681</u>	<u>60.5%</u>

Total 35,824 100.0%

Pre-natal,
natal and
post-natal
causes of
maternal
mortality.

The pre-natal, natal and post-natal mortality according to age of mother per 100,000 live born children was as follows :—

Age.	Death rates per 1,000 births.				Percentage of total deaths.			
	Pre-natal.	Natal.	Post-natal.	Total.	Pre-natal.	Natal.	Post-natal.	Total.
15—	·20	1·81	1·97	3·98	4·9	45·6	49·5	100·0
20—	·17	1·69	1·01	2·87	6·0	58·8	35·2	100·0
25—	·24	1·91	·94	3·09	7·7	61·9	30·4	100·0
30—	·37	2·41	1·10	3·88	9·6	62·2	28·2	100·0
35—	·73	3·32	1·42	5·47	13·3	60·7	26·0	100·0
40—45	1·59	7·35	3·32	12·26	13·0	59·9	27·1	100·0

It might be inferred from the mortality rates shown according to age of mother in the above table (col. 5) that the risk of a married woman in childbirth is considerably greater below 20 years of age than at age 20-25. This is, however, not the case. The mortality rates for women under 20 are weighted by the high proportion of single mothers, more than half the total births to women of this age being illegitimate. The mortality among single women in childbirth may be taken to be twice that of the married and on this assumption and with the aid of the fertility rates by ages given in the Registrar-General's Report for 1922 (Text p. 158) the maternal mortality among married women can be approximately stated, and is shown in the following table :—

Approximate death rates in childbirth of married women per 1,000 children born alive—England and Wales, 1911-1921.

Age.	Death rates per 1,000 births.				Percentage of total deaths.			
	Pre-natal.	Natal.	Post-natal.	Total.	Pre-natal.	Natal.	Post-natal.	Total.
15— ...	·13	1·18	1·28	2·59	5·0	65·6	49·4	100·0
20— ...	·16	1·52	·91	2·59	6·0	58·8	25·2	100·0
25— ...	·23	1·86	·92	3·01	7·6	61·8	30·6	100·0
30— ...	·37	2·41	1·09	3·87	9·5	62·3	28·2	100·0
35— ...	·73	3·32	1·42	5·47	13·3	60·7	26·0	100·0
40—45 ...	1·59	7·35	3·32	12·26	13·0	59·9	27·1	100·0
15—45 ...	·37	2·31	1·14	3·82	9·7	60·4	29·9	100·0

These corrected figures show that the maternal risk in childbirth is lowest at ages under 25 years and increases rapidly with age after the thirtieth year. The high post-natal mortality at the age period 15-20 is entirely due to the far greater risk of death from convulsions and puerperal albuminuria at this age, and especially in primiparae (see p. 22).

The mortality under 20 years of age would be considerably reduced relatively to later years if correction were made for the increased risk to the mother in the first confinement. In Matthews Duncan's analysis of the Glasgow and Edinburgh records for the year 1855 it is shown that 88 per cent. of the births to mothers under 20 were first births, and about 50 per cent. at ages 20-25, etc. Applying, *faute de mieux*, Matthews Duncan's figures to the rates for England and Wales, 1911-21, and assuming the mortality in first confinements to be twice that of subsequent confinements among mothers of the same age, the approximate maternal risk per 1,000 births in primiparae and in multiparae is found to be as follows :—

Age of mother.	All confinements.	First confinements.	Subsequent confinements.
15—	2·59	2·75	1·38
20—	2·59	3·44	1·72
25—	3·01	5·01	2·51
30—	3·88	7·16	3·58
35—	5·47	10·41	5·21
40—45	12·26	23·73	11·86

The figures in the last column show the true relation between maternal age and risk in childbirth, and may be compared with the death rates from all causes among all women at the same ages :—

<i>Age period.</i>	<i>Female death-rate from all causes (per 1,000 living, 1911-21).</i>	<i>Mortality of married women in childbirth excluding first confinements (per 1,000 births, 1911-21).</i>	<i>Fertility of married women according to age. England and Wales, 1920-21 (births per 1,000 women).</i>
15—	3.2	1.38	447
20—	3.8	1.72	359
25—	4.4	2.51	268
30—	5.0	3.58	197
35—	5.9	5.21	131
40—45	7.0	11.86	32

In the last column is shown the comparative fertility of mothers according to age in 1920-21 (see annual report of the Registrar-General for 1922, Text, p. 138), and it will be observed that as the fertility decreases the risk of confinement increases. The inverse relation of the figures in the last two columns is very close ; the observation on page 13 of *the inverse relation of maternal mortality and fertility at different periods of time therefore applies also to different ages of the mother.*

The data given above show that women marrying at 18 and having three children before the age of 25 years would have on the average a death risk per 1,000 children born of 2.07 ; while women marrying at 33 and having three children before the age of 40 would have a death risk of 5.86 per 1,000 births. The postponement of marriage in such an instance would presumably nearly treble the maternal risk per birth.

On the other hand if no women had borne children after the age of 35 in the period 1911-1921 the total births would have been less by 20.3 per cent. but the maternal deaths would have been reduced by as much as 34.0 per cent. Thus birth control may have a considerable effect upon the maternal mortality rates.

Figures relating to New South Wales during the eight years, 1893-1900, contained in Sir T. Coghlan's statistical essay on "The Decline in the Birth-rate," pp. 60 and 62, show that the maternal mortality-rate per 1,000 births would have been a minimum if each married woman had borne four children. The maternal risk in childbirth of a married woman bearing her first child was equivalent to a mortality of 8.8 per 1,000 births : the average risk among multiparae was as follows :—

<i>Children borne.</i>	<i>Average maternal risk per 1,000 births.</i>
2	6.74
3	6.32
4	6.05
5	6.21
6	6.23

After the fourth child the average risk increases with the number of children. The life-table for London for 1920-22 shows that the average births per married woman in that period was only 2.8.

In view of the higher risk of mothers in a first confinement, it is obvious that a decrease in the average size of the family will increase the proportion of first confinements and thus tend to increase the rate of maternal mortality when calculated per 1,000 births. The point is referred to by Dr. Janet M. Campbell in her third report on Maternal Mortality, p. 6, where a statistical note on the subject by Prof. Greenwood and Dr. T. H. C. Stevenson is added. It is shown that a population with a stated proportion of large families may have a maternal mortality rate which is equal to that of another population in which there are no large families. In France, where questions affecting fertility have received more attention than in this country, the number of first confinements is ascertained and it is thus possible to calculate the effect of varying proportions of primiparae in an actual population.

A comparison of the figures relating to primiparae and multiparae for the period 1911-13 and the year 1921 shows that the increased proportion of primiparae in France in the latter year would have sufficed to account for an increase from that fact alone of 12·6 per cent. in the maternal mortality rate upon that for 1911-13.

The trend of the rates since 1910 is best shown by comparison of the figures for 1911-15 with those for 1921-25, since in the intervening years war conditions and the influenza pandemics disturbed the continuity of the rates. Some increase is shown to have occurred in the pre-natal mortality rate while there is a slight general decrease in natal causes ; in post-natal causes there is a decrease, rather more marked at younger ages :—

Age.	Pre-natal.			Natal.			Post-natal.		
	1911-1915.	1916-1920.	1921-1925.	1911-1915.	1916-1920.	1921-1925.	1911-1915.	1916-1920.	1921-1925.
15— ...	·16	·10	·16	1·32	1·11	·93	1·64	1·05	·89
20— ...	·15	·15	·18	1·57	1·47	1·49	·94	·90	·83
25— ...	·23	·23	·24	1·77	1·98	1·84	·89	·96	·83
30— ...	·38	·38	·47	2·37	2·49	2·27	1·03	1·17	1·05
35— ...	·76	·70	·67	3·34	3·33	3·18	1·48	1·37	1·29
40—45...	1·69	1·50	1·69	7·36	7·35	7·05	3·25	3·38	3·09
15—45...	·38	·36	·40	2·30	2·35	2·23	1·14	1·15	1·04

Taking the total mortality as 100 for each age in 1911-15 and 1921-25, the proportion of deaths attributable to pre-natal, natal and post-natal causes compare as follows :—

Age.	1911-1915.			1921-1925.		
	Pre-natal. per cent.	Natal. per cent.	Post-natal. per cent.	Pre-natal. per cent.	Natal. per cent.	Post-natal. per cent.
15— ...	5·0	42·3	52·7	8·1	47·1	44·8
20— ...	5·8	58·9	35·3	7·1	59·8	33·1
25— ...	7·8	61·3	30·9	8·3	63·0	28·6
30— ...	10·0	62·7	27·3	12·4	59·9	27·7
35— ...	13·5	59·9	26·6	13·1	61·8	25·1
40—45...	13·8	59·8	26·4	14·3	59·6	26·1
15—45...	10·0	60·2	29·8	10·9	60·7	28·4

Among pre-natal causes there is a marked increase in the deaths attributed to ectopic gestation, but there is a decrease in the deaths due to abortion, a circumstance pointing to the possibility of the change being the result of altered practice in certification. The percentages of total deaths during pregnancy attributed to the headings of abortion, ectopic gestation and other causes varied considerably in different classes of administrative area, as appears from the following figures :—

Cause of death.	England and Wales.		London.		Rural Districts.	
	1911-15.	1921-25.	1911-15.	1921-25.	1911-15.	1921-25.
Abortion ...	32·9	30·5	28·5	27·4	33·4	35·7
Ectopic gestation ...	27·5	26·0	34·2	39·0	26·2	24·2
Other accidents of pregnancy...	39·6	43·5	37·3	33·6	40·4	40·1
	100·0	100·0	100·0	100·0	100·0	100·0

Trend of maternal mortality in relation to all other causes of death.

The mortality rates among married women in England and Wales for the two periods 1911-15 and 1921-25 in childbirth, and from all other causes, respectively, were as follows :—

Age.	Married women. Death rate per 1,000 living from—					
	Childbirth.			All other causes.		
	1911-15.	1921-25.	Decrease %.	1911-15.	1921-25.	Decrease %.
20— ...	1·04	·82	—21·1	2·88	2·58	—10·4
25— ...	·84	·70	—16·7	3·06	2·82	— 7·8
30— ...	·80	·68	—15·0	3·74	3·14	—16·0
35— ...	·78	·60	—23·1	5·20	3·92	—24·6
40—45 ...	·42	·34	—19·0	7·10	5·12	—27·9

The decrease per cent. in the mortality of childbirth among women under 30 years is shown to be greater than the decrease in other causes of death. For comparative purposes the mortality rates from all causes among spinsters may be stated :—

Age.	Spinsters—Comparative mortality from all causes.		
	1911-15.	1921-25.	Increase (+) % Decrease (—) %
20— ...	2·94	3·04	+ 3·4
25— ...	3·34	3·38	+ 1·2
30— ...	4·28	3·86	— 9·8
35— ...	5·56	4·42	—20·5
40—45 ...	7·38	6·00	—18·7

The increased mortality of single women at the younger age recalls the observed increase in phthisis mortality among young women since the war, to which reference has been made in previous reports.

Maternal mortality in relation to social conditions.

For the purpose of illustrating in a general way the relation of social condition to maternal mortality in London, a group (A), representative of the better class of population has been formed of the boroughs of Hampstead, Lewisham and Wandsworth, and another (group B), of poorer populations comprising the boroughs of Bermondsey, Bethnal Green, Finsbury, Shoreditch and Stepney. The contrast afforded between the two groups in respect of some relative rates for the year 1920-22 is as follows :—

	Fertility.		Infant mortality.	Death rates from all cause among women aged.	
	Total Births per 1,000 living.	Legitimate births per 100 married women.		15—25	25—45
Group A	18·2	13·7	60	2·31	3·59
Group B	28·4	21·2	92	3·23	5·87

Broadly speaking the figures of Group B are between 50 and 60 per cent. greater than those of Group A, the excess being much the same under all the heads shown. The boroughs of Group A, of course, contain a large proportion of persons of the same class as that of Group B, and the contrast is, therefore, not so great as would be shown by figures relating purely to the well-to-do class and to the poorer classes respectively.

It would be expected in view of these figures that the maternal mortality in Group B areas would be in excess of that of Group A ; actually, however, if the risk in child-birth of the mother in poorer districts were relatively as great as the risk of dying from all other causes, the maternal mortality of Group B would be nearly doubled.

The following table shows the approximate mortality in child-birth according to age of mother (i) per 1,000 legitimate live births, (ii) per 1,000 married women for the period 1920-1927 :—

Group.	Per 1,000 married women aged—			Per 1,000 legitimate births to women aged—		
	15—25	25—45	15—45	15—25	25—45	15—45
A	·50	·40	·40	1·79	3·44	3·05
B	·53	·50	·49	1·29	2·91	2·43

An adjustment had been made in order to minimise the disturbing effect of illegitimate births. In view, however, of the lower fertility and higher age of marriage among the well-to-do the higher mortality of first confinements makes the figures at ages 15-25 of doubtful value for purposes of comparison, the Group A figure being relatively over-stated; the rates for ages 25-45 are more fairly comparable, and show that the dominating factor in maternal mortality per 1,000 births is not social condition *per se*, but *the fertility of the women compared*.

Some observations on the subject of fertility in relation to social condition will be found on page 6.

In a supplement to the 44th annual report of the Local Government Board on Maternal Mortality, the death rates per 1,000 births during 1911-14 in the county boroughs of England and Wales are tabulated in order of puerperal fever mortality; and in "Maternal Mortality" (Reports on Public Health and Medical Subjects, No. 25, Ministry of Health) similar figures are given by Dr. Janet M. Campbell for the years 1919-1922. In both periods the county boroughs of Oldham, Bury, Rochdale, Dewsbury, Blackburn, Barnsley, Blackpool, Bradford, Huddersfield and Halifax appear in the first thirteen boroughs with highest maternal mortality, while West Ham, Worcester, Reading, Eastbourne, Bath, Bootle, Portsmouth, Southampton and Coventry are placed in both periods among the 22 boroughs of lowest mortality. Forming of these two groups, one, Group A, containing the nine boroughs of consistently *low* maternal mortality, and B, the ten boroughs of consistently *high* mortality the following contrasts are obtained :—

	Death-rate all causes.		Fertility rate.		Illegitimate births per cent. of total.		Maternal Mortality per 1,000 births.	
	1912-13	1920-21	1911-14	1919-22	1911-14	1919-22	1911-14	1919-22
Group A	13·1	11·8	20·5	17·1	3·66	4·29	2·94	2·94
Group B	15·2	13·8	16·2	14·7	5·25	6·20	6·41	6·71

In these two groups the maternal mortality rates are shown to follow the general death-rate and to vary inversely with the fertility. In the following table Group A comprises metropolitan boroughs with *low* maternal mortality both in 1911-14 and 1919-22 (Stepney, Shoreditch, Bethnal Green, Greenwich and Bermondsey), while Group B contains boroughs of *high* maternal mortality in both periods (Chelsea, Stoke Newington, Fulham, Kensington, Westminster and Hammersmith) :—

	Death rate all causes.		Fertility rate.		Illegitimate births per cent. of total.		Maternal mortality per 1,000 births.	
	1912	1922	1911-13	1921-23	1911-14	1919-22	1911-14	1919-22
Group A	15·7	15·1	24·2	20·5	2·34	2·67	2·54	2·66
Group B	13·0	13·1	17·4	14·6	5·63	6·71	3·92	4·57

In these two groups the maternal mortality varies inversely with the fertility, and also *inversely with the general death rate*.

It is, therefore, concluded that the general environmental conditions which determine the mortality from all causes are not the specific factor in the maternal mortality rate per 1,000 births, *but that this is dependent upon the relative fertility of the groups of mothers compared*. This conclusion is consistent with that reached by consideration of the movement of the maternal mortality rate in London in recent years, see page 13, and with the variation of fertility with age of mother, see page 16.

With regard to the groups of county boroughs, it will, of course, be apparent

that the contrast is largely one between the county boroughs of the north and those of the south. In the boroughs of Group B, however, a far higher proportion of married women are employed, and the lower fertility of this group would appear to be largely attributable to local economic conditions.

In a report by the Local Government Board on the provision made by public health authorities in respect of maternity and child welfare issued in 1917, figures are given, mostly for the year 1916, which show that 66 per cent. of the midwives in the county boroughs of Group A were trained and that they attended 75 per cent. of the births; the corresponding figures for Group B were 59 per cent. trained and 50 per cent. of births attended.

The metropolitan boroughs of Group A, with the exception of Greenwich, are served by the foremost obstetricians of the day through St. Bartholomew's, the London and Guy's hospitals, and their low maternal mortality has been attributed to the maternity work of these hospitals. It is, however, evident from a comparison of the percentage of illegitimate births in the two groups that other factors of social rather than administrative significance are predominant. There has not been any change in the maternity service of this area since 1910 which could have lowered its efficiency, yet the mortality in childbirth per 1,000 births from other causes than puerperal fever increased from 1·29 in 1911-14 to 1·36 in 1919-22 and to 1·73 in 1923-27.

Puerperal
fever.

In a report on maternal mortality in Aberdeen, 1918-27, with special reference to puerperal sepsis by Drs. J. Parlane Kinloch, J. Smith and J. A. Stephen (Scottish Board of Health, 1928), some interesting results are given of the bacteriological findings in 88 cases of puerperal fever (p. 52). It is shown that in 83 instances in which the result of the first blood culture is given as either sterile (61 instances) or as showing the presence of streptococcus hæmolyticus (22 instances) there were 12 fatal *sterile* cases (20 per cent.) and 17 (77 per cent.) fatal cases positive to this streptococcus. Of 32 cases with sterile blood on first test, but with positive uterine culture, 8 died (25 per cent.). The lower mortality associated with absence of streptococcus hæmolyticus from the blood when the uterine culture is positive may be taken to indicate that resistance to general streptococcal infection is an important factor.

The authors regard the higher incidence of puerperal sepsis in the practice of doctors as contrasted with that of midwives as being "due to contagion, being dependant in considerable part on a streptococcal carrier condition in doctors," and observe (p. 30) "there is reason to believe that the high incidence of puerperal sepsis in maternity institutions in Aberdeen is due to contagion." In this connection they say the most illuminating data so far as the Aberdeen statistics are concerned, are contained in a tabular statement showing the effect of referring back to their source cases sent into an institution by a doctor or midwife. "The figures show that the sepsis rate in the practice of midwives is 1·0 per 1,000 maternity cases, as contrasted with 1·7 in the practice of doctors and 4·5 in in-patient institutional practice" (p. 20). In view of the increasing confidence which is being shown in maternal institutions the conclusions of the authors deserve close consideration; the actual data (see Table XII, p. 46) are as follows:—

Nature of skilled attendance at delivery, or at death if before delivery—Aberdeen, 1918-27. Deaths per 1,000 deliveries.

Cause of death.	Cases delivered by		
	Doctors.	Midwives.	Institutions.
Sepsis	1·7	1·00	4·5
Other causes	5·2	1·75	10·4
Total	6·9	2·75	14·9

It will be seen that the mortality rate in respect of all other causes than sepsis *in which contagion can necessarily play no part* is, in institutions, twice that of the rate among doctors and six times that among midwives, and thus the "excessive mortality from sepsis occurring in the practice of maternity institutions" in Aberdeen which "has been largely due to gross contagion" is actually no greater than that of *non-contagious causes*. Clearly the institutional cases are "selected" and not comparable with those delivered by either doctors or midwives.

Sir Shirley Murphy initiated systematic inquiries into all cases of puerperal fever in London, and detailed statements of the facts elicited both in regard to puerperal fever and other accidents of childbirth occurring in the midwives' practice are given in the Annual Reports of the Medical Officer since 1904.

The result of routine inquiries in London during 1911-14 into deaths certified as due to puerperal fever showed that 196, or 30 per cent. of the total deaths from this cause had not been notified. Similar records for 1921-24 showed 27 per cent. not notified.

Under regulations of the Ministry of Health issued in 1926, any febrile condition other than puerperal fever, occurring within 21 days of confinement, is notifiable as puerperal pyrexia; of these pyrexias, many which prove to be puerperal fever, escape notification as such. This is evident from the fact that in 1927, 57 per cent. of the fatal cases of puerperal fever were not notified.

The records for 1911-14 show that 23 per cent. of the deaths from puerperal fever occurring in deliveries by doctors and medical students were not notified, as against 48 per cent. of cases in hospitals and poor law institutions, and 80 per cent. of cases which were either unattended or were attended by uncertified women (mostly miscarriages).

Among notified cases the case mortality was as follows :—

	Case-mortality.
Doctors and medical students	31.2 per cent.
Midwives	24.7 „
Hospitals and poor law institutions	43.0 „
Miscarriages and uncertified women in attendance	23.9 „
All cases	30.1 „

In the above figures, cases in which the midwife was unable to deliver without the assistance of the doctor are included among doctor's cases; and excluding these, it is found that 26.4 per cent. of the total notified cases occurred in the practice of midwives. The total still births notified in the same period under the Notification of Births Act was 10,179, and the number reported by the midwives in their practice was 2,561, or 25.2 per cent. The close approximation of these two percentages suggests that there is no markedly smaller incidence of puerperal fever in the midwives' practice and that the higher fatality in cases delivered by doctors and in institutions results from the transfer by the midwife to a doctor or to an institution of cases in which there are indications of difficult or complicated labour. The duty is laid upon the midwife of transferring such cases by the rules of the Central Midwives Board.

The case-mortality from puerperal fever in relation to parity was ascertained, with four exceptions, in the midwives' practice of London in 1911-14, the figures being as follows :—

Number of confinement.	Cases of puerperal fever.	Deaths.	Case Mortality.
1st	90	22	24.4
2nd and 3rd	102	26	25.5
4th, 5th and 6th	99	26	26.3
7th and above	73	16	21.9

Relative incidence in midwives' and doctors' practice.

Case-mortality in relation to parity and age.

The figures seem to indicate that the fatality is not greatly dependent upon parity. The Aberdeen figures for 1918-1927 appear to show that, while relatively to other causes of death, puerperal fever is of less importance in first confinements than later, the mortality per 1,000 births is considerably higher. The deaths according to parity (Table X, p. 43) were as follows:—

	First confinements.			Subsequent confinements.		
	Deaths.	per cent.	Deaths per 1,000 births.	Deaths.	per cent.	Deaths per 1,000 births.
Sepsis	20	22	·23	49	31	·17
Abortion	3	3	·03	10	6	·04
Albuminuria and convulsions ...	26	28	·30	13	8	·04
Hæmorrhage	6	7	·07	20	13	·07
Phlegmasia, etc., uncontrollable vomiting, ectopic gestation ...	6	7	·07	14	9	·05
Other causes in pregnancy ...	7	7	·07	18	11	·06
do. do. childbirth ...	6	7	·07	13	8	·04
do. do. puerperium	18	19	·21	23	14	·08
	92	100	1·05	160	100	·55

If the sepsis deaths per 1,000 births had been the same in first as in subsequent confinements, there would have been 15 deaths from this cause instead of 20 under the heading of first confinements on the above figures.

The case-mortality from puerperal fever according to the age of mother in the 1,424 cases notified in London during 1911-14 was found to be as follows:—

Age of mother.	Case mortality per cent.
15—	18·3
20—	25·3
25—	31·0
35—45	33·7

The figures show clearly the tendency of the resistance to puerperal fever to diminish markedly with age. The lower mortality of primiparae (among the same cases see above) is consistent with the higher resistance at younger ages and lends support to the view already expressed that resistance to the infective process, rather than the severity of the confinement, is the predominant factor.

Considerable differences are found in the proportion of cases of puerperal sepsis notified in 1911-14 by midwives and doctors respectively in different metropolitan boroughs. In Poplar, for instance, 44 cases were notified in midwives' practices as compared with 26 notified by medical practitioners; while in the neighbouring borough of Stepney 90 cases were notified by doctors and 21 by midwives. Grouping together the four boroughs in which the midwives' cases are highest (A) and those in which doctors' cases are highest (B) the following contrast is obtained:—

Borough.	Puerperal fever cases notified in practice of			Deaths per 1,000 births.	
	Doctors.	Midwives.	Others.	Puerperal fever.	Other accidents of childbirth.
<i>Group A</i>					
Fulham	40	40	25	1·7	1·5
Shoreditch	15	14	6	1·1	1·6
Poplar	26	44	10	1·7	1·3
Southwark	25	25	26	1·0	1·4
	106	123	67	1·37	1·45
<i>Group B</i>					
Stepney	90	21	17	1·5	1·3
Bermondsey	38	4	9	1·0	1·1
Lambeth	66	14	13	1·6	1·4
Lewisham	23	3	2	1·2	1·8
	217	42	41	1·32	1·40

There is nothing in these figures to support the hypothesis that the doctor is a carrier of puerperal infection, since in the boroughs where obviously the greater proportion of births have been delivered by doctors or medical students the puerperal fever mortality is lower than in the group where midwives' cases are in a majority, without any compensating excess in deaths from other causes.

The Registrar-General in his annual report for 1923 (Text p. 96 et seq.) directs attention to the remarkable increase in maternal mortality from sepsis in the latter months of 1919 and the beginning of 1920, and shows the rates in relation to the demobilisation records of 1919. He observes: "It has been suggested that the explanation of this correspondence between demobilisation and puerperal sepsis resulting from conceptions of the same date may be provided by the liability of the site of gonorrhœal infection to secondary streptococcal invasion." The quarterly rates which he gives on page 98 show, however, that the increase in mortality had already commenced in the second quarter of 1919 when demobilisation could not have entered into the question, and, further, the increase in mortality shown to have occurred in 1914 cannot be associated with any event of a similar kind. The epidemiologist will in fact hardly accept any hypothesis of the kind suggested as accounting for the facts in view of the observation of Dr. G. B. Longstaff in a paper read before the Epidemiological Society nearly 50 years ago, in which he pointed out the close inter-dependence of movements in the mortality from erysipelas, puerperal fever and scarlet fever ("Studies in Statistics," Dr. G. B. Longstaff, p. 310). For the purpose of illustrating the relative variations in puerperal fever mortality and erysipelas deaths in England and Wales a diagram is shown facing page 25. It will be seen from the upper contour that during the years 1911-14 and 1921-27 the fluctuations in mortality of the two diseases show remarkable similarity; and the variations in puerperal sepsis mortality of the intervening years must therefore be regarded as due to the causes, whatever they may be, which have determined the variations of the rates in preceding and succeeding years.

Fluctuations
in annual
sepsis rates.

In the lower contour the deaths from erysipelas among women aged 15-45, above and below the mean, for the years 1913-27, are shown in relation to the deviation of the actual puerperal fever mortality from the rate which would be expected if the puerperal fever deaths stood in a constant relation to the deaths from all other causes in childbirth, in which of course no zymotic influence comes into question: thus the mortality per 1,000 births in childbirth from causes other than puerperal fever in England and Wales during 1913-1917 averaged 2.577 while the puerperal fever rate was 1.461, or .567 that of the former: and if the mortality from other causes in each year be multiplied by .567 rates approximating to the actual puerperal fever rate will be obtained. The divergences of the actual rates from these calculated rates are shown by the contour in the lower section of the diagram to be similar to the divergence of the erysipelas deaths in each year from the average deaths for the same period: a result consistent with the view that the two diseases have a zymotic association, in which other causes of maternal mortality have no part.

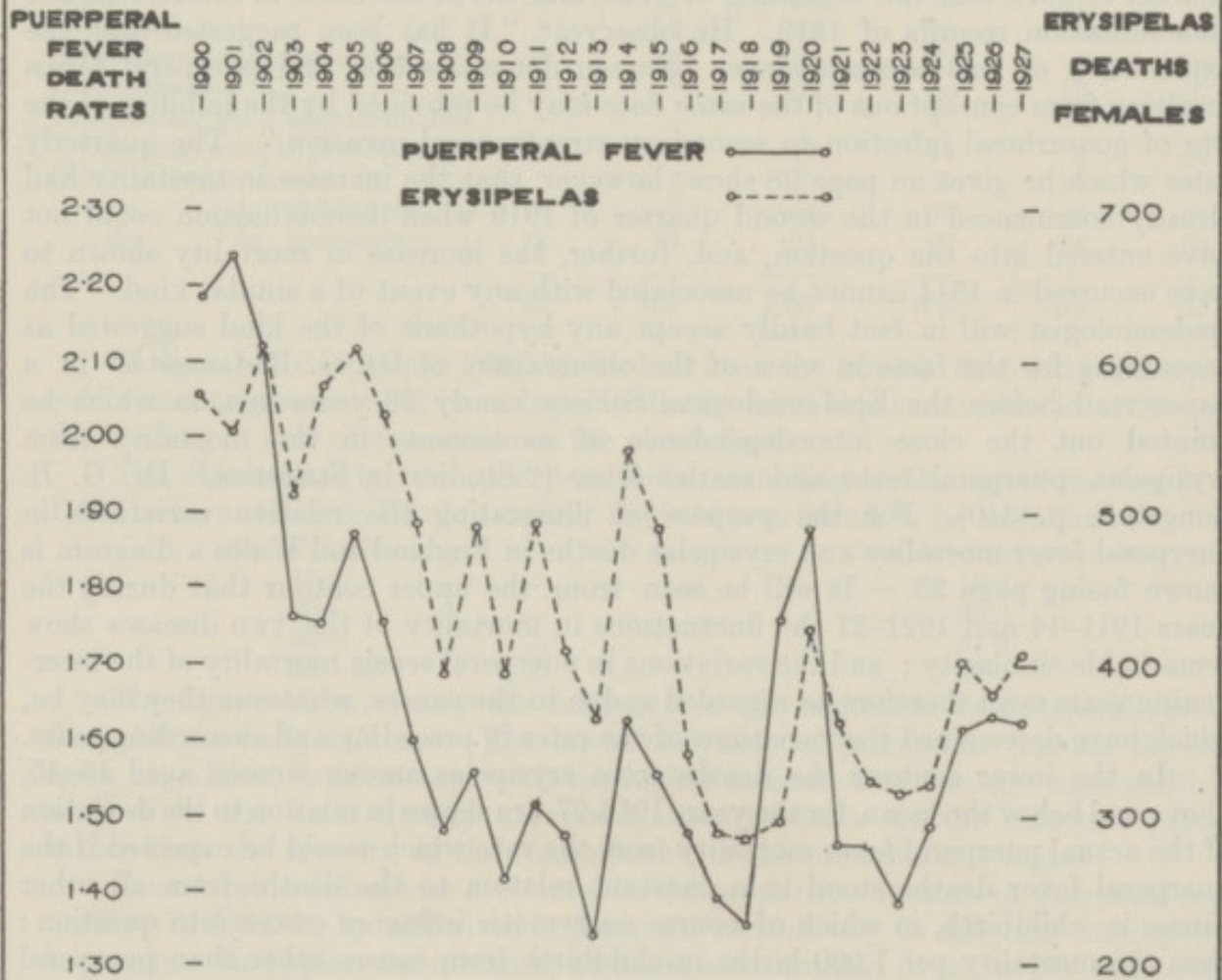
Dr. Longstaff showed (*loc. cit.*) that the annual rainfall influenced in a general way the prevalence of the zymotic diseases with which he dealt in his paper.

It will be observed that the maternal mortality rates have been calculated per 1,000 live births; still births and miscarriages have been ignored. With regard to still births, it is not found that social condition influences their proportion to live births in any considerable degree so far as can be observed in the metropolitan boroughs, nor has their proportion to live births varied since 1910 sufficiently to affect in any measure the comparability of the rates shown. With regard to miscarriages no information is available. The percentage of pregnancies terminated by stillbirth or abortion is variously stated as being from 14 to 30 per cent. (Problems of Population and Parenthood, p. lxxx). The figures for Aberdeen show that in 1918-1927 of 252 deaths associated with childbearing 109 or 43 per cent. occurred after stillbirth or abortion or before parturition.

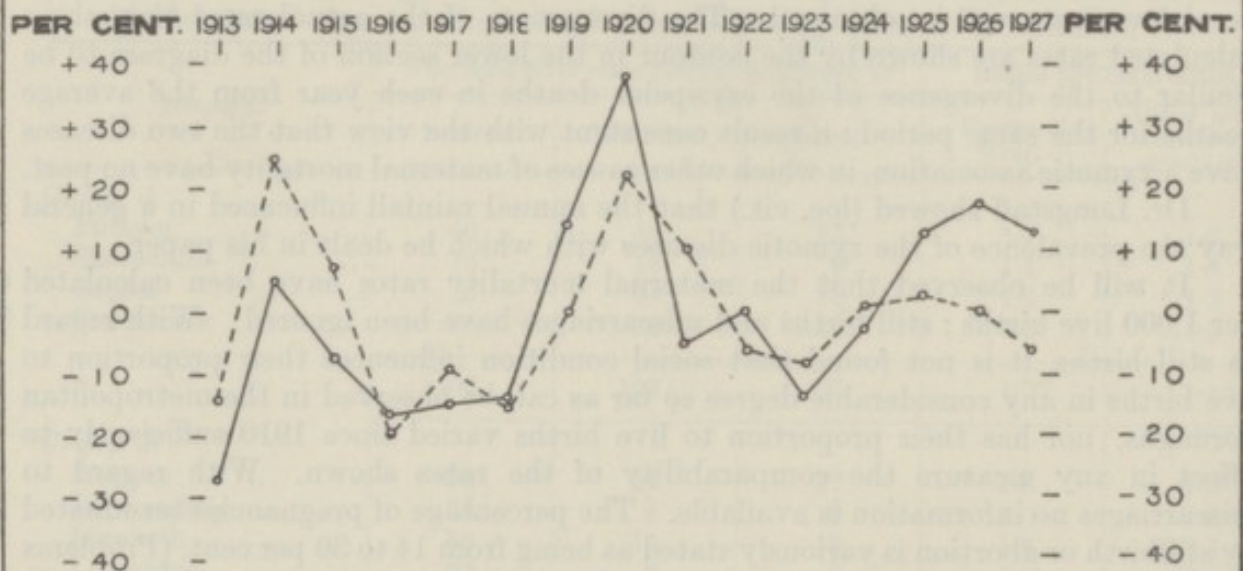
Concluding
observations.

PUERPERAL FEVER AND ERYSIPELAS ENGLAND AND WALES

I. ACTUAL INCIDENCE 1900—1927



II. DEVIATION FROM MEAN INCIDENCE 1913 — 1927



No allowance has been made in regard to the percentage of sterile women, as no reliable figures are available. The percentage is no doubt higher among the well-to-do, and therefore affects the comparativity of the figures for different social classes. So far as birth control plays any part in reducing fertility there must be added to the proportion of naturally sterile women a proportion (and, one may suppose, a considerably increased proportion) of sterile marriages.

A factor which is of great importance in the problem of maternal mortality is one upon which no information is available, namely, the effect of the spacing of confinements. The normal rhythm of conception at the ages of higher fertility is about two years, and any reduction *or* increase in this interval may be attended with increased risk to the mother; a shorter interval giving less opportunity of recuperation while a longer interval brings conditions physiologically more approximating to primiparity. The result of prolonging the normal interval by restriction is to increase the maternal risk stated per 1,000 births.

The proportion of unwilling mothers must be increased in time of economic stress and unwillingness may prejudice the normal risk; and thus if it is granted that economic conditions are the cause of the declining birth rate, the inverse relation of fertility and maternal mortality will tend to be accentuated.

Reasons have been advanced in earlier reports for the view that economic conditions are in the main the cause of the decline in the birth-rate; and since it is here shown that there is an inverse relationship between fertility and the maternal mortality rate per 1,000 births, it follows that this rate will tend to be sustained unless the birth rate increases. The question of the increased burden of parenthood is discussed in the report of the Medical Officer for 1926, p. 5, to which reference should be made.

Summary.—The facts revealed by the foregoing examination may be summarised as follows:—

(1) The conspicuous decrease in maternal mortality in the period 1901–1910 is associated with improved midwifery, but with the complete displacement of the untrained midwife the scope of further decrease in maternal mortality necessarily became more limited (pp. 12, 13).

(2) Mortality in childbirth is shown to vary with the general death-rate (pp. 13, 16) but the rapid fall in the birth-rate discloses that fertility is the specific factor in maternal mortality (p. 13).

(3) Marked changes in the fertility-rate mask the effects of later enlargement of the scope of administrative action in regard to maternal and child welfare (p. 13).

(4) Pre-natal causes of death increase relatively in importance with advancing age, while post-natal causes decrease (p. 15). Corrected figures show that the risk in childbirth is lowest among mothers under 20 years of age, and increases rapidly with age (p. 15).

(5) No general change has occurred in the relative mortality from pre-natal, natal and post-natal causes in 1921–25 as compared with 1911–15, but an increase has occurred from pre-natal causes among women under 25 years of age (p. 17).

(6) It is made clear that birth-control may have considerable effect upon the maternal mortality rate per 1,000 births (pp. 16, 25). The influence of the size of family on the maternal mortality rate is discussed (p. 16).

(7) The mortality from all other causes than childbirth among young married women has decreased, while the death-rate of young single women has increased in 1921–25 as compared with 1911–15 (p. 18).

(8) Economic conditions are the governing factor in local variations of fertility and thus of maternal mortality (pp. 19, 20).

(9) The “carrier” hypothesis of convection of puerperal fever infection, and the resistance factor, are discussed (pp. 20, 22).

(10) It is shown to be improbable that infection brought home on demobilisation after the European War was responsible for an increased puerperal fever mortality (p. 23).

(11) The possible psychological effect of adverse economic conditions upon the maternal risk is referred to (p. 25).

(12) *The need for more detailed records relating to the maternal state is stressed throughout*, and the tentative character of many of the rates shown, owing to the lack of necessary data, must be borne in mind.

Conclusion.—This statistical analysis shows that the sustained rate of maternal mortality, in spite of improvements in the maternity service, is in general terms the result of the repression of natural fertility brought about by economic conditions.

Enteric fevers.

There were 580 notifications of enteric fevers in London in 1928 (52 weeks), as compared with 322 in 1927. The deaths in the calendar year numbered 51, as against 30 in 1927, when the mortality was the lowest recorded.

Outbreak of paratyphoid B fever in July—August.

A widespread outbreak of paratyphoid B fever occurred in London and certain neighbouring areas in July and August. The outbreak, which was remarkable for the mildness of the majority of the cases, was attributed to infected cream. A detailed report on the prevalence by the Council's Medical Officer of Health may be obtained from the Council's publishers.*

There were 36 instances in 1928 where two or more cases of enteric fever occurred in the same house or institution during the year. Of these 14 were associated with the paratyphoid outbreak previously referred to, and, including these, the number of which is shown in parenthesis, there were 27 (10) instances of two cases in the same house, 4 (2) of 3 cases, 2 of 4 cases, 1 of 5 cases and 2 (2) of 6 cases.

Anthrax.

Three cases of anthrax, one of which proved fatal, were notified in London during 1928; the diagnosis was in each case confirmed by bacteriological examination. The patients were all infected by handling foreign hides or skins, which are known to be a fruitful source of infection. They were all admitted to Guy's Hospital. One was treated with anti-anthrax (Sclavo's) serum and the other two with novarseno-benzol.

Plague, cholera and typhus fever.

No cases of plague or cholera occurred in London in 1928. There were two notifications of typhus fever, in both of which the final diagnosis was not without doubt.

Cerebro-spinal fever.

Seventy cases of cerebrospinal fever were notified during the year, but in 14 of these the diagnosis was not confirmed. Of the remaining 63 genuine cases, 41 (65 per cent.) proved fatal. In addition, 25 fatal cases which were not notified were discovered through the medium of the Registrar-General's death returns, making a total of 66 fatal cases during the year.

Poliomyelitis and polio-encephalitis.

Fifty-four cases of poliomyelitis or polioencephalitis were notified during the year, but in 12 of these the diagnosis was revised. Of the 41 confirmed cases, 9 (19 per cent.) proved fatal. In addition, 5 fatal cases which had not been notified were recorded in the Registrar-General's death returns, making a total of 14 fatal cases for the year. The arrangement whereby children suffering from infantile paralysis are admitted for treatment to the Metropolitan Asylums Board's institution, Queen Mary's Hospital, Carshalton, for residential treatment was continued throughout the year. At the end of 1927 there were 47 cases under treatment. During 1928, 27 children were admitted (including 4 re-admissions), 48 were discharged, and one child died, thus leaving 25 patients under treatment at the end of 1928.

Encephalitis lethargica.

One hundred cases of encephalitis lethargica were notified, and of these 24 were not confirmed. Of 83 actual cases, 27 (32 per cent.) proved fatal. In addition, 22 fatal cases had never been notified, and in many of them the onset of the post-encephalitis symptoms were not observed until some years had elapsed since the primary illness, often of a mild nature, had occurred.

Table of age incidence (actual cases).

Age periods.	Under 3.	3-5.	5-10.	10-20.	20-30.	30-40.	40-50.	50-60.	Over 60.	Total.
Cerebro-spinal fever...	54	3	11	9	6	2	2	—	1	88
Poliomyelitis and polioencephalitis...	21	4	10	11	5	—	—	1	—	52
Encephalitis lethargica ...	1	5	10	19	25	9	13	14	9	105

Table of yearly prevalence (notified cases).

Year.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Cerebro-spinal fever	425	390	218	197	154	103	86	65	93	93	83	93	70
Poliomyelitis and polioencephalitis	190	59	50	96	49	57	40	111	116	55	95	86	54
Encephalitis lethargica	Not notified until 1920				140	233	66	98	600	293	224	142	100

The problem of finding the cause and the cure of encephalitis lethargica has been brought no nearer to solution during the year. Children who are suffering from the after effects of the disease have been admitted to the encephalitis lethargica unit of the Metropolitan Asylums Board's Northern Hospital, Winchmore Hill, a report on which appears on page 141 of this report. During the year a number of adults who have suffered from the disease have been admitted to certified institutions, as, for instance, the Manor Mental Hospital, but there are still many who cannot be dealt with by this means. Attention has frequently been called to the necessity for making some special provision for these cases, and negotiations have been carried on between the Council, the Ministry of Health and the Metropolitan Asylums Board, as a result of which it has been found possible to provide accommodation at the Northern Hospital for 50 persons of 16 years of age and over who are suffering from the after effects of encephalitis lethargica. Patients will be admitted to these beds in May, 1929, and while it cannot be hoped, in many cases, that any treatment will prove of a curative nature, it is hoped that the condition of the patients will be improved during their stay and the relatives will be relieved, for a time at least, of the burden of looking after these unfortunate sufferers who are so entirely unfitted for the ordinary conditions of social life or for treatment in the general hospitals. It has been arranged that admissions to these beds, as in the case of children, will be secured through the Council or the metropolitan boards of guardians.

The deaths from influenza during 1928 numbered 590 as compared with 1,815 in 1927. Influenza was not epidemic in 1928, but during the last weeks of the year there were signs of an epidemic in the north which later became general. In the first quarter of this year there were 2,703 deaths, this being in excess of the deaths in this period in any year since the great epidemic of 1919. The maximum number of deaths was recorded in the eighth week, and this falls midway between the time at which it might have been expected on the hypothesis of the periodicity of Dr. Stallybrass (the 50th week of 1928), and that of the late Dr. Brownlee (the 15th week of 1929); but it is within three weeks of the time assigned by the periodicity described in the annual report of the medical officer for 1925 (p. 36).

The epidemic was remarkable for the high concurrent mortality from diseases of the heart and respiratory system, and also for the excessive mortality at the higher ages. The following figures show how the epidemic compares with that of 1919:—

	Influenza.	Deaths. Disease of the Heart.	Diseases of the Respiratory System.
1919—1st quarter ...	3,487	2,296	5,468
1929— „ ...	2,703	5,599	7,018

and in the following table the age distribution of deaths is shown in comparison with similar figures for certain earlier epidemics:—

Age-group.	1890 (year)	1900 (year)	1919 (1st quarter)	1929 (1st quarter)
0—	91	53	79	60
5—	32	19	33	9
15—	68	41	121	24
25—	107	69	242	29
35—	173	110	127	75
45—	200	141	131	134
55—	138	184	117	193
65—	119	193	99	229
75+	72	190	51	247
	1,000	1,000	1,000	1,000

Rheumatic
fever.

Acute rheumatism among children under 16 years of age is notifiable in three metropolitan boroughs under local notification orders, namely, in Paddington, Kensington and Holborn. The deaths in London during 1928 numbered 165, as compared with 169 in 1927.

In view of the suggestion that the incidence of the disease is governed by social conditions, the death-rate in London for the ten years, 1901–10, has been calculated for five groups of boroughs corresponding with those for which similar figures relating to tuberculosis are given in the Medical Officer of Health's report for 1911 (page 42). The resulting death-rates afford no evidence whatever of there being any relation between fatal cases of rheumatic fever and social condition in either sex or at any age period.

Tuberculosis.

The deaths from tuberculosis of the respiratory system in London during 1928 numbered 3,985 giving a death rate of 0·89 per 1,000 living, and there were 639 deaths from other forms of tuberculosis as against 640 in 1927, the death rate being 0·14. The annual deaths and death rates from phthisis in recent years are shown in the following table. It will be noticed that there has been practically no decrease in the mortality during the past three years:—

Period.	Deaths.			Death-rates.		
	Males.	Females.	Total.	Males.	Females.	Total.
1919–21 ...	2,786	2,109	4,895	1·36	0·87	1·10
1922–24 ...	2,685	1,917	4,602	1·27	0·78	1·01
1925 ...	2,571	1,790	4,361	1·21	0·72	0·95
1926 ...	2,474	1,592	4,066	1·16	0·64	0·88
1927 ...	2,521	1,619	4,140	1·20	0·66	0·91
1928 ...	2,356	1,629	3,985	1·14	0·68	0·89

The number of primary notifications in metropolitan boroughs during 1928 (52 weeks), after correction of the figures within each metropolitan borough by the exclusion of cases notified as primary but subsequently found to have been previously notified, was 8,586, the corresponding figure for 1927 being 8,777. The following is an analysis of the notifications in London during 1928 (52 weeks).

Form of tuberculosis notified.	Sex.	Notifications on Form A. (Total of primary notifications received in London boroughs, other than elementary school cases, <i>infra</i> .)											
		0–	1–	5–	10–	15–	20–	25–	35–	45–	55–	65+	Total.
Pulmonary tuberculosis	M.	4	27	72	82	325	517	809	731	752	386	127	3,832
	F.	4	21	55	106	465	597	757	441	287	135	55	2,923
Other tuberculosis ...	M.	17	182	266	122	85	59	80	52	28	31	10	932
	F.	19	124	173	106	109	87	116	33	35	19	12	833
All forms of tuberculosis	M.	21	209	338	204	410	576	889	783	780	417	137	4,764
	F.	23	145	228	212	574	684	873	474	322	154	67	3,756

Form of tuberculosis notified.	Sex.	Notifications on Form B. (Primary notifications of cases discovered through medical inspection in elementary schools.)				Notifications on Form C. (Secondary notifications from institutions receiving cases.)	
		0-	5-	10+	Total.	Poor Law.	Other.
Pulmonary tuberculosis	M.	—	3	2	5	1,130	2,989
	F.	—	1	3	4	764	1,926
Other tuberculosis ...	M.	4	19	10	33	93	492
	F.	1	15	8	24	74	409
All forms of tuberculosis	M.	4	22	12	38	1,223	3,481
	F.	1	16	11	28	838	2,335

In addition to the primary cases notified on forms A and B shown in the above tables, a number of cases came to the knowledge of Medical Officers of Health, otherwise than by notification. These figures include cases not notified before death :—

Form of tuberculosis notified.	Sex.	New cases of tuberculosis coming to knowledge otherwise than by notification on forms A and B.											
		0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65+	Total.
Pulmonary tuberculosis...	M.	5	8	7	9	13	39	89	69	63	55	25	382
	F.	—	14	2	7	22	51	101	46	34	23	16	316
Other tuberculosis ...	M.	14	43	21	13	10	11	8	11	9	4	2	146
	F.	11	31	26	14	8	12	16	11	4	6	4	146
All forms of tuberculosis...	M.	19	51	28	22	23	50	97	80	72	59	27	528
	F.	11	48	28	21	30	63	117	57	38	29	20	462

The source of information as to the unnotified cases shown in the above table was as follows :—

Source of Information.							No. of Cases.	
							Pulmonary.	Non-pulmonary
Death Returns	...	...	...	...	...	...	359	186
"Transfers" from other areas	...	...	...	...	...	...	258	75
Forms C and D	...	...	...	...	...	...	27	3
Other sources	...	...	...	...	...	...	54	28

The returns received under the Public Health (Tuberculosis) Regulations, 1924, from the Medical Officers of Health of the metropolitan boroughs show that there were 33,117 cases of pulmonary tuberculosis (18,553 males and 14,564 females) and 13,623 cases of other forms of tuberculosis (7,146 males and 6,477 females) on the registers of the metropolitan boroughs at the end of 1928.

There were 6,773 deaths from cancer in 1928 as compared with 6,774 in 1927 and 6,720 in 1926. The death rate per 1,000 was 1.52. There was an increase of 44 in the male deaths and a decrease of 45 among females.

ADMINISTRATION.

The supervision of the 157 common lodging-houses licensed by the Council under the L.C.C. (General Powers) Act, 1902, entailed 7,335 day visits and 242 night visits by the inspectors. The supervision of 27 seamen's lodging-houses licensed under the Merchant Shipping Act, 1894, entailed 813 visits by day and 32 by night.

A comprehensive report on common lodging-houses, with special reference to the accommodation for women, was prepared in December, 1926, and is obtainable at the Council's publishers.*

*Common Lodging Houses and Kindred Institutions. No. 2489. Price 1s. 6d.

Vital statistics for the several metropolitan boroughs and the County of London in the year 1928. (Rates per 1,000 of civil population.)

Metropolitan boroughs. (Arranged in topographical order.)	Estimated civil population, 1928.	Births.	Deaths.	Infant mortal- ity (per 1,000 births).	Notified cases of infectious disease. (a)										Maternal mortal- ity (per 1,000 births).	Notified cases of infectious disease. (a)					
					Measles.	Scarlet fever.	Diph- theria.	Whoop- ing cough.	Ty- phoid fever.	Diarrhoea and Enteritis, age 0-2 (per 1,000 births).	Phthi- sis.	Pneu- monia.	Bron- chitis.	Cancer.		Scarlet fever.	Diph- theria.	Ty- phoid fever.	Erys- ipelas.	Cere- bro- spinal fever.	Acute pneu- monia.
Western.																					
Paddington ...	145,200	15.0	13.0	85	.49	.03	.05	.09	.01	10.6	.72	1.04	.47	1.79	3.22	3.58	2.11	.17	.62	.03	1.79
Kensington ...	178,200	14.3	13.1	85	.33	.01	.08	.06	.01	8.2	.60	1.06	.58	1.78	2.73	2.30	1.78	.45	.33	.01	.84
Hammersmith ...	136,300	16.6	11.4	69	.17	.02	.04	.04	.01	12.8	.89	.77	.56	1.52	4.42	2.42	2.71	.06	.38	.02	.97
Fulham ...	155,300	15.4	11.5	78	.10	.01	.09	.09	.01	25.1	.77	.71	.37	1.46	2.51	2.69	2.32	.27	.52	.03	1.92
Chelsea ...	63,630	12.7	13.5	48	.05	—	.06	.03	.02	1.2	.97	.79	.44	2.01	3.73	1.86	2.32	.21	.55	—	1.71
Westminster, City of	129,700	10.4	11.7	59	.04	.01	.10	.02	.04	9.4	.73	.72	.51	1.73	13.06	1.59	1.48	.21	.36	—	.20
Northern.																					
St. Marylebone ...	104,000	12.7	11.9	80	.36	.02	.12	.10	.02	13.7	.83	.83	.44	1.45	6.82	2.09	1.55	.22	.64	—	.44
Hampstead ...	85,880	11.6	11.7	54	.08	.01	.03	—	.01	7.0	.45	.73	.59	1.96	6.00	2.35	1.21	.15	.43	—	.61
St. Pancras ...	205,600	16.0	12.9	79	.62	.00	.06	.12	.01	13.3	.95	1.04	.68	1.60	2.12	3.00	1.99	.08	.47	.02	1.66
Islington ...	324,700	17.9	12.8	64	.49	.02	.07	.08	.01	11.7	.96	1.08	.71	1.63	4.13	4.04	2.35	.06	.41	.01	1.05
Stoke Newington ...	50,690	15.3	12.5	61	.14	—	.02	.10	—	2.6	.75	.53	.55	1.70	6.45	2.98	1.75	.08	.28	—	.46
Hackney ...	217,200	16.0	11.7	68	.13	.03	.13	.05	.01	10.6	.74	1.02	.56	1.57	4.31	4.39	3.43	.08	.19	.01	.33
Central.																					
Holborn ...	39,280	12.0	13.5	57	.20	—	.05	.10	—	12.7	1.04	1.27	1.32	1.68	2.11	2.89	1.54	.26	.59	.03	1.48
Finsbury ...	72,010	20.4	15.1	84	.71	.01	.15	.28	.01	7.5	1.29	1.42	1.11	1.65	3.40	3.28	3.37	.08	.70	.03	1.76
London, City of (b)	11,710	7.1	12.3	72	—	—	.09	—	—	—	1.11	.60	.51	1.37	12.05	2.06	2.15	—	.26	—	.43
Eastern.																					
Shoreditch ...	101,200	20.7	13.6	78	.58	.03	.13	.05	—	12.0	1.19	1.28	.63	1.41	3.34	5.32	4.49	.10	.49	.02	2.72
Bethnal Green ...	112,200	19.0	11.7	74	.39	.02	.08	.11	—	15.4	.94	1.04	.61	1.42	1.40	5.60	3.43	.06	.84	.03	2.04
Stepney ...	244,000	18.5	11.9	73	.41	.02	.11	.11	.02	15.9	1.06	.95	.59	1.27	2.00	5.89	3.22	.22	.63	.02	1.56
Poplar ...	162,000	19.9	11.8	72	.35	.01	.15	.12	.02	13.0	.94	1.15	.69	1.28	2.48	4.44	3.46	.04	.56	.01	3.49
Southern.																					
Southwark ...	181,300	19.2	13.0	71	.40	.02	.07	.14	.01	8.6	1.09	1.08	.74	1.41	3.17	3.73	3.72	.04	.50	.03	1.85
Bermondsey ...	115,200	19.8	13.2	79	.76	.03	.15	.24	.01	6.6	1.28	1.53	.74	1.22	2.20	4.30	5.26	.02	.38	.02	.47
Lambeth ...	298,100	16.8	12.3	61	.20	.02	.08	.13	.01	7.0	.93	.90	.46	1.68	2.20	3.28	2.74	.12	.46	.01	1.78
Battersea ...	164,100	16.7	11.9	64	.22	.03	.16	.09	.01	9.5	.84	.89	.62	1.51	2.55	3.30	4.44	.07	.52	.04	2.29
Wandsworth ...	347,300	13.3	10.9	50	.11	.01	.04	.03	.01	6.7	.71	.70	.43	1.45	4.12	2.21	1.77	.15	.41	.01	1.46
Camberwell ...	260,400	15.9	11.9	62	.41	.02	.08	.10	.01	8.5	.93	.91	.61	1.46	4.35	3.47	2.86	.06	.53	.01	.76
Deptford ...	112,400	16.3	12.0	76	.27	.02	.12	.13	.01	10.9	.95	1.05	.62	1.35	6.02	3.99	4.17	.07	.68	.04	1.36
Greenwich ...	100,200	16.9	11.6	56	.26	.01	.15	.08	.02	7.0	1.08	.75	.45	1.44	4.09	3.77	4.70	.12	.72	.02	1.31
Lewisham ...	199,300	15.2	10.0	52	.18	.02	.08	.08	.03	7.2	.78	.74	.55	1.26	2.31	2.56	1.65	.21	.31	.01	.79
Woolwich ...	141,100	15.5	11.0	50	.06	.04	.10	.11	.01	4.0	1.03	.50	.80	1.48	5.73	3.75	2.07	.11	.63	.01	1.52
London ...	4,458,200	16.2	12.1	67	.30	.02	.09	.09	.01	10.3	.89	.93	.59	1.52	3.59	3.45	2.74	.13	.48	.02	1.38

(a) The distribution of the 296 notifications of smallpox in London during 1928 is shown in the table on page . One case proved fatal (in Southwark).
(b) Including Inner and Middle Temple.

A census of homeless persons in London was taken on the night of Friday, 17th February, 1928. The area covered extended over the whole of the county, except such of the outlying portions as are not usually the resort of such persons. The night was fine. No persons were found sheltering under arches or on staircases. In the streets 61 males and 17 females were found, as compared with 68 males and 28 females in 1927, and 296 males and 76 females in 1914, on the occasion of previous censuses. In the common lodging-houses, 14,738 persons were accommodated as compared with 14,724 in 1927, and 20,173 in 1914, before the war. In the free shelters and labour homes not licensed, 735 males, 103 females and 25 children were accommodated as compared with 646 males, 134 females and 22 children in 1927. The number of persons in casual wards and in the Metropolitan Asylums Board hostel on the night in question was 835 (821 males and 14 females), the largest number recorded at any census since 1912. At London Rowton Houses, 5,047 men were accommodated and there were no vacant beds.

Census of
homeless
persons.

Under section 37 of the London County Council (General Powers) Act, 1907, the medical officer or any person provided with his authority (in writing) may examine the person or clothing of any inmate of a common lodging-house where they have reason to suspect that such person or clothing is verminous or in a foul and filthy condition. There are no figures available as to the actual number of lodgers cleansed, but a considerable improvement has been noted with regard to verminous conditions in such houses.

Verminous
lodgers in
common
lodging
houses.

A survey of the public conveniences for men and women within the county was made during the year. The sanitary condition, the number, their distribution and adequacy, and the hours during which they are available were the main points of observation.

Public
conveniences.

Returns were obtained from the councils of the several metropolitan boroughs, as well as the Corporation of the City of London, of the public conveniences under their control. Similar information was received from the Parks Department and the Department of the Chief Engineer. Enquiry was also made of the various Clerks to the Justices respecting urinals accessible to the public provided by public-houses and beer-houses. Over 6,000 visits were made by the inspectorate of this department in connection with these returns. Particulars were also obtained as to the provision of sanitary conveniences in certain capital cities on the continent.

Perhaps the most outstanding defect at present existing in London is the inadequacy of the free provision for women. The influx of women into the Metropolis in recent years has created a situation which calls for improvement. Generally speaking, however, the inquiry showed that the standard of excellence in sanitary attainment in London has nowhere been surpassed. The report, giving details of the investigation, may be obtained from the Council's publishers.*

During the year, representations have been made in respect of the areas known as Teale-street, Bethnal Green, and West Ferry-road, Poplar. A representation was also made by the borough medical officer of health of Southwark, but on consultation with the Council's officers it was deemed desirable that the represented area should be enlarged and final details were not decided upon during the year.

Housing
Acts, etc.

The rapid growth of the population housed on the Becontree Estate has created a need for adequate hospital accommodation in the area. As a result of the representations made the Trustees of King Edward's Hospital Fund agreed to make a first contribution of £10,000 towards the capital cost of a new voluntary general hospital provided that an equal amount was subscribed from other sources, and that the details of the scheme were satisfactory. Under Section 107 of the Housing Act, 1925, the Council, with the consent of the Minister of Health, has agreed to

Becontree
estate.
Hospital
accommo-
dation.

COUNTY OF LONDON. Statistics of the administrative work carried out during the year 1928.

Sanitary Authority.	Cow-sheds.		Slaughter-houses.		Offensive Trades.		Smoke nuisances.				Common lodging houses.		Cleansing of persons and rooms.				Water supply.	Milk-shops.		Ice cream premises.		Restaurants and Eating Houses.	
	No. licensed.	No. of inspections.	No. licensed.	No. of inspections.	No. authorised.	No. of inspections.	Observations.	Intimations.	Complaints.	Notices.	Houses licensed.	Authorised lodgers.	Persons.		Rooms or premises.		Tenement houses extra supply.	No. on register.	No. of inspections.	No. on register.	No. of inspections.	No. of places.	No. of inspections.
													Adults.	Children.	After infectious diseases.	For vermin.							
City of London...	—	—	—	—	—	—	165	—	14	—	1	455	68	1,044	all	all	—	277	274	45	39	857	1,328
Battersea ...	—	—	2	139	3	3	15	7	21	—	3	201	221	3,769	735	172	14	203	417	151	159	103	185
Bermondsey ...	—	—	—	—	16	63	63	5	3	3	3	1,195	103	—	1,781	439	2	196	594	107	109	146	596
Bethnal Green ...	11	58	2	208	9	83	4	2	—	—	6	395	345	13	1,122	461	—	255	835	160	310	193	577
Camberwell ...	1	11	2	203	10	33	135	14	10	—	5	438	69	3,559	3,451	246	24	380	1,565	125	306	157	237
Chelsea ...	—	—	2	55	—	—	52	4	3	—	2	172	7	995	345	153	1	75	96	26	30	76	80
Deptford ...	—	—	2	76	6	35	—	—	—	—	7	1,193	—	2,012	1,633	70	3	183	355	176	219	53	110
Finsbury ...	—	—	1	122	3	14	38	3	13	3	2	470	9	—	669	216	2	151	185	86	126	207	265
Fulham ...	—	—	2	268	—	—	419	9	9	—	2	87	16	—	—	—	200	153	313	65	201	39	702
Greenwich ...	1	7	3	45	3	8	50	6	24	—	2	90	14	811	895	21	3	132	144	144	152	56	75
Hackney ...	3	50	15	512	18	36	1,185	38	50	4	4	313	58	3,050	2,351	283	6	381	1,412	251	489	143	153
Hammersmith ...	—	—	7	553	2	10	32	5	2	1	1	292	92	2,646	1,085	19	28	88	1,470	162	195	175	467
Hampstead ...	—	—	1	57	—	—	6	—	1	—	—	—	8	1,077	2,088	68	30	63	180	82	101	67	130
Holborn ...	—	—	1	2	—	—	432	5	1	—	12	873	143	—	446	70	3	129	96	44	223	244	405
Islington ...	1	6	13	751	19	77	114	14	43	2	22	803	15	5,213	3,605	39	56	430	808	238	82	454	530
Kensington ...	—	—	5	298	1	40	320	9	4	2	5	213	212	3,839	1,127	540	85	149	719	93	130	143	1,125
Lambeth ...	1	12	7	126	4	48	35	35	35	—	3	473	—	—	13,150	531	72	635	3,811	215	862	200	335
Lewisham ...	1	4	8	651	—	—	33	4	4	2	—	—	—	—	1,325	71	—	133	345	150	185	112	290
Paddington ...	—	—	2	243	1	58	343	4	15	2	3	165	15	2	—	75	—	107	421	170	215	113	184
Poplar ...	4	18	7	8	9	43	39	19	27	1	5	342	62	569	733	181	10	111	265	128	197	313	1,354
St. Marylebone ...	1	27	1	87	3	70	483	—	9	—	4	756	3,634	2,304	745	446	3	107	360	70	146	314	816
St. Pancras ...	—	—	4	159	1	37	242	6	27	6	2	78	1,159	4,911	1,233	295	220	287	699	319	240	380	292
Shoreditch ...	2	26	1	17	3	9	27	3	5	—	4	282	4	6	1,191	185	7	258	1,246	123	337	190	510
Southwark ...	—	—	4	96	4	11	11	3	3	1	21	2,240	928	3,191	5,828	1,309	16	355	1,783	150	300	342	1,368
Stepney ...	20	89	1	1	55	395	139	24	30	7	22	3,026	589	—	2,589	492	3	393	1,176	262	527	335	564
Stoke Newington ...	—	—	4	65	—	—	10	2	7	—	—	—	1	1,477	372	112	2	68	127	26	52	28	53
Wandsworth ...	1	12	6	610	2	104	34	11	31	—	1	69	274	—	4,873	437	1	254	873	455	230	278	849
Westminster ...	—	—	—	—	—	—	640	21	36	1	6	1,750	377	1,061	56	32	6	330	345	55	55	760	582
Woolwich ...	8	96	7	25	—	—	332	1	—	—	10	365	39	1,961	1,048	40	—	96	575	129	317	60	242

NOTE.—In the columns above a dash signifies a nil return.

Common lodging houses licensed by the Council (*i.e.*, excluding those in the City of London) number, 157; lodgers, 16,281; visits—day, 7,335, night, 242; prosecutions, 2; penalties and costs, £4 2s. 0d.

Seamen's lodging houses, licensed number, 27; Poplar, 5; Stepney, 22; lodgers, 1,044. Visits—day, 813; night, 32; prosecutions, 5; penalties and costs, £21 7s. 0d.

Prosecutions—*Smoke Nuisances*: Finsbury, 1, penalty and costs, £5 5s.; Hackney, 1, penalty and costs, £1 1s.; Poplar, 2, (1 conviction) £10 penalty—£2 4s. 0d. costs. *Water Supply*: Hammersmith, 2; Kensington, 1; Lambeth, 4; Poplar, 1; St. Pancras, 2. *Milkshops*: St. Pancras, 1. *Ice Cream Premises*: Stepney, 2; *Restaurants and Eating Houses*: Stepney, 2.

Borough.	No. of houses.		No. of houses inspected.		No. of notices served.			No. of houses repaired or nuisances remedied under P.H. Act.	No. of houses repaired under Section 3 of Housing Act.		Under-ground rooms.		Over-crowding.		Houses let in lodgings.		No. of houses closed by owner.	No. of houses for the working classes.		Houses unfit for habitation.								
	In borough.	Occupied by the working classes.	Complaints or illness.	House to house.	Under P.H. Act.				By owners.	By L.A.	No. illegally occupied.	No. closed or otherwise remedied.		Instances found.	No. remedied.	No. on register.		No. of inspections.	Erected during year.	In course of erection.	Representations.		Closing orders.		Demolition orders.			
					Intimation.	Statutory.	Under Housing Act.														No. made.	No. of houses.	No. made.	No. determined.	No. made.	In pursuance of orders.	No. of houses demolished.	Voluntarily.
City of London...	1,851	905	386	193	212	126	—	154	154	—	1	—	—	—	63	222	—	16	—	—	—	—	—	—	—	121		
Battersea ...	27,908	25,017	4,365	1,032	3,363	1,333	27	3,607	447	—	—	—	14	14	58	1,035	—	30	6	—	—	—	—	—	—	—		
Bermondsey ...	18,177	18,027	5,470	3,349	2,430	474	4,031	2,430	3,054	6	—	—	990	250	220	445	3	40	38	1	152	—	—	—	76	8		
Bethnal Green ...	18,497	Prac. all	7,121	783	6,268	4,622	—	7,204	—	—	—	—	Many cases	—	170	1,030	—	45	—	—	—	—	—	—	—	—		
Camberwell ...	42,567	34,042	4,264	1,513	5,016	1,640	43	4,862	—	—	2	—	262	110	240	240	—	42	73	—	—	—	—	—	52	—		
Chelsea ...	11,738	2,494	812	116	753	166	—	406	—	—	—	—	8	8	148	99	—	—	180	—	—	10	—	—	6	—		
Deptford ...	18,122	—	1,165	3,160	3,557	260	—	3,557	—	—	—	—	Many cases	2	—	—	—	12	—	—	—	—	—	—	—	—		
Finsbury ...	10,889	—	1,430	116	1,688	246	—	1,688	—	—	2	2	12	12	855	4,217	—	55	—	—	—	—	—	—	—	—		
Fulham ...	24,215	—	3,587	277	977	822	478	822	388	—	2	2	193	37	—	—	3	33	6	2	2	2	—	—	—	—		
Greenwich ...	17,274	M'j'city	882	25	1,476	110	5	1,836	—	—	2	2	2	—	114	122	—	185	150	—	5	—	—	40	4			
Hackney ...	35,230	14,373	6,924	381	5,259	1,795	—	5,650	—	—	6	4	168	51	153	50	—	98	104	2	3	3	1	—	—	12		
Hammersmith ...	19,700	13,000	6,855	396	3,180	1,224	—	3,048	—	—	5	4	70	47	2,495	—	—	692	252	1	1	1	—	—	—	—		
Hampstead ...	13,150	6,575	464	—	927	613	—	412	—	—	71	71	38	22	501	1,185	—	—	—	3	3	3	2	2	—	—		
Holborn ...	3,473	(tmnts 8,571)	1,086	—	436	58	—	436	—	—	3	3	2	2	515	584	—	—	15	2	2	2	—	—	—	—		
Islington ...	45,900	28,680	8,438	1,360	4,459	576	—	5,818	—	—	11	11	37	37	1,011	4,572	—	97	111	1	8	—	—	—	—	11		
Kensington ...	34,400	—	2,566	1,801	3,159	834	22	3,047	12	3	25	25	99	85	3,402	7,717	—	5	—	—	—	4	1	—	—	—		
Lambeth ...	42,607	—	13,800	472	4,224	237	482	5,736	398	1	8	8	69	69	—	—	—	183	150	1	1	1	—	—	4	—		
Lewisham ...	46,000	—	2,054	1,085	1,934	572	—	1,934	—	—	—	—	27	7	4	120	—	1,920	—	—	—	—	—	—	—	—		
Paddington ...	17,000	9,100	2,453	—	1,494	1,398	491	1,249	393	—	2	2	Many cases	2	1,406	7,204	—	—	—	—	—	—	—	—	—	—		
Poplar ...	23,248	23,000	6,243	212	4,466	1,580	—	4,521	—	—	—	—	61	32	105	448	—	10	—	—	—	—	—	—	—	—		
St. Marylebone ...	19,447	8,540	2,575	923	1,845	94	—	1,939	—	—	13	13	4	4	1,055	9,895	—	12	12	—	—	—	—	—	—	—		
St. Pancras ...	25,216	18,000	5,121	385	3,616	1,823	272	3,441	255	4	2	28	21	1,384	5,595	—	52	165	1	1	1	—	—	—	—	—		
Shoreditch ...	14,031	13,131	6,202	3,973	6,357	1,216	—	6,357	—	—	Many	2	227	146	296	1,034	—	70	32	—	—	—	—	—	—	—		
Southwark ...	20,567	14,093	7,901	3,917	5,545	3,765	3,804	6,180	5	—	1	1	31	31	621	2,023	—	24	—	1	1	1	—	—	—	—		
Stepney ...	38,553	31,763	11,294	6,544	14,965	10,832	—	12,795	—	—	16	10	115	50	2,635	2,997	—	—	—	—	1	—	—	—	—	—		
Stoke Newington ...	8,628	3,975	1,065	121	932	80	—	2,189	—	—	4	3	—	—	100	—	—	—	—	—	—	—	—	—	—	4		
Wandsworth ...	73,944	48,842	9,236	989	4,678	610	—	10,168	—	—	15	9	174	131	265	350	—	694	—	—	—	—	—	—	—	16		
Westminster ...	25,321	—	2,457	382	1,489	25	—	1,584	—	—	32	18	56	41	242	713	—	118	—	1	13	—	—	—	—	—		
Woolwich ...	29,365	24,768	2,890	3,820	3,558	896	—	2,788	—	—	5	1	92	26	—	—	—	709	142	15	15	11	—	2	2	89		

NOTE.—In many cases, it has been impossible to take effective action in the matter of overcrowding owing to the shortage of houses.

Prosecutions—*Houses let in Lodgings*: Finsbury, 1; Islington, 2; Kensington, 9; Paddington, 4; Poplar, 1; St. Pancras, 8; Stepney, 2.

„ *Overcrowding*: Camberwell, 1; Fulham, 5; Hammersmith, 4; Islington, 6; Kensington, 3; Stepney, 1; Westminster, 1.

Under-
ground
rooms.

contribute £10,000 on the same conditions, with further safeguards as to the composition of the board of management, and the right of residents at Becontree to treatment at the new hospital.

During the year under review the Council has had under consideration the question of the use of underground rooms as dwellings. The provisions of the law which relate to this subject are contained in section 96 of the Public Health (London) Act, 1891, section 18 of the Housing Act, 1925, and section 122 of the London Building Act, 1894. These provisions are mainly directed to securing satisfactory sanitary conditions, including drainage, and stricter standards with the object of preventing the use of such rooms for sleeping quarters can be adopted only as part of the general housing programme of London.

Existing legislation for the control of underground rooms has been directed almost exclusively to the regulation of underground rooms used as sleeping places, but it is the use of basement dwellings as living rooms which is particularly injurious to health. This latter use is the more objectionable because generally basement rooms are entirely deprived of sunlight, and, although dark or artificially lighted, are occupied throughout the day mainly by women and children. These rooms, moreover, are not only dark, but damp and ill-ventilated, and no combination of conditions so injurious to health is to be found in any other class of domestic dwellings. In many of the low-lying areas it is extensively the case that such rooms fail to comply with statutory requirements in such degree as to be unfit for human habitation. They should be dealt with by closing order, but it appears, unfortunately, that there is no statutory power to close only part of a house.

The desirability of promoting further legislation to deal with the whole problem of the use of underground rooms is still under consideration by the Council.

Milk and Dairies (Consolidation) Act, 1915.

Milk.

Samples of the milk forwarded to London from places outside the county are taken and examined under the provisions of the Milk and Dairies (Consolidation) Act, 1915. The railway stations are visited in rotation and, generally speaking, the number of samples taken from the milk sent by each consignor is regulated by the size of the consignment. Endeavour is made to sample all milk entering the county, and during the year, in pursuance of this policy, samples were also taken from supplies of milk sent to London by road, in each case by co-operation with the local sanitary authority. In this way, 19 samples were taken from churns. In addition, 26 samples were taken from milk consigned in glass-lined tanks, 14 of these came from two tanks that came by road, and 12 from two tanks that were borne by rail. During 1928 there were 2,011 samples of milk, taken from consignments sent to London from 40 counties, and submitted for bacteriological examination. In the case of 1,605 samples, the biological examination was completed and of these 143 were found to be tubercle infected, or 8.9 per cent., as against 7.8 per cent. in 1927.

In accordance with the provisions of the Milk and Dairies (Consolidation) Act, 1915, information is sent, immediately upon discovery of tubercle infected samples of milk, to the Medical Officer of Health of the county who is responsible for the examination of the cows at the farm whence the sample emanated. From the copies of reports forwarded by the County Medical Officers of Health, it would appear that 66 cows had been found to be affected with tuberculosis and were slaughtered under the Tuberculosis Order, 1925.

A large quantity of the milk sent to London is "bulked" at the country depot prior to despatch. Difficulty has always been experienced in tracing to its source any such milk found to be tubercle infected, and this has now been made the more serious by the despatch of milk in glass-lined tanks. Although in many respects hygienically superior to churns, the mixing of so large a volume of milk multiplies

the sources of origin and the consequent difficulties of tracing to their source incriminated milks, are obvious. One of these containers may hold 3,000 gallons of milk which may have come from over 200 farms, and at any one of these farms the herds may be of considerable size.

The transport of mixed milk in bulk, in addition to aggravating the difficulty of tracing tubercle-infected milk to its origin, has another two-fold effect:—(a) The introduction of a single infected milk into the tank infects the whole of the milk in the tank; (b) the dilution of a tubercle-infected milk by a large volume of milk not so infected must necessarily reduce the dose of tubercle bacilli which any one consumer receives. Whether on balance this is an advantage or not cannot at present be decided. Intensified dosage is certainly more dangerous, but the wider risk of a more diluted infection may not be without its dangers. It is considered that the increase in the percentage of samples of milk found to be tubercle infected may be explained by the wider diffusion of tubercle bacilli in the bulked milk. The attention of the Ministry of Health has been drawn to the matter, and it is hoped that a system will be devised which will reduce the difficulties now being experienced in the efficient administration of the Milk and Dairies (Consolidation) Act, 1915.

During the year it was reported in the case of 397 samples, that the infected guinea-pigs had succumbed to an acute intercurrent infection by some organisms other than tubercle contained in the milk. It was stated in the report for the year 1927 that the death of the guinea-pig was caused by lethal organisms usually present in the milk. The presence of these organisms was due to dirty conditions of the cow's udder, to dirty cowsheds and generally to faulty practices in the production, storage and transport of milk. For this reason the practice was begun of notifying the county medical officers of health concerned of these cases in order that they might take such action as appeared desirable. During the past year many striking reports have been received from the county authorities as to the conditions found at farms inspected as a result of these notifications. A correlation appears to exist between the death of the guinea-pig and unhygienic conditions at the farm. In some instances, however, the conditions found at the farm were free from objection and nothing could be detected that would account for the condition of the milk. It does not follow necessarily that a guinea-pig dying of an acute intercurrent infection following the subcutaneous injection of milk has been infected by the milk, but such an occurrence suggests the desirability of inspecting the conditions of milk production at the source. So far as is practicable, an indication of the milk origin or otherwise of the infection is obtained, and particulars based on this further information are now transmitted to the county authorities concerned.

While engaged in milk sampling, the Council's inspectors sometimes observe conditions, either of the milk or of the churn, which contravene the provisions of the Milk and Dairies Order, 1926. This applies more especially (1) to the temperature of the milk, the regulations concerning which are laid down in Article 24 of the Order, and (2) to the cleanliness and condition of the churns, which are dealt with in sections 27, 28 and 29 (2) of the Order. The Council is not the authority responsible for the enforcement of these sections of the Order, and details relating to contraventions of these articles of the Order are transmitted to the authorities concerned. The consignments in respect of which contraventions of the requirements of the Milk and Dairies Order were observed in all amounted to 130 churns.

In compliance with the instruction of the Mental Hospitals Committee, samples of milk have been taken twice a year from the supplies of the herds at each of the institutions under the direction of the Mental Hospitals Committee. In all 78 samples were taken. Of these three were found to be tubercle infected, in 16 cases the guinea-pig succumbed to an acute intercurrent infection, and in the remaining 59 cases tubercle was not detected. The percentage of samples found to be tubercle infected of the total number of completed examinations made was, therefore, 4.8.

Each of the herds at the institutions whence the three tuberculous samples were derived was inspected. Both at Bexley and at Colney Hatch a tuberculous cow was detected. In the case of the remaining sample, that taken at Colney Hatch on 30th July, 1928, a cow was considered to be in a suspicious condition. This animal was put dry and has since been slaughtered. In accordance with the further instruction of the Mental Hospitals Committee, the cows at the institutions have been inspected every three months by the Council's veterinary surgeon. The results are shown in the following table:—

No. of visits.	No. of cows examined.	No. of cows found suffering from tuberculosis.	No. of cows found with other defects.
44	2,385	2	51

It has been found that frequent routine inspections result in a detection of disease in the initial stages. At each of his visits the veterinary surgeon confers with farm bailiffs and gives such advice as may be necessary. These conferences, together with the system of routine inspections, assist materially in keeping the condition of the herds at a high standard.

Milk from
London
cowsheds.

The Public Health Committee on 20th October, 1927, instructed the Medical Officer "to arrange for some investigation to be made as to the comparative character of London and imported milk." In accordance with this instruction, 80 samples of milk were taken during the summer months at 34 cowsheds within the county. The number of samples taken was determined by the number of cows in the cowsheds. The results of the bacteriological examinations showed that in each of 5 samples taken from 4 cowsheds the milk was tubercle infected, and in each of 6 samples taken from 6 cowsheds the guinea-pig succumbed to an acute intercurrent infection.

The cows at the sheds from which the tuberculous milk was derived were inspected with the following results:—

Cowshed 1.—Cow found to be suffering from lung tuberculosis. Slaughtered voluntarily by owner.

Cowshed 2.— Do. Do.

Cowshed 3.—Two cows suffering from general tuberculosis. Slaughtered voluntarily by owner.

Cowshed 4.—One cow suffering from tuberculosis of the udder and one suspicious animal were slaughtered voluntarily by owner.

A comparison with the sampling of imported milk is made in the following table:—

Imported Milk. (Figures for year ended 30th June, 1928.)		London Milk.	
% Tubercular.	% Intercurrent.	% Tubercular.	% Intercurrent.
7.6	18.9	6.7	7.5

From this it appears that London milk was found to be more free from tubercle than the imported milk to the extent of 0.9 per cent., and that there was a marked difference (11.4 per cent.) in the percentage of guinea-pigs succumbing to an acute intercurrent infection by organisms other than tubercle. This is what might be expected when it is remembered that the London milk was sampled as, generally speaking, it is used, soon after milking. In the case of the milk sent into London from the country, the time necessarily elapsing between milking and delivery, affording, as it does, many opportunities of contamination, during transport, in wholesale and retail storage, and in final distribution, is undoubtedly a factor adverse to the cleanliness of milk of distant origin.

During the autumn 59 further samples of milk were taken at 22 cowsheds. Of these, two, taken from the same cowshed, were found to be tubercle infected (or 3.8 per cent. of the total number of completed examinations), 51 revealed no evidence of tubercle and in 6 cases the guinea-pig succumbed to an acute intercurrent infection.

The veterinary surgeon makes a routine quarterly inspection of the cows at each cowshed. The results of his visits are shown below :—

No. of visits to cowsheds	307
No. of cows examined	7,900
No. of cows presenting unhealthy conditions as follows..	117
With tuberculosis of udder .. 1	} Each of these animals was slaughtered voluntarily by the owner.
Giving tuberculous milk .. 7	
With atrophy of one or more quarter	60
With other defects	49

A general survey of cowhouses within the County of London was made during the year.

The power of issuing licences in respect of London cowsheds possessed by the justices at the several petty sessions was transferred to the London County Council on its creation by the Local Government Act, 1888. When the Public Health (London) Act, 1891, came into force, the Council was continued as the licensing authority, but the London Government Act, 1899, transferred to the local sanitary authorities the duty of enforcing the regulations made by the Council under the Dairies, Cowsheds and Milkshops Orders of 1885, 1886 and 1899. These orders were superseded by orders made under the Milk and Dairies (Consolidation) Act, 1915. The effect of this Act and its consequential orders is that while the inspection of the cattle and the general supervision in respect of licensing powers devolves upon the Council, the local sanitary authorities are responsible for administering the law relating to the lighting, ventilation, drainage and sanitary condition of the sheds and curtilages, together with the supervision of the handling and distribution of the milk.

In the forty years during which the Council has been the licensing authority the number of licensed cowhouses in the County of London has decreased from 738 in 1888 to 55 in December, 1928.

Cowsheds have practically disappeared except in the boroughs of Woolwich, Stepney and Bethnal Green. In Woolwich the reason for their persistence is that portions of this district still retain their rural character. Stepney and Bethnal Green both contain a considerable Jewish population, who, from religious motives, are always anxious to obtain fresh raw milk. With the exception of Woolwich much of the milk is sold from the shed direct to the consumer, and only a small proportion of that sold otherwise is cooled.

The London cowsheds are mostly old, and of a character such as would not be approved in the case of new buildings. The original regulations made under the Dairies and Cowsheds Order of 1885 were directed mainly to the control of structure, cubic space, etc., whereas under the Order of 1926, and the memorandum accompanying the Order, the main regulations are replaced "by provisions similar in general purpose, but modified in accordance with the development of modern hygienic knowledge, so as to lay greater stress on cleanliness in all operations connected with the production and handling of milk (including the care of the cow) than upon the structure of the buildings."

In the existing cowsheds found in the more congested parts of the county, the lighting and ventilation is in some cases unsatisfactory, and the yard space attached to many of the sheds is not sufficient to enable the cowkeeper to deal satisfactorily with manure, grains, churns, vehicles and washing. It should be remembered, however, that the yard space is paved, whereas in the country, although the curtilage is larger, this is rarely so, and there is greater risk of the fouling of the cows and the shed and consequently of the milk.

It is generally agreed that the "ideal milk is fresh raw milk from a healthy cow, carefully produced and handled," and whilst the London cowkeeper is sometimes

handicapped by his small yard space and other circumstances arising from limited site, he has the advantage of prompt delivery of his milk, and there is much less chance of exposure to contamination than in the case of milk subject to prolonged transport.

Venereal Diseases.

The number of new cases of venereal disease dealt with by the hospitals under the London and Home Counties Scheme during 1928 was 16,401, of which 5,270 were syphilis, 10,896 gonorrhœa, and 235 soft chancre. Comparing these figures with those of the previous year, it will be observed that the total number of new cases dealt with is 2,400 less than in 1927.

The diminution in the number of new cases as compared with the previous year may be explained by the fact that one large treatment centre ceased to participate in the scheme after 31st March, 1928, but continued to treat patients suffering from these diseases.

Year.	Syphilis.	Gonorrhœa.	Soft chancre.	Non-venereal.	Total.
1927 ...	6,095	12,496	210	10,164	28,965
1928 ...	5,270	10,896	235	9,595	25,996
Increase + or decrease —	—825	—1,600	+25	—569	—2,969

The distribution of new cases of venereal disease between the sexes is shown in the following table, the figures for the preceding years being given for comparison.

Year.			New cases.						Total venereal cases.	
			Syphilis.		Soft chancre.		Gonorrhœa.			
			M.	F.	M.	F.	M.	F.	M.	F.
1917...	...	...	4,427	3,351	199	11	3,830	1,207	8,456	4,569
1918...	...	...	3,764	3,002	116	13	4,844	1,940	8,724	4,955
1919...	...	...	6,394	3,391	463	18	10,441	2,440	17,298	5,849
1920...	...	...	6,988	3,579	766	25	10,669	2,427	18,423	6,031
1921...	...	...	5,088	3,100	458	13	8,573	2,136	14,119	5,249
1922...	...	...	4,207	2,600	309	12	8,233	2,402	12,749	5,014
1923...	...	...	4,497	2,631	311	4	9,043	2,520	13,851	5,155
1924...	...	...	4,174	2,452	301	4	8,565	2,785	13,040	5,241
1925...	...	...	3,556	2,346	268	11	8,464	2,857	12,288	5,214
1926...	...	...	3,725	2,013	301	2	8,825	2,858	12,851	4,873
1927...	...	...	3,886	2,209	203	7	9,637	2,859	13,726	5,075
1928...	...	...	3,433	1,837	229	6	8,249	2,647	11,911	4,490

Importance is attached to the necessity of securing the regular attendance of patients at the clinics, more especially in the case of gonorrhœa, and efforts to secure the requisite provision of facilities for intermediate treatment at times other than during the hours of the clinic are meeting with considerable success. A number of patients still fail to complete the full course of treatment considered necessary before final discharge, due in no small measure to the false impression that a cure has been effected on the disappearance of outward signs of the disease. The need for improving conditions likely to cause patients to discontinue attendance at the clinics or to transfer them from one clinic to another continues to receive careful attention.

Ratio of
attendances.

In past years the ratio of attendances has been stated as so many attendances to each new case of venereal disease admitted to the clinics during the year. The attendances included both V.D. and non V.D. A more accurate method of gauging the attendances of such patients would be to count only the attendances of V.D. patients and not those of non V.D. This is probably as good a method as can be found for obtaining an estimate comparable year by year of the efficiency of the

work as measured by the continued attendance. Although the number of attendances of patients who attend for the first time towards the end of the year is not included, the loss is balanced by the addition of the later attendances of patients who entered the clinic for the first time in the previous year and who therefore do not rank for inclusion among the "new cases" of the year under consideration.

For the year 1928, however, the figures arrived at by both the old and new method of calculation are given. The total attendances were 763,535, and the ratio of all attendances to each new V.D. case was 46. This figure is comparable with 40 for 1927 and 38 for 1926 and therefore shows a gradual advance over that for previous years. Under the new method of calculation the total attendances of V.D. patients were 710,760 and the ratio of attendances of V.D. patients to new V.D. cases was 43. Even this figure shows an advance over the figure of 40 for 1927 under the old calculation.

Comparative figures for the twelve years during which the scheme has been in force are shown in the following table:—

Year.	New cases.		Total.	Attendances.	In-patient days.
	Venereal.	Non-venereal.			
1917	13,025	2,360	15,385	120,659	63,923
1918	13,679	2,693	16,372	169,485	66,095
1919	23,147	5,118	28,265	307,722	73,211
1920	24,454	6,592	31,046	464,033	81,612
1921	19,368	6,050	25,418	496,209	79,692
1922	17,763	5,950	23,713	529,003	112,564
1923	19,006	6,644	25,650	555,509	106,662
1924	18,281	7,292	25,573	589,002	102,456
1925	17,502	8,680	26,182	646,131	102,454
1926	17,724	8,988	26,712	687,075	101,735
1927	18,801	10,164	28,965	767,278	112,413
1928	16,401	9,595	25,996	763,535	65,106

Attention is also drawn to the very large number of non-venereal patients who present themselves for examination. This appears to indicate quite clearly that the general public is appreciating more and more the efforts which have been, and are being made to spread far and wide a knowledge of the serious nature and grave after-effects of the venereal diseases.

Another point worthy of note is the total number of examinations made of pathological specimens. Comparative figures for the twelve years are shown in the following table:—

Year.	Pathological examinations.	
	For treatment centres.	For private practitioners.
1917	13,988	3,649
1918	25,973	6,380
1919	51,554	10,464
1920	58,920	14,027
1921	66,134	18,472
1922	74,022	19,836
1923	69,784	24,403
1924	79,005	24,797
1925	106,064	26,346
1926	100,543	27,565
1927	107,512	27,046
1928	107,410	29,785

The continued use made by medical practitioners of the facilities for the examination of pathological specimens is highly satisfactory.

Under the Scheme, medical practitioners who fulfil certain conditions are entitled to free supplies of the approved arsenobenzene preparations for the treatment of their private patients. The number of medical practitioners availing themselves of this service is now 459 as compared with 108 at the end of 1917, the first year of the operation of the Scheme.

TUBERCULOSIS DISPENSARIES—ANALYSIS OF RETURNS, JAN.—DEC., 1928.

Borough	On Dispensary Register, 1-1-28.		Trans- ferred during 1928 from other areas and lost sight of cases re- turned	Examined for first time during 1928. (a) New cases excluding contacts. (b) Contacts (printed in italics).										Total number (includ- ing con- tacts) under dispen- sary super- vision during 1928.	Removed from Dispensary Register during 1928.		On Dispensary Register on 31-12-28.		Total attend- ances.	Visits to homes for dispensary purposes by		No. of speci- mens of sputum ex- amined.
	Diag- nosis com- pleted.	Under obser- va- tion.		Pulmonary.		Non- Pulmonary.		Doubtfully Tuberculous.		Non- Tuberculous.		Total.			(a) Cured. (b) Diag- nosis not con- firmed or non- T.B. (printed in italics).	(a) Trans- ferred to other areas or lost sight of. (b) Died (printed in italics).	Diag- nosis com- pleted.	Under Obser- vation.		Tuber- culosis Officer.	Dispen- sary Nurse.	
				Adults.	Child- ren.	Adults.	Child- ren.	Adults.	Child- ren.	Adults.	Child- ren.	Adults.	Child- ren.									
Battersea ...	897	82	31	174 <i>4</i>	—	16	10	61 <i>9</i>	30 <i>5</i>	189 <i>76</i>	112 <i>76</i>	440 <i>89</i>	152 <i>81</i>	1,772 <i>535</i>	13 <i>107</i>	118 <i>107</i>	934	65	3,912	141	4,865	556
Bermondsey ...	1,174	40	11	99 <i>3</i>	5	11	26	114 <i>9</i>	25 <i>4</i>	99 <i>118</i>	75 <i>162</i>	323 <i>130</i>	131 <i>166</i>	1,975 <i>630</i>	69 <i>100</i>	69	1,081	26	2,998	238	2,697	785
Bethnal Green...	596	9	15	98 <i>2</i>	3	11	11	35 <i>1</i>	8 <i>12</i>	217 <i>101</i>	129 <i>127</i>	361 <i>115</i>	151 <i>129</i>	1,376 <i>608</i>	1 <i>63</i>	61	638	5	3,682	143	2,341	627
Camberwell ...	1,979	33	25	217 <i>22</i>	7 <i>3</i>	24 <i>3</i>	32 <i>5</i>	75 <i>17</i>	25 <i>12</i>	350 <i>116</i>	318 <i>310</i>	666 <i>158</i>	382 <i>330</i>	3,573 <i>1,220</i>	25 <i>160</i>	108	2,036	24	6,863	501	6,560	903
Chelsea ...	199	16	5	32 <i>4</i>	—	—	1	10 <i>—</i>	1 <i>1</i>	201 <i>22</i>	202 <i>69</i>	243 <i>26</i>	204 <i>70</i>	763 <i>505</i>	3 <i>27</i>	24	193	11	2,834	33	3,479	318
Deptford ...	603	104	23	83 <i>2</i>	2	12	6	132 <i>25</i>	90 <i>18</i>	51 <i>24</i>	69 <i>64</i>	278 <i>51</i>	167 <i>82</i>	1,308 <i>506</i>	43 <i>78</i>	115	518	48	3,235	126	3,809	706
Finsbury ...	460	13	19	33 <i>23</i>	2 <i>2</i>	3 <i>1</i>	7 <i>2</i>	3 <i>3</i>	1 <i>65</i>	56 <i>90</i>	104 <i>92</i>	66 <i>97</i>	851 <i>278</i>	9 <i>68</i>	75	411	10	3,784	350	2,793	434	
Fulham ...	902	13	41	133 <i>5</i>	7	13	25	45 <i>2</i>	24 <i>11</i>	298 <i>182</i>	314 <i>213</i>	489 <i>201</i>	370 <i>226</i>	2,242 <i>1,072</i>	64 <i>75</i>	154	846	31	4,502	491	4,541	898
Greenwich ...	647	31	21	67 <i>24</i>	9 <i>2</i>	4 <i>1</i>	13 <i>6</i>	9 <i>6</i>	6 <i>5</i>	109 <i>134</i>	106 <i>196</i>	189 <i>165</i>	134 <i>209</i>	1,396 <i>592</i>	— <i>72</i>	29	665	38	5,229	192	3,242	159
Hackney ...	1,128	45	40	154 <i>4</i>	5	17	17	65 <i>16</i>	16 <i>6</i>	219 <i>151</i>	158 <i>186</i>	455 <i>171</i>	196 <i>196</i>	2,231 <i>785</i>	3 <i>112</i>	152	1,162	17	6,328	227	3,418	945
Hammersmith	720	24	55	132 <i>17</i>	5 <i>1</i>	10 <i>3</i>	17 <i>2</i>	9 <i>2</i>	2 <i>1</i>	205 <i>67</i>	125 <i>86</i>	356 <i>89</i>	149 <i>90</i>	1,483 <i>502</i>	10 <i>85</i>	68	801	17	2,433	123	2,903	305
Hampstead ...	204	11	21	33 <i>2</i>	1	—	—	15 <i>4</i>	9 <i>2</i>	69 <i>42</i>	16 <i>27</i>	117 <i>48</i>	26 <i>29</i>	456 <i>168</i>	10 <i>17</i>	78	160	23	1,132	13	1,172	128
Holborn ...	178	2	10	35 <i>1</i>	2	7	2	15 <i>—</i>	— <i>8</i>	10 <i>45</i>	6 <i>55</i>	67 <i>54</i>	10 <i>56</i>	377 <i>146</i>	13 <i>13</i>	42	162	1	924	46	1,114	156
Islington ...	1,275	29	128	243 <i>45</i>	5 <i>2</i>	20 <i>1</i>	15 <i>3</i>	33 <i>4</i>	7 <i>3</i>	202 <i>195</i>	91 <i>219</i>	498 <i>245</i>	118 <i>227</i>	2,520 <i>805</i>	7 <i>198</i>	171	1,320	19	8,418	504	5,969	1,071
Kensington ...	846	13	18	87 <i>6</i>	2	6	19	67 <i>5</i>	20 <i>2</i>	91 <i>222</i>	72 <i>240</i>	251 <i>233</i>	113 <i>247</i>	1,721 <i>685</i>	105 <i>65</i>	65	775	26	3,118	88	1,665	419
Lambeth ...	1,592	111	30	353 <i>20</i>	9 <i>2</i>	34 <i>3</i>	37 <i>4</i>	145 <i>32</i>	29 <i>13</i>	365 <i>222</i>	102 <i>258</i>	897 <i>277</i>	177 <i>277</i>	3,361 <i>1,149</i>	64 <i>166</i>	270	1,613	99	8,814	602	5,330	1,537
Lewisham ...	901	5	77	186 <i>5</i>	2	13	13	16 <i>—</i>	5 <i>—</i>	122 <i>68</i>	134 <i>95</i>	337 <i>73</i>	154 <i>96</i>	1,643 <i>448</i>	55 <i>105</i>	85	944	6	2,843	352	2,068	172
Paddington ...	1,102	50	39	98 <i>3</i>	1	20	65	126 <i>15</i>	97 <i>23</i>	231 <i>165</i>	279 <i>134</i>	475 <i>191</i>	442 <i>174</i>	2,473 <i>1,092</i>	— <i>68</i>	102	1,175	36	9,974	532	4,752	326
Poplar ...	946	49	6	126 <i>11</i>	10 <i>2</i>	9	17	13 <i>5</i>	11 <i>5</i>	301 <i>57</i>	293 <i>147</i>	449 <i>73</i>	331 <i>155</i>	2,009 <i>847</i>	47 <i>121</i>	48	916	30	4,636	146	7,837	1,495
St. Marylebone	285	101	30	76 <i>9</i>	6 <i>2</i>	1	5	76 <i>16</i>	67 <i>39</i>	31 <i>31</i>	13 <i>37</i>	184 <i>56</i>	91 <i>78</i>	825 <i>317</i>	— <i>35</i>	37	347	89	3,253	142	1,840	185
St. Pancras ...	758	127	46	159 <i>6</i>	5	4	9	74 <i>8</i>	17 <i>1</i>	118 <i>32</i>	89 <i>83</i>	355 <i>46</i>	120 <i>84</i>	1,536 <i>355</i>	8 <i>90</i>	234	725	124	4,398	175	3,875	882
Shoreditch ...	558	29	43	69 <i>22</i>	8 <i>1</i>	7	3	5 <i>1</i>	4 <i>1</i>	189 <i>119</i>	129 <i>145</i>	270 <i>142</i>	144 <i>147</i>	1,333 <i>593</i>	6 <i>90</i>	76	554	14	5,728	373	2,339	735
Southwark ...	580	51	21	162 <i>6</i>	9 <i>1</i>	12	21	51 <i>1</i>	29 <i>4</i>	103 <i>132</i>	38 <i>221</i>	328 <i>142</i>	97 <i>233</i>	1,452 <i>502</i>	162 <i>125</i>	114	455	94	5,046	25	2,303	452
Stepney...	1,691	80	39	238 <i>19</i>	23 <i>13</i>	10 <i>2</i>	26 <i>4</i>	107 <i>21</i>	38 <i>18</i>	238 <i>437</i>	158 <i>515</i>	593 <i>479</i>	245 <i>550</i>	3,677 <i>1,529</i>	123 <i>143</i>	127	1,667	88	7,686	288	4,724	1,128
Stoke Newington	221	14	15	44 <i>1</i>	—	2	1	17 <i>5</i>	1 <i>2</i>	23 <i>44</i>	9 <i>24</i>	86 <i>50</i>	11 <i>26</i>	423 <i>120</i>	4 <i>17</i>	53	226	3	889	26	698	205
Wandsworth ...	1,192	22	39	214 <i>20</i>	5	20	17	70 <i>3</i>	14 <i>6</i>	241 <i>101</i>	789 <i>323</i>	545 <i>124</i>	825 <i>332</i>	3,079 <i>1,494</i>	39 <i>158</i>	75	1,266	47	5,432	234	4,884	533
Westminster ...	677	2	24	159 <i>1</i>	5	13	19	9 <i>4</i>	— <i>1</i>	67 <i>15</i>	58 <i>76</i>	248 <i>17</i>	82 <i>81</i>	1,131 <i>262</i>	— <i>52</i>	142	674	1	2,370	112	3,444	159
Woolwich ...	1,155	19	10	177 <i>4</i>	18	17	23	46 <i>3</i>	22 <i>5</i>	370 <i>170</i>	373 <i>202</i>	610 <i>177</i>	436 <i>207</i>	2,614 <i>1,176</i>	210 <i>107</i>	110	996	15	4,930	483	5,023	960
TOTALS ...	23,466	1,125	882	3,681 <i>291</i>	156 <i>32</i>	316 <i>14</i>	457 <i>63</i>	1,443 <i>256</i>	598 <i>200</i>	4,774 <i>3,153</i>	4,313 <i>4,380</i>	10,214 <i>3,714</i>	5,524 <i>4,675</i>	49,600	1,093 <i>18,921</i>	2,802 <i>2,517</i>	23,260	1,007	125,391	6,706	99,685	17,179

Venereal
disease.
Hostel
accommoda-
tion.

From the outset the necessity was recognised for accommodation where young women and children under treatment could be lodged during the period of infectivity. Certain hostels managed by or independently of hospitals have received grants in aid for this purpose, and experience has proved the value of these hostels for the more efficient treatment of certain cases and for preventing the spread of disease. During the year 1928, the number of patients dealt with at these institutions from the areas in the scheme was 235 the aggregate number of days in residence being 23,377.

Rescue
homes.

The desirability of maintaining treatment and observation of girls and women for whom residence in hostels has been provided during the acute stages of venereal disease, engaged the attention of the Public Health Committee of the Council during the year. As a result, arrangements were made with the authorities of certain Rescue Homes providing vocational training in domestic and other work, to receive young women and girls who had been certified by the medical officer of a clinic, that although requiring continued treatment and observation they could reside in any institution without danger to other residents. These arrangements were not completed until late in the year, and it was only possible to fill two of the eleven beds available for the purpose.

The Council's Tuberculosis Scheme.

Tuberculosis
dispensary
service.

Detailed information has been furnished by the metropolitan borough councils as to the work of the tuberculosis dispensaries, including particulars as to the numbers of new cases and "contacts" examined, and the number of home visits, etc. The information is summarised in the table on pages 40 and 41.

After-
histories of
tuberculous
patients.

An investigation has been made into the after-histories after a period of five years, of adult and child patients treated in residential institutions during the year 1922.

Adults.—The number of adult cases investigated was 3,017, which included 192 surgical cases. The following table shows the result of the enquiry and also (in brackets) the corresponding figures ascertained from last year's enquiry into the 1921 cases.

* Class.	Total.	Percentage alive five years after discharge.	Percentage dead.
A	372 (468)	80.6 (83.5)	19.4 (16.5)
B 1	253 (330)	60.1 (61.5)	39.9 (38.5)
B 2	1,376 (1,299)	33.9 (34.0)	66.1 (66.0)
B 3	824 (858)	5.6 (3.7)	94.4 (96.3)
Surgical	192 (223)	71.9 (73.5)	28.1 (26.5)

* The classification adopted is as follows:—

- A. Cases in which tubercle bacilli have not been demonstrated in the sputum ;
- B. Cases in which tubercle bacilli have been demonstrated in the sputum ;
- B.1 Early cases ;
- B.2 Moderately advanced cases ; and
- B.3 Advanced cases.

Particulars obtained as to the fitness for work in 1927 of the 1,103 surviving adult patients who were discharged from treatment in 1922 show that out of a total of 452, A. and B.1 cases, 65 per cent. were at work. The corresponding percentage for the A. and B.1 cases in the 1921 group was 68. The percentages at work in the other categories and also the corresponding figures for the 1921 group (shown in brackets) are as follows : B.2, 39 (40) per cent. ; B.3, 22 (25) per cent. ; and surgical, 73 (71) per cent. Of the total number of 1,103 in all categories, 53.5 (57.5) per cent. were at work, 3.7 (4.4) per cent. were fit for work but were unemployed, 42.8 (37.5) per cent. were unable to work (including cases receiving further residential treatment).

Children.—The particulars obtained as to the after histories of children discharged in 1922 relate to 513, of which 307 are pulmonary and 206 non-pulmonary.

The mortality records are as follows. (The figures in brackets refer to last year's enquiry into the 1921 cases.)

Class.	Total.	Percentage alive five years after discharge.	Percentage dead.
A	225 (271)	95.5 (90.0)	4.5 (10.0)
B.1	16 (11)	62.5 (44.5)	37.5 (55.5)
B.2	27 (18)	37.0 (50.0)	63.0 (50.0)
B.3	39 (33)	7.7 (3.0)	92.3 (97.0)
Surgical	206 (189)	84.0 (81.0)	16.0 (19.0)

The mortality rates of the non-pulmonary cases classified according to the location of the disease are as follows:—

	Total.	Percentage alive five years after discharge.	Percentage dead.
Hip	45	82.2 (71.1)	17.8 (28.9)
Spine	38	68.4 (75.7)	31.6 (24.3)
Other bones	40	90.0 (88.6)	10.0 (11.4)
Glands	71	93.0 (93.2)	7.0 (6.8)
Other parts	12	66.7 (53.8)	33.3 (46.2)

Of the 238 surviving pulmonary cases, 62 were at school and 145 at work, and of 173 surviving non-pulmonary cases, 71 were at school and 86 at work.

The following table indicates the number of applications from adults for residential treatment during each of the last five years:—

	Applications for first period of treatment.			Applications for further treatment.			Total applications.
	Ex-Service.	Civilian male.	Female.	Ex-Service.	Civilian male.	Female.	
1924 ...	363	1,823	1,705	714	560	469	5,634
1925 ...	381	1,929	1,829	598	605	527	5,869
1926 ...	128	2,262	1,864	478	693	582	6,007
1927 ...	63	2,119	1,819	417	727	622	5,767
1928 ...	33	2,125	1,839	345	760	633	5,735

Tuberculosis,
residential
treatment

Of the 5,735 adult cases recommended for residential treatment during 1928, only 25 were subsequently withdrawn, 5,113 were accepted and 597 were not accepted. The 5,113 cases were disposed of as follows: (a) 1,258 were passed for admission to "observation" beds in order to determine "diagnosis" or "suitability for sanatorium treatment"; (b) 3,855 were admitted direct to sanatoria or hospitals. Of the foregoing accepted cases, 337 for various reasons failed to enter institutions and 21 were awaiting vacancies at the end of the year.

The cases referred to "observation" hospitals were generally (1) patients in whom the diagnosis of tuberculosis was doubtful; (2) acute cases; and (3) patients with well-marked symptoms whose suitability for sanatorium treatment could only be satisfactorily determined after a period of observation in hospital.

During the year 1,208 patients were discharged from "observation beds" and their classification was as follows (the corresponding figures for 1927 in pulmonary cases are also given):—

		1928.		1927.	
Pulmonary.		Number.	Percentage.	Number.	Percentage.
Group A ... ..	...	316	35.27	355	36.30
Group B1 ... ..	...	39	4.35	60	6.13
Group B2 ... ..	...	415	46.32	484	49.49
Group B3 ... ..	...	126	14.06	79	8.08
Total pulmonary cases		896		978	
Surgical cases ... ..	...	21		18	

Total diagnosed as tuberculous 917

926

For definition of classification see footnote on page 42.

In the remaining 291 cases the diagnosis of tuberculosis was not confirmed. Of the 917 cases definitely diagnosed as tuberculous, 651 pulmonary cases were sent to sanatoria, 75 to institutions for advanced cases, 16 died in the "observation" hospitals, 9 cases were transferred to surgical institutions, and 166 were discharged home or arrangements made for them independently of the Council's Tuberculosis Scheme.

The total number of adults admitted to institutions during 1928 was 5,087 as against 5,311 in 1927. 1,946 were under treatment at the commencement of the year, so that the total number of adults treated in 1928 was 7,033 as against 7,152 in 1927. The number under treatment on 31st December, 1928, was as follows (the corresponding figures for the previous year are shown in brackets) :—

			Discharged soldiers.	Civilian adults.	Totals.
Voluntary institutions	...	...	99 (129)	479 (507)	578 (636)
Metropolitan Asylums Board	...	...	26 (37)	1,316 (1,273)	1,342 (1,310)
Total	...	...	125 (166)	1,795 (1,780)	1,920 (1,946)

The immediate results of the treatment of patients discharged on completion of treatment during 1928 and the two preceding years are indicated in the subjoined table. All percentages are shown in *italics*. The upper line of percentage figures under each classification heading indicates the percentage of cases falling within each classification group, and the second line of percentage figures shows the percentage of cases falling under each division into which results of treatment are classified. For the purpose of this table patients of 15 years of age on admission are regarded as adults, owing to the "age" division of patients required for the purposes of the Ministry of Health, although treatment for them was arranged in institutions for children.

Immediate results of treatment.	CLASSIFICATION.																	
	A.			B1.			B2.			B3.			Surgical.			Totals.		
	1926	1927	1928	1926	1927	1928	1926	1927	1928	1926	1927	1928	1926	1927	1928	1926	1927	1928
Quiescent ..	135 <i>47</i> <i>22.9</i>	181 <i>46.6</i> <i>27.4</i>	275 <i>52.6</i> <i>36.9</i>	42 <i>14.6</i> <i>14.1</i>	73 <i>18.8</i> <i>28.8</i>	84 <i>16.1</i> <i>38.2</i>	29 <i>10.1</i> <i>1.1</i>	51 <i>13.2</i> <i>2.2</i>	86 <i>16.4</i> <i>3.8</i>	— — —	— — —	— — —	81 <i>28.3</i> <i>19.6</i>	83 <i>21.4</i> <i>21.7</i>	78 <i>14.9</i> <i>21.6</i>	287 <i>100</i> <i>6</i>	388 <i>100</i> <i>8.4</i>	523 <i>100</i> <i>11.4</i>
Much improved	349 <i>17.9</i> <i>59.2</i>	352 <i>19.6</i> <i>53.3</i>	371 <i>19.3</i> <i>49.8</i>	215 <i>11</i> <i>72.4</i>	168 <i>9.4</i> <i>66.5</i>	124 <i>6.5</i> <i>56.3</i>	1,093 <i>56</i> <i>41.3</i>	1,021 <i>57</i> <i>45</i>	1,172 <i>61.1</i> <i>51.7</i>	29 <i>1.5</i> <i>3.4</i>	45 <i>2.5</i> <i>4.3</i>	49 <i>2.6</i> <i>4.9</i>	265 <i>13.6</i> <i>64.3</i>	205 <i>11.5</i> <i>53.5</i>	202 <i>10.5</i> <i>56</i>	1,951 <i>100</i> <i>40.7</i>	1,791 <i>100</i> <i>38.8</i>	1,918 <i>100</i> <i>41.7</i>
No material improvement	102 <i>4.9</i> <i>17.3</i>	122 <i>6.4</i> <i>18.5</i>	91 <i>5.5</i> <i>12.2</i>	38 <i>1.8</i> <i>12.8</i>	12 <i>.6</i> <i>4.7</i>	12 <i>.7</i> <i>5.5</i>	1,473 <i>70.4</i> <i>55.7</i>	1,152 <i>60.3</i> <i>50.7</i>	978 <i>58.8</i> <i>43.1</i>	422 <i>20.2</i> <i>49.9</i>	549 <i>28.7</i> <i>52.1</i>	514 <i>30.9</i> <i>51.3</i>	56 <i>2.7</i> <i>13.5</i>	77 <i>4</i> <i>20.1</i>	69 <i>4.1</i> <i>19.1</i>	2,091 <i>100</i> <i>43.7</i>	1,912 <i>100</i> <i>41.4</i>	1,664 <i>100</i> <i>36.2</i>
Died in institutions	4 <i>.9</i> <i>.6</i>	5 <i>.9</i> <i>.8</i>	8 <i>1.6</i> <i>1.1</i>	2 <i>.4</i> <i>.7</i>	— — —	— — —	50 <i>10.8</i> <i>1.9</i>	46 <i>8.7</i> <i>2.1</i>	30 <i>6.1</i> <i>1.4</i>	395 <i>85.5</i> <i>46.7</i>	460 <i>86.9</i> <i>43.6</i>	440 <i>89.8</i> <i>43.8</i>	11 <i>2.4</i> <i>2.6</i>	18 <i>3.5</i> <i>4.7</i>	12 <i>2.5</i> <i>3.3</i>	462 <i>100</i> <i>9.6</i>	529 <i>100</i> <i>11.4</i>	490 <i>100</i> <i>10.7</i>
Totals ..	590 <i>12.3</i> <i>100</i>	660 <i>14.3</i> <i>100</i>	745 <i>16.2</i> <i>100</i>	297 <i>6.2</i> <i>100</i>	253 <i>5.5</i> <i>100</i>	220 <i>4.8</i> <i>100</i>	2,645 <i>55.2</i> <i>100</i>	2,270 <i>49.1</i> <i>100</i>	2,266 <i>49.3</i> <i>100</i>	846 <i>17.7</i> <i>100</i>	1,054 <i>22.8</i> <i>100</i>	1,003 <i>21.8</i> <i>100</i>	413 <i>8.6</i> <i>100</i>	383 <i>8.3</i> <i>100</i>	361 <i>7.9</i> <i>100</i>	4,791 <i>100</i> <i>100</i>	4,620 <i>100</i> <i>100</i>	4,595 <i>100</i> <i>100</i>

With regard to children, the number recommended for treatment under the Council's Tuberculosis Scheme during each of the last five years was respectively 1,019 in 1924, 1,025 in 1925, 1,163 in 1926, 1,190 in 1927, 1,081 in 1928. There is now no waiting list, either for pulmonary or surgical cases in children. In dealing with surgical cases arrangements have been made for the immediate admission to residential institutions of children suffering from tuberculosis of the hip, spine and other joints.

Of the 1,081 children (*i.e.*, patients under 16 years of age) referred to the Council in 1928, 1,048 were accepted for treatment, 33 were not accepted or were withdrawn; 25 of the accepted cases for various reasons failed to enter institutions after acceptance. There were 219 children under treatment in voluntary institutions and 669 in Metropolitan Asylums Board institutions on 1st January, 1928 (total

888) and 988 children were admitted during the year, making in 1928 the total number of children treated 1,876 as against 1,928 in 1927. The number of children under treatment on 31st December, 1928, was 855, distributed as follows:—

Metropolitan Asylums Board Institutions	.. .. .	629
Voluntary Institutions	.. .. .	226

The condition of the children under 15 years of age (on admission) who were discharged from residential institutions in 1928 is indicated in the following table (children of 15 years of age are included with adults owing to requirements of the Ministry of Health). The figures in brackets are those for 1927:—

Immediate results of treatment.	Classification.				Surgical.	Totals.
	A.	B1.	B2.	B3.		
Quiescent	66 (72)	— (—)	1 (1)	— (—)	344 (360)	411 (433)
Much improved... ..	82 (83)	1 (1)	15 (5)	— (—)	186 (224)	284 (313)
No material improvement	26 (19)	— (1)	15 (6)	10 (7)	23 (27)	74 (60)
Died in institution ...	1 (1)	— (—)	— (2)	14 (7)	16 (18)	31 (28)
Total	175 (175)	1 (2)	31 (14)	24 (14)	569 (629)	800 (834)

In addition to the foregoing arrangements for residential treatment of tuberculous children the Council has established seven open-air day schools with accommodation for 540 children suffering from pulmonary tuberculosis or else from tuberculous glands with no open wounds who do not appear to require treatment in residential institutions. The work of these schools is dealt with in the section of this report dealing with the school medical service.

Arrangements were made by the Council in 1926 for an experimental scheme to be put into operation which would enable the metropolitan borough councils to utilise as part of the tuberculosis dispensary scheme the facilities for artificial light treatment at certain hospitals and centres throughout London approved by the Ministry of Health and the Council. This experimental scheme was continued throughout the year 1928. It appeared, however, from reports obtained from the tuberculosis officers of the 19 boroughs in which arrangements for artificial light treatment were approved by the Council, that very little use had been made of the scheme by the tuberculosis officers, an average of only six cases during a period of about nine months having been recommended from each of the boroughs taking part in the scheme. The reports of these officers disclosed practically no evidence of benefit having been derived by the patients from this form of treatment. The further experience gained this year confirms the view expressed in last year's report that the best results are obtained when light treatment is given as an additional method of treatment under suitable conditions in residential institutions in the country where all methods of treatment are available in addition to fresh air, good food and a regular régime. It has, therefore, been decided to proceed no further with the scheme, but to bring to the notice of the metropolitan borough councils the importance of ensuring that all cases of active tuberculosis whether pulmonary or non-pulmonary, particularly in the early and remediable stages, are recommended for residential treatment at the earliest possible moment.

Artificial
light treat-
ment.

The valuable work of the tuberculosis care committees in arranging assistance for tuberculous patients and their families cannot be summarised statistically, but the effectiveness of the tuberculosis scheme is in no small measure indebted to their co-operation. The scope of activity of the committees has widened considerably since the inception of the scheme and the quality of the work which involves close co-operation with the various social agencies, and public officials in the respective boroughs is now excellent. There is much evidence that the help and advice given at the right moment by the care committees enables those assisted to re-establish themselves in life after residential treatment.

Tuberculosis
Care
Committees.

Handicraft
classes for
dispensary
patients.

Among the activities of the Tuberculosis Care Committees in several boroughs is included the organisation of handicraft classes for dispensary patients, mainly those who are unfit for ordinary employment. At the beginning of the year such classes were in operation in five boroughs and classes were established in four additional boroughs during the year, making a total of nine classes. From the reports received it is evident that this work is of considerable value. Improvement in the morale of patients, long unaccustomed to work, is a noticeable feature, and the opportunity of obtaining pocket money by the sale of articles made has been much appreciated by the patients. The occupation, in many cases, has rekindled the work habit and has led to the patients obtaining permanent employment.

Employment.

Assistance to patients in obtaining employment following residential treatment is a valuable feature of the activities of the Tuberculosis Care Committees.

In view of the importance of this question the Metropolitan Asylums Board has adopted a scheme which provides for the training for nursing and domestic service of selected patients sent by the Council to one of the Board's institutions. Nine posts for nurses and nine for domestic servants are to be reserved for trainees who complete satisfactorily the course of training. The scheme is not yet fully in operation although a few appointments have been made.

Boarding out
of contacts
and supply of
surgical
appliances,
etc.

With the co-operation of the Invalid Children's Aid Association the scheme for boarding out children living in contact with cases of advanced pulmonary tuberculosis has been continued, and, in a few cases, where it was not possible to make other arrangements, children have been provided for in order to enable their mothers to accept institutional treatment. The benefit derived by the children from being boarded out in the country and the relief thereby afforded to the home is much appreciated; at the same time the opposition of many parents to parting with their children considerably limits the scope of the scheme. During 1928, 232 applications were received, and 149 children accepted, the remaining 83 being withdrawn or unsuitable. At the end of the year 52 children were being maintained under this scheme. Beds were provided in institutions for such of those tuberculous children who required medical supervision and whose homes were unfavourable for their return after residential treatment under the Tuberculosis Scheme. Eight children were dealt with in this way during 1928. Arrangements were also made for providing surgical appliances for children after discharge from institutional treatment, and for supplying clothing in certain cases to children sent away under the Tuberculosis and Contact Schemes. Ninety-three children were provided with surgical appliances and 13 children with clothing during 1928.

Report on the work of the Bacteriological Laboratory during 1928.

A total of approximately 10,000 examinations of various specimens and material was made during the year. For carrying out this work some 8,700 tubes and plates of culture media were prepared by the laboratory assistants. The examinations may be grouped under the following headings:—

I.—*Diphtheria*.—Of 6,406 examinations and re-examinations made in the Council's schools by swabbing from the throat and nose for the presence of diphtheria bacilli in culture, 5,747 were negative, and 659 or 10.3 per cent. yielded morphological diphtheria bacilli.

The primary swabbings (i.e., not counting re-swabbings) numbered 5,935 children, and of these 457 or 7.6 per cent. proved positive. There was a total of 471 re-examinations, 202 of which still showed the presence of diphtheria bacilli. In the event of diphtheria bacilli being found on re-examination for a third time, it has been considered advisable to apply a virulence test, and for this purpose the bacillus was isolated in pure culture and sent to the Clinical Research Laboratory for animal inoculation. The cultures sent from 26 such cases were reported "virulent" in 8 instances, and it was impossible therefore to permit to return to school of the

remaining 18 children who were non-virulent and harmless, though still "carriers."

The chronic virulent "carriers" were then dealt with at the special hospital clinics for which arrangements have been made during the past two to three years with Guy's Hospital and more recently with the London and St. Mary's Hospitals.

II. *Ringworm*.—Specimens of hair were examined in 1,374 cases and showed the presence of a fungus in 488 or 35.5 per cent., made up of 398 of the small spore, and 86 of the large spore variety. Four cases proved to be favus and two were not determined.

III. *Miscellaneous*. Sputum.—In 7 out of 16 specimens tubercle bacilli were found. Blood.—Count and hæmoglobin estimation in two cases showed a chlorotic type of anæmia. Urine.—Four specimens were examined chemically and microscopically or bacteriologically. Films from vaginal or urethral discharge.—In 6 cases these proved negative for gonococci. Throat and nose swabbings from four maternity nurses.—These proved negative for streptococci. Pemphigus.—One case yielded staphylococcus aureus. Post mortem material from Brain.—Histological examination of 5 specimens showed presence of miliary tubercles. (Highgate Hospital).

IV. *Special Examinations*.—(1) Swimming Bath water.—39 samples were examined bacteriologically by quantitative count of the number of colonies developing from 1 c.c. in plate culture after 48 hours incubation at 37° C.—and for the presence of *B. Coli* in amounts ranging from 1/10 to 1 c.c.

Eleven separate swimming-baths and pools were under investigation and the results are here tabulated.

Open-air Baths fitted with special plant for filtration, disinfection and aeration.

	No. of samples.	Highest count. No. of Colonies per c.c.	Presence of <i>B. coli</i> .
(1) Highbury	4	50 in July	0
(2) Peckham	3	26 in July	in 1/10 c.c. but absent in two other samples.

Open-air Baths and Pools with no filtration or disinfecting plant.

	No. of samples.	Count of Colonies per c.c.		Presence of <i>B. coli</i> .	
		Highest	Lowest.	Highest.	Lowest.
(1) Brockwell	6	6,300 in July	14 in May	in 1/10 c.c.	in 5 c.c.
(2) Eltham	3	160 in Aug.	11 in July	in 1 c.c.	in 5 c.c.
(3) Highgate	1	1,000 in June		in 1/10 c.c.	
(4) Millwall	4	64,000 in July	10 in Aug.	in 1/10 c.c.	0
(5) Royal Victoria Gardens	4	3,500 in Aug.	52 in June	in 1 c.c.	in 1/10 c.c.
(6) Southwark Park	3	3,000 in July	4 in June	in 1/10 c.c.	in 1 c.c.
(7) Victoria Park	2	140 in June	60 in June	in 1/10 c.c.	in 1/10 c.c.
(8) Tooting	6	9,000 in Aug.	4 in May	in 1/10 c.c.	in 5 c.c.
(9) Plumstead	3	500 in July	100 in June	in 1/10 c.c.	in 1/10 c.c.

(2) Specimens of Sand from the sand pits in Meath Garden, Bethnal Green, were examined bacteriologically on two separate occasions. On March 12th.—Two samples yielded a count of approximately 100,000 colonies (chiefly moulds) per gramme of sand, and the presence of *B. Coli* was shown in 1/100 gramme of sand. On April 20th—Two samples yielded an average of 57,000 colonies per gramme of sand, and showed the presence of *B. Coli* in 1/10,000 of a gramme.

(3) Milk.—Two samples of milk submitted for examination from Banstead Mental Hospital in February were tested for the number of coliform organisms present. Farm Milk.—Lactose fermenters (including *B. Coli*) numbered 1,500 per

c.c. Contract Milk.—Lactose fermenters (including *B. Coli*) numbered 187,000 per c.c. As no non-lactose fermenting colonies were found in either specimen, *B. Typhosus* could be considered absent.

V. *Cerebro-Spinal fluid examinations*.—During 1928 assistance in diagnosis was afforded by examination of 81 specimens of cerebro-spinal fluid from a total of 79 cases in the Poor Law Hospitals, viz., 38 at the Fulham Hospital, 26 at St. James' Hospital, Balham, 9 at Highgate Hospital and 6 at St. Pancras Hospital. Although such help was originally offered in connection with cases admitted to the hospitals, to assist the diagnosis of notifiable infectious disease, particularly cerebro-spinal fever, encephalitis lethargica and poliomyelitis, the scope has been considerably widened and now includes many other conditions. Thus out of the 81 specimens examined during the past year, six only were from cases of encephalitis and five from cases finally diagnosed as meningococcal or cerebro-spinal meningitis. Taken in order numerically the specimens reported on may be conveniently classified under the following headings according to the final diagnosis :—

1. *Meningismus*.—The term applied to conditions clinically suggestive of inflammation of the meninges, but showing normal cerebro-spinal fluid and proving from the subsequent course of events to be due to pneumonia, bronchitis, gastro-enteritis, etc. Thus out of 14 cases which showed nothing abnormal in the cerebro-spinal fluid, but diagnosed on clinical grounds as tuberculous or other form of meningitis, eleven eventually proved to have been suffering from pneumonia or broncho-pneumonia, two from gastro-enteritis, and one from enteric fever.

2. *Meningitis*.—(25 specimens from 23 cases). (a) *Tuberculous meningitis*.—11 cases aged 54, 26, 24 (two), 23, 15, 7 (three), 2 years and 1 5/12 years. Tubercle bacilli were found in 6 specimens, and in the remainder, although no tubercle bacilli were found, pathological changes, *e.g.*, well marked excess of lymphocytes and increase in protein, pointed to the probability of a tuberculous meningitis, confirmed by post mortem examination.

(b) *Other forms of meningitis*—(14 specimens from 12 cases).

(1) *Meningococcal* (cerebro-spinal or post basic).—In 7 specimens of cerebro-spinal fluid from 5 cases the presence of a marked excess of leucocytes chiefly polymorphs, in the acute stage, succeeded later by lymphocytes, together with gram negative intra-cellular diplococci and a marked increase in protein, absence of or merest traces of dextrose, pointed to a meningococcal infection.

(2) *Pneumococcal*.—In two cases, aged 23 and 37, abundant pneumococci and heavy deposit of pus cells were found.

(3) *Influenzal*.—B influenzae and numerous polymorph cells confirmed the clinical diagnosis in one case.

(4) *Secondary to extension from the mastoid and middle ear, meningitis* was indicated by the presence in three cases of pus cells, marked excess of protein, together with staphylococcus and *B. proteus* obtained in culture. In one case of uncomplicated otitis media, the cerebro-spinal fluid proved to be normal and recover followed.

3. *Cerebral Disorders*.—I. *Gross Lesions*.—(a) *Tumour* (three cases). (1) carcinoma of frontal lobe, secondary to carcinoma of the lung. (2) Glioma of the temporosphenoidal lobe. (3) Cerebellar tuberculoma. The cerebro-spinal fluid afforded little help in diagnosis beyond excluding meningitis and cerebral syphilis, the only abnormality being the increase in the protein content. (b) *Cerebral hæmorrhage* (two cases)—In which the fluid showed some increase in protein and colour changes due to the presence of blood serum.

II. *Cerebral degeneration associated with altered mental states* (10 cases).

(a) *Chronic Hydrocephalus* (two cases, aged 47 and 3 years)—One showing some increase in lymphocytes and protein content but no evidence of active meningitis, and the other normal fluid. (b) *Polioencephalitis*, aged 12 years, and cerebral

diplegia, aged 11 months—In each condition the fluid was normal. (c) *Dementia* (two cases, aged 49 and 54 years)—Normal fluid was found with no evidence of meningitis or cerebral syphilis. (d) *Cerebral syphilis* (one case, aged 33 years)—The fluid showed slight lymphocytosis, excess of globulin and positive Wassermann and colloidal benzoin reactions. (e) *Epilepsy* (three cases, aged 51 and 43 years and 4 months)—In one case the fluid showed increased protein content only, and in the others was normal—syphilis was contra-indicated by negative Wassermann reactions and absence of cells.

III. Encephalitis lethargica (six cases)—In three cases, during the acute phase of the disease, and in two during the later stages (one and three years respectively since onset) the fluid was examined and, as is generally found, showed no changes—thus excluding meningitis.

The sixth case, a man aged 35, was clinically suggestive of the acute phase of encephalitis and the cerebro-spinal fluid showed a marked lymphocytosis (120 cells per c.m.m.), and increase of protein content. Positive Wassermann and colloidal benzoin reactions pointed to a syphilitic infection, which may have complicated the acute cerebral condition. Recovery followed.

4. Diseases of the spinal cord and peripheral nerves (nine cases). (a) *Pressure Paraplegia* from spinal caries (two cases) from lymphosarcoma—(one case). The fluid in each case showed no excess of cells, but marked increase in the protein content; the negative Wassermann and colloidal benzoin reactions contra-indicated neurosyphilis. (b) *Chronic spastic paraplegia* (one case)—Normal fluid was found together with negative Wassermann reaction. (c) *Tabes dorsalis* (one case)—Normal fluid with negative Wassermann and colloidal benzoin reactions (as occurs in about 40 per cent. of cases of this form of neurosyphilis). (d) *Anterior poliomyelitis* (two cases)—One in the acute stage (aged 7 years) showed normal fluid. In the other, whose duration was several months, the fluid showed marked lymphocytosis (63 per c.m.m.) and slight increase of protein. (e) *Peripheral neuritis*—affecting the lower extremities (two cases). The fluid showed nothing abnormal.

5. Functional disorders (five cases).—In three cases the cerebro-spinal fluid was normal. The clinical symptoms indicated gross cerebral or spinal lesions, but eventually complete recovery resulted and in consequence the conditions were regarded as temporary functional neuroses. In one case, however, the fluid showed a marked increase both in the cell content (to 200 lymphocytes per c.m.m.) and in the amount of protein. A negative Wassermann reaction and the absence of tubercle bacilli contra-indicated both neurosyphilis and tuberculous meningitis. Eventually the symptoms of headache and vomiting, which had pointed to possible cerebral tumour, cleared up and the patient recovered. In the fifth case with paraplegic symptoms, weakness in both legs, the fluid was normal and although there was no improvement in the condition, in the absence of evidence of organic disease, the patient, a woman of 34, was discharged as a case of hysterical paraplegia.

6. Acute blood infections—(a) *Infective endocarditis*.—In three cases in which the cerebro-spinal fluid was examined, the subsequent course showed the condition to be due to infective endocarditis, confirmed in the two cases by post mortem examination. The fluid during life was blood stained and the films from the blood cell deposit showed a well marked polymorphocytosis, and on culture, in one case staphylococcus, and in the other streptococcus, was obtained—indicating a possible blood infection rather than meningitis, as was borne out by the later examination post mortem. In the third case, the fluid contained no blood and was normal in character and the patient was subsequently discharged suffering from infective endocarditis. (b) *General toxæmia* (two cases) in which the cerebro-spinal fluid was examined and found to be normal. One proved to be suffering from purulent synovitis of the knee joint and the other from osteomyelitis of the femur. Post mortem examinations showed no evidence of meningitis.

7. Nephritis and uræmic symptoms (three cases).—In two cases which recovered the cerebro-spinal fluid was found to be normal. In the third case, the increase in the amount of area to over 0.4 per cent., and of chlorides to 1 per cent., in the cerebro-spinal fluid, pointed to a state of uræmia, which was associated with sudden fatal hemiplegia.

Consultation Visits.—The low incidence in London of both encephalitis lethargica and cerebro-spinal fever during the past year was reflected in the small number of calls for consultation in suspected cases. Only four such visits were paid to patients in North Kensington, Hampstead, Islington and Eltham at the request of private practitioners or medical officers of health :—(1) A boy, aged 5, proved to be a case of measles complicating cerebral tumour. (2) A woman of 30 (full term pregnancy) was suffering from probable encephalitis associated with myoclonus ; she experienced a normal confinement, and has so far made a good recovery after an interval of five months. (3) A man, aged 62, whose febrile state, complicated by extensive rash and lethargy, rendered diagnosis very uncertain, was transferred to hospital and very shortly made complete recovery. The final diagnosis was drug-poisoning from overdose of aspirin and aconite. (4) A girl, aged 18, at Avery Hill College, whose condition was suggestive of encephalitis lethargica or cerebral tumour, made recovery and after an interval of five months showed nothing abnormal.

*Midwives Acts, 1902 to 1926, Nursing Homes Registration Act, 1927,
and Children Act, 1908.*

Midwives.

There are approximately 5,000 certified midwives with London addresses of whom 854 gave notice of intention to practise within the county during the year as compared with 870 in 1927, the remainder acting mostly as general or monthly nurses under medical supervision. Practising midwives, other than those who work entirely in voluntary or poor law hospitals under medical supervision, are subject to inspection by the Council's officers with a view to ensuring that a proper standard of efficiency is maintained. It may be noted that E.27 of the Rules of the Central Midwives Board provides that the said Rules, other than 22 (2) shall not apply to certified midwives exercising their calling in poor law institutions "under the supervision of a duly appointed medical officer," which is interpreted by the Central Midwives Board as meaning "a resident medical officer." The work of inspection is carried out by four women assistant medical officers who supervise the work of the midwives generally ; give advice in regard to any difficulties that may arise in connection with their work and pay special visits where cases of a septic nature or persistent high temperature, inflammation of the eyes or blisters on the child occur. 2,115 visits were paid this year as compared with 2,014 in 1927.

Infringe-
ments of
C.M.B.
rules.

95 infringements of the Rules of the Central Midwives Board were reported during the year, as compared with 77 during 1927. Of these, 75 were slight and a verbal caution was deemed to be sufficient, 13 cases of a more serious nature were dealt with by a written caution, and 5 were interviewed by the Committee and personally cautioned. One midwife was reported to the Central Midwives Board and severely censured ; in another case the Board directed that special observation should be kept on the midwife and reports submitted to the Board at the end of periods of three, six and nine months respectively. This midwife's name was ultimately removed from the roll.

Suspension
of midwives.

The Midwives Act, 1926, laid it down that in the case of midwives suspended from practice in order to prevent the spread of infection the local supervising authorities must compensate such midwife for loss of practice by the payment of such amount as is reasonable in the circumstances of the case, provided that the midwife was not herself in default. 15 midwives were suspended from practice during the year in order to prevent the spread of infection, and in 7 cases compensation was authorised.

The Midwives and Maternity Homes Act, 1926, amended section (ii) of the Midwives Act, 1902, so as to make it an offence for any uncertified person to attend women in child-birth, except under the direction and personal supervision of a registered medical practitioner, unless the case was one of sudden or urgent necessity. During the year 7 enquiries were made into such cases, as compared with 8 in 1927. In 1 case no further action was taken; in 5 a verbal or written caution was administered. The remaining case was prosecuted and the defendant was bound over in the sum of £10 and paid 21s. costs. Uncertified persons.

The Births and Deaths Registration Act, 1926, requires that the birth of every still-born child shall be registered by the registrar in a register of still-births, containing the heads of information prescribed by the first schedule of that Act. During the year there were 473 still-births reported by midwives in their practice, as compared with 582 in 1923, 594 in 1924, 510 in 1925, 513 in 1926 and 486 in 1927. Of the cases reported this year, 256 were male and 215 female, while in 2 cases the sex was not stated. 279 were reported as macerated, 192 not macerated, and in 6 the condition was not stated. Still-births.

During the year 294 cases of puerperal fever were reported, as against 267 in 1927. 55 of these cases proved fatal, as compared with 40 in 1927, a case mortality of nearly 18·7 per cent. as compared with 15 per cent. in 1927. In addition, the Registrar-General recorded 33 deaths from puerperal sepsis which were not certified as fever, as compared with 23 the previous year. The distribution of notified cases with the mode of delivery was as follows, deaths being shown in brackets :—Medical practitioners, 110 (19); Certified midwives, 58 (10); Medical practitioner and certified midwife, 5 (2); Hospitals and poor law institutions, 91 (17); Medical students, 11 (1); Cases of miscarriage or abortion where no attendant was engaged 16 (5); Uncertified women, 1 (0); Not ascertained, 2 (1). Total, 294 (55). Puerperal fever.

In July, 1926, the Ministry of Health made Regulations requiring the notification of puerperal pyrexia which is defined by the Regulations to be "any febrile condition (other than a condition which is required to be notified as puerperal fever under the Infectious Diseases (Notification) Acts) occurring in a woman within 21 days after child-birth or miscarriage in which a temperature of 100·4 Fahrenheit (38 centigrade) or more has been sustained during a period of 24 hours or has recurred during that period." Puerperal pyrexia.

The Regulations were amended in 1928 and now require a medical practitioner to notify any such case on the approved form and transmit the notification to the medical officer of health of the district in which the patient is actually living at the time of notification. In addition any notification of a case in a London hospital must specify the place from which and the date at which the patient was brought to the hospital and shall be sent to the medical officer of health of the district in which the said place is situated. 787 notifications of puerperal pyrexia were received during 1928, as compared with 892 in 1927. 42 of these cases proved fatal and were distributed as follows, the deaths are shown in brackets :—Medical practitioners, 248 (14); Certified midwives, 155 (11); Medical practitioner and certified midwife, 9 (2); Hospitals and Poor Law institutions, 319 (9); Cases of miscarriage or abortion where no attendant was engaged, 32 (4); No information, 3 (2). Total, 787 (42).

22 of the cases, with 7 deaths, were subsequently notified as puerperal fever, and are therefore shown in both tables.

The Rules of the Central Midwives Board indicate the emergencies for which a midwife must advise in writing that medical aid be obtained, and for which such help must be secured. A notice in the approved form is sent to the doctor, and London County Council. In the year now under review 6,984 such notices were received, as compared with 6,622 in 1927. The estimated number of confinements Medical aid.

carried out by midwives in independent practice during the year is 32,000. This appears to indicate that medical aid was necessary in about 21·8 per cent. of the cases, as compared with 19·5 per cent. during 1927.

Ophthalmia
neonatorum.

In 1926 regulations came into force rendering it no longer necessary for a midwife to notify a case of this disease to the local sanitary authority, this duty being assigned to the medical practitioner only. This, however, did not relieve the midwife of the necessity of sending a copy of her medical aid notice in all such cases to the London County Council. The Ministry of Health issued a memorandum in connection with the regulations, suggesting that the Council should consider whether it should not refrain from exercising the power of recovery from the patient's representative of the fee paid to a medical practitioner summoned by a midwife in a case of ophthalmia neonatorum, and the Council agreed to adopt the suggestion. The number of such cases during the year was 671, and the amount paid to medical practitioners in respect of such cases was £525 6s.

Inflammation
of the eyes—
Notices.

During the year 1,421 notices were received indicating that medical aid had been summoned for inflammation of the eyes of infants, as compared with 1,300 in 1927. 59 other cases arose in which either medical aid was not called in by the midwife or she failed to notify the Council that she had done so. Of these 1,480 cases, 444 proved to be ophthalmia neonatorum, as compared with 488 in 1927. 283 other cases that did not occur in midwives' practices were also notified, making a grand total of 727 such cases during the year, the percentage occurring in the practice of midwives being 61 per cent., as compared with about 60 per cent. in 1927. All the midwives' cases were investigated, and it was found that 434 were completely cured, 4 died and 2 could not be traced owing to the removal of the parents. Impairment of the vision of one eye occurred in 4 cases. 68 cases became in-patients at St. Margaret's Hospital, as compared with 61 during 1927.

Training of
midwives.

For some years it has been the practice of the Council to arrange classes and demonstrations for the post-graduate instruction of midwives. The demonstrations at institutions were well attended, and the lectures appeared to give great satisfaction. One of the lecturers has drawn attention to the distinct improvement observed by him with regard to ante-natal work. Ante-natal cards are being furnished to institutions at which there are pupils, with a view to improvement in their midwifery work. During the year the Medical Officer of the Middlesex County Council approached the London County Council suggesting that Middlesex midwives be admitted to the lectures on the same terms as London midwives. This was agreed to by the Committee, on the understanding that the Middlesex County Council would bear a proportionate share of the loss.

During the year 1 midwife was given a month's intern training at a post-certificate school at a cost of 2 guineas a week, and in another case a midwife who desired to obtain a teacher's certificate was paid the sum of six guineas towards her expenses.

On 22nd May, 1928, the Minister of Health appointed a Departmental Committee, under the chairmanship of Sir Robert Bolam, O.B.E., Hon. LL.D., M.D., F.R.C.P., "to consider the working of the Midwives Acts, 1902-1926, with particular reference to the training of midwives (including its relation to the instruction of medical students in midwifery), and the conditions under which midwives are employed." The Departmental Committee invited the London County Council to give evidence before them, and defined the following specific matters to which they proposed to give their attention in connection with their review of the position: (1) Period of training of midwives; (2) Curriculum; (3) Available facilities for teaching both theoretical and practical subjects; (4) Desirability of differentiation in midwifery training schools according to the type of pupil to be trained; (5) Qualifications for teachers of midwifery; (6) Post-certificate training; (7) Subsequent employment of midwives; (8) Need for inducements to secure well-educated and well-trained women in both rural and urban districts; (9) The

placing of maternity nursing on a more satisfactory basis; (10) The training in midwifery of medical students. It was agreed that evidence should be submitted on these matters to the Departmental Committee in due course.

During the year 125 cases of pemphigus neonatorum occurred, as compared with 251 during the previous year. In my last report attention was drawn to the fact that the cause of infection in such cases is obscure, and that an arrangement had been made for a special enquiry to be carried out. Dr. Christabel Eyre, who made the enquiry, came to the conclusion that the cases occurring were true pemphigus neonatorum and that the measures at present enforced by the Council for the prevention of the spread of infection appeared to be adequate so far as our present knowledge permits. Midwives now appear to realise the great importance of early diagnosis and careful personal disinfection once the diagnosis is established.

In the last annual report attention was drawn to the fact that there had been scarcely any decrease in the maternal mortality rate for some years past, and it was hoped that the higher standards of work in midwifery would lead to improvement in this respect. On 23rd April, 1928, the Ministry of Health issued a circular on the subject. This circular referred to a prior one, dated 30th June, 1924, suggesting that an investigation be made in every area by a competent and experienced medical officer with regard to all maternal deaths and all cases of puerperal fever. The inquiry was to be conducted with a view to ascertaining more exactly the actual causes which lead to maternal mortality, and in order, if possible, to provide further means of prevention. Further it was suggested that the responsibility for the investigation should be undertaken by a medical officer of experience, and that in those cases in which the Maternity and Child Welfare authority is not also the local supervising authority under the Midwives Acts the two authorities should confer with a view to deciding to what officer these investigations should be entrusted. Arrangements to give effect to the suggestion of the Ministry have been made, and reports on forms issued by the Ministry will be made by the officers of this Council concerned and exchanged with the borough medical officers, it being clearly understood that such reports are strictly confidential. A discussion of the statistics of maternal mortality appears earlier in this report, *see* p. 12.

The Midwives Act, 1918, gave to the Council the duty of paying the medical practitioners' fees when called in by midwives in cases of emergency. Later the Ministry of Health laid down a scale to which local authorities must adhere. The Midwives Act, 1926, fixed a limit of time, namely, two months from the date of the first visit, within which a medical practitioner must submit his claim. In pursuance of this provision 95 claims amounting to £97 18s. 0d. were refused during 1928. In addition 69 claims submitted by one medical practitioner in 1926 amounting to £85 6s. 0d. were refused. The claims were spread over a number of years, some visits being paid prior to 1926 and the refusal was based on the opinion of the solicitor. 3,736 claims were submitted during the year 1928, as compared with 3,535 in 1927, the total amount involved being £4,131 15s. 0d. as compared with £3,012 11s. 0d. in 1927. About 25 per cent. of this amount will, it is believed, in due course be recoverable from patients.

On 1st January, 1928, there were in all 245 lying-in homes registered under the provisions of Part IV of the London County Council (General Powers) Act, 1921. Twenty-five applications for registration were received during the period 1st January to 30th June, 1928. Fourteen of these applications were granted and one refused. During the same period 56 registrations were cancelled at the request of the registered keepers or upon the receipt of reports that the premises were no longer used as lying-in homes. On 30th June, 1928, there were 203 homes on the register.

The Nursing Homes Registration Act, 1927, came into force on 1st July, 1928. This Act repeals Part II of the Midwives and Maternity Homes Act, 1926, and also

Pemphigus
neonatorum.

Maternal
mortality.

Payment of
medical fees.

Lying-in
homes.

Nursing
homes.

so much of any local Acts as may provide for the registration of maternity homes. The Act applies to London subject to certain modifications which are set out in Section 11 of the Act, and extends the necessity for registration to include all premises used for or intended to be used for the reception of, and the providing of nursing for, persons suffering from sickness, injury or infirmity, but does not include (a) premises maintained or controlled by a Government Department, a local authority or a body established by Royal Charter or a special Act of Parliament; (b) certain premises authorised under the Lunacy Act, 1890, and the Mental Deficiency Act, 1913. Local supervising authorities have power to grant exemption, renewable annually, in respect of any hospital or institution not carried on for profit. In this connection it is to be noted that premises managed by a medical practitioner are now subject to registration. Their exemption was formerly granted under Part IV of the London County Council (General Powers) Act, 1921.

Special provision is included in the Act (Section 1 (3) (e)) to ensure that in all maternity homes established after 1st July, 1928, any person attending a woman in child-birth or nursing any patient in the home must be either a duly qualified medical practitioner, a certified midwife, a pupil midwife or a qualified nurse. Section 12 (3) of the Act provides that any person registered in respect of a maternity home prior to the commencement of this Act shall, if the authority with which he was previously registered is, for the purpose of this Act, the local supervising authority of the area in which the home is situated, be deemed a person duly registered under this Act in respect of that home.

All premises in the County of London known to be used for the reception of, and the provision of nursing for, persons suffering from sickness, injury or infirmity have been advised of the main provisions of the Act. All registered lying-in homes have been specially surveyed for the purposes of this Act. Up to 31st December, 1928, 257 applications for registration of nursing homes have been received and 204 certificates of registration have been issued, including those issued to maternity homes under Section 12 (3) of the Act. In addition 17 applicants have been informed that the Council is prepared to grant registration when a suitable qualified nurse is nominated to supervise the nursing in the home. In three cases the Council has refused to issue certificates of registration on the grounds that the premises were not suitable for registration or were not intended for the provision of nursing within the meaning of the Act. 98 applications have been received for exemption from registration under the Act; 59 of these have been granted and the remainder are being dealt with.

Considerable difficulties were met with in initiating the duties imposed by the Act and numerous reports on matters of principle were submitted to the Public Health Committee. On the whole, however, the Act has been administered harmoniously and the general principles which have been embodied in letters and circulars to keepers of homes are now understood and acted upon. In November, 1928, the Public Health Committee received a deputation from the keepers of nursing homes in the St. Marylebone district when many matters of difficulty were discussed and decisions arrived at concerning future action. A marked improvement in cleanliness, general orderliness and in the staff of many of the homes which have been inspected has been noted, and as time goes on it is hoped that there will be still greater improvement. By-laws with respect to nursing homes in the County of London have been prepared in accordance with model by-laws issued by the Ministry of Health.

The annual report for the year 1921 indicated fully the powers of the Council under the Children Act, 1908, Part I, with regard to infant life protection. Fourteen qualified nurses carry out the work of inspection and act as visitors under the Act. Further inquiries with regard to unnotified nurse infants and other irregularities are made by male inspectors attached to the department. At the end of 1928 there

were 2,146 homes under inspection, the number of nurse infants therein being 3,052.

Nurse infants who are kept under unsatisfactory conditions may, if such conditions fall within the purview of section 5 of the Act, be removed to a place of safety. In London poor law institutions are used for this purpose. During 1928 it was necessary to remove 5 nurse infants as against 4 in 1927. The Act permits local authorities to grant total or partial exemption from inspection in cases where circumstances appear to warrant such a course, but no application for exemption was made during 1928.

From time to time the homes where nurse-infants are kept are visited in order to ascertain whether the sanitary condition, etc., of the premises is satisfactory. 804 reports were made during 1928 as compared with 841 in 1927. In 491 cases the premises were found to be satisfactory as compared with 553 in 1927. In 113 homes sanitary defects were discovered as compared with 107 in 1927, while overcrowding was found in 76 homes as compared with 85 in 1927. Overcrowding and sanitary defects were found in 15 homes as compared with 10 in 1927. In 109 cases no action could be taken under the provisions of this Act owing to the removal of the nurse-infant prior to the visit of the inspector. 266 special inquiries were also made with regard to the condition of the premises and the necessary action taken in the matter. In the event of a serious sanitary defect being reported the attention of the local borough council is drawn thereto, and in some cases it has been found possible by rearrangement of the accommodation to secure improvement. In others it has not been possible and the foster-parents have been urged either to return the child in their charge to the parent or to obtain other and more suitable accommodation. Difficulty in dealing with cases of this character is accentuated by the lack of suitable house accommodation.

Foster-mothers are advised to attend local infant welfare centres with the children in their charge. In the event of a nurse-infant being weak or ailing the visitor carefully watches the case and sees that the treatment advised is duly carried out. If doubt exists in the visitor's mind with regard to the progress of the nurse-infant the matter is submitted to one of the Council's medical officers, who attends and examines the child. This practice has been carried out for some years now and is of assistance to the visitors and gives satisfaction to both parties. At the age of seven years a child ceases to be a nurse-infant and is no longer liable under the Act, but the Education Act applies to children of five years and upwards; there is, therefore, supervision by the school medical services available from that age. During the year, 33 nurse-infants died as compared with 34 in 1927. In 7 cases inquests were held as compared with 14 in the previous year; a verdict of death from natural causes was recorded in 4 cases as compared with 10 in the previous year, and in 2 cases accidental death as compared with 4. In 1 case an open verdict "cause unknown" was returned. In none of the cases was blame attached to the foster-mother.

The Adoption of Children Act, 1926, came into force on the 1st January, 1927. The Act provides for the legal adoption of infants (under the age of 21 years) who have never been married, the parents relinquishing all rights and responsibility which are thereupon assumed by the petitioners. The application may be dealt with by the High Court, the County Court or a Court of Summary Jurisdiction (police court). An interim order may be made by any of these Courts fixing a probationary period during which the applicant may have the custody of the child, or may give a full adoption order. By Section 8 (3) of the Act the Court upon the hearing of the application may appoint some public body to act as guardian *ad litem*, with the duty of safeguarding the interests of the infant before the Court, and where the body so appointed is the local authority may authorise the authority to incur any necessary expenditure.

Adoption of
Children
Act, 1926.

On the 8th March, 1927, the Council, at the request of the Secretary of State for the Home Department, agreed for an experimental period of one year to act as guardian *ad litem* of infants under the Act when so requested by County Courts and Courts of Summary Jurisdiction. At the end of the year the result of the work of the Education Officer's Department and of the Public Health Department was reported to the Council and it was agreed to continue the work. In the last report attention was drawn to the fact that from 8th March, 1927, to 14th December in the same year, 83 full adoption orders and 3 interim adoption orders were made, one application was withdrawn and one adjourned. All of these referred to children who were or had been nurse-infants. During the year 1928 the total number of applications dealt with by this department was 105. The result of the hearings was as follows :—92 full adoption orders and 4 interim adoption orders made ; 5 applications refused ; 1 adjourned and 3 withdrawn.

There appears to be little doubt but that the work of the Council's officers in connection with the filling up of the forms has been of assistance both to the Courts and to the petitioners. If a petitioner, for the child proposed to be adopted, does not reside within the Administrative County of London it has been found that details necessary in connection with the latter have been readily furnished by the local authorities for that area. In return the Council furnishes information to local authorities outside London. Although the Court may authorise the public body to incur any necessary expenditure it has been decided not to make application to Court for payment, as the out-of-pocket expenses are trivial.

Mental Deficiency Acts.

The passage into law of the Mental Deficiency Act, 1927, has introduced some changes in the definitions, the conditions under which a person may be subject to be dealt with under the Mental Deficiency Act of 1913, in the duties of local authorities and in procedure.

Changes
in the
definitions.

Mental deficiency has been defined for the first time by Section 1 sub-section (2) :—

“ ‘ Mental defectiveness ’ means a condition of arrested or incomplete development of mind existing before the age of eighteen years, whether arising from inherent causes or induced by disease or injury.”

This does away to some extent with the difficulty which arose from the terms “ from birth or at early age ” used in the Act of 1913, and it will now be sufficient to show that the defect had been noticed before the age of eighteen. The classes of mentally defective persons are now defined as follows :—

Idiots.—“ Persons in whose case there exists mental defectiveness of such a degree that they are unable to guard themselves against common physical dangers.”

Imbeciles.—“ Persons in whose case there exists mental defectiveness which though not amounting to idiocy, is yet so pronounced that they are incapable of managing themselves or their affairs or, in the case of children, of being taught to do so.”

Feeble-minded Persons.—“ Persons in whose case there exists mental defectiveness which, though not amounting to imbecility, is yet so pronounced that they require care, supervision and control for their own protection or for the protection of others or, in the case of children, that they appear to be permanently incapable by reason of such defectiveness of receiving proper benefit from the instruction in ordinary school.”

Moral Defectives.—“ Persons in whose case there exists mental defectiveness coupled with strongly vicious or criminal propensities and who require care, supervision and control for the protection of others.”

The class “ Moral Imbeciles ” is abolished and in its place a class of moral defectives is defined. The old difficulties arising from the use of the terms “ per-

manent defect" and "of propensities on which punishment has had little or no deterrent effect" are avoided, but it may be noticed that the new postulate is that the control required is to be for the protection of others. Presumably, the amount of defect, as ascertained by tests and conversation, might be less than that ordinarily required to justify certification as a feeble-minded person, but there must be *evidence* of the propensities and that these endanger others. Possibly, a subnormal prostitute who refused treatment and continued to ply her avocation while in an infectious state from venereal disease might come within the category. Otherwise, it may prove, in practice, limited to serious and repeated crimes or to serious perversions. It is unlikely that children would often come within this category even though their behaviour were such as to render their presence in class or school detrimental to the interests of others.

Section 2, sub-section (1) allows the addition to the previous list, which amounted to dealing only with those who were neglected, criminal, inebriate, or notified by the local education authority on leaving a special school, of any person "with respect to whom a representation has been made to the local authority by his parent or guardian that he is in need of care or training which cannot be provided in his home." This eliminates the difficulty which formerly arose of having to allege a technical neglect in cases in which the parents had done their best but had been handicapped merely by lack of means. Cases under this will probably be those aged between 16 and 21 as a condition that the first duty of ascertainment and education of persons between 7 and 16 still rests with the local education authority.

Changes in the conditions rendering a person "Subject to be dealt with."

Section 2, sub-section (5) permits local education authorities to notify to the local control authority the names of those young persons leaving a special school at or about the age of 16 in whose care they are of opinion that "supervision" under the Mental Deficiency Act would be beneficial. Previously, only the names of those deemed to need institutional treatment or guardianship could thus be notified.

Section 2, sub-section (2) allows the Board of Education to certify that special circumstances exist rendering it desirable that a defective child of school age should be dealt with by institutional treatment as well as by supervision or guardianship as the clause formerly ran. This is really legalising a point which had crept into practice for, although, originally, the notification was for supervision or guardianship only, institutional care had often been found necessary.

Section 7 requires local authorities "to provide suitable training or occupation for defectives who are under supervision or guardianship or have been sent to certified institutions," though "a local authority shall be under no obligation to provide training or occupation in the case of any defective under supervision if they satisfy the Board (of Control) that there are in his case adequate reasons for not so doing." This proviso enables local authorities to establish, maintain or aid occupation centres or centres for continued training for defectives of any age under supervision.

Changes in the duties of local authorities.

Section 10 enables one local authority that maintains a certified institution to contract to take cases from another authority and also allows of the erection and maintenance of institutions which may be jointly certified institutions and special schools, the cost being divided between the control and the education authorities in a specified manner.

Section 4 provides that the written consent of the parent or guardian may be dispensed with if by reason of his being abroad "any attempt to obtain his consent would result in undue delay in dealing with the petition."

Changes in procedure.

Section 5 provides that when a court (of summary jurisdiction) has ordered a petition to be presented under section 8 of the Act of 1913, and the presentation is found impracticable or the petition is dismissed then the case is again to be brought before the court. In the meantime, unless the court has otherwise ordered, the person concerned shall, if the place of safety is a prison or place of detention, remain

therein until the sitting of the court and if it is not he shall be transferred to a prison or place of detention according to his age to await the sitting of the court.

The general result of the changes has little or no effect on the certification of children for special schools, but involves the special consideration of every child at 15 + with a view to deciding if he is a defective under the Mental Deficiency Act, and so suitable to notify for supervision or institutional care.

Cases dealt
with by the
Council.

On the 31st December, 1928, there were being dealt with at the expense of the Council 5,115 cases. Of these, 2,957 were in institutions ; 57 under guardianship ; 2,071 under supervision ; and 30 in places of safety waiting other action. During the year 768 cases were examined with the following results :—

Type.	Idiot.	Imbecile.	Feeble-minded.	Moral defective.	Not defective.
Males... ..	6	119	236	2	21
Females... ..	15	107	218	2	42
Totals... ..	21	226	454	4	63

Details with regard to certain children who were examined between the ages of 7 and 16 will be found on page 147 referring to the work of the School Medical Officer.

Occupation
Centres.

The London Association for Mental Welfare has organised 8 occupation centres and accommodation is provided for 147 children under 16 years of age and 41 young persons over that age. Arrangements were made for the medical inspection of the children under 16 and 136 of them were examined. In 59 instances a detailed examination was made and in 55 of these the parents, who were invited to attend, were present—a larger percentage than is found in any age group in elementary schools. Of the 136 examined, 45 (33 per cent.) were noted as requiring dental treatment ; 10 had defective vision or squint ; 4 external eye disease and 9 with other ailments. 54 children, or nearly 40 per cent., were thus found to require treatment, a proportion approximate to the percentage in elementary schools for children of the same age. The figures appear to show that parental care is exercised and that the children are as well looked after as normal children.

Provision has been made for the treatment of children of school age under the scheme of medical treatment in connection with the elementary schools and children found to be verminous are dealt with under the Council's general scheme for the cleansing of verminous children. The Council has also made provision for the employment of guides where necessary in order to convey the children to and from the Centres.

Mentality
and ante-
cedents of
cases dealt
with at police
courts.

Dr. Carleton Williams has analysed the mentality and antecedents of 92 cases dealt with at police courts. These cases had been reported as certifiable under the Mental Deficiency Act by the medical officers of prisons ; although sometimes the report was qualified by the remark that the case approached the border line and should be further investigated by the London County Council Medical Officer. Out of the 92 cases 11 were deemed by the medical officers of the London County Council to be not feeble minded, most of them being insane. Four others were deemed feeble minded, but were found not to be residents of London in a legal sense. Two were found to be defective, but of such violent and dangerous tendencies as to be fit only for the State Institution at Rampton. Ninety-three cases in all were dealt with, but one is omitted since the prison doctor had not, in fact, suggested mental deficiency.

The number of these prison cases shows an increase, in part due to the fact that all young men under 21 are subjected to a mental examination at Wandsworth Boys' Prison, and in part to the fact that the Mental Deficiency Act, 1927, modified the Clauses of the 1913 Act which limited action to persons deficient from birth or an early age. The new definition includes all cases where the condition existed before the age of

eighteen, whether arising from inherent causes, or induced by disease or injury. In particular this has brought in those whose mental condition has been affected by encephalitis lethargica occurring after early childhood. There are 7 examples in this series. The educational attainments and mental ages of these persons are much higher than those of the average of cases of ordinary amentia, their certifiability being due to their markedly childish reactions and conduct. On account of their special characteristics they have been sent to a particular institution—The Manor. The striking feature in this and other years is the small proportion of females, numbering 17 as compared with 75 males, though the numbers of girls and boys in the M.D. schools are nearly equal.

The antecedents of 81 cases as regards education are here given separated for sex, the females being shown in brackets: Elementary schools (London) 24, (6); (Provinces) 7, (3); Mentally defective schools (London) 28, (4); Other education 8, (0); Not known (1). Totals, 67 (14). Under the heading "Other education" is included a lad who was at a well-known public school until he was excluded.

The proportion of those who had attended M.D. schools is lower than might be expected, and the reason for this appears to be:—

(i.) The inclusion of the cases of encephalitis lethargica previously noted with the addition of the few persons deemed to be morally defective, that is, showing their defect more by vicious and irrational conduct than by lack of aptitude for literary education.

(ii.) The inclusion of a number of persons with some resemblance to those just noted, showing less intelligence and educability, yet not quite incapable of benefit in an ordinary elementary school. The majority of these it was said attained Standard IV. at school, but on investigation it appeared that on account of age and growth they were put up into a higher class than their attainments would justify.

(iii.) There is no case mentioned as coming from a provincial M.D. school. On account of the lack of provision of special schools in country districts many children who in London would be sent to M.D. schools have to be kept in elementary schools though their educational attainments are almost nil.

(iv.) Finally, two cases who apparently in London would have been sent to M.D. schools, were not brought to notice during the school period, and so did not receive a statutory examination under the Education Acts.

The large number of cases from the lowest classes of elementary schools is consistent with the fact that it is not so much the markedly and obviously mentally deficient as the backward and unstable who become delinquents. In the majority of these the question of certification under the Mental Deficiency Act never arises, it is only when their intelligence is on the border line and their social inefficiency demonstrated in practice that they come to be dealt with. It is this group with whom many authorities think that continued education in a wide sense might make all the difference. The proportion of mentally deficient scholars is especially low in the females. This year's figures are small by themselves, but this feature and also the appreciable number who come from country schools has been obvious each year. It may be connected with the fact that girls in the London M.D. schools are retained till 16. Even then, if there is any doubt as to their character or home control, they are more likely to be recommended for institutional care or supervision than the lad who has a prospect of obtaining work.

With the delinquents who had been in special schools, the "mental ages" found in prison can be compared with those found at the last examination in special school. There were 24 cases in which this was possible. In 17 of them the figures were identical, *i.e.*, a mental age of 9 was found at age 21 in prison, and also at age 15 in school. In 3 cases it appeared to be 6 months or 1 year higher, and in 4 cases it seemed to be 6 months or 1 year less. The numbers are small but they seem

to suggest that the level of intelligence as measured by mental age tends to remain constant.

The educational levels were also compared, being marked as A—education practically nil, B—attainments well below Standard I., and then in Standards from I. upwards. These educational levels were less constant than the level of intelligence, but in 15 persons the figure was roughly identical. In 11 it had fallen, but in 3 it seemed higher. Evidently there was a tendency to forget what had been learnt in school, but this tendency was overcome when the employment or some other factor opposed it.

The following table shows occupations:—

	<i>Domestics</i>	<i>Hawkers</i>	<i>Van boys, etc.</i>	<i>Factory</i>	<i>Labourers</i>	<i>School</i>	<i>Soldiers</i>	<i>Sailors</i>	<i>Others</i>	<i>Nil</i>
Male	—	4	17	4	10	10	2	2	9	9
Females	5	—	—	3	—	4	—	—	—	1

Note.—The van boys include errand boys, odd men and similar occupations. The factory work was unskilled. Schools include reformatories, etc.

Some of the younger offenders were still at some schools for older pupils, such as reformatory schools, industrial schools, or M.D. schools for older boys and girls. The history of the others was usually that they went to unskilled work as errand boys, shop boys, or (favourite occupations of mentally deficient boys) van boys, kitchen boys or into glass-blowing works where they did the unskilled tasks. Even in these positions their inefficiency soon showed itself, and it is rare to find that a post was kept for 12 months. Two young men gave the Army as their only occupation, and both had been ultimately discharged “as not likely to make efficient soldiers.” Many of the older men had served in the war (1914-18), but had been soon transferred to the Labour Corps and later discharged unfit. Often the discharge had been accompanied by a temporary pension for “aggravation of congenital mental deficiency by war service.” The feeble-minded are in fact made somewhat worse by shell shock, but the effect is diminished by time. Two men had been deck hands in the merchant service, both inefficient, and one of them had caused trouble to the Mission to Seamen, which had repeatedly paid his passage home from foreign parts. Nine lads had left school, but never obtained employment.

Higher mental ages were found in 9 men whose work was not completely unskilled—1 film actor, 2 tailor’s assistants, 1 gardener, 1 barman, 3 pugilists, 1 trainer of Alsatian dogs. In these cases employment was usually of brief duration, and failure was due not only to inefficiency but to laziness, carelessness, quarrelling and other effects of mental instability. The occupations of the women were practically all unskilled, the domestic work being usually scrubbing. In these instances also loss of employment was apparently caused not by the lack of intelligence which their employers accepted as inevitable, but by their troublesome behaviour.

Blind Persons Act.

Blind
training.

During the year 122 persons were seen. Of these, 56 males and 33 females were found to be capable of benefiting by training, and 11 males and 15 females were rejected either because they were not certifiable as blind within the meaning of the Act, or were physically or mentally unfit for training. One case was referred for re-examination which will take place in 1929. Advice was given as to the grades in which the persons should severally be trained, having regard to the prospects of future employment.

Medical
certificates
furnished in
connection
with grants
from public
funds.

In connection with the arrangements for the welfare of the blind in England and Wales medical certificates of blindness may be required for the following purposes:—

- (1) To support a claim for a pension under the Blind Persons Act, 1920.

(2) To support an application in respect of a blind person by a local authority or voluntary agency for grant out of public funds under the Regulations, for grant for the Welfare of the Blind, or under the Education Act.

(3) To obtain evidence of blindness before the registration of a blind person.

(4) To support an application for assistance to a voluntary agency by a blind person in respect of whom no grant out of public funds is payable.

Formerly medical certificates were obtained from various sources but the Council has decided that, in the future, such certificates shall, if necessary, be furnished by the Council's Medical Officer. Arrangements to this effect have therefore been made and, during the year, certificates have been furnished to two males and four females who were applicants for the (Blind) Old Age Pension.

Work of the Chemical Branch.

The work of this branch is carried out at four laboratories, viz., the Central Laboratory at County Hall, and the laboratories at the Northern and Southern Outfalls and the Greenwich Power Station.

A large proportion of the work carried out here consists of the examination of samples of stores supplied under contract to the Council's many depots and stations. Specifications are frequently revised so as to bring them closely into touch with modern conditions and to ensure that the goods demanded shall, as nearly as possible, be of the exact description needed. Processes of examination are adopted in which materials are tested under conditions approximating to those of use, e.g., paints and enamels are submitted to prolonged exposure, with alternations of heat and cold, moisture and dryness, in an atmosphere of oxygen for a month, in order to simulate exposure out of doors.

The total number of samples examined in this laboratory during the year amounted to 5,101 and the following table shows their number and description:—

Paints and Colours	232	Air from tunnels	99
Petroleum and Paraffin	158	Building materials	315
Soaps, Shampoo preparations, etc ...	45	Disinfectants	19
Rainwater	107	Drugs	19
River waters	518	Feeding stuffs and Fertilisers ...	21
Boiler waters	232	Foods, groceries, etc.	726
Waters from softening plant	159	Meals (school)	11
Water and deposit (bathing lakes) ...	89	Metals	23
Water (in-leakage)	357	Milk	1,495
Miscellaneous	206	Oils, Greases, etc.	244

Among building materials examined may be mentioned two liquids offered as waterproofing materials for Portland cement. One of these was a solution of calcium chloride, the other a rather strong solution of caustic potash.

Methods of testing the fire-resisting qualities of woods used in building, as detailed in an earlier report, have been developed and are used for the examination of the many new woods now being introduced from distant parts of the Empire.

In connection with fire protection it has been found that fusible links, intended to effect the automatic closing of ventilators on the outbreak of fire, sometimes yield only at temperatures much higher than stated. One case, in particular, may be cited in which a heavy link for controlling a large opening was found to yield at 180° C., the melting point of a soft solder of two parts to one by weight, the eutectic alloy of tin and lead. The more easily fusible alloys such as Wood's and Rose's metals are mixtures of three or four metals. Incidentally it was found that the melting point of some of these alloys as prepared in the laboratory was higher than is usually ascribed.

Considerable attention has been given to problems in connection with water softening, both at County Hall, where the hot water supply is softened previous to heating, and at main drainage pumping stations. Arrangements based on system-

Central
laboratory

Building
materials.

Fire-resisting
materials and
appliances.

Water
softening and
steam raising
plant.

atic analyses for a variable treatment of the tidal water used at the Western Pumping Station have led to a great improvement in the condition of the boilers. The great advantage of treatment at an elevated temperature has been demonstrated by experiments made in the laboratory.

Systematic examination of water in the various stages of steam-raising has assisted in the efficient working of both pumping stations and sludge ships; similar work has been done at the outfall laboratories.

Coroners' inquests—Poisoning.

Toxicological investigations have again been made at the request of medical officers in charge of certain of the Council's institutions. A case of peculiar interest was that of an inmate of a mental hospital who was found dead in her bed. Yew poisoning was suspected and vegetable structures found in the stomach contents were isolated and found to be morphologically indistinguishable from authenticated yew leaves. The toxic constituent of yew does not appear to be well characterised chemically, but the deadly properties of the leaves and stems of *taxus baccata* are well known.

Bathing lakes and open-air swimming baths.

The supervision, as set out in previous reports, has been continued in connection with the outdoor swimming baths in the Council's parks. The fine weather led to a much greater use of these baths and in these conditions the very great advantage of filtration and chlorination were manifest. It has been found that the use by the bath attendants of simple chemical tests, after careful instruction, enabled the use of the necessary chemicals to be sufficiently controlled. Chlorination effected some improvement in the water of the baths not fitted with filtering plant, but it is impossible to keep these in the same satisfactory condition as to appearance, purity or safety as those with filters.

Petroleum Acts.

The examination of samples collected by inspectors under the Petroleum Acts has shown that new materials are being largely used as solvents for paints, varnishes and "dopes." Among these may be mentioned methylcyclohexanone, a member of a class of bodies which has been prominently exhibited in recent years at the British Industries Fair.

River Lee.

The River Lee, which was inspected on two occasions in July, continues to be objectionable in the parts which flow through or by the County of London. The main cause of this condition appears to be the heavy pollution of the Pymmes Brook and the intercepting ditch which receives the contents of the Brook and passes them into the Lee below Tottenham Lock. Below this point the Navigation Cut is dirty with a scummy surface. The water bubbles vigorously and smells unpleasantly whilst scum accumulates around moored boats. Chemical analysis shows this water to be poorly aerated and highly contaminated although there is some self-purification. The very small flow in this canalized part of the river allows the accumulation of foul matters to settle on the river bottom so that the water itself does not show the full effect of pollution. The natural stream which runs more or less alongside the Navigation Cut is in a rather more satisfactory condition.

River Wandle.

This river was visited towards the end of July, at Earlsfield, where the effluents from the Wandle Valley Sewage Board Works and the Wimbledon works enter. The water of the river after receiving these effluents is used by the Southern Railway for circulation in the condensers at their electricity works. The effluents appear to be well purified, and the effect of cascading in the condensers and return channel was on the whole beneficial as, at the time of examination, the water below the outfalls was better aerated than that above.

River Thames.

The systematic examination of the River Thames was continued in 1928 at points from the Edinburgh Lightship to Waterloo Bridge. The results obtained in the early summer were considered to justify the partial use of chemical precipitants for a short period. Some improvement occurred as the summer went on, owing to an increase in the fresh water flow, and the additional treatment was stopped. The results obtained at the upper stations in the summer, show that the effects due

to the discharge of effluent extend far above the highest point at which examinations are made. Information as to conditions in the upper tideway will be needed in order to test the effect of the improved treatment which is to be commenced in the near future, and this can most conveniently be obtained by the aid of a boat.

At the outfall laboratories, systematic daily examinations of the sewage reaching the outfalls and the resulting effluent and sludge, as well as of the water of the River Thames at both high and low tides have been continued. The systematic analysis of samples in connection with the working of the outfalls have also been made at these laboratories in addition to the research work undertaken in connection with activated sludge. Much attention has been given during the year to boiler control at the outfall works and on the sludge vessels.

Throughout the year research has been continued into the biological treatment of sewage and of sewage effluent by aeration in contact with free humus, "activated sludge" as it is usually called. Concurrently with this research on treatment a systematic examination of the River Thames has been made, and many points have been investigated. The comprehensive scheme adopted has placed in the possession of the Council readily available information of the condition of the River Thames on which to base an opinion as to when and how to undertake any modification of the present method of sewage treatment.

In March, 1926, a full report on the position at that time both as regards the condition of the Thames and the results of researches on biological treatment of sewage was submitted to a special sub-committee of the Main Drainage Committee. Coincidentally a report on the engineering aspect of the question was submitted by the Chief Engineer. After considering these reports the Committee consulted Professor H. R. Kenwood and Professor W. E. Adeney, both recognised authorities on such matters. In view of the unanimity of opinion of the Council's officers and these authorities, the Committee advised the Council to sanction the construction of a first large unit for further treatment of a portion of the effluent now discharged from the Northern Outfall.

Detailed drawings for this large plant which is intended to treat from five to ten million gallons of sewage are now being made. The plant, which embodies new and important features, is the outcome of the long researches conducted at the Outfalls. These researches have been described in some detail in a paper on "Modern Methods of Sewage Disposal," by Colonel Butler and Mr. Coste, read before the London Section of the Society of Chemical Industry in January, 1927, and printed in the Transactions of that Society (J.S.C.I. 1927. XLVI 49-59T).

During the past year various points arising in connection with the form which a large-scale plant should assume have been investigated, but for some time work on the new overhead sludge store at Crossness interfered with the working of the small experimental installation which has been in use for many years.

Whilst the question of improvement of effluent has been approaching a solution, attention has been directed to the collateral question of improvement of the sludge sent to sea. So far experiments conducted under the direction of the Medical Officer (General Purposes) and the Chemist have only been of a tentative character and on a laboratory scale, the objects sought being a reduction of the volume of sludge and the possible utilization of the evolved gases.

A statistical examination of the data available shows that in the dry year 1921 the percentage of sludge varied from 5.1 to 8.9 and in the wet year 1927 varied from 4.7 to 9.7. The figures are based on the weekly averages at the southern outfall.

The percentage proportion of volatile ("organic") matter (V) is given approximately by the equations—

$$(1921) \quad V = 0.41 \times \text{dry matter} + 1.6 \text{ (greatest divergence 0.4 per cent.)}$$

$$(1927) \quad V = 0.35 \times \text{dry matter} + 1.85 \text{ (greatest divergence 0.5 per cent.)}$$

The main facts which emerge as a result of the experiments already made are—

(1) The usual average percentage of dry matter in sludge sent to sea is from 6 to 7. Cargoes containing as much as 10 per cent. of dry matter are very unusual.

(2) An increase in the amount of dry matter in a sludge usually indicates an increase in the amount of organic matter in sewage even under present conditions where detritus and sludge are sedimented together.

(3) A comparison of the composition of the sludge sent to sea in a week with the closely-preceding weekly average rainfall, volume of sewage treated, or number of hours for which channels were in use before being emptied, discloses no relationship.

It is hoped during the present year to conduct some large-scale experiments in de-watering.

Greenwich
Power
Station.

Systematic chemical examinations have been carried out in connection with the steam-raising plant at this station and a more effective control of its working has been obtained. The coal and other fuel supplied to this and other stations and premises belonging to the Council have been examined both for composition and calorific value at the Greenwich Laboratory, which is specially equipped for this work.

Investigations on special matters arising out of the working of the stations are undertaken at this laboratory and, in part, at the laboratory at County Hall. During the past year a considerable amount of work has been done in connection with the steam generating plant at Greenwich.

Observations of Visibility and Actinicity.

The observations on visibility referred to in the reports for 1926 and 1927, were continued during 1928. Daily observations were made at noon from the flèche of the County Hall by the identification of a large number of well-defined objects at varying distances in all directions and by noting in each case the distance from the County Hall as measured on the map. By this means a closed figure can be drawn representing the limit of visibility in all directions.

The marked seasonal variations in visibility have been commented on in previous years. On page 59 of my report for 1926, the figures for spring, summer, autumn and winter are shown, in which summer visibility is by far the greatest and winter least, whilst the seasons around the equinoxes occupy intermediate positions. In 1927, evidence, based on observations on the lower Thames and in the open estuary, was adduced showing that the low visibility of winter observed in London is not common to the river valley. More systematic observations on the river during 1928 have fully confirmed the marked difference observed in 1927. These observations have been made from the bridge of the sludge ship used as a laboratory by the chemical assistant undertaking the examinations of the lower river.

The results obtained are summarised in the Table which represents the ratio of the mean limit of visibility in all directions from the ship at the place named to that found by simultaneous observation at County Hall. It will be seen that even at places on the eastern fringe of the County like Beckton and Crossness the visibility from September to May was distinctly greater than at County Hall, whilst from the Mucking Light (say, towards Canvey Island) downwards it was even more marked. The visibility in summer tends to become uniformly good.

It seems reasonable to conclude that the explanation is that whereas a sea or river fog is likely to affect the whole river valley, reducing visibility generally in cold weather, in warmer weather the large and dry region of the more thickly populated areas enables the droplets of condensed water which constitute such a fog to be absorbed by the relatively hot air, and thus accounts for rather better summer visibility in London. On the other hand, the great use of fuel in the London area

in winter tends to the local formation of soot fogs in which water is condensed on solid nuclei. In summer, when so little solid fuel is used, local conditions have very little effect on the clarity of the air, hence the good visibility. As to the directions of greatest and least visibility, these are fairly well defined. From March to November the average visibility over any arc of $22\frac{1}{2}^{\circ}$ ($1/16$ of a circle or 2 points of the compass) was from S.E. to S.W. maxima for individual days and for monthly averages usually falling in the arc around S.S.W. The minima were usually easterly mainly around E.N.E. A consideration of the fact that the main industrial quarter of Greater London is in this direction offers some explanation of the poor visibility.

Table showing the ratio of mean visibility at the undermentioned places to that at County Hall, the County Hall being regarded as unity.

Place and distance in miles from County Hall.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Beckton ($8\frac{1}{2}$) ...	1.45	1.4	3.3	2.0	2.1	1.2	.7	.7	3.0	1.8	2.1	5.5
Crossness (10) ...	1.7	1.3	2.2	2.8	1.4	.7	.5	.7	—	—	2.7	5.0
Erith ($12\frac{1}{2}$) ...	—	—	—	—	—	.8	—	—	—	—	—	—
Purfleet ($14\frac{1}{2}$) ...	—	—	—	—	—	.5	—	—	—	—	—	—
Broadness ($17\frac{3}{4}$) ...	1.1	—	3.7	2.0	1.7	.7	—	.9	—	—	3.0	—
Shorne Mead ($22\frac{1}{4}$) ...	—	—	—	—	—	.6	—	—	—	—	—	—
Mucking ($26\frac{1}{4}$) ...	—	—	2.0	.7	2.1	—	—	—	1.4	3.0	10.0	3.5
Southend (36) ...	1.3	5.7	7.1	1.2	2.7	4.0	—	3.3	1.2	7.2	4.0	2.0
Mouse ($46\frac{1}{2}$) ...	10.0	1.0	—	—	3.0	3.0	1.5	1.0	2.4	5.8	4.0	11.7
D.4 Buoy ($54\frac{1}{2}$) ...	—	—	—	—	—	1.5	—	—	—	1.3	—	—

CHAPTER II.

REPORT OF THE SCHOOL MEDICAL OFFICER FOR THE YEAR 1928.

By F. N. KAY MENZIES, M.D., F.R.C.P. (Ed.), D.P.H., F.R.S.E., County Medical Officer of Health and School Medical Officer.

Staff.

The Public Health Department of the Council is organised in five divisions of work under the Medical Officer of Health and School Medical Officer. Of these Division II. is wholly, and Divisions IV. and V. partly, concerned with school medical work.

Division II. (Senior Medical Officer, Dr. C. J. Thomas) embraces the medical inspection of school children in elementary, secondary and trade schools, the medical and dental treatment and cleansing of school children, open-air schools, etc.

For purposes of routine medical inspection in schools, etc., London is divided into five territorial areas :—

- North West (Divisional Medical Officer, Dr. A. W. Sikes) ;
- North East (Divisional Medical Officer, Dr. F. C. Lewis) ;
- East (Divisional Medical Officer, Dr. G. Chaikin) ;
- South East (Divisional Medical Officer, Dr. H. R. Kidner) ;
- South West (Divisional Medical Officer, Dr. E. E. Argles).

The remaining staff in Division II. includes 1 principal assistant medical officer for aural work (Dr. A. G. Wells), 4 part-time assistant aurists, 1 part-time consulting dental surgeon (Dr. A. Livingston), 1 part-time principal assistant medical officer (Dr. B. Tchaykovsky), 1 divisional medical officer for ophthalmic work, nursery schools, etc. (Dr. E. M. McVail), 23 whole-time assistant medical officers, 11 assistant medical officers giving 6 sessions a week, 44 assistant medical officers giving 3 sessions a week ; additional temporary medical assistance for 115 sessions a week, 10 medical officer (part-time), at open-air schools, etc., 264 surgeons and anæsthetists at treatment centres, and 62 inspecting dentists (part-time).

The school nursing service comprises the superintendent of school nurses (Miss H. L. Pearse), 6 assistant superintendents, 93 school nursing sisters and 260 school nurses.

Division IV. (Senior Medical Officer, Dr. F. C. Shrubsall), in addition to work under the Mental Deficiency Act and the Blind Persons Act, includes the medical examination of scholarship candidates, school teachers, etc., reference cases, and the medical work in special schools and reformatories. The staff allocated to this division includes a part-time consulting surgeon for aural disease (Mr. P. M. Yearsley), a part-time consulting surgeon for orthopædics (Mr. K. J. Acton Davis), a part-time ophthalmic consultant (Mr. N. Bishop Harman), and 2 divisional medical officers (Drs. J. L. D. Fairfield and A. C. Williams).

Division V. (Senior Medical Officer, Dr. J. A. H. Brincker) deals with infectious disease administration, bacteriology, diagnosis of smallpox, etc. In this division is one principal assistant medical officer (Dr. J. G. Forbes) and one medical consultant (Dr. W. McC. Wanklyn).

School Buildings.

The "40 and 48" scheme.

In accordance with the "40 and 48" scheme the Council is steadily improving the hygienic condition of the school buildings. In addition to the erection of new schools built in accordance with modern sanitary ideals, every year a quota of older schools is brought under the scheme for re-modelling and re-organisation. At the present time 88·8 per cent. of the classrooms are on the "40 and 48" basis as compared with 57 per cent. in 1924.

Special reports were made during the year on 38 schools in relation to hygienic defects, which included references to lighting, natural and artificial, ventilation, sanitary offices, heating, nuisances from smells, etc., arising both within and without the school premises, desking provision, condition of floors, noise, sleeping arrangements for infants, nuisance from rats and nuisance from flies.

The services of the school medical department are continuously sought in connection with a large number of questions and experiments connected with the sanitation of the schools and the provision of hygienic furniture and appliances.

The question of the cleansing of schools is being kept under review, further methods for floor cleansing have been investigated, and the number of school departments the floors of which are treated with dust-allaying oil has increased.

A variation of standard planning was agreed to allow for linoleum on concrete in lieu of boarding for the floors of babies' rooms in new schools, and at Frankham Street, the first school to be dealt with, this variation has proved satisfactory.

Progress has been made with the solution of problems connected with the substitution of tables and chairs for fixed desks in classrooms. This problem assumes an important aspect in connection with the dual use of schools for children in the daytime and adults in the evening. The heights of tables and chairs prescribed by the school medical officer and described in last year's annual report have proved satisfactory, except in one instance; the table of the third size proved to be too low in actual practice, and this is now amended. The babies' tables remain unaltered. The four sizes of tables and chairs now being supplied are as follows:—

	(1)	(2)	(3)	(4)
Heights of tables (inches) ...	29	27½	24½	20
„ chairs (inches) ...	17½	16	14	12

In order to enable the experimental chairs to be placed on the tables while cleansing was in operation the width of the tops was originally fixed at 20½ inches; owing to the floor space taken up it has been found necessary to reduce the width to 18 inches. This is found sufficient in use. Originally tables 78 inches long, each to accommodate 4 children, were supplied, but it was found that the teachers had difficulty in supervising the work of the two inside children and the front row of the class encroached too far upon the teacher's demonstration space. A variation was, therefore, instituted providing for the supply of tables accommodating two children only; these permit of the necessary gangway and leave room for a reasonable demonstration space. The optimum length of the tables for two children has, after experiment, been determined at 42 inches, the width remaining at 18 inches.

The results of Medical Inspection.

The number of children medically inspected in the three statutory age groups in the elementary schools during 1928 was 207,254, being 13,378 more than in 1927, and 23,558 more than in 1926. The increase is due to the fact that the age groups examined comprised children born in years of relatively high birth-rate. In addition, 59,302 children were inspected in detail in the term before that in which they were due to leave school (*i.e.*, approximately at age 14). This examination is important in connection with the future careers of the children as it gives great assistance in connection with the choice of employment.

Provision is made for the examination of all children not falling in the age groups who are referred for examination on account of suspicion of illness or disability by care committee workers, teachers, school nurses, attendance officers, etc. The number seen under this heading was 37,650. Additional children to the number of 51,182 were inspected in groups in connection with school journeys, open-air classes, camp schools, and so forth. Further, 2,036 children were medically inspected in their age groups at special schools.

**Total
inspections**

The grand total of children inspected during the year of whom records were taken amounted to 357,424, being 18,907 more than in 1927 and 27,029 more than in 1926. When it is considered that in addition there were 187,480 re-inspections of children kept under observation for defects found at previous inspections, the total number of children seen by doctors during a year forms a very high percentage of children in attendance. Every child in attendance is also seen three times a year by the school nurse.

**Attendance
of parents.**

Although it is stated that each child attending an elementary school is seen three times during school life, at entry to school, on reaching the age of 8 years, and on reaching the age of 12 years, and in London a fourth time when about to leave school, the statement falls far short of giving a complete account. It is only healthy children who receive this minimum amount of care, all ailing children are seen far oftener.

Parents are invited to attend all primary age group inspections; 65.5 per cent. attended in response to the invitation, an increase of 1 per cent. over the previous year. Only 32.9 per cent. of parents attended the examination of leaving boys, but 87.5 per cent. attended the inspection of entrant infants.

Refusals to allow examination are few in number, and during the year 1928 the parents of only 156 (151) children refused to allow them to be examined by the Council's medical officers. (The figures in brackets refer to the year 1927.) Of these children, 51 were boys and 105 were girls and were divided amongst the divisions as follows:—E., 12; N.E., 10; N.W., 52; S.E., 39; S.W., 43. 18 (17) of these objections were subsequently withdrawn, and in 14 (12) cases either the medical record cards were filled up by a private practitioner or medical certificates were supplied.

**Requests
from other
local
authorities
for medical
record cards.**

In the course of the year applications were received from other local authorities for the medical record cards of 487 (483) children who had left London and removed to other areas. These requests were received from numerous authorities throughout England and Wales. Of the cards asked for 288 (316) were sent; of the remainder 45 (47) had not been examined, 115 (96) could not be traced, and 39 (25) belonged to other neighbouring authorities, *i.e.*, Willesden, East Ham, etc.

**Children
referred
for
treatment.**

115,174 children in the age groups were referred for treatment for various ailments; the proportion referred was 43.2 per cent. compared with 44 per cent. in 1927. Many of the above were referred on account of dental caries, and if this ailment be excluded there remain 49,720, or 18.7 per cent., children referred for various later detailed ailments. This is about 1 per cent. less than in 1927.

**Results of
medical
inspection,
1928.**

The analysis of the results of medical inspection immediately following is limited to the three statutory age groups in order to facilitate comparison with previous years. The results of the extra examination of children leaving will be separately dealt with.

**Nutritional
condition of
school
children.**

In 1925, 6.3 per cent. of the children in the three age groups were found to be under-nourished. In succeeding years the percentages were 6.2, 5.3 and 5.1, respectively. *The improvement noticed last year has, therefore, been maintained, and, in gross, is the best result hitherto obtained.* In each age group girls continue to be better nourished than boys.

Cleanliness.

As a result of the continuous and unrelenting campaign in the schools against conditions of uncleanness extraordinary improvement has been secured. The great success which has attended this campaign is to be attributed entirely to the patient and devoted work of the school nurses, who have, however, in the teeth of opposition, sometimes very fierce, been supported by all departments of the Council's service. The standard set in London is a very high one, and the parents are notified by the school nurse of the slightest lapse from a rigid standard, even if the lapse amounts to the presence of only one or two nits.

The index which is taken for comparison is the condition of the hair of the 12-year-old girls. In 1913 only 67.2 per cent. of the older girls were completely free

from signs of verminous infestation of the hair, compared with 87.3 per cent. of the boys. In 1916 and 1917, the percentage had risen in the girls to 70, in 1920 to 75, in 1923 it had climbed to 80, in 1926 to 88.1. In 1927 the percentage of 12-year-old girls found completely free was 89.5, and in 1928 for the first time the 12-year-old girls have passed the 90 mark, the percentage being actually 91.5. When it is considered how bad the conditions were formerly in elementary schools in this respect, and when it is also considered that the finding of a single nit removes the girl from the absolutely-clean classification, this result entitles 1928 to be marked as a red letter year. The improvement in this one respect is to be taken, of course, merely as an index of all round general improvement in personal hygiene and care. Infestation with body vermin, which before medical inspection was found in 3 to 4 per cent. of elementary school children, has now practically disappeared.

Only those who had experience of conditions before the institution of the school medical service can really appreciate what this great improvement means in the comfort of those working in the schools, in the raising of the general tone of our schools, and in the added self-respect and reverence for hygienic ideals on the part of the girls themselves. At the same time, the boys have greatly improved also, and 96.8 per cent of the 12-year-old boys are now scrupulously clean in respect of the hair. The patient labour of the nurses has naturally been greatly assisted by the fashion which is now quite general for girls to have their hair cut shorter than formerly.

The condition of the children's teeth improves during school life, but 28.3 per cent. of 12-year-old boys and 26.6 per cent. of 12-year-old girls are still found to have obvious caries at the school doctor's oral inspection. This is slightly better than during 1927, when 29.4 per cent. of the boys and 27.7 per cent. of the girls at this age were returned as having obvious dental caries. Each year there is a slight progress in this respect, and altogether since 1913 the progress is quite considerable, for in that year 50 per cent. of 12-year-old boys and 47.6 per cent. of 12-year-old girls were found with obvious decay. This is entirely due to the provision of school dental inspection and dental treatment, for the condition of the mouths of the entrant infants shows that now 47.0 per cent. of entrant boys and 48.0 per cent. of entrant girls have obvious caries, which is a worse state of affairs than existed in 1913.

In addition to dental caries itself, conditions of oral sepsis (abscesses, septic gums, enlarged glands, etc.) are high amongst entrant infants, of whom 15 per cent. suffer from these conditions, which are reduced during school life to 7.5 per cent. at 8 years of age, and 2.2 per cent. at 12 years. There is ample proof, therefore, that the efforts of the school dental service are successful in improving generally the condition of the children while at school; it is to be hoped that more will be done in the near future for the child of pre-school age, who, when he arrives at school, is so often found to have already much dental trouble. It is also hoped that it will be found possible for something to be done to continue the supervision of dental conditions after school life, for it is a melancholy thing to contemplate the almost total cessation of care and opportunity for the remedy of defect which takes place immediately school is left. Some of the enlightened employers are making efforts to cope with the evil, and it is hoped that methods towards this end will shortly be adopted in the voluntary day continuation schools.

In the statutory age groups 13,508 children were in 1928 referred for treatment for enlarged tonsils and adenoid growths. This number is 6.5 per cent. of those examined and deviates only slightly from the number so referred (6.6 per cent.) in 1927. Entrant infants provide a greater proportion of children referred for treatment for unhealthy throat conditions than any other age group (10.1 per cent. of all examined in boys, and 9.3 per cent. in girls). The provision of facilities for treatment under conditions satisfactory to modern requirements for this large

Dental
decay.

Enlarged
tonsils and
adenoid
growths.

number continues to make heavy demands on our resources as it is no longer considered desirable that the operation for removal of enlarged tonsils and adenoid growths should be treated as a minor affair which can be carried out under out-patient conditions. Considerable improvement is effected during school life and the percentage of 12-year-old children found to require operation for these conditions is 3.2 in boys and 4.1 in girls.

Ear disease
and hardness
of hearing.

In 1928 otorrhœa (running ears) was found in 2,228 children, or 1.1 per cent. a distinct improvement upon the previous years. In 1927 there were 2,463 children noted with running ears, this being 1.3 per cent. Here again, entrant infants contributed a greater proportion than any other age group. Hardness of hearing is, unlike otorrhœa, too often incurable, and to those already suffering at entrance to school life are added those in whom deafness arises later so that a cumulative effect is produced. 803 children, 0.4 per cent., were found with some degree of hardness of hearing, of these 193 were entrant infants (0.25 per cent.). Fewer children were found, however, with hardness of hearing than in previous years, the number during 1927 on a lower total of inspections being 868.

Defect of
vision.

46.6 per cent. of boys and 48.9 per cent. of girls at age 8 failed to pass the test for normal vision; this is again a very considerable improvement, for in 1926 the figures were 51.9 per cent. and 54.7 per cent. respectively, and in 1927 they were 51.1 per cent. and 52.9 per cent.

The greater incidence of visual defect upon girls is still in evidence, in spite of the efforts which have been made by improved methods in school to equalize in the two sexes the conditions of education in regard to strain. At 12 years 41.2 per cent. of boys and 44.9 per cent. of girls failed to pass the tests, an excess of 3.7 per cent. amongst girls as compared with an excess of 2.3 per cent. at age 8. It appears, therefore, that the conditions unfavourably affecting the visual acuity of the girls as compared with the boys persist and are active throughout school age, although the greater incidence of defect among girls is not so marked as it was in former years. In 1927 among twelve-year-old children 43.2 per cent. of boys and 46.6 per cent. of girls failed to pass tests for normal vision, so that in 1928 the improvement in visual acuity of children at age 8 was repeated in children at age 12. Children are tested for visual acuity wearing their spectacles, as the aim of medical inspection is to discover those who require correction. The total amount of visual defect, therefore, does not find expression in these figures.

Heart defect
and anæmia.

Heart defect (functional or organic) was reported in 4,634 children; 2.2 per cent. of those examined compared with 2.4 per cent. in 1927, and 2.6 per cent. in 1926. Older girls continue to present the signs of heart strain in excess (2.8 per cent. in girls as compared with 2.3 per cent. in boys), but this excess tends to diminish and is less marked than in the previous year when it was 3.3 per cent. in girls compared with 2.4 per cent. in boys.

Anæmia was recorded in 3,423 children (1.7 per cent.), a great improvement on former years, since 2 per cent. were returned as anæmic in 1927, and 2.4 per cent. was recorded in 1926.

Defects of
the lungs.

5,360 children (2.6 per cent.) were found with lung complaints. Here again was a great improvement upon former years, there having been 3.4 per cent. in 1926, and 3.3 per cent. in 1927, so recorded. Lung complaints are by far the most numerous in the entrant infants of whom no less than 4.3 per cent. suffer, compared with 1.2 per cent. of 12-year-old children. It is extremely common to find entrant infants with bronchitic râles in the chest, especially amongst those showing minor degrees of rickety signs.

Tuberculosis.

Pulmonary tuberculosis, definite or suspected, was reported in only 127 children, and other forms of tuberculosis in only 109, in each case being less than one in 1,000 of those inspected. The drop in cases of surgical tuberculosis from 152 to 109, in spite of the larger numbers inspected, is noteworthy.

97 (101) children were noted as epileptic; 204 (185) as suffering from chorea, and 125 (146) as suffering from paralysis. (The 1927 figures are shown in brackets.) The slightly higher figures for chorea are in contradistinction to the figures for almost every other complaint recorded during the year, and, taken with the increased number of children out of school for long periods on account of this disease, tend to support the opinion that there has been a definite increase in the incidence of this disease in school children. Nervous diseases.

Signs of rickets were noted in 1,148 children, compared with 1,242 in 1927. Naturally the greatest number was noted in entrant infants, especially boys, in whom 490 or 1·3 per cent. were recorded with signs of rickets. Rickets.

Special enquiry directed towards the discovery of signs of rickets which are usually overlooked shows that traces of slight degrees of rickets in babyhood are to be found in school children to a much higher extent than was expected. There is no doubt that a large part of the town population comes under the influences inimical to healthy growth during babyhood, including deprivation of the necessary vitamins, or of the sunlight which, in their absence, is a necessary compensation.

Deformities other than those due to rickets were recorded in 3,109 children or 1·5 per cent., compared with 1·4 per cent. in 1927. 878 of these were spinal deformities to which the older girls contributed the greater share. These deformities are almost entirely postural curvatures of relatively slight degree. Deformities.

Considerable attention was paid to the condition of the feet of the children by many school doctors, as the result of a conference held at The County Hall at the commencement of the autumn term. The entry upon the records of the results of these observations no doubt has raised slightly the number of total deformities.

29,854 boys and 29,448 girls were inspected medically during the term before that in which they were due to leave school as an additional age group. The results of this examination for each child are available at the after-care conference, and are of great assistance in the choice of occupation. This examination is also valuable as it gives a final verdict upon the net result of the work of the school medical service and the success or otherwise achieved by the school care committees in following up the children found to suffer from defects at an earlier age. The health of the leaving child.

The leaving children are better nourished than any of the other groups. Under-nourished boys were 3·9 per cent., and under-nourished girls 3·2 per cent., of those examined, compared with an average of 5·1 per cent. of all children in the age groups.

In regard to personal hygiene, the leavers are also superior to any other age group, the percentage of girls found scrupulously clean being 93 (compared with 91·5 at age 12). Little difference is noted in the dental condition of the leaving group compared with the 12-year-old group, the percentages with mouths free from obvious dental decay being at age 12—boys, 71·7, girls, 73·4; at leaving school—boys, 72·2, girls, 72·6.

The visual acuity of the leavers is superior to that of the 12-year-old group, the percentage numbers passing Snellen's test for normal vision being 62 as against 58·8 in boys, and 58 as against 55·1 in girls.

The percentage of leavers referred for tonsillar and adenoidal growths was 2·7 in boys and 3·2 in girls, as compared with 6·6 per cent. in other age groups. Otorrhœa was found in 0·8 per cent., as compared with 1·1 per cent. Defective hearing in 0·43 per cent., compared with 0·4. Heart defect in 1·9 per cent. of boys and 2·4 per cent. of girls, as compared with 2·3 per cent. of boys and 2·8 per cent. of girls at 12. Anæmia was marked in 1·3 per cent. of boys and 1·5 per cent. of girls, as compared with 1·6 in boys and 1·8 in girls at age 12. In every improvable particular, therefore, the children on leaving school were superior to those of 12 years of age.

While the routine inspections comprise all children, whether well or ailing, children specially examined are those who are brought before the doctor as obviously suffering. Those suffering from such conditions as scabies, ringworm, impetigo, Special inspections.

corneal ulcer, tuberculosis, epilepsy and chorea, found amongst special cases greatly outnumber in each case those suffering from the same diseases in all the routine age groups combined.

There were 401 cases of scabies, 522 cases of impetigo, 929 cases of otorrhoea, 327 cases of tuberculosis in its various forms, 239 cases of epilepsy, 460 cases of chorea, and 353 cases of paralysis, etc., amongst children specially examined. Considerable numbers of children too, with defective vision (4,090), hardness of hearing (421), anæmia (1,367), and enlarged tonsils and adenoids (4,729), whose condition had attracted the attention of the teachers were also thus brought specially to the school doctor's notice. The provision for special examinations is, therefore, most valuable and indeed essential to the well-being of the schools.

Medical
inspection
at secondary
schools.

All pupils at secondary schools are examined in detail at the ages of 12 and 15, while the record of each pupil is reviewed at other ages and the pupil is medically examined if this is considered advisable. 4,815 male pupils and 5,577 female pupils were inspected in detail, 2,254 male pupils and 2,006 female pupils were specially seen and 2,400 pupils were reinspected.

Dental defect was found in 19.9 per cent. Defective vision in 16.8 per cent., nose and throat defects in 5.9 per cent., defects of heart and circulation in 3.4 per cent., anæmia in 2.3 per cent., spinal deformity in 10.8 per cent., and flat foot in 11 per cent. The large proportion of deformities found is due to the careful recording of every minor departure from the normal, but it is noticeable that many of those living the lives of students still give scant attention to physical culture, paying the penalty in the development of narrow chests, stooping shoulders and ungainly gait.

Summary
of results.

Comparisons made of the results of inspection of children at different ages, whether between these ages themselves or between the results of the present and those of past years, show how far the school medical service is playing its part in the improving of health and physique. The detailed figures show a great mass of disability and suffering mainly caused by environmental and nurtural conditions. It is seen that already on arrival at school the infants are, in large numbers, suffering from unhealthy conditions. During school life, however, they are under constant and intelligent supervision; the teacher, the attendance officer, the school nurse, the school dentist, the school doctor and the organisers and workers of the school care committees combine to do all in their power with the resources at command to ameliorate their condition.

In this period of supervision there is a steady improvement which from year to year is more and more marked, and when, over the whole term of years since school medical work began, the gradual improvements of the separate years are added together, the total benefit is seen to be great. Indeed, those things have been achieved which, at the outset, no one, however hopeful, would have believed possible. The year 1928 has been an especially good one as substantial advances are noted all along the line. Particularly gratifying is the continued improvement in standards of personal hygiene.

It may be asked whether, with greater facilities for treatment and more intensive effort, the improvement could not be made still more rapid and thorough. There are three great influences which determine the health of the children. The first is heredity, the second the environment, and the third the knowledge possessed and the care exercised by the mother. The school medical service is unable to alter the first, it can deal only slightly and indirectly with the second; it is, however, greatly concerned with the third. Its work is essentially that of education, and this is of its nature a slow process. Extension of provision for treatment, advantage of which was not taken by the parents, would be useless. Parents have to be educated up to a higher standard of care, and this takes time. Each year more and more they are learning the value of solicitude for personal hygiene and bodily culture, and the results of this are reflected in the improving condition of the children. Just as

the effect of the introduction of elementary education was not fully felt for a generation, until an educated parentage took the place of an illiterate one, so the full effect of the first twenty years of school medical work will be seen later when those of the children who have experienced its benefits become, in turn, the parents of a new generation.

The Incidence of Flat Feet in School Children.

Special attention to the condition of the feet of the children was given by several school doctors as the result of a letter from the orthopædic surgeon of one of the great general hospitals, who pointed out that a number of boys comes for treatment for painful flat foot about 6 months to one year after leaving school and going to work.

During school life flat foot attracts little attention, as complaint is scarcely ever made, but if a number of children is examined specially, there is always found a certain proportion who present various degrees of flattening of the arch of the foot, varying from 3 to 12 per cent., according to the idiosyncrasy of the doctor inspecting, and the age and sex distribution of the children.

It is by no means certain, however, that the children thus singled out as having flat arches are those who later fail in industry owing to the development of acute flat foot causing pain and disability. It is noteworthy that children who present themselves for licensing as stage dancers and have the most perfect mobility of the feet are found in repose to have feet which can only be described as flat, although they have finely developed calf muscles and are able immediately upon springing into activity to produce well-arched feet. Osgood at the American Congress at Buffalo in 1913, stated that many of the weakest feet are those in which the arch is high but under strain, whereas the feet of savage men are quite efficient, although they often show complete depression of the arches when the muscles are relaxed. Bankart, in 1923 (*Lancet*, p. 799), stated that the worst symptoms of flat feet occur in feet which are not flat. A high arched, thick-set or sturdy foot offers resistance, and distortion of its joints is very painful.

The shape of the feet of young infants is flat and remains flat in races that do not resort to boots, but retain the mobility and partially prehensile character of the feet. Some eminent surgeons have expressed the view that wearing of plimsolls or sandals leads to the development of flat feet, while others point out that what happens is that the arch fails to develop.

General conclusions.

It seems as though it were not possible to predicate during school life that a particular child will suffer from flat foot after entering industry, but there are certain types which, whatever the condition of the arch, are more likely than others to develop painful trouble, and these are to be looked for amongst those with least mobility of the feet and poorest developed muscles, and not necessarily amongst those with feet which are flat in repose.

Whilst doubt exists as to the course of the natural development of the human foot, there can, however, be no doubt as to what the schools must do to anticipate and prevent the development of flat foot in adolescence. Physical exercises must be directed towards increasing foot mobility and muscular development, and should be carried out in flexible shoes or, what is indeed better, without foot gear of any sort.

Dr. Verner Wiley inspected the feet of 592 boys at two secondary schools; the number found with flat feet was 49, or 8.4 per cent. Of the 49 boys, 38 were classed as slight, 8 as moderate and 3 as severe. From general observation of the physique of the sufferers it appears that flat foot is found in two types—(i.) the weedy boy of poor physique; (ii.) the very heavy louty boy. Only 4 of the boys complained of symptoms (tiredness or pain).

Statistical information
Dr. Verner
Wiley.

Dr. Danvers-Atkinson examined the feet of 504 children of the leaver age groups in elementary schools. Amongst 251 boys flat foot was found in 8 or 3.18 per cent. Amongst 253 girls flat foot was found in 11 or 4.34 per cent. In none of the feet showing as "flat" was the typical picture of talipes valgus manifested. There was

Dr. Danvers
Atkinson.

flattening of the antero-posterior arch, but no protrusion of the navicular bone. In each case the foot on either side was readily bent, and the arch restored by active movement on request.

Dr. Jessie
Duncan.

During the Christmas term, 1928, notes were kept by Dr. Jessie Duncan, with regard to children with "flat foot" and the following are the results:—

		Employment. Special cases.		Leavers.		Born in 1916.		Born in 1920.		Entrants.		Totals.		Per- centage F.F.
		No. exd.	No. FF.	No. exd.	No. FF.	No. exd.	No. FF.	No. exd.	No. FF.	No. exd.	No. FF.	No. exd.	No. FF.	
Boys	...	13	1	97	7	198	7	366	10	165	2	839	27	3.22
Girls	...	13	0	69	6	152	5	248	8	113	1	595	20	3.36
Totals	...	26	1	166	13	350	12	614	18	278	3	1,434	47	3.28

In none of these cases was there any of the symptoms which are usually associated with flat foot, *e.g.*, pain, and Dr. Duncan is of opinion that these are not the children who will in later life develop "flat foot." When the low arched supple foot flattens there is no resistance and no pain. It is with the high arched foot that the trouble arises. It offers great resistance and pain is felt before there is any flattening to be seen. Many of the parents of the children with "flat feet" stated that it was in the family, and that they themselves had never had any symptoms.

Dr. Agnes
Parson.

Dr. Agnes Parson examined the feet of 582 children, including 199 boys and 383 girls, classifying the children (a) according to the height of the arch—1 high, 2 slightly flat, 3 flat, and (b) according to the following three degrees of mobility:— (1) those able to stand on tip-toe, with the anterior part of the foot being almost in a straight line with the leg; (2) those able to stand on tip-toe but with a slight angle between the anterior part of the foot and the leg, but with the arch restored, and (3) those worse than (2)—the arch not being restored.

Only a few children complained of pain, aching, or of a tired feeling in the feet, and then only when directly asked, the majority with flat feet and poor mobility denied having any trouble with their feet. A very few children have come to notice complaining of their feet, and in these cases the defect has been very severe, the mobility almost completely lost. It is to be noted that the children with the best arches had also the greatest amount of mobility and *vice versa*.

Boys born in	Arch.	No. seen.	Mobility.			Girls born in	Arch.	No. seen.	Mobility.				
			1	2	3				1	2	3		
1914—5	...	1	7	6	1	0	1914—15	...	1	15	12	0	3
		2	21	10	9	2			2	25	19	6	0
		3	11	1	5	5			3	18	9	3	6
			39	17	15	7				58	40	9	9
1916	...	1	11	5	5	1	1916...	...	1	9	6	3	0
		2	30	15	12	3			2	52	32	16	4
		3	14	6	6	2			3	24	6	11	7
			55	26	23	6				85	44	30	11
1920	...	1	6	2	2	2	1920...	...	1	9	8	0	1
		2	49	31	15	3			2	67	41	22	4
		3	15	5	6	4			3	17	7	8	2
			70	38	23	9				93	56	30	7
Entrants	...	1	0	0	0	0	Entrants	...	1	1	1	0	0
		2	21	9	10	2			2	50	34	15	1
		3	14	7	4	3			3	15	10	5	0
			35	16	14	5				66	45	20	1

Rheumatism in Children.

The year past has seen increased attention paid to the rheumatic child. The decision of the Council to encourage the establishment of rheumatic supervisory centres has been carried into effect. In addition to the centres already in being which were described last year, two new rheumatic supervisory centres at voluntary hospitals have been established in close relationship with the Council's organisation of children's care, *viz.*, at the Queen's Hospital, Hackney, and at Waterloo Hospital for Women and Children, Waterloo Road; the rheumatic clinic at the Hospital for Sick Children, Great Ormond Street, has also been brought into organic relationship with the Council's children's care system, and, in addition, two directly administered supervisory rheumatism centres have been established at the Downham School Treatment Centre and the Elizabeth Bullock School Treatment Centre in Wandsworth-road. There has been a further extension of beds placed at the Council's disposal for rheumatic children by the courtesy of the Metropolitan Asylums Board.

Dr. Nairn Dobbie, upon whom the bulk of the Council's supervisory work in regard to rheumatic children has fallen, himself attends the two centres directly established, and gives the following account of the work performed:—

Dr. Nairn
Dobbie's
report.

"By arrangement with the Metropolitan Asylums Board 10 extra beds for sub-acute rheumatic girls have been secured at High Wood Hospital, Brentwood. The number of beds now available under the scheme is as here stated—for acute cases at Carshalton, 60 beds; for sub-acute cases (girls) at Carshalton, 16 beds; at Highwood, 66 beds; (boys) at Highwood, 28 beds.

"The Register containing all the names of rheumatic children brought to the notice of the School Medical Officer up to the end of December, 1928, contains the names of 8,059 children. In this list are included the names of 261 boys and 447 girls specially nominated during 1928 by assistant school medical officers, hospital and private practitioners for institutional treatment under the Council's scheme. These nominations are far in excess of the present available beds. Those children whose conditions appeared to be most urgent for institutional treatment were examined and their homes visited by an assistant school medical officer. In this connection 78 visits were made during the year to general and special hospitals and 325 home visits were made. In order that, when possible, some provision should be made for all nominated children, co-operation has been established with the Invalid Children's Aid Association, and full information is obtained as to the supervision and treatment received by the great majority of these children not admitted to beds under the scheme. 440 names were referred to the Invalid Children's Aid Association, which fully reported on 411 children and arranged for the treatment of many.

The following table shows the way in which these 708 nominations have been dealt with:—				Nomination of rheumatic children, 1928.	
	Boys.	Girls.		Boys.	Girls.
High Wood Hospital—			Treatment arranged by Invalid Children's Aid Association	32	41
Still under treatment	... 22	63	Cases considered unsuitable or no longer requiring treatment	32	71
Discharged	... *43	70	Parents averse from institutional treatment	12	21
Taken out by parents	... 21	30	Admitted to hospitals, infirmaries or sent away by guardians	24	22
Refused to go after arrangements made	3	6	Convalescence arranged by hospitals or privately	4	16
Deaths in hospital	... 2	2	Removed outside London administrative area	2	3
Queen Mary's Hospital (sub-acute beds)—			Died	2	—
Still under treatment	... —	15	Number still awaiting consideration	55	68
Discharged	... —	8	Total number of nominations	261	447
Taken out by parents	... —	2			
Queen Mary's Hospital (rheumatic unit)—					
Still under treatment	... 4	4			
Discharged	... 3	5			

* Of these numbers 18 boys and 19 girls were actually admitted in 1927.

"The valuable assistance given by the Invalid Children's Aid Association is much appreciated, and mention must be made of the ever-widening work of the voluntary care committees who not only follow up and report on the home and environmental conditions of children attending the centres, but also visit and report fully on the home conditions of every child accepted for institutional treatment. On these reports such action as is possible is taken for bettering the home conditions or in suitable cases recommendation for houses is forwarded to the Council's Housing Section. Insanitary conditions were notified to Local Sanitary Authorities in 46 cases and 14 recommendations were forwarded for the consideration of the Housing Section.

"Children on their return from High Wood or Carshalton are examined at the County Hall and classified according to their individual fitness for ordinary or special school and for full or modified school curriculum. The parents are advised as to the regime best suited to the individual child, and arrangements are made for each child to be put under or to remain under supervision at centre or hospital or under the supervision of a private practitioner. Afterwards a representative of the care committee again reports whether the doctor's advice is being carried out, and whether such adverse home conditions as may have existed prior to his admission to hospital are now bettered or abated. The child is specially examined at regular intervals on his return to school and a full record is kept as to his future progress.

"One session a week is held at each of the new rheumatism supervisory centres which were opened after Easter, 1928. The aim of the centres is to examine and supervise rheumatic children in the hope of preventing the development or further progression of rheumatic heart disease and to guide children along the right lines during periods of quiescence of the illness. It is at once a diagnostic centre and a 'clearing house' for shepherding the child into the channels that fit his particular condition. The personal circumstances, both internal and external, of the actual sufferers are investigated as far as possible in the hope that any adverse conditions which appear to be common to all definite rheumatics may be recognised and avoided in the case of potentially rheumatic children. No active treatment is given. Where it appears necessary, children are at once referred to the family doctor, the hospital, or such other agency as the case indicates.

"Children already under constant medical supervision or treatment are not encouraged to attend these centres, too frequent examination by different doctors is useless to the child and may even be harmful in some few cases when conflicting advice might be given, besides too frequent examinations defeat their own ends by taking up too much of the mother's time. The close co-operation between these centres and the school medical service, the hospitals, care committees and bodies such as the Invalid Children's Aid Association and in some cases with private practitioners, reduces the chance of overlapping in the supervision and enhances the sufferer's chance of immediately benefiting by the existing facilities for treatment and convalescence or profiting by one or other of the many facilities for education under special conditions.

"The numbers of children seen at the two centres up to the end of 1928 are as follows. The figures represent a rough average of 6 new cases and 5 re-examinations per session. So far it has not been found possible much to increase the number of new cases per session.

<i>Elizabeth Bullock Centre.</i>						<i>Downham Centre.</i>			
		<i>New cases.</i>		<i>Re-examinations.</i>		<i>New cases.</i>		<i>Re-examinations.</i>	
Boys ...	...	73	...	41	...	64	...	40	...
Girls ...	...	91	...	65	...	78	...	49	...
		---		---		---		---	
Totals		164		106		142		89	
		---		---		---		---	

"The only prophylactic measure at present known, apart from removing the child from unhealthy surroundings, is to attempt to alleviate adverse home and housing conditions and to increase the well-being and resistance of the child by homely advice to the parent on domestic conditions, on feeding, lighting and ventilation, on cleanliness, on regular habits, on rest and on conserving the body heat by suitable clothing and boots, and to follow this up by home visits of trained social workers, and when the financial standing of the parent precludes suitable or ample nurture to ensure that every official and voluntary means of extra help is at the disposal of the child, *e.g.*, school meals, guardians' relief, etc.

"The sources of reference of the children seen are shown in the following table:—

Centre.	School medical officer.	Hospitals.	Private doctor.	Other treatment centres.	Invalid Children's Aid Association.	Care committee.	Parents.	Head teachers.
Elizabeth Bullock...	113	5	7	11	4	5	17	2
Downham ...	107	6	4	8	3	6	7	1

"The great majority of the children seen were referred by school doctors who during their routine examinations have neither the time nor the conditions necessary for a more extended examination and review of the often indefinite symptoms and signs that are the features of early rheumatism. Children referred from hospitals were mainly quiescent cases whose homes were close to the centres. Cases sent by private practitioners were referred mainly for treatment under the Council's Scheme. Parents are increasingly bringing up others of their children for examination and advice—a procedure encouraged, as it is becoming more and more clear that rheumatism tends to run in certain families.

"There are always some children whose delicacy, whether inborn or acquired, is brought out by various adverse circumstances which apparently do not greatly affect their stronger fellows. Such children everywhere present great difficulty, since in the majority of cases their several conditions of subnormal health cannot definitely be traced to any one disease. More harm than good results in labelling such children with one or other of the great crippling diseases, rheumatism or tuberculosis. Rheumatism has become synonymous with heart disease to many people and when a child without full justification is deemed to be rheumatic there is sometimes unnecessary anxiety and depression on the part of the parents which reacts badly on the child. Moreover, the 'tag' of rheumatism sometimes precludes such children from benefiting by the very facilities which exist for their betterment, as it is rightly held that 'rheumatic children do not thrive in day open-air schools,' or, again, that certain localities 'are inimical to rheumatism.' There are also many children in apparently good general health who complain of 'pains' and yet thrive and develop along normal lines and who never develop carditis.

"Pain is a purely subjective expression, the intensity and often even the significance of which cannot be measured by any standard or norm, and so its significance must be interpreted in conjunction with other symptoms and signs before a justifiable diagnosis of rheumatism is permissible. The writer's criteria of rheumatism were outlined in the Annual Report of 1927. The conditions of 50 children seen at the Elizabeth Bullock Centre and 59 at Downham were thought not to be specifically indicative of rheumatism. 13 of these children at the Elizabeth Bullock Centre and 19 at Downham were discharged after their first visit, and the remaining children were referred for re-examination, usually in 6 months' time. Of the children referred, 14 boys went to Bushy Camp School and 18 girls were either convalesced or went to residential open-air schools for a period of a month or longer, and all of them remained free from symptoms while away and were benefited

in their general health. It is believed that many of these children would benefit and respond well to the régime of an ordinary open-air school.

"Since the matter of moment in rheumatic children is the condition of the heart, it is of interest to note this feature in the children seen:—

				<i>Nil.</i>		<i>Congenital.</i>		<i>Suspicious.</i>		<i>Definite.</i>
Elizabeth Bullock Centre—										
Girls	...	...	...	36	...	3	...	33	...	22
Boys	...	...	...	28	...	2	...	30	...	10
Totals				64		5		63		32
Downham Centre—										
Girls	...	...	...	38	...	4	...	35	...	10
Boys	...	...	...	22	...	1	...	23	...	9
Totals				60		5		58		19

"The relatively small numbers of children with definitely affected hearts is due to a very extensive and efficient supervision now carried out at the hospitals and in P.D. schools. If prevention is to be useful attention must be focussed on the children without cardiac involvement and those with suspicious hearts, although every child with active rheumatism must be treated.

"The disposal and regulation of all these children form a considerable part of the work at the centres. To exclude from school without just cause is almost as harmful as to allow a child with active carditis to attend school and participate in competitive games. In many cases the lot even of a delicate child is more propitious when attending school in a relatively warm, open and happy environment, watched over by an observant and kindly disposed teacher, fortified by school meals if necessary, and stimulated by the wide variety of school interests, than sitting or working in what is often a stuffy and ill-regulated home or roving the inclement streets. Physical exercises can be better limited to the needs of the child in school than out of it; nor need the over-anxious child be pressed in his school work if the doctor thinks it would be injudicious. Teachers heartily co-operate in dealing with delicate children. School exercises are forbidden to children whose heart muscles or valves are not functioning properly, but where there is active carditis, bed alone is the place, and this can, in the majority of cases, only be secured in hospital.

"The following table shows the lines upon which the children were treated. The numbers total more than the actual children seen, as some of them appear in two columns, *e.g.*, excluded school while waiting institutional treatment.

Centre.	School and no restrictions.	School and restrictions.	Treatment while attending school.	Treatment and excluded from school.	Institutional treatment.	Convalescence.	P.D.
Elizabeth Bullock ...	47	45	10	31	26	30	8
Downham ...	57	32	13	20	14	19	5

"While restriction in school games and exercises must depend on the condition of the individual child—experience shows that swimming, unless under the strictest supervision, is detrimental to definitely rheumatic children—acute exacerbations of rheumatism have followed in some cases where rheumatic children have gone to the swimming baths contrary to instructions. All the children under treatment were attending hospitals or private practitioners.

"39 children were discharged after their first re-examination at the Elizabeth Bullock Centre, and 36 at Downham—with the proviso that they were to re-attend on the recurrence of any symptoms. The remaining 112 children at the Elizabeth Bullock Centre and 87 at Downham were referred for re-examination at periods

varying from one week in one or two cases to several months in others. The results of these re-examinations are tabulated :—

Centre.				Remaining free symptoms.	Recurring symptoms.	Definite retrogression.
Elizabeth Bullock	...	...	...	52	43	17
Downham	...	...	...	51	27	9

“ Institutional treatment was recommended for all the children who appeared to be retrogressing.

“ A comparison of the above tables seems to bear out the impression previously gathered that there was a relatively smaller incidence of active rheumatism among the children seen at Downham than in those of the Elizabeth Bullock Centre. The former children were, with notable exceptions, cleaner, better dressed and appeared better nurtured. On the whole their housing conditions were better. These Downham children were drawn not only from the Downham and Bellingham Estates, but from the neighbouring places like Lee and Lewisham—open localities with the cottage type of house and inhabited by better artisan types, and even on the Estates, although preference for houses is given to those families living under conditions inimical to health, it is mainly those people with the will and ability to better themselves and those of steady earning capacity who find sanctuary in such places. A general survey of the environmental conditions so far collected gives pre-eminence to no one adverse factor, and leaves the impression that any harmful home or environmental condition, whatsoever its nature, prejudices children of rheumatic tendencies.”

Dr. Gerald Slot has given assistance to Dr. Nairn Dobbie and also himself attends the supervisory centre at the Waterloo Hospital, where he holds the post of Physician to the Hospital. He has furnished the following report on his work during the past year in (1) inspection of physically defective schools, (2) the charge of a Rheumatism Supervisory Centre, (3) research work in relation to cardiac efficiency. Dr. Slot's report.

“ The work of a rheumatism supervisory centre, such as the one at the Royal Waterloo Hospital, S.E., consists in the main of four factors.—(1) The examination of children suspected to be rheumatic or choreic. This is a very important part of the work. The children are seen by appointment made through the local care committee officer or divisional medical officer and are nearly all referred by one of the school medical officers. Their medical record cards come with them and an opinion is written on these. In this way a second opinion, aided by all the facilities of a hospital, is available in difficult or doubtful cases to the school medical service. The need for such a centre is evident, because about 15 cases a session are seen and appointments have been nearly completely filled for some weeks ahead. Some cases are referred by private practitioners and some come up by direct application from a parent, teacher or other social worker. The Council provides an experienced organiser who attends each session of the clinic and acts as a liaison officer between the various organisations, outside doctors and the clinic.

“ (2) The second factor is the inspection of cases, especially those with a cardiac lesion, from time to time. Patients receive a reminder from the clinic when their visit is due.

“ (3) It acts as a medium for the propagation of information to the parents and others about rheumatism. Parents or guardians attend with the children. More accurate histories are thus obtained and the instruction of the parents is regarded as a very important factor. Leaflets, founded on those of Dr. Reginald Miller, are distributed, and a special point is made of interviewing each parent and ensuring that the importance to the child of a correct treatment and prolonged rest in active rheumatic cases is understood.

"(4) The registration, following up in their own homes, and arrangement of after-care of cases notified. It is important to keep an accurate register. With regard to home circumstances, it is well known how difficult even careful parents find it adequately to carry out medical instructions. Care Committee workers visit the homes, make reports, and impress on the parents the importance of complete rest in cardiac cases. Accurate information of home circumstances, in many cases supplemented by personal observation, is thus obtained, and with more material it is hoped to use this in a review of home conditions and the occurrence of rheumatism in the young. One of the great difficulties, and one of the most important factors, is the arrangement of prolonged convalescence and after-care when the acute attack has subsided. Arrangements by which acute cases can be admitted into the hospitals at High Wood or Carshalton exist, and owing to cordial relationship of the centre, the organiser with the I.C.A.A., and kindred organisations, children can be rapidly removed to the above hospitals with their special rheumatic beds, or other convalescent homes. This arrangement meets the difficulty which occasionally occurs when a child, owing to lack of beds, is unable to have a sufficiently long stay in hospital, and when home conditions may not be such as render it desirable for him to be sent home. The difficulty of securing adequate rest at home has been brought home very forcibly—choreic children often sharing beds with one or two other adults or children, and it is a moot point in some cases whether owing to this fact, and slack discipline at home, the children are not quieter in school.

"Opportunities occur for research in all aspects of rheumatism. The material is abundant and concentrated. Lectures have been arranged which have been well attended. School doctors are always welcome to see these cases. In the centre at the Royal Waterloo Hospital every effort is being made to advance the research side. A small team of experienced workers has been collected, and it is hoped to have a unit of five beds for in-patient investigation of rheumatic fever.

"During the year an inspection has been made of all the cardiac cases in two P.D. schools. The importance of sending rheumatic cases there for a period of six months after discharge from hospital was apparent on many occasions. Many cases there were reviewed and an attempt is being made to arrive at some method of classification of these heart cases. An investigation is also being made with the assistance of the care committee into the after-history of cases leaving these schools. Parents are interviewed at the schools and the importance of keeping up the treatment is stressed. In cases where no treatment is being given, this is arranged. In a review of cases in this way, it has been possible to decertify some now well, and a study is being made of the difference between children in P.D. schools and others.

"With regard to the clinical method of estimating cardiac efficiency the aim is to obtain if possible, (i.) an objective test whereby an observer can estimate changes noted by a former observer, (ii.) a method of classification of hearts, and (iii.) a numerical method of denoting progress or otherwise in heart cases.

"The study of large numbers of notes shows clearly the difficulty of tracing the opinion and history of the heart held by a previous observer owing to the vague and varied nomenclature used. In these tests definite figures are obtained. The work, which is based in part on that of Schneider and Blumer, consists only of simple estimations which can be easily carried out in an inspection at a school. The factors considered are (i.) the reclining pulse rate, (ii.) the standing pulse rate, (iii.) the increase in these two factors, (iv.) the pulse rate after exercise, (v.) the time for the pulse to return to normal, (vi.) the difference in the reclining and standing blood pressures. The exercise has been standardised to touching the toes with the hands twenty times. The first five factors can advantageously be ascertained by the school nurse who has entered them in a book, in some cases, before inspection. The child is used to the nurse and the factor of

acceleration of the pulse rate due to fear is in this way to some extent eliminated. The system of marks shown in the attached schedule is used.

"The fallacies of this method are realised. It is in part a measure of exercise tolerance. Some children—'the effort syndrome' type—have rapid pulses. Conditions other than heart disease—*e.g.*, tuberculous glands—may quicken the pulse. On the other hand, if all the factors are taken into consideration, these scales are of great help in determining efficiency. The figures are based on a large number of cases, and it is appreciated there is a fallacy inseparable from numerical methods; in general they will be found to err on the side of safety. Work, however, is still in progress and modifications in the scale are possible.

"The last point is that lectures to parents on elementary hygiene have been given in schools. The attendances have been good, and the many questions asked after the lecture showed that the parents took interest in the subject. Head teachers have said that they find this work very useful in their health propaganda."

These figures are adapted from Schneider and Blumer and afford a simple means of estimating cardiac efficiency. The following 6 factors are taken :—

Cardiac
efficiency
tables.

1. Reclining pulse rate.
2. Standing pulse rate.
3. Increase of pulse rate on standing.
4. Increase in pulse rate after exercise.
5. Time for pulse to return to normal.
6. Difference in blood pressure in lying and standing.

Marks are given as in the following table. The maximum score obtainable is 18 marks. 8 marks or better can be passed; 7 is doubtful, and scores below 7 indicate myocardial inefficiency.

Reclining pulse rate—				0-10 beats.	11-18	19-26	27-34	35-42
50-60	3	...	...	3	3	2	1	0
61-70	3	...	...	3	3	1	0	-1
71-80	3	...	...	3	2	1	-1	-2
81-90	2	...	...	2	2	0	-2	-3
91-100	1	...	...	2	1	-1	-3	-3
101-110	0	...	...	1	0	-2	-4	-3

Standing pulse rate—									
Increase after exercise—					0-10	11-20	21-30	31-40	41-50
60-70	3	...	...	...	3	3	2	1	0
71-80	3	...	...	...	3	2	1	0	0
81-90	3	...	...	...	3	2	1	0	-1
91-100	2	...	...	...	2	1	0	-1	-2
101-110	1	...	...	...	2	1	-1	-2	-3
111-120	0	...	...	...	1	-1	-2	-3	-3
121-130	0	...	...	...	0	-2	-3	-3	-3
131-140	1	...	...	...	0	-3	-3	-3	-3

Return of pulse to normal—									
0-60 seconds	...	...	...	...	...	...	...	...	3
61-90	...	...	...	...	...	...	...	...	2
91-120	...	...	...	...	...	...	...	...	1
Above 120 sec.	2-10	above resting rate	...	...	...	...	...	...	0
	11-30	" "	...	...	...	...	...	...	-1

Blood pressure—									
A rise of 8 or more mm. between reclining and standing blood pressure	...	...	...	...	...	...	...	...	3
rise of 2-7	...	...	...	...	...	...	...	...	2
no rise	...	...	...	...	...	...	...	...	1
fall 2-5	...	...	...	...	...	...	...	...	0
fall of 6 or more	...	...	...	...	...	...	...	...	-1

The exercise used consists in touching the toes with the outstretched hands 20 times where this is practicable.

It may be noted that a normal heart never shows an increase of more than 40 beats and usually returns to normal rate after 120 seconds. These figures of course must be taken in conjunction with other signs and symptoms.

By the courtesy of Mr. McKay, the Secretary of the Hospital of Sick Children, Great Ormond Street, the following report has been furnished by Dr. W. H. P. Sheldon, who is in charge of the Rheumatic Clinic, and Miss Salmon, the Hospital Almoner.

Great
Ormond-
street—Dr.
Sheldon's
report.

Numbers.—Since its inception on January 1st, 1928, the Clinic has entered on its register 507 children, of whom 260 reside within the L.C.C. boundary and 247 reside in extra metropolitan districts. Cases discharged from the Clinic, (over-age, died, etc.) 37.

Procedure.—The Clinic is run in conjunction with the out-patient department and meets each morning in the week, thereby differing from other Rheumatic Clinics which have only one or two sessions per week.

“For the first half of the year, Miss Allen, a voluntary worker, was entirely responsible for the organisation of the attendances of the children. The L.C.C. marked their official recognition of the Clinic on July 2nd, 1928, by supplying a half-time social worker, Miss Sydenham, to assist in the management of the L.C.C. school children. The efficient assistance of this worker has been much appreciated. The maintenance of regular attendance of the children is carried out by Miss Allen and Miss Sydenham. All recommendations for half time schooling, attendance at Schools for Physically Defective Children, extra nourishment and correspondence with the School Medical Service are transmitted by Miss Sydenham for L.C.C. children, and by the Almoner's Department for the extra-metropolitan children.

“It is interesting to note that as a result of the Clinic being recognised by the L.C.C., all L.C.C. children attending the Clinic have special facilities for cheap tramway tickets, and if they are on a School Register, their attendance at Hospital is counted as attendance at school.

“The Almoners interview all patients on their first attendance and obtain all necessary particulars, and in the event of convalescence being recommended, they make all arrangements. The medical notes together with a report of the home conditions are made on a special form, (attached) and kept in a private file.

“The Clinic embraces all types of rheumatism; potential rheumatics, early heart disease, established cardiac cripples, and cases of chorea. It has not been considered advisable to divide the children into various groups according to their particular manifestations of rheumatism, as is done at some clinics, notably Glasgow. Each case, both from a medical and social point of view, is considered on its own merits.

Home Visits.—During the year, 305 home visit reports have been furnished. Of these 124 have been made by School Care Committee Workers in London, whilst on the extra-metropolitan homes, Miss Allen has made 181 reports. Owing to the exceptionally high standard of the latter's work, it is hoped that in the near future she may be able to visit the homes of all the children in the Clinic. Of the 305 homes visited, 111 were reported damp, and 81 as ill-lighted.

Co-operation with the School Medical Service.—An increasing number of children is being referred for supervision to the Clinic by the School Medical Service, whilst reports to the School Medical Service have been sent on L.C.C. and extra-metropolitan children.

“The following figures re reports sent from this Clinic apply only to L.C.C. children :—

A. on initial attendance	260
B. on special cases	43

In addition 8 children have been sent to Physically Defective Schools.

“Convalescence.”—During the year 129 children have been distributed to 41 Convalescent Homes for a total period of 1,315 weeks, which means an average convalescence for each of these children of eleven weeks.

“Special beds at Lancing.”—20 beds have been set aside for Rheumatic Clinic patients at Miss Booker’s Home at Lancing, and these are all now occupied by cases from the Clinic. Dr. Sheldon has paid two official visits to the Home and on each occasion he has been well satisfied with the condition of the children.”

The following report has also been received from Dr. D. W. Winnicott, Assistant Physician to the Hospital, on the working of the Rheumatic Clinic at the Queen’s Hospital.

Queen’s
Hospital.—
Dr.
Winnicott’s
report.

“At the beginning of this year (1928) the London County Council made an offer to The Queen’s Hospital for Children of £100 a year towards the running of a Rheumatic Clinic, this clinic to deal with L.C.C. children, and to aim at the prevention of heart disease. This offer was immediately accepted.

“No precise instructions were given as to the nature of the work to be done. One obvious way of developing the clinic would have been to have attempted to take under its wing all the cases of rheumatism attending the hospital. This was discussed with Dr. Thomas, and he agreed that it would be impractical to do this unless the clinic should meet much more often than once a week. Moreover, the diagnosed cases of sub-acute and acute rheumatism were already being treated according to present day knowledge by the hospital physicians in the ordinary hospital out-patient departments.

“But it was felt that a sufficient number of doubtful cases of rheumatism and chorea were being sent from the school care committees to justify the setting apart of this clinic of one session a week to deal almost exclusively with this type of case. Accordingly a start was made along these lines at the beginning of the summer term, and in the 19 sessions up to the present date 121 new cases and 46 old cases have been seen.

“Cases referred to the clinic :—

Sent by school M.O.’s and care committee secretaries	...	...	...	95
Referred from Dr. Winnicott’s own out-patient department	...	...	...	17
Referred through the L.C.C. organiser from the hospital casualty department	...	...	...	28
Sent by treatment centre doctors	...	...	...	5
Sent by head teachers	...	...	...	4
Came spontaneously	...	...	...	3
Failed appointments	...	...	...	31

As far as possible all children are seen by appointment. Thirty-one parents failed to keep their first appointments.

“On June the 27th, the secretaries of the school care committees were invited to the hospital through Miss Jenkins. Between 50 and 60 came, and they were told about the clinic and its present aims. It was suggested that the care committee should send their doubtful cases of chorea and rheumatism and heart-disease cases to the clinic; if it was found that the children were being sorted out and dealt with in a satisfactory way the practice of sending cases would grow. In this way the success or failure of the scheme would be represented in the figures.

“It was also pointed out that the clinic did not seek a reputation as a rheumatism treatment centre. Until some specific treatment is discovered, based on a knowledge of the organism and conditions responsible for the disease, there was nothing to be gained by raising false hopes by such a pretence. The object of the clinic would be to sort out the possible rheumatic diseases, and to become responsible for the provision of common sense treatment of indirect value. This consists in :—

- (1) Convalescent home treatment between attacks.
- (2) Rest in bed in a hospital or infirmary during attacks.
- (3) Convalescent treatment in special heart homes in the later stages of acute attack.

- (4) Management of home life when the child has returned home.
- (5) Recommendation for "Physically defective" schools.
- (6) Treatment of diseased tonsils, gum-boils.
- (7) Advice to parents on common sense matters, *i.e.*, diet, clothing, midday rest period, sleeping arrangements, drying of rooms, ventilation, regulation of exercise, etc.

"When treatment is considered necessary for any other ailment the parent is advised and facilities are explained. Usually this means referring the case to the out-patient department where the child is kept under treatment, returning periodically to the clinic for examination where any question of rheumatism remains. Arrangements are also made at the hospital for X-rays, blood tests, urine examinations, and for massage and special exercises in suitable cases.

"If one may judge from the numbers of children referred to the clinic each week this (autumn) term, the method which has been chosen for the development of the clinic is justified. The difficulty is to keep the numbers of the new cases within practicable limits.

"Incidentally this method of obtaining cases is providing the physician in charge with very difficult and interesting cases of a kind different from that which is mostly dealt with at the other established rheumatism centres. Little is known of the clinical picture of the pre-rheumatic state (if it exists in a recognisable form), and these cases provide a field for research. The main difficulty, as might be expected, is to find suitable accommodation for the child with sub-acute rheumatism and the child recovering from an acute attack. But this is a part of the problem of child-rheumatism as a whole, and is not a problem peculiar to the clinic.

"Mrs. Farmer is attached to the Clinic as L.C.C. Organiser."

Age of onset
of
rheumatism.
Dr. Mabel
Russell.

Dr. Mabel Russell has analysed the age of onset of the acute attack from 100 cases of "authentic rheumatism."

Age in years at onset of attack	...	5+	7+	9+	11+	13—14
Numbers of children	...	19	48	15	14	4

In the majority of the above cases it was possible to elicit the expected history of vague pains before the onset of the acute attack.

Special Inquiries and Researches.

Assistance has continued to be afforded to the Special Committees of the Board of Education, especially to those dealing with Visual Defects and Enlarged Tonsils and Adenoids. Special researches by the staff include the investigation of flat-foot in school children by Doctors Danvers-Atkinson, Verner Wiley, Jessie Duncan and Agnes Parson (p. 73); the comparative condition of children living in a demolition area by Dr. Nairn Dobbie (p. 95); notes on the comparative incidence of defect in slum children, Dr. Mabel Russell (p. 101); the incidence of oral malformation, Dr. Livingston and Mr. Ovey (p. 109); the development of refractive errors of the eye during school life, Dr. J. Hamilton McIlroy (p. 84); the physical and mental characteristics of children with high myopia, Dr. Elizabeth M. McVail (p. 87); the condition of children in the hop fields, Dr. E. J. Boome (p. 90).

Research
into the
changes in
the eye
during
school life.

It is held amongst English ophthalmic surgeons that eyestrain during education is potent in the development of myopia and that it is of special importance that it should be avoided in cases which are termed progressive myopia where myopia is of high degree with a tendency to rapid increase.

Educational methods have, therefore, been worked out, pre-eminently in London, whereby children with myopia are shielded from strain, and sight saving schools and classes have been established for ordinary elementary school children and latterly also for central school and secondary school children.

Two or three years ago some facts were brought to light in the annual report which appeared to clinch the hypothesis that the chief cause of the development of myopia was school work. It was noted that whereas amongst Gentile children there is always more visual defect in the girls than in the boys, and this adverse incidence upon girls increases with school age, amongst Jewish children on the other hand the boys suffer more than the girls, and the incidence upon boys is more apparent the older they grow. It was thought that the fact that Jewish boys especially have to attend evening classes and do much work under conditions of artificial lighting, not always well adapted for the purpose, accounted for this reversal.

This discovery caused perturbation and has led to further research. Dr. A. Sourasky in particular paid close attention to the question and he published the results of his enquiry in the *British Journal of Ophthalmology* for April, 1928.

1,649 boys in the Hebrew Evening Classes (Talmud Torahs) were examined by Dr. Sourasky and on a similar basis 600 non-Jewish boys were examined at Council schools in the East end by the Council's staff. The first broad analysis of the results of the comparison proved that the facts which were set out in the annual report were confirmed, 43.2 per cent. amongst Jewish and 21.7 per cent. amongst non-Jewish boys proved to be defective.

Upon closer analysis of the facts, however, Dr. Sourasky has come to the conclusion that the explanation cannot be sought in the inference that the higher percentage of visual defect amongst Jewish boys is due to increased use of the eyes in school work, rather he suggests it is due to inherent racial variation.

It is impossible here to set out all the tables and figures upon which this deduction is based. He points out, however, that there is no greater advance amongst Jewish boys during school life than amongst non-Jewish, which tends to negative the suggestion that the heavy evening work is to be invoked to explain the greater total incidence of defect upon the former. The greater defect amongst Jewish boys as opposed to non-Jewish is already apparent before attendance at Talmud Torah begins.

In order to test whether there were racial qualitative differences as well as quantitative differences a research was carried out amongst Jewish and non-Jewish children attending hospital for visual defect. There were 516 Jewish and 892 non-Jewish cases. The dominant suggestion obtained from the analysis of type of case in this part of the research is that while hypermetropia is the predominating refractive error in both, low hypermetropia is the common error amongst the Jewish, while high hypermetropia is the more common amongst non-Jewish children.

Dr. Sourasky, therefore, believes that Jewish children start from a level of low hypermetropia in the beginning while the non-Jewish children start from a level of high hypermetropia, and the forces of growth by themselves unassisted by special conditions such as excessive study explain the passing over of a larger number of Jewish than non-Jewish children into high myopia. But this explanation as yet does not account for the reversal in the incidence of visual defect in the sexes as between non-Jewish and Jewish children. Dr. Sourasky has, therefore, analysed the incidence of visual defect in four groups—Jewish boys, Jewish girls, non-Jewish boys and non-Jewish girls, and he finds that in both Jewish and non-Jewish girls the tendency is for hypermetropia to a greater extent than in boys to persist and not to pass over into myopia. There is according to this very ingenious hypothesis a racial factor which accounts for the excess of myopia in Jewish boys and a non-racial sex-linked factor which accounts for the excess of visual defect (consisting to a large extent of persistent hypermetropia) amongst non-Jewish girls.

In criticism of this hypothesis perhaps stress should be laid on the fact that Dr. Sourasky's cases in which the refractive error was determined were derived from a selected group, *i.e.*, children who had sought relief at hospital and therefore are not necessarily representative of the school population.

Dr. J.
Hamilton
McIlroy's
enquiry.

Dr. J. Hamilton McIlroy, working in the London schools, has during the past year examined by refraction the condition of the eyes of 1,335 unselected children comprising 407 Jewish boys, 438 Gentile boys, 155 Jewish girls and 335 Gentile girls. The number as yet examined is unfortunately insufficient to settle the points at issue, but from a preliminary report which Dr. McIlroy has made some important deductions may be drawn. Her results are set out in the following two tables:—

VISUAL ACUITY RESULTS (PERCENTAGES).

Age group.	Normal vision. (Not worse than 2.)				Moderately subnormal vision ($\frac{1}{2}$).				Poor vision. ($\frac{1}{4}$ or worse.)			
	Better eye.		Both eyes.		Better eye.		Worse eye.		Better eye.		Worse eye.	
	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.
Boys.												
7	82	78	73	74	9	13	0	4	9	9	27	22
8	63	90	47	83	16	5	19	2	21	5	34	15
9	68	91	56	84	20	3	13	5	12	6	31	11
10	75	91	58	83	8	5	14	9	17	4	28	8
11	73	85	56	76	9	4	9	5	18	11	35	19
12	75	88	59	75	8	7	13	5	17	5	28	20
13	65	90	54	70	10	4	10	12	25	6	36	18
GIRLS.												
7	—	86	—	72	—	14	—	14	—	0	—	14
8	—	84	—	82	—	10	—	3	—	6	—	15
9	83	91	72	79	11	9	17	12	6	0	10	9
10	90	77	75	67	7	11	7	10	3	12	17	23
11	75	81	65	70	10	9	2	13	15	10	33	17
12	68	87	58	77	16	4	16	9	16	9	26	14
13	70	85	64	80	18	12	15	10	12	3	21	10

RETINOSCOPY PERCENTAGES.

(Mean of 4 Meridians).

Age group.	EM.		H ₁ .		H ₂ .		M ₁ .		M ₂ .	
	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.	Jews.	Gnts.
Boys.										
7	18	30	82	70	0	0	0	0	0	0
8	31	38	56	52	9	7	3	2	0	0
9	32	26	54	69	8	5	4	0	2	0
10	36	39	44	58	6	1	13	1	1	0
11	37	43	45	48	3	5	13	4	2	0
12	30	41	49	53	5	4	10	2	6	0
13	31	39	44	55	6	0	14	5	5	1
GIRLS.										
7	—	22	—	71	—	7	—	0	—	0
8	—	34	—	60	—	3	—	3	—	0
9	39	30	61	68	0	2	0	0	0	0
10	33	33	60	53	7	10	0	1	0	3
11	39	43	41	51	5	3	10	3	5	0
12	40	26	45	62	0	5	15	7	0	0
13	39	44	46	45	6	8	0	3	0	0

Nomenclature.—

Emmetropia (EM) when the mean is between +0.5 Dioptré and -0.5 Dioptré.

Low Hypermetropia (H₁) when the mean is greater than +0.5 Dioptré and less than +3 Dioptries.

High Hypermetropia (H₂) when the mean is equal to +3 Dioptries or greater.

Low Myopia (M₁) when the mean is greater than -0.5 Dioptré and less than -3 Dioptries.

High Myopia (M₂) when the mean is equal to or greater than -3 Dioptries.

Retinoscopy without mydriatics was used by Dr. McIlroy, who has had extensive experience of the method which consists of the use of a Wright Thomson skiascope in a darkened room.

The results show that starting at age 7 with about equal proportions possessing normal vision the Jewish children at later ages show much greater visual defect than the Gentile children, while Jewish boys are distinctly worse than Jewish girls. Generally these results confirm all the previous observations.

Dr. McIlroy's results may be summed up as follows:—

(1) The prevailing condition at age 7 is that of low hypermetropia—this may be taken as the normal condition of the eyes at this age, both in Jewish and Gentile children.

(2) A comparison of the condition of Jewish and Gentile boys at the younger ages does not lend support to Dr. Sourasky's hypothesis that Jewish children start from a condition of low hypermetropia, while Gentile children start from a condition of high hypermetropia.

In fact, the position is rather the other way, for on the whole there is more hypermetropia amongst the Jewish than the Gentile children at the younger ages.

(3) Hypermetropia diminishes during school life from 70 to 82 per cent. at age seven to 44 to 55 per cent. at age thirteen. But low hypermetropia still remains the dominant refractive error at age thirteen and must account for the largest proportion of visual defect, even at the later school ages.

(4) Low myopia, absent at the earliest age, increases during school life in all groups, but to a far greater extent amongst Jewish children, both boys and girls, than amongst Gentile children.

(5) High myopia is very uncommon even at the later ages in Gentile children, but is more frequently found in Jewish children, reaching a degree of 5 per cent. amongst the older Jewish boys.

Thus Dr. McIlroy's results go to show that the hypothesis that Jewish children, start from a lower plane of hypermetropia than Gentile children is not supported. On the other hand, the claim of Dr. Sourasky that the main part of the visual defect of Gentile girls is due to low hypermetropia is fully confirmed.

The excess of the incidence of myopia upon Jewish children, both boys and girls at the older ages, raises the question whether there is not a racial factor tending to produce myopia more in Jewish than in Gentile children. The special incidence of high myopia upon Jewish boys as compared with Jewish girls leaves the hypotheses that it is due to over-use of the eyes at Chaida still in the field.

It is to be hoped that further enquiries on the lines of those of Dr. Sourasky and Dr. McIlroy will be carried out until sufficient data are accumulated to settle the questions at issue, which are of such fundamental importance to the practice of school hygiene.

Dr. McIlroy also investigated social conditions in relation to her enquiry and found that on the whole the Gentile boys go to bed earlier than the Jewish boys, but Gentile girls keep later hours than Jewish girls. Jewish boys attend cinemas to a greater extent than Gentile boys. Enquiries in regard to attendance at Chaida showed that only 12 per cent. to 22 per cent. of Jewish boys fail to attend these evening classes.

Dr. Elizabeth M. McVail has continued her investigation of the mental and physical characteristics of myopic children.

Examination has been made of all myopic children from 5 to 10 or 11 years of age in certain sight-saving classes.

The number examined was 110, of whom 86 were Gentiles and 24 Jews. Intelligence quotients were obtained on the Binet scale and the degree of myopia noted. Longitudinal and transverse measurements of the heads were taken and the cephalic indices calculated from the formula $C.I. = \frac{100 \times d}{D}$, where "d" is the transverse

Visual acuity.

Dr. McVail's investigation.

Intelligence quotients of myopic children.
Dr. E. McVail.

measurement and "D" the longitudinal measurement in centimetres. Classification has been made according to the Frankfurt nomenclature, namely, dolichocephaly 75 and below, mesaticephaly from 75.1 to 79.9, brachycephaly from 80 to 85, and hyperbrachycephaly 85.1 and above.

Table A, showing the intelligence quotients of the 100 children divided into eight groups.

Cephalic index.	Intelligence quotients.								Total.
	66—75.	76—85.	86—95.	96—105.	106—115.	116—125.	126—135.	136—145.	
Dolichocephaly under 75	—	4	1	1	1	—	—	—	7 or 6.3%
Mesaticephaly 75.1—79.9	—	8	14	13	12	—	1	—	48 or 43.7%
Brachycephaly 80—85	1	5	12	13	10	4	1	1	47 or 42.7%
Hyperbrachycephaly 85.1 and above	—	1	1	2	3	—	1	—	8 or 7.3%
Total ...	1 or .9%	18 or 16.4%	28 or 25.5%	29 or 26.4%	26 or 23.6%	4 or 3.6%	3 or 2.7%	1 or .9%	110

An impression prevails, particularly amongst people themselves myopic, that the myope is highly intelligent. Those examined were on the whole a very normal set of children, though the percentage of decided subnormals (quotients 85 and under) is greater than amongst ordinary children. Terman gives the average percentage subnormal as 11.3, whereas of these myopes 17.3 per cent. fall into this group. Possibly the percentage is not quite a true one for the youngest myopes, only recently admitted from an ordinary school, are often very shy and diffident, and it is with difficulty that they can be induced to perform verbal tests in particular. It is only after they have worked for a time with others similarly handicapped and in conditions suitable for the myopic eye that they gain confidence and show their real ability.

The number of very brilliant myopes with intelligence quotients of 116 and over is 8 or 7.2 per cent., as compared with Terman's percentage of 11.85 amongst ordinary children.

Taking Gentiles and Jews separately, 16 or 18.6 per cent. of the 86 Gentiles have quotients of 85 and less, and 4 or 4.7 per cent. have quotients of 116 and more. Similar figures for the 24 Jews are 3 or 12.5 per cent. with quotients of 85 or less, and 24 or 16.7 per cent. with quotients of 116 and more. Comparative precocity, both mental and physical, of the Jewish child is generally recognised.

Table B, showing the intelligence quotients of Gentiles.

Cephalic index.	Intelligence quotients.								Total.
	66—75.	76—85.	86—95.	96—105.	106—115.	116—125.	126—135.	136—145.	
Dolichocephaly under 75	—	4	1	1	1	—	—	—	7 or 8.1%
Mesaticephaly 75.1—79.9	—	8	12	12	11	—	—	—	43 or 50%
Brachycephaly 80—85	1	3	10	8	7	3	1	—	33 or 38.4%
Hyperbrachycephaly 85.1 and above	—	—	—	1	2	—	—	—	3 or 3.5%
Total ...	1 or 1.2%	15 or 17.4%	23 or 26.7%	22 or 25.6%	21 or 24.4%	3 or 3.5%	1 or 1.2%	—	86

Table C, showing the intelligence quotients of Jews.

Cephalic index.	Intelligence quotients.								Total.
	66—75.	76—85.	86—95.	96—105.	106—115.	116—125.	126—135.	136—145.	
Dolichocephaly under 75	—	—	—	—	—	—	—	—	—
Mesaticephaly 75.1—79.9	—	—	2	1	1	—	—	—	4 or 16.7%
Brachycephaly 80—85	—	2	2	5	3	1	1	1	15 or 62.5%
Hyperbrachycephaly 85.1 and above	—	1	1	1	1	—	1	—	5 or 20.8%
Total ...	—	3 or 12.5%	5 or 20.8%	7 or 29.2%	5 or 20.8%	1 or 4.2%	2 or 8.3%	1 or 4.2%	24

Cephalic Indices.—Table A shows that of 110 myopes 7 or 6.3 per cent. are dolichocephalic, 48 or 43.7 per cent. mesaticephalic, 47 or 42.7 per cent. brachycephalic, and 8 or 7.3 per cent. hyperbrachycephalic. Separating Gentiles from Jews (Tables B and C), of the 86 Gentiles 7 or 8.1 per cent. are dolichocephalic, 43 or 50 per cent. mesaticephalic, 33 or 38.4 per cent. brachycephalic, and 3 or 3.5 per cent. hyperbrachycephalic. Of the 24 Jews none are dolichocephalic, 4 or 16.7 per cent are mesaticephalic, 15 or 62.5 per cent. brachycephalic, and 5 or 20.8 per cent. hyperbrachycephalic. For the 86 Gentiles the average cephalic index is 79.2. Comparative figures for Londoners given by Professor F. G. Parsons, in his address on "The Englishman of the Future," are 77.7 for St. Thomas's Hospital patients and 78.5 for students of that Hospital. The myopes appear, therefore, to have a breadth of head rather above the normal, but it must be remembered that those examined were children from 5 to 10 or 11 years of age. It is possible that at that time of life the cephalic index may normally be greater than in the adult, though figures are not yet available for comparison. For the 24 Jews, numbers of whom come from races normally broadheaded, the average cephalic index is 82.9.

Grouping Gentiles and Jews (Table D), little relationship is shown between the degree of myopia and the cephalic index. Children with the highest degrees of myopia are not the most broadheaded, none of the 10 with a mean myopia of over 12 dioptries being hyperbrachycephalic.

Table D, showing the cephalic indices of all cases.

Mean myopia in dioptries.	Cephalic indices.				Total.
	Dolichocephaly under 75.	Mesaticephaly 75.1—79.9.	Brachycephaly 80—85.	Hyperbrachycephaly 85.1 and above.	
4—6	1	13	13	3	30 or 27.3%
7—9	4	19	19	3	45 or 40.9%
10—12	1	11	11	2	25 or 22.7%
13—15	1	5	2	—	8 or 7.3%
16—18	—	—	2	—	2 or 1.8%
Total	7 or 6.3%	48 or 43.7%	47 or 42.7%	8 or 7.3%	110

Correlating intelligence quotients with cephalic indices (Table A) it is found that there is a greater proportion of intelligence amongst the broadheaded than amongst the narrowheaded.

Of 19 myopes with I.Q.'s from 66-85, 37 per cent. are brachy- or hyperbrachy-
cephalic.

28	"	"	"	86-95, 46 per cent.	do.
29	"	"	"	96-105, 52 per cent.	do.
26	"	"	"	106-115, 50 per cent.	do.
8	"	"	"	116-145, 87.5 per cent.	do.

Table E, showing the intelligence quotients with relation to the myopia in dioptries, calculated from the mean of the four meridians of the two eyes.

Mean myopia in dioptries.	Intelligence quotients.								Total.
	66-75.	76-85.	86-95.	96-105.	106-115.	116-125.	126-135.	136-145.	
4-6 ...	—	5	8	3	11	1	1	1	30 or 27.3%
7-9 ...	—	6	12	14	10	1	2	—	45 or 40.9%
10-12 ...	1	3	7	7	5	2	—	—	25 or 22.7%
13-15 ...	—	3	1	4	—	—	—	—	8 or 7.3%
16-18 ...	—	1	—	1	—	—	—	—	2 or 1.8%
Total ...	1 or 0.9%	18 or 16.4%	28 or 25.5%	29 or 26.4%	26 or 23.6%	4 or 3.6%	3 or 2.7%	1 or 0.9%	110

Speaking generally, the degree of intelligence does not increase the amount of myopia, but rather the reverse, the highest percentage of children with quotients above the average being in the group with six dioptries or less of myopia.

Of 30 children with 4-6 dioptries of myopia, 47 per cent. have I.Q.'s of 106 and over.

45	"	7-9	do.	29 per cent.	do.
25	"	10-12	do.	28 per cent.	do.
10	"	13-18	do.	none	do.

Comparing Gentiles and Jews it appears that the greatest percentage of high myopia occurs amongst the former, although the numbers examined are too small to form any definite conclusion.

Dr. E. J. Boome's investigation of the condition of children visiting the hop gardens, 1928.

This report is based upon information gathered in London and in the hop gardens.

In London.—Arrangements were made in as many schools as possible for pupils proceeding to the hop gardens to be examined by the school doctors, both before and after the visit to the hop gardens. Each child after the return from the hop gardens was seen again by the same doctor by whom he had previously been examined. At the second examination the doctors were asked to report in the case of each child whether the health was improved, deteriorated or unchanged as a result. A special inspection card was used on which the members of the school care committee entered particulars derived from the parents and children of the conditions under which they sojourned in the hop country.

Owing to the fact that many of the children originally examined did not actually proceed to the hop gardens, and some who did were not available for re-examination when the doctor again visited for the purpose, the number of children for whom records were completed after return were 1,510.

Among these 1,510 children the effect upon health of the visit to the hop gardens as judged by the doctors at the re-examinations, is given in the table below :—

			<i>Health improved.</i>		<i>Health deteriorated.</i>		<i>Health unchanged.</i>		<i>Total.</i>
Boys ...	...	...	295	...	10	...	233	...	538
Girls ...	...	...	341	...	12	...	261	...	614
Infants ...	...	...	208	...	9	...	141	...	358
Total ...	...	...	844	...	31	...	635	...	1,510

Thus the net result gives 56 per cent. whose health was benefited, 42 per cent. in whom no perceptible difference was noted and only 2 per cent. whose health had deteriorated. The general impressions of the doctors, apart from the result obtained from analysis of the returns, were to the effect that the children had decidedly benefited as a whole from the stay in the hop gardens.

Dr. Griffiths, who examined the children from the Southwark schools states : " On the whole it appears that the general condition of the children improves—' the change does good '—their general appearance, their colour and so on, are all better ; but with the personal hygiene and cleanliness, and the skin conditions which are likely to follow, it is not the case. There are a few points to be remembered—(1) The poor, dirty children are the ones to go hopping and probably in many cases their home conditions are no better than those of the hop gardens. (2) All children ' go back ' in cleanliness during the holidays. This year the weather conditions were ideal, which may have accounted for the short hopping season, in some cases only 15 days. The children seem to enjoy it, and ' not to go ' would be a disappointment. To sum up—the total effect seems beneficial."

Dr. Dorrit Waterfield, who examined children in the East End schools, states : " I thought (from the London end) that the children were extraordinarily improved in health by their country stay, and only wish more of them could be persuaded to go."

It is necessary to point out that the conditions in 1928 have been exceptionally favourable. Not only was the hopping season one of the shortest upon record, but the weather was throughout as perfect as it could have been, bright, sunny days following one another without exception, and it is not to be wondered at that the results were beneficial ; they could hardly have been otherwise.

No doubt had the season been cold, wet and prolonged, the result to the health of the children would have been less beneficial, while, on the other hand, if the accommodation in the hop gardens had been throughout equal to that on the best farms, and if all the rural areas had put into operation and enforced the model by-laws as some do, the result on the children's health would have been better still.

The attitude of the children themselves may be summed up in an extract from the report of Miss Taylor, the District Organiser in Southwark. " Except for a very few children who came home in disgust, they all seem to have loved their time in the hop gardens."

Particulars in the cases of the 31 children whose health was found to have suffered are as follows :—

Boys (10) : verminous, 6 ; septic condition, 3 ; external eye disease, 1.

Girls (12) : verminous, 1 ; general health, 5 ; septic conditions, 4 (including 1 vaginitis) ; rheumatism, 2.

Infants (9) : verminous, 1 ; general health, 2 ; septic conditions, 3 ; external eye disease, 3.

In practically all these cases there was a history elicited of overcrowding in sleeping huts and difficulty of obtaining water for cleanliness purposes. One of the infants whose general health had suffered, had stayed in a tin hut which accommodated two adults and seven children. Straw was provided to lie on, cooking was done on a camp fire and the lavatories were said to have been disgraceful. This was the family's first experience of hopping, and the parents have determined never

to go again as the conditions were "too rough." Similar complaints were made in other cases.

As a number of the children who had been to the hop gardens were not present at the doctor's visit after the return, it is possible that some were absent on account of illness contracted while away. So far as possible, therefore, enquiries were made into the causes of absence. It was found that there were 31 further children who were absent for conditions of ill health which may have been connected with their visit to the hop gardens. These included children who had not returned to school owing to infection 13, sepsis 4, chorea 2, stomach trouble 2, bronchitis 2, ear trouble 2, meningitis 1, broken arm 1, neuralgia and toothache 2, bad eyes 1.

The bringing together in a crowded encampment of families derived from many of the poorer districts of London gives special opportunity for the spread of infectious disease, and, as a result, the return of the hop-pickers to London is the signal for the outbreak of infection in new centres. Several of the children who failed to appear for their re-inspection were away from school, excluded on this account. This year for the first time smallpox was a danger, and an outbreak amongst the hop-pickers was followed by the appearance of the disease in new schools in London, in the first place amongst children who had been away hopping. Of 31 cases of smallpox occurring in London between 26th July and 18th October, twelve cases (10 in Lambeth, 1 in Poplar and 1 in Southwark) were infected in connection with the hop gardens at Marden, Kent. The first case came to notice when a girl, aged 14, living in North street, Lambeth, was diagnosed as suffering from smallpox in the out patient's department of St. Thomas's Hospital on the 6th September. Enquiries revealed that she had returned from Marden that day and that the rest of her family was still in the hop gardens. It was also ascertained that her brother, aged 3 years had had a rash before the family left London. On 8th September this brother and a sister aged 5, were removed to South Wharf from Marden, as suffering from smallpox. About 2,000 hoppers returned to London from Marden on 12th September and were followed up as contacts of smallpox. As stated above, 9 further cases of smallpox have resulted from this source.

There are two chief conditions which stand out in the reports of the social workers in London in regard to their enquiries after the return of the children calling for comment. There are (1) the prevalence of overcrowding in huts, and (2) the difficulty in obtaining adequate water supply and facilities for cleaning. It is clear from the enquiries made that farms and districts differ widely in these respects. In some areas the number of persons per hut appears to have been rigorously regulated, while in others no supervision existed or rule was obeyed. It was not possible, of course, to obtain any idea of the amount of cubic space per person in the sleeping quarters, but dividing the returns into two categories (1) five persons or less to one hut, and (2) more than five persons to one hut, 36 per cent. of the cases fall in the second category of probable overcrowding. Thirty-two per cent. of the children returned as improved in health slept under presumably overcrowded conditions, while 42 per cent. of those not improved slept more than 5 to a hut. A bad feature in very many cases was the fact that the huts were totally without windows or provision for ventilation other than the door.

Spontaneous complaints of latrine accommodation were frequently made, and it is clear that in many instances, conditions were very bad in this respect. Water supply to the encampments was very unequal. Many had water laid on to taps in the immediate vicinity of the hutments; in other cases tanks of water were provided and the supply renewed daily by the growers; many unfortunate ones had no specific water supply and had to rely upon streams and ponds, and many had to carry their water themselves from sources at a distance of, in some cases, half a mile.

The danger of burns and fire was very real. The hutments are often of wood and the bedding of loose straw on the floor. Even when a cook-house was provided

the hop-pickers often preferred to use a camp fire just outside the doorway. Some used oil stoves inside their huts and, although burns and scalds were less frequent during this season than is usual, there is always present an element of danger. One mother, amongst the cases investigated, was so frightened by the danger that she brought her children away quite suddenly, solely on that account. At Staplehurst three children were burnt to death in a hop-picker's hut, owing to the straw being set alight by a naked candle.

The effects of "hop-eye" and "hop-rash" (described later by Dr. Beatrice Smithies) were apparent in a few of the children, and the care visitors were told by the parents that in some cases the children could not be permitted to approach the bins because they were attacked by rashes or running eyes if they did so. In very many cases, however, the parents were enthusiastic about the kindness and care bestowed upon them by the farmers' families and the solicitude with which their wants were attended to. In nearly all cases the opinion was that things have greatly improved during recent years.

In the hop gardens.—A casual inspection of conditions in the hop gardens during the season gave the impression of crowds of people enjoying with jollity and happiness the overflowing sun and the delights of country existence. Close examination of the conditions, however, revealed such a diversity of practice in the different farms and areas as to be startling.

A conference for the discussion of the health of hop-pickers and sanitation of encampments was organised by the Royal Sanitary Institute on Friday and Saturday, 13th and 14th April, 1928. This was attended by a number of medical officers, representatives of hop growers and social workers. Drs. J. G. Forbes and E. J. Boome of the Council's Public Health Department were present. A paper was read by Dr. A. Greenwood, the Medical Officer of Health of Kent, who pointed out that there was ample machinery for ensuring satisfactory conditions, but the difficulty lay in enforcing the application of this machinery. The enforcement depended upon the rural district councils, and some of these tended to show leniency in the administration of the by-laws. For example, in one district, although the recent by-laws of the Ministry of Health had been adopted, the clause referring to the minimum sanitary convenience had been omitted. He held strongly that these by-laws should be adopted *in toto*. More than half the total hop gardens in England and Wales were situated in Kent, and this meant an immigration of over 70,000, probably 100,000, workers into the hop gardens. This gave the public health authorities great concern as to the prevention of epidemics. The serious epidemic of 1897 was due to the pollution of water from a hop-picking encampment. Last summer there were many sources of pollution present, which, if there had happened to be typhoid infection, might have caused a series of epidemics. He thought that in future legislation there should be compulsory registration of encampments, with annual licences in each case, such licences only to be granted if the provisions made before occupation should satisfy the district council concerned.

To deal with the problems satisfactorily, Dr. Greenwood suggested there should be a special hop-pickers' committee of the Ministry of Health to work with rural district councils, boards of guardians and voluntary organisations.

A visit was paid by Drs. Boome and Forbes to Mrs. Stuart Day's farm at Gallants, East Farley. Here ideal conditions were seen; in every particular the health and convenience of the workers was studied and catered for. They also visited the Hop-pickers' Hospital at Marden, which was inaugurated four years ago by Mrs. Spender. This consists of a group of buildings, including a dispensary, hospital wards with 14 beds, isolation hut and administration quarters. There is a motor ambulance and the staff consists of two medical officers and nine trained sisters and nurses.

Dr. Beatrice Smithies, one of the medical officers at the hospital, has supplied a report giving detailed accounts of London school children attended to at the hospital, and its sub-centres, during the present season. Of 1,172 hop-pickers who attended the hospital, 258 were children under five and 388 children between five and fourteen. The conditions for which the latter required treatment were burns and scalds 12, casualties 84, conjunctivitis and "hop-eye" 11, dermatitis and "hop-rash" 13, constipation 25, enteritis 30, sepsis 117, infectious disease 35, ear-aches and otorrhœa 6, teeth 21, pneumonia 5. In her general notes on the above conditions Dr. Smithies refers to many points of great interest.

Owing to the marvellous weather pneumonia was less frequent than usual, and burns and scalds were fewer, owing to the less need for fires for drying purposes, and outdoor cooking was practised very generally. The frequency with which children suffered from constipation is partly due to the insufficient, and often filthy, latrine accommodation which existed in some of the camps. Many cases of enteritis were caused by unsuitable food and to food actually unfit for human consumption. A number of others were caused by eating unripe fruit, especially apples and wild fruits gathered from hedgerows. Some of this illness might be avoided if definite instruction on the subject were given in the schools before hop-picking began.

"Hop-rash" and "hop-eye" occur chiefly among women and children. Both appear to be of the nature of a protein sensitiveness such as is seen in the cutaneous reactions and ophthalmic reactions used in the diagnosis of hay-fever and its allied conditions. The rash comes up rapidly within a few hours as an intense papular erythema. If untreated this stage may be followed by pustulation which requires very active treatment. General constitutional disturbance may be a marked feature, the patient complaining chiefly of extreme drowsiness. "Hop-eye" appears to be an acute conjunctivitis associated, in some cases, with considerable œdema of the eyelids. The œdema without the conjunctivitis has also been seen. In those cases investigated it appears to have occurred rapidly after the eyes have been rubbed with fingers dirty from hop-picking. The pain, which is smarting in character, rapidly becomes worse. In a previously healthy eye the conjunctivitis is readily amenable to the usual treatment, and the œdema subsides in a couple of days with the use of cold compresses.

The hop gardens, during the picking season, were visited independently by two members of the Council's medical staff, *viz.*, Dr. E. J. Boome, who accompanied the deputy Medical Officer of Health of Kent, on visits to farms in relation to some of which there had been complaints, and Dr. Dorrit Waterfield, who visited with the local sanitary inspector in a "good" area. Their reports gave much information as to the actual conditions. All accounts, whether obtained on the hop gardens themselves or from the hop-pickers on their return to London confirm the remarks and opinions of Dr. A. Greenwood cited at the commencement of this section.

The conclusions which the available evidence in this enquiry warrant are:—

(i.) In a favourable season the hop-picking exodus gives an opportunity for an enjoyable country holiday attended by general improvement in health to a large number of children from the most crowded central districts of London.

(ii.) Wholesale condemnation of the conditions in the hop gardens is unwarrantable, but there are many farms and areas in which not as much is done as is desirable to secure healthy conditions for the hop-pickers, and in some cases the conditions are very bad.

(iii.) General improvement has taken place in the hop-gardens during recent years; this is to be ascribed:—(1) To the adoption and enforcement of by-laws by some of the rural councils. (2) To the example shown by the more public spirited hop-growers. (3) To the improvement in education and behaviour of the hop-pickers themselves. (Many growers assert that the conditions are largely in the control of the hop-pickers, and to some extent this is true. Dr. Waterfield's report

shows how the culture of the home surroundings follows the pickers into the hop-gardens.) (4) To the activities of voluntary bodies and social workers, such as the Kent Rural Community Council and the organisers of at least forty medical dispensaries, and branch dispensaries of which Mrs. Spender's organisation at Marden, which had been described, is the most complete.

(iv.) The most urgent reforms required are the bringing up to the level of the best farms and best areas:—(1) Latrine provision. (2) Ventilation and lighting in hutments and prohibition of overcrowding. (3) Provision of easily available supplies of pure water.

100 school children living in an area in Marylebone, suggested for demolition on account of the generally insanitary and dilapidated conditions of the houses, have been compared with 100 children of the same ages, but from better homes in the immediate neighbourhood, the whole 200 children being drawn from the area enclosed within a circle of roughly $\frac{1}{4}$ of a mile in radius. The demolition area is enclosed by Fisherton-street, Luton-street, Carlisle-street, North-street and Lyons-street, and consists of old 2 and 3 storied terraced houses. Although these houses have no damp courses the sanitary reports show that dampness of the houses is not a feature. For the most part these houses have two rooms on each landing and in the majority of cases one family occupies each landing, the estimated number of persons per house being 8.

Dr. J. Nairn Dobbie's report on the comparative condition of children living in a demolition area.

The great majority of the better-housed children lives in well-laid-out tenements of 4 and 5 stories high, situated just north of the Regent's Canal and bordering on Lisson-grove and St. John's Wood-road. These tenements were built some 30 years ago, about the time when the Great Central Railway Terminus was completed. They are divided into flats of 2, 3 and 4 rooms and kitchen with separate offices.

The level of the demolition area is roughly 120 feet, and of the tenements about 125 feet above the mean sea level at Liverpool. Both areas are on rising ground and stand slightly higher than the localities to the east, south and west. They are practically divided by the Regent's Canal, which at this place lies deep and for part of its course between the two areas is covered over. The towing-path of the Canal is about 94 feet above datum line. The subsoil of both areas is clay, according to the Geological Survey.

There did not appear to be any racial differences among the children examined. All the 200 children attend three schools, which are within 200 yards of each other, St. John's Wood R.C. (Boys), Emmanuel (Girls), both largely attended by children from the poor area, and Capland-street School, with roughly 25 per cent. of its children from the demolition area and 75 per cent. from the better homes. The children examined were drawn from these schools as follows:—

<i>Demolition Area Children.</i>	<i>Better Area Children.</i>
40 boys from St. John's Wood.	
10 " " Capland Street.	50 boys from Capland Street.
35 girls " Emmanuel	
15 " " Capland Street.	50 girls " " "

The respective head teachers were asked to pick the children at random—preference being given to older children since the parents were not interviewed. Children from the demolition homes were first inspected and later the better-housed children, as nearly as possible of the same ages. Each child was submitted to the same examination and was asked the same questions. The physical examination of the children was along the usual routine lines—heights and weights being taken without boots—the only departure being that vision was not tested by Snellen's Type Test Cards. The heights and weights were compared with L.C.C. standards for elementary school children drawn up in 1913.

The numbers of children falling below these standards were :—

		Good Area.				Demolition Area.			
		Height.		Weight.		Height.		Weight.	
Boys	2	...	1	...	14	...	18
Girls	2	...	6	...	15	...	17
Totals	4	...	7	...	29	...	35

These figures alone show how badly the latter children compare with their more fortunate fellows in stature and physique,

The individual differences from the standard height and weight were added up and averaged for the children of each age group, and this average was then added to the standard figures for height and weight for that age with the result shown below :—

	Heights in cms.						Weights in Kgs.					
	13	12	11	10	9	8	13	12	11	10	9	8
Age last birthday ...	13	12	11	10	9	8	13	12	11	10	9	8
Good area boys ...	155.2	147.9	142.4	140	137.1	133.3	45.1	39.2	35.7	34.7	29.6	29
Demolition area, boys	145.7	141.2	134.7	131.9	133.3	125.3	38	36.1	30.8	29	29.1	24.2
Number of boys ...	12	10	10	9	6	3	12	10	10	9	6	3
Good area, girls ...	153.2	150.7	147.4	141.9	131.5	131	45.2	39.9	38.7	33.1	28.7	27.5
Demolition area, girls	150.8	147.3	135.2	132.7	127.9	127.2	43.1	38	29.6	29.4	25.4	28
Number of girls ...	13	10	10	8	7	2	13	10	10	8	7	2
Standard for 1913—												
Boys ...	143.1	138.7	134.3	129.8	125.2	120.5	36.4	32.5	29.9	27.6	25.5	23.5
Girls ...	146.8	140.6	135	129.9	124.7	120.2	37.7	33.3	29.9	27.2	25	22.9

Even in this small number of children it is apparent that the physique of the poorest children is better than the 1913 standard. This statistical method serves to show the disparity, at almost every age, in heights and weights—the balance being definitely in favour of the better-housed children. The clinical findings are set out in the following table, and again a startling difference is found.

	Good area.						Demolition area.					
	Boys.			Girls.			Girls.			Boys.		
	1	2	3	1	2	3	1	2	3	1	2	3
Clothing ...	34	16	—	38	12	—	2	27	21	4	30	16
Nutrition ...	15	29	6	17	30	3	5	27	18	6	28	16
Dirty or vermin marked skin ...	2			1			17			20		
Skin blemishes and disease ...	1			1			13			8		
Teeth defective ...	9			5			19			16		
Tonsils enlarged ...	14			8			18			21		
Tonsillectomy ...	12			19			5			8		
Nasal discharge, etc. ...	2			Nil.			12			7		
External eye disease ...	Nil.			1			9			3		
Glasses ...	4			9			3			5		
Ear disease ...	1			Nil.			7			4		
Hearing defective ...	1			Nil.			1			Nil.		
Speech defects ...	Nil.			Nil.			2			4		
Pallor—anaemic ...	3			6			5			11		
Abnormal hearts ...	9			5			17			13		
Poor circulation ...	3			2			10			8		
Lungs—bronchitis, etc. ...	Nil.			Nil.			4			6		
Old rickets ...	6			3			12			16		
Other defects, etc. ...	1			1			3			2		

The clothing and footwear was estimated on a 3 point scale as to suitability, quality, quantity, cleanliness and repair.

Although no child was seen whose clothing was definitely insufficient or altogether unsuitable, it is seen that poverty and home conditions are reflected in this one item alone. There were only 6 out of 100 children from the demolition area whose clothing and footgear were in really good order as against 72 from the better homes, and while the clothing of 37 of the former class was deemed to be poor, no child from the better area was so badly clad as to appear in this category.

Nutrition, judged on the general appearance and the physical condition of each child as exhibited by the development and tone of the muscles, colour and texture and condition of the skin, the expression and the poise and alertness of the body, was classed as good 1, average 2 and fair to poor 3. Such a personal estimate is liable to be biased by the general type of individuals seen at one time. The tendency when examining a number of children all of good physique and nutrition is to adopt, unconsciously, a higher standard than when seeing only poorly-developed and ill-nourished individuals—even so, 32 children from the better homes were classed as Nutrition 1, against 11 children from the condemned homes, and only 9 of the former were of Nutrition 3, against 34 of the latter.

The cleanliness of the skin and presence of vermin marks were carefully noted as an indication of the home conditions. Vermin-marked children were not numerous, but in 9 cases of poor children the distribution of the marks round exposed parts, such as the neck, was thought to indicate bug marks. Such insects only flourish in dilapidated, dirty and overcrowded houses. No child from the better area showed such marks.

The nutritional condition of the skin and presence or absence of blemishes such as excoriations from scratching, dry scaly patches, moist eczematous and seborrhœic conditions, sores and impetigo, etc., also register the levels of social and economic standing, and again the children from the condemned area show badly, 21 of them exhibiting such blemishes against 2 of the other class.

Evidence of past dental trouble there was in plenty and fairly evenly distributed in the two classes, but active caries was present in 14 of the better-housed children and in 35 of the poorer—the inference being that the more careful parents have treatment when such is indicated.

Whenever the tonsils were visible they were noted, which accounts for the large percentage seen in this series. Again the incidence of tonsils—present or enucleated—is evenly divided between the two groups, the percentage being respectively 53 and 52 per cent., but tonsillectomy had been performed in 31 of the better-housed children and in 13 of the others—further evidence of greater parental care of the more fortunate children.

Clogging of the nostrils, nasal discharges, external ear and eye defects are relatively more frequent in children from poorer houses. Many of these conditions have been classed with impetigo as “Dirt” diseases, and in all these defects this series of poorer children showed unenviable pre-eminence.

Although vision was not tested, the number of children wearing glasses was noted—13 from the better homes and 8 from the poorer—again evidence of parental care rather than a heavier incidence of defective vision among the better children.

Retardation of the mind and body is sometimes associated with defects of articulation—just as instability of mind and body is occasionally expressed in stammering, and such defects of speech were present in 6 of the children from the bad area.

The presence of some slight abnormality in the heart or its action was more than twice as common and pallor and anæmia nearly twice as common, while evidence of defective circulation was more than 3 times as frequent in the badly housed children. Bronchial catarrh was present in 10 of these children and

28 of them showed some evidence of past rickets against 9 of the better housed children.

The table on p. 31 shows clearly the physical inferiority and the greater incidence of defects and diseases and evidence of parental ignorance and neglect among this series of badly housed children—the following table showing the Frequency of School Standard for Age gives evidence of educational and mental retardation :—

		Good area.						Demolition area.					
Age last birthday	...	8	9	10	11	12	13	8	9	10	11	12	13
<i>Boys.</i>													
Standard 1	...	—	—	—	—	—	—	2	1	—	—	—	—
" 2	...	—	—	—	—	—	—	1	3	3	—	—	—
" 3	...	3	1	—	—	—	—	—	1	3	3	2	—
" 4	...	—	2	3	1	1	—	—	1	3	4	3	3
" 5	...	—	3	5	2	2	—	—	—	—	3	3	4
" 6	...	—	—	—	5	3	3	—	—	—	—	1	2
" 7	...	—	—	1	2	4	6	—	—	—	—	1	3
*Central	...	—	—	—	—	—	3	—	—	—	—	—	—
<i>Girls.</i>													
Standard 1	...	—	—	—	—	—	—	1	1	—	—	—	—
" 2	...	—	—	—	—	—	—	1	3	1	—	—	—
" 3	...	1	2	—	—	—	—	—	3	2	4	—	—
" 4	...	—	4	1	—	—	—	—	—	5	6	3	1
" 5	...	1	1	4	4	—	2	—	—	—	—	3	3
" 6	...	—	—	3	2	3	3	—	—	—	—	2	5
" 7	...	—	—	—	3	5	6	—	—	—	—	2	4
*Central	...	—	—	—	1	2	2	—	—	—	—	—	—

* Children drawn from the Central School at Capland-street to complete the numbers—these children also live in the immediate neighbourhood.

This table, however, based on standards estimated by the head teachers can only be approximately true. "Classes" have taken the place of "Standards," and the educational levels of work done in corresponding "classes" appear to vary somewhat in different schools. The lowest class in the mixed boys and girls department at Capland-street approximates to the level of Standard III. The "practical class" at Capland-street for children of poorer mental attainments is peopled largely by children from the poor area—5 of the 10 boys, and 8 of the 13 girls of the demolition area drawn from Capland-street were in the "practical class." Although mental tests were not used in the examination of the children, 3 boys and 1 girl from the poor area were thought to be definitely subnormal in intelligence. The head teacher at Capland-street informed me that last year 31 children from the mixed department secured either scholarships, free places, or went to the Central School, and practically all the children were drawn from the better neighbourhood.

The following information was obtained by asking each child the same questions and the close correspondence found in the results seems to indicate that considerable reliance can be placed on the answers. Had there been no war, some estimate of the life value of the parents of these children might be gathered from the number of parents who have died. The number of deceased parents is shown.

		Good Area.			Demolition Area.	
		Fathers Dead.	Mothers Dead.	Living Apart.	Fathers Dead.	Mothers Dead.
Boys	.. ..	3	1	2	11	5
Girls	.. ..	4	2	1	10	4

It was stated that 7 poor boys' fathers, 5 poor girls' fathers had been killed in the war, but that does not explain the relatively higher incidence of maternal deaths in the poorer class. No child from the bad area volunteered the information

that he had a step parent, while 3 of the other children said they had. It is, therefore, possible that re-marriage among the better placed adults is relatively more frequent, and many of the children may not know that one or other of their parents is a step-relative, and so the lower incidence of deaths in the better homes may be more apparent than real. Three of the better housed children volunteered the information that their parents were living apart, while none of the poorer children did so. Ignorance of their parents' separation may also result in the child's belief that Mummy or Daddy is dead. Four only of the better area fathers were said to have been killed in the war.

It would be unjustifiable to draw any deductions from the above, but when we come to the numbers of fathers said to be out of work, we find :—

				<i>Good Area.</i>	<i>Demolition Area.</i>
Boys	..	..	..	Nil	10
Girls	..	..	..	Nil	13

The working value of the fathers from the poor area is of a lower order. If the numbers of fathers out of work be added to the number deceased, the total is 44, leaving only 56 per cent. male wage earners in this series of 100 families from a demolition area.

Number of mothers who go out to work :—

				<i>Good Area.</i>	<i>Demolition Area.</i>
Boys	..	..	..	3	19
Girls	..	..	..	5	25

That is, 44 per cent. of the mothers in the demolition area are wage earners—these two sets of figures show almost a reversal of the usual order of affairs. It is obvious that if the mother must go out to work, the children cannot have the same attention. The whole family suffers when the father is incapacitated for work either by inherent or acquired disability or by disinclination or inability to get work. One head teacher volunteered the information that when the mothers draw pensions for husbands killed in the war their children were invariably better looked after than those boys whose fathers were still alive. The male parents are the drones and the female the workers.

The occupations of the fathers were also noted, and in the bad area only 2 were shopkeepers and 4 were said to be skilled tradesmen. The remainder comprised labourers, porters, hawkers, etc. The better placed men were shopkeepers, clerks, shop hands, engineers from the neighbouring electrical works, policemen, postmen and were generally in jobs requiring skill and training.

An interesting observation was the length of time the individual children had lived in their present homes :—

				<i>Good Area.</i>		
				<i>As long as the child remembered.</i>	<i>Moved— from same neighbourhood.</i>	<i>from different neighbourhood.</i>
Boys	..	..	..	29	15	6
Girls	..	..	..	32	11	7
<i>Demolition Area.</i>						
Boys	..	..	..	46	3	1
Girls	..	..	..	45	2	3

91 children from the bad area had lived in the same houses as long as they remembered against 61 from the better homes. It would seem that the inhabitants of the bad area had filtered down to bottom level and were unable or unwilling to rise again, while the more robust and ambitious tend to move up the social ladder, for these tenements are the most desirable working class dwellings in the neighbourhood.

As was seen above, departures from the normal and diseases of all kinds are more rife where conditions of squalid poverty exist and rheumatism or at least some aspects of it appears to be no exception.

The existence of pains in the body and limbs was enquired into. The numbers admitting to such were as follows:—

					<i>Good Area.</i>	<i>Demolition Area.</i>
Boys	..	..	..	..	6	19
Girls	..	..	..	..	7	23

It is not suggested that these pains are necessarily an indication of rheumatic infection, but their presence indicates some departure from normal good health on the part of such children.

The majority of the children admitting to pains were the less robust in appearance. Only 3 of them were considered to be of good nutrition, 28 of average nutrition and the remaining 24 were below the average. They supplied 20 out of the 25 children noted as being pale and anæmic, and in 28 of them there was some slight cardiac abnormality, nothing tangible in itself, yet the clinical appearance of many of these children was that generally associated with the rheumatic child.

Every child was asked if he had ever attended or been a patient in hospital, and, if so, the nature of the trouble. Infectious diseases were, naturally, the most frequent—the better-housed children appeared to have the higher incidence of exanthemata, but it was thought this was largely due to the well-known fact that, in crowded areas the children develop these illnesses at a younger age and, consequently, either never know or forget they have had them.

The number having been treated for rheumatism at hospital or by private doctor is shown:—

shown :—				Good Area.		Demolition Area.	
				Hospital.	Private Dr.	Hospital.	Private Dr.
Boys	..	..	2	1	5	Nil	
Girls	..	..	3	2	2	Nil	

From these figures it would seem that rather more children (8) from the better homes suffered from rheumatism so severe as to require treatment, but with previous knowledge of this series, it will be readily admitted that it is probably further evidence of parental observation and care on the part of the better-area parents. Where obvious defects like running ears and discharging noses and inflamed eyes are not treated it would be surprising to find the faint signals of the insidious approach of rheumatism observed and acted upon.

The number of children whose brothers or sisters were said to have been treated at hospital for rheumatism is as follows:—

		<i>Good Area.</i>	<i>Demolition Area.</i>
Boys	..	2	5 (One in P.D. school with very defective heart).
Girls	..	2	6

The number of children per family in the worse-housed area was larger than in the better-housed area, but against this is to be placed the fact that the better children were brighter, more intelligent and more observant, and probably a truer estimate of morbidity in the family was obtained from them than from the poorer children. It appears, then, that rheumatism is more prevalent among the very poor than among those better situated.

No attempt has here been made to appraise the relative influence of genetic and environmental factors in producing children inferior in physique, in mentality and in resistance to disease. To quote Dr. Jas. Kerr, "Potentiality of ultimate results has been decided before birth," but it is self-evident that adverse environmental factors will curb, cramp and seriously interfere with the opportunities for full development. Dr. C. J. Thomas also has said that the defects we find in school children are but the symptoms of their home conditions.

Thanks are due to the head teachers of the three schools for their kindly courtesy and assistance. The amount of work and time expended, particularly by Mr. G. C. Johnson, head teacher at Capland-street, and by his assistant teacher, Mrs. Gents, in selecting, weighing and measuring 130 children age for age with the poorer children, has been much appreciated.

Dr. Mabel Russell has submitted the following notes upon the effect of slum environment on the school child.

Dr. Mabel Russell's observations upon slum children.

In the course of conducting medical inspections at a small Church school, it was noted again and again that the children drawn from one particular slum street, afterwards called "X" street, were what could be described as generally subnormal in health and nutrition, indeed it is quite possible in reviewing a class to pick out the children coming from this street for they are anæmic and of bad colour. "X" street itself is a narrow sunless cul de sac, which was once a mews.

Knowing the street and having examined so many unhealthy children inhabiting it, a small enquiry was made in the following manner:—The head teacher of the Infants' department was asked to pick out from the children present those living in "X" street, and an equal number of children living in other streets, picked out at random from the register, to act as a control. The "X" street children and controls were mixed up and sent to the Examiner without information, except that they were named. Their medical record cards were not produced until after the examination. The result of the enquiry is here tabulated:—

Unhealthy conditions.						16 "X" street children.	16 controls.
Tonsils, enlarged or unhealthy	...	...	...	...	...	11	3
Glands, enlarged	...	...	...	...	...	7	1*
Anæmia ...	...	...	...	...	...	9	2
Nutrition poor ...	...	...	...	...	...	5	0
Rickets ...	...	...	...	...	...	3	0
Bronchial Catarrh	...	...	...	...	...	2	0
Morbus Cordis ...	...	...	...	...	...	1	0
Stunted growth	...	...	...	...	...	1	0

* Lived in basement. Had anæmia as well as enlarged glands.

Following Up.

The following up of children found defective at medical inspections is entrusted by the Council to the school care committees, of which the number is now 931. The number of voluntary workers who are full members of committees is 5,297, and there are in addition 534 other workers. The work of the care committees is under the direction of a paid staff consisting of a principal organiser (Miss T. M. Morton), two principal assistant organisers, twelve district organisers, five divisional treatment organisers, and 142 assistant organisers.

The formal re-inspection in school of children previously found in need of treatment or requiring observation makes it possible to compile a statistical record of "following-up." During the year the total number of re-inspections was 198,088, an increase of 4,772 over the previous year. 125,782 of these were primary re-inspections and 72,304 were second re-inspections of cases not completely cleared up at the primary re-inspection (which generally takes place about four to six months after the child first comes under notice.) Combining the results of first and second re-inspections, it is found that 78.9 per cent. of children found ailing were finally treated or discharged as not needing treatment; this is the best result that has yet been obtained.

Results of reinspection of ailing school children.

Dental troubles still account for the largest amount of leakage, and when these are eliminated from the figures the results of re-inspection show that 83.1 per cent. of children suffering from non-dental ailments were treated or discharged during the year.

1st Re-inspections, 1928.

	Treated.						Not treated.		
	By private doctor.		Under Council's scheme.		At other hospitals.		Discharged cleared up.	Improved for observation only.	Still needing treatment.
	Cured.	Not cured.	Cured.	Not cured.	Cured.	Not cured.			
Refraction 19,525 ...	121	61	5,166	2,111	569	371	1,634	3,154	6,338
	·6	·3	26·5	10·8	2·9	1·9	8·4	16·2	32·4
Minor Ailments	174	47	2,945	843	517	305	2,864	1,433	2,145
11,273	1·5	·4	26·1	7·5	4·6	2·7	25·4	12·7	19·0
Nose and throat,	63	9	5,408	271	1,294	112	2,398	2,425	7,788
19,768	·3	·0	27·4	1·4	6·5	·6	12·1	12·3	39·4
Teeth, 62,352 ...	1,372	416	21,860	824	974	228	5,711	898	30,069
	2·2	·7	35·1	1·3	1·6	·4	9·2	1·4	48·2
Other, 12,864 ...	308	126	38	152	1,835	1,597	3,425	3,522	1,861
	2·4	1·0	·3	1·2	14·3	12·4	26·6	27·4	14·4
Total 125,782 ...	2,038	659	35,417	4,201	5,189	2,613	16,032	11,432	48,201
	1·6	·5	28·2	3·3	4·1	2·1	12·8	9·1	38·3

2nd Re-inspections, 1928.

	Treated.						Not treated.		
	By private doctor.		Under Council's scheme.		At other hospitals.		Discharged cleared up.	Improved for observation only.	Still needing treatment.
	Cured.	Not cured.	Cured.	Not cured.	Cured.	Not cured.			
Refraction, 13,570...	63	32	2,659	1,334	277	343	1,406	2,647	4,809
	·5	·2	19·6	9·8	2·0	2·5	10·4	19·5	35·5
Minor Ailments,	44	42	1,148	495	227	187	1,484	1,027	1,332
5,986	·7	·7	19·2	8·3	3·8	3·1	24·8	17·2	22·2
Nose and throat,	26	9	2,757	106	745	78	2,003	1,536	4,982
12,242	·2	·1	22·5	·9	6·1	·6	16·3	12·6	40·7
Teeth, 32,481 ...	801	232	9,295	409	612	123	4,174	497	16,338
	2·5	·7	28·6	1·3	1·9	·4	12·8	1·5	50·3
Other, 8,025 ...	93	86	26	136	885	979	2,229	2,395	1,196
	1·2	1·1	·3	1·7	11·0	12·2	27·8	29·8	14·9
Total 72,304 ...	1,027	401	15,885	2,480	2,746	1,710	11,296	8,102	28,657
	1·4	·6	22·0	3·4	3·8	2·4	15·6	11·2	39·6

Cases
referred to
N.S.P.C.C.

In cases where there is persistent neglect to obtain treatment, the facts are reported to the N.S.P.C.C. who endeavour to persuade the parents, and in certain cases the Society takes the matter into court. During 1928, 870 cases (representing 985 ailments) were reported to the Society. 416 of these required dental treatment, 326 had defects of vision, 157 enlarged tonsils or adenoids, 23 discharging ears and 63 other defects.

Aural
disease
after
scarlatina,
etc.

Owing to the close connection between certain infectious diseases and subsequent ear trouble, an arrangement has been made with the Metropolitan Asylums Board by which notification is sent of children discharged from the Board's four hospitals who suffered from otorrhœa while under treatment at the hospital. 315 such cases were notified during the year. The cases of children under school age are referred to the local medical officers for following-up at the infant welfare centres. The elementary school cases are examined every six months until two consecutive reports indicate that there is no further evidence of the disease.

19 cases were found on first examination to have otorrhœa—13 of these had cleared up after an interval of six months; 4 were still affected, 2 of which subsequently cleared up; and on 2 cases further reports have not yet been made. In 10 cases which showed no symptoms at the first examination the disease reappeared six months later; 3 of these had subsequently cleared and the remaining 7 are still under observation.

An idea of the comprehensive scope of the work of the school care committees may be gathered from the following summary by the Paddington Local Association of the annual reports of 23 children's care (school) committees in that area for the year ending 31st March, 1928, taken at random from a number of similar reports for the various areas. Report of
the
Paddington
Local
Association.

Meetings and Attendance.—The number of meetings held in the year varies considerably in the different schools. Excluding Kensal House, where fortnightly meetings are held throughout the school terms, nine is the largest number recorded, the smallest being three. This is exclusive of After Care Conferences, and some of the reports note that general Care Committee business is sometimes dealt with at these. The attendance is usually stated to be good, the average being about 60 per cent.

Feeding (Dinners, Milk and Oil).—In 10 out of the 23 reports it is stated that no free dinners have been given; in 7 no free milk or oil meals; in the other schools the numbers in receipt of free meals have been very small. Oil and milk meals have been given under medical orders, but it has generally been found possible for the parents to pay for these. When free meals of any kind are given, the families are said to be frequently and regularly visited, and at the end of the six months' period the cases are referred to the Chronic and Difficult Cases Sub-Committee. Very few of the reports give any indication as to the causes which have necessitated the granting of free meals, but from the individual cases quoted these would appear to be usually:—(1) Illness of the breadwinner; (2) temporary unemployment of the same. In most cases the help given is only to tide over an immediate difficulty, at least in the case of the grant of free dinners; milk and oil meals are occasionally given on medical grounds for long periods where the family income appears to be below scale.

Medical and Dental Treatment.—The reports on this part of the work are very encouraging; the proportion of cases satisfactorily treated appears to be very high, and in nearly all the reports reference is made to the greatly improved attitude of the parents in this matter. One Committee (Essendine road) notes that the cases requiring treatment are now chiefly among the infants and 8 year olds, while the 12 year old children and leavers are generally healthy. If this can be confirmed from the other schools, it is a most satisfactory proof that the inspection and treatment of the younger children is producing excellent results as they grow up and develop. From many schools there are complaints of the difficulty of following up the large number of cases reported as needing treatment after a dental inspection. Apparently, in spite of the improved attitude of the parents generally, towards medical treatment, there are still some who are hard to convince of the need for dental treatment, especially for infants, but we note in one of the reports a remark that the need for the extraction of really badly decayed teeth is now much more rare, which points to the fact that the early treatment of dental defects is producing a good effect. One report refers to the difficulty of securing hospital accommodation where an operation for adenoids or removal of tonsils is necessary. Remission of the cost of treatment has been made in about 100 cases, chiefly in the cases of families attending the Amberley road group of schools, situated in a very poor district. In most cases where remission has been granted, the parents are in receipt of relief from the guardians.

Spectacles.—A very large number of spectacles have been supplied in the course of the year. These have generally been paid for by the parents, sometimes by means of loans which have generally been repaid or are in process of being repaid; a certain number have been given free by the help of the Spectacle Fund.

Convalescence and Holidays.—It would appear that about 6-7 per cent. of the Paddington children are sent away in the course of the year by the agency of Care Committees. This includes those who go to Bushy or Bournemouth, and those sent away by the C.C.H.F. or the Sea and Sun Club. Two of the large schools,

Beethoven street and Essendine road, make no mention of the C.C.H.F. in their reports. The largest number of C.C.H.F. cases appear to go from Senior-street, Amberley road and Moberly Schools. Eight prizes for C.C.H.F. competitions were won by the Moberly girls. Apart from the Care Committee cases it appears that the number of parents who arrange to take or send their children away in the summer holidays is increasing, and it seems from the reports that a good proportion are able to get some change in the course of the year. From the poorer districts, a good many go hopping, but this is a doubtful benefit. The S. Augustine's boys join the camp of the Church Lads Brigade. Some of the S. Saviour's boys go away with the Scouts. A School Journey is arranged for the Moberly girls each spring, apart from all other holiday arrangements.

Cases of Neglect and Cruelty.—As we might expect from the reports as to the improved attitude of the parents, the number of cases referred to the Special Officer and to the N.S.P.C.C. is small in proportion to the whole number dealt with. There are very few cases of real neglect, and none of cruelty reported. The cases sent to the Special Officer are mainly those in which treatment has been refused, and they can generally be satisfactorily dealt with by him, though occasionally the N.S.P.C.C. has to be called in.

War Orphans.—There are very few of these left in the schools; the reports on those remaining are satisfactory.

After Care Conferences.—These are held each term in all the schools, and the parents are said to attend well and to be grateful for the help given. One or two reports note an increasing tendency to keep children for an extra term or two at school, and greater willingness to let them take advantage of the evening classes. The following up of cases is difficult, especially in the larger schools, where the number of leavers each term is more than the visitors can cope with. The old scholars' clubs are useful in this way, but deal rather with the children who have done well at school and like to come back. The cases which really are most in need of supervision are those of children who are rather anxious to avoid any further supervision, and the real crux of the matter is to provide for these. S. Augustine's has a special debating club for older boys, which has existed for many years, and is an interesting feature of their work. S. Peter's and Moberly give analyses of the various trades asked for at the conferences. The girls seem for the most part to desire posts as shop assistants or in needlework trades; the number wishing to enter domestic service remains very small. The boys chiefly ask for Post Office or other clerical work, cabinet making and motor engineering. There appears to be little difficulty in placing the children from 14-17, it is at the later age that the "blind alley" occupations come to an end and the young people, especially the boys, drop out of work.

Other Activities.—Boot clubs exist in some of the schools, but they are said to be less required than formerly. Branches of the National Savings Association are mentioned in two of the reports, and are said to be doing well. The Moberly Committee organised a lecture to parents on rheumatism in children, which proved a great success.

Suggestion.—Greater facilities for aural treatment are required in the Campbell-street district. To judge from the reports sent in the work of the Care Committees in Paddington would appear to be going on steadily and well, the medical side of the work is especially producing very good results. The work would be further improved if more workers could be found willing to visit, especially to keep in touch with the children who have left school.

Chronic Invalidity in Children of School Age.

All chronic invalids amongst children of school age are notified by the attendance department to the school medical officer each month. A census of all children who have been out of school on account of illness is taken every November. In November, 1928 there were 2,086 children notified including 1,006 boys and 1,080 girls.

Heart disease, rheumatism and chorea were the cause of absence in 681 children (including 253 boys and 428 girls), nearly 31 per cent. of the total. How far this increase is due to increased incidence and how far to greater attention being paid to rheumatic children it is not possible to say, but the preponderance of rheumatic infection in producing chronic invalidity in childhood becomes more and more marked each year. On the other hand, striking improvement continues to be shown in the number of chronic sufferers from skin disease, ringworm, external eye disease and ear disease.

The following table gives an analysis of the causes of chronic invalidity over the last four years. Largely owing to the intensive work in following-up and treating ringworm of the scalp, this disease, from being a great and serious trouble during school life, has fallen to insignificant proportions.

	Ailments.				Percentage of total.				Three months out of school cases, November, 1925-1928.
	1925.	1926.	1927.	1928.	1925.	1926.	1927.	1928.	
Rheumatism, heart and chorea ...	614	537	508	681	24.71	23.98	25.32	30.95	
Nervous disorder ...	268	249	207	199	10.78	11.12	10.32	9.05	
Tuberculosis (pulmonary and other) ...	322	268	234	216	12.96	11.97	11.66	9.82	
Anæmia and debility ...	196	169	135	141	7.89	7.55	6.73	6.40	
Ringworm ...	81	27	27	17	3.26	1.21	1.35	.77	
Skin complaints (excluding ringworm)	72	62	63	56	2.90	2.77	3.14	2.55	
Eye ...	103	92	76	62	4.14	4.11	3.79	2.82	
Infectious diseases ...	92	103	100	106	3.70	4.60	4.98	4.82	
Other defects ...	737	732	656	722	29.66	32.69	32.71	32.82	
	2,485	2,239	2,006	2,200	100.00	100.00	100.00	100.00	

Age.	Boys.	Percentage.	Girls.	Percentage.	Total.	Percentage.	Age distribution of chronic invalids.
5 ...	104	10.3	94	8.7	198	9.5	
6 ...	150	14.9	151	14.0	301	14.4	
7 ...	140	13.9	124	11.5	264	12.7	
8 ...	136	13.5	120	11.1	256	12.3	
9 ...	93	9.2	85	7.9	178	8.5	
10 ...	75	7.5	77	7.1	152	7.3	
11 ...	75	7.5	89	8.3	164	7.9	
12 ...	92	9.1	125	11.6	217	10.4	
13 ...	91	9.1	145	13.4	236	11.3	
14 ...	31	3.1	38	3.5	69	3.3	
15 ...	18	1.8	24	2.2	42	2.0	
16 ...	1	.1	8	.7	9	.4	
	1,006	100.0	1,080	100.0	2,086	100.0	

Medical Treatment.

At the end of the year 1928, there were 17 hospitals and 68 centres, included in the Council's medical treatment scheme, in addition to the dental centre at Bushy Camp School. The provision made for the several ailments and the numbers treated during the year were as follows :—

Ailment.	Provision made in 1928.	Number treated 1928.	Number treated 1927.
Defective vision ...	39,320	40,984	40,293
Ear, nose and throat disease...	16,400	20,162	18,176
Ringworm ...	890	516	644
Minor ailments ...	72,765	97,918	99,766
Dental defects ...	131,670	129,255	124,992
	261,045	288,835	283,871

This represents an increase of 4,964 on the numbers treated under the Council's scheme during the year.

Further particulars under the headings of the various ailments dealt with are as follows :—

(a) *Minor Ailments*.—97,918 children received minor ailments treatment which is 1,848 less than were treated during 1927. The number of actual attendances by the children (1,605,831) for treatment was, however, greater than the previous year. During 1928, there were 109 children suffering from ophthalmia and interstitial keratitis referred to the Metropolitan Asylums Board's Residential School at White Oak, Swanley. Among these were 16 cases of trachoma and 12 cases of interstitial keratitis.

(b) *Ringworm*.—As has been experienced for some years past the number of children treated for ringworm has again declined. The number dealt with was 516, as compared with 644 during 1927. This improvement bears eloquent testimony to the increasing care and attention paid to personal hygiene.

(c) *Visual Defects*.—40,984 children were dealt with under the Council's scheme for refraction, or 691 more than last year. Spectacles were prescribed in 28,977 instances, and 25,887 children obtained them, a proportion of 89·3 per cent. A new centre was opened at Downham during the year.

(d) *Nasal and Aural Defects*.—The number of cases treated under the Council's scheme was 20,162, or 1,986 more than in 1927. 15,036 children received operative treatment for enlarged tonsils and adenoids, and of these 12,866 were retained as in-patients at the 11 centres where special arrangements have been made. During the year this form of treatment was extended to the St. George's Dispensary. The only centres at which out-patient treatment is given are the Fulham and Hammersmith Centre and the Metropolitan, St. Mary's and South Eastern Hospitals. It is hoped that during the next twelve months in-patient treatment will be provided at the Hammersmith centre and at the Metropolitan and South Eastern Hospitals.

Dr. A. G. Wells has submitted the following report upon the work of the aural department. The staff of assistant aurists has been increased during the year by the appointment of Dr. Savege, who attends on five sessions per week, with the result that the amount of work done this year considerably exceeds that done in 1927, and it has been possible to reduce arrears. This is shown by the greatly diminished length of the waiting lists, and the reduction of the number of long standing cases. Earlier cases are now more generally being treated, which tends to speedier work and greater numbers can be dealt with. The following tables show the particulars of the work done :—

PARTICULARS OF ALL CASES.

Division.	Total examinations made.		Total cases examined.		New cases.		Cured cases.		Lapsed cases.		Relapsed cases.		Current file.		Discharged on 1st visit.
	Pa-tients.	Ears.	Pa-tients.	Ears.	Pa-tients.	Ears.	Pa-tients.	Ears.	Pa-tients.	Ears.	Pa-tients.	Ears.	Pa-tients.	Ears.	
N.W.	1,470	1,862	378	493	206	376	203	260	37	43	44	49	113	142	24
N.E.	2,790	3,193	571	589	475	489	391	432	71	78	117	129	161	190	45
E.	2,551	3,128	609	739	506	599	368	441	83	95	79	82	182	227	75
S.E.	4,375	4,713	812	898	533	587	484	521	64	75	140	144	334	468	82
S.W.	3,044	3,651	625	777	477	598	439	516	59	75	77	83	257	291	37
Totals	14,230	16,547	2,995	3,496	2,197	2,649	1,885	2,170	314	366	457	487	1,047	1,318	263

PURELY DEAF CASES.

Division.	Total examinations made.		Total cases examined.		New cases.		Cases cured.		Cases improved.	
	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.
N.W. ...	80	135	20	34	18	30	14	25	—	—
N.E. ...	115	230	18	35	9	17	11	22	2	4
E. ...	174	329	49	96	38	75	21	41	1	2
S.E. ...	186	350	45	80	35	62	14	26	9	17
S.W. ...	136	268	27	53	24	48	11	22	1	2
Totals ...	691	1,312	159	298	124	232	71	138	13	25

Division.	Cases unrelieved.		Discharged 1st visit.		Lapsed cases.		Relapsed cases.		Current file.	
	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.	Patients.	Ears.
N.W. ...	1	1	—	—	—	—	3	6	5	9
N.E. ...	—	—	—	—	4	8	—	—	8	14
E. ...	5	10	—	—	3	6	—	—	16	32
S.E. ...	5	10	—	—	4	7	2	3	21	39
S.W. ...	3	6	—	—	2	3	—	—	25	49
Totals ...	14	27	—	—	13	24	5	9	75	143

ANALYSIS OF OTORRHOEA CASES.

Cause of suppuration.				Total ears.	Cured.	Referred for mastoid operation.	Lapsed.	Still under treatment.
Acute otitis med. supp. ...	...	...	...	116	86	9	2	19
<i>Chronic ot. med. supp. due to—</i>								
I. Tympanic conditions—								
(a) Tympanic sepsis ...	...	...	...	1,201	929	12	21	239
(b) T.S. + granulations ...	...	...	...	224	118	21	12	73
(c) T.S. + Polypi ...	...	...	...	84	44	11	6	23
(d) T.S. + caries ...	...	...	...	25	7	2	1	15
(e) T.S. + other conditions ...	...	...	...	26	18	1	1	6
II. Tympanic conditions+								
(a) Tonsils and adenoids ...	...	...	...	360	208	—	7	145
(b) Nose conditions ...	...	...	...	107	80	1	9	17
(c) Mouth conditions ...	...	...	...	2	2	—	—	—
III. Tympanic conditions+								
(a) Attic disease ...	...	...	...	157	56	28	8	65
(b) Mastoid disease (no operation yet)	...	...	...	247	45	118	9	75
(c) Mastoid disease (operation already done)	...	...	...	329	242	27	3	57
IV. Tympanic conditions+								
(a) External otitis ...	...	...	...	36	31	—	—	5
(b) Stricture of meatus ...	...	...	...	5	1	—	2	2
External otitis ...	...	...	...	53	37	1	7	8
Cause undetermined ...	...	...	...	1	—	—	1	—
Total ...	...	...	...	2,973	1,904	231	89	749

The last table gives a complete analysis of all the cases of otorrhœa dealt with by the aurists in all the divisions of London, and shows the cause of suppuration

in each case, the cause of chronicity, the number cured, the number referred to hospital for a mastoid operation, the number of "lapsed" cases (i.e., those who left school while treatment was in progress or for some other reason were lost to view), and the number still under treatment at the end of the year. From these figures it will be seen that the percentage of "cured" cases, after deducting those that lapsed, is 66 per cent., or including the "cured" cases operated on for mastoid diseases, 71·7 per cent.

The following are the details of the work done at the After-Care Clinic, Kentish Town, in connection with the mastoid cases:—

	<i>Patients.</i>	<i>Ears.</i>
(a) No. of cases discharged from Downs Hospital in 1928	193	214
(b) No. of cases discharged from Downs Hospital in 1927 and treated in 1928	50	59
1928 CASES—		
No treatment required after leaving Downs Hospital	11	12
Treated at Kentish Town and "cured"	93	99
Treated at L.C.C. clinics and "cured"	8	11
Still under treatment at Kentish Town	69	80
Still under treatment at L.C.C. clinics	3	3
Referred back to Downs Hospital for further operation	6	6
Lapsed	2	2
Not yet attended	1	1
	<hr/> 193	<hr/> 214
1927 CASES CONTINUING INTO 1928—		
Treated at Kentish Town and "cured"	45	54
Referred back to Downs Hospital for further operation	2	2
Lapsed	3	3
	<hr/> 50	<hr/> 59
CASES NOT OPERATED ON (1928)—		
Treated at Kentish Town and "cured"	48	55
Still under treatment on 31st December, 1928	18	22

There were 214 mastoid operations done during the year 1928 at the Downs Hospital.

Diastolisation.

It will be remembered that this method of treatment for various nasal conditions was introduced in the year 1926. The most suitable conditions are those of defective nasal respiration due to inflammation, congestion and swelling of the soft tissues of the nasal chambers. It is surprising how common these nasal conditions are in the London County Council school child, and they are mainly due to the lack of proper attention to ordinary nasal hygiene and the neglect of common catarrh. The opinion is held that, not only would these nasal conditions be less frequent, but that the sequelæ such as adenoids, otorrhœa, etc., would have a lower incidence if the principles of nasal hygiene formed a regular part of the child's education, if the children were taught to keep their noses in a cleanly state and to breathe habitually through the nose. Generally insufficient attention and time are devoted to this subject, and it is urged that a progressive policy be adopted along these lines.

Further, among the children suffering from these conditions, experience of the use of diastolisation has been sufficient to support the view that great improvement may be produced, and frequently complete relief, by the employment of this technique. It is surprising how some habitual mouth breathers—due to various degrees of nasal obstructions—acquire the ability to breathe nasally after a few administrations of this treatment. It would be well to see this method very greatly extended, as it is employed in Paris, where there are special clinics for diastolisation for the school children.

Out of a series of 85 cases suffering from some of the many symptoms associated with catarrhal conditions and obstructions 45 were completely relieved, 25 were

improved, 5 showed no improvement, 3 lapsed, and 7 were still under treatment at the end of the year.

Dental Diseases.—In the appendix will be found a detailed statement of the treatment given to the teeth and mouths of the school children. Compared with the figures for the year ending December 31st, 1927, the following facts are apparent.

Dr. A. Livingston's report on the dental scheme.

"The admissions of new cases show again an increase; this year of 4,263 in number; a corresponding increase is reflected in the total of attendances made for treatment.

"The number of teeth extracted still remains high, but this number is falling, and for a *greater* number of new cases a *smaller* number of permanent teeth was extracted. This fact gives ground for hope that extraction of permanent teeth—virtually a mutilation—will some day cease to be as it is to-day, the last resort of doctor and dentist in their war against poisoning of the body by gross oral sepsis.

"As has been shown, each child treated must lose some 3 or 4 teeth, and one of these may be a permanent tooth, but year by year more teeth are being saved by conservative filling methods. It was naturally expected that an increase in fillings would follow the rise in the number of new cases, but this increase was *four times* as great as was expected in respect of permanent teeth, and twice as great as was expected in respect of temporary teeth. The 'fillings per child' ratio has advanced from '84 per child to '904 per child; in these figures there is no great 'appeal,' but it indicates an actual increased number of 14,000 fillings. Thus, the work is begun of preventing gross sepsis by early treatment.

"Last year the attention of the Council was directed to an increasing demand—a very natural one—for 'painless dentistry.' The service has met this demand largely, and continues to use anæsthesia freely. A separate statement has been added showing the use of 'local' anæsthesia in 6,617 cases. Anæsthesia by injection of suitable medicaments is coming to occupy an increasingly important place in the practice of dental surgery, and in suitable cases is an expeditious, inexpensive and effective means of abolishing pain—except for the momentary prick of the needle. The scope is, however, very strictly limited; the familiar nitrous oxide gas is infinitely more suitable for multiple extractions and in any cases where there is suspicion of sepsis.

"Evidence from annual statistics and other sources tends to show that the high tide of dental disease, with consequent chronic poisoning of the system is being stemmed; for instance, in Deptford, Mr. McGraw, dental surgeon, observes that there is a markedly lessened need for heroic and wholesale extraction, and a greater need for small fillings, scaling and minor treatment.

"In collaboration with Mr. William Ovey it has been possible to begin to collect information concerning the problem of the deformed mouth, upon which it is hoped action may ultimately be based. A simple analysis form was drawn up, and during the year 1928 Mr. Ovey examined 3,081 children for the various orthodontic conditions presented. A summary of these analyses is given below, grouped as boys, girls, infants and mixed, with the results from two schools each for physical and mental defect.

Dental deformity.

	No. Exd.	R.N.	A.N.	O.B.	C.R.	X.B.	L.V.	T.V.	V.	Total.	Per cent.
Boys	1,058	192	7	13	29	2	67	3	30	343	32.5
Girls	932	165	10	17	44	3	50	7	18	314	33.7
J.M. and Infants	753	70	7	17	9	2	19	3	6	133	17.7
P.D.	142	32	1	3	7	1	7	3	3	57	40.1
M.D.	196	39	10	3	20	1	14	1	14	102	52.0
Totals	3,081	498	35	53	109	9	157	17	71	949	30.8

Key to contractions.—R.N., Retro-normal articulation of mandible; A.N., Antero-normal articulation of mandible; O.B., open bite; C.R., crowding; X.B., excessive over-bite (*without* other defects); L.V., Misplacement; T.V., Rotation; V., other defects.

"No case has been included which has been treated, and no case not established as a deformity. Therefore, in infant departments the incidence of abnormality is low, although the trained eye can see that deformity will occur later in all probability. Again, the omission of treated cases causes a low incidence of gross deformity in the higher grade schools. The accepted text books state that in physical and mental defectives, oral deformity is rife, and may be classed as a stigma. While this is not yet absolutely proved, the figures appear most strikingly to confirm the presence of this oral and dental stigma. Shortage of calcium probably has no *direct* influence on decay and deformity; but where general oral sepsis is still rife the incidence of deformity is very high. Additional and most important causal factors are associated with nasal obstruction, adenoids and tonsils; with mouth breathing, induced by the flaccid tonelessness of the non-chewing child suffering from oral sepsis; and with individual habits, such as finger sucking or the use of a "dummy."

"The first and most striking fact shown by the table is the very high percentage of deformity—no less than 30 per cent. of the children examined in a representative area—even somewhat higher in grade than the rest of the county, show some deformity. Fully 18 per cent. of our children have R.N., retro-normal mandibles, with the usual corollary of projecting upper front teeth; fully 8 per cent. have misplaced teeth (L.V.); almost as many have crowded mouths (C.R.); these three deformities account for the bulk of the deformed mouths, while a large number follows with various defects, one of which—open bite (when the incisors fail to meet)—is utterly disfiguring, though any dental deformity classified here may relegate a child for life to a dreaded inferiority.

"The problem of the treatment of deformity must be faced upon these lines:—

"A. The parents must be brought to realise that milk teeth are as important as permanent teeth. Attention must be paid to tuition of the future mothers of the race, that when their time comes they may know what is a right diet for the expectant mother—good teeth and good bones go together in the unborn and newly-born child.

"B. Both knowledge and teaching are at present incomplete. So that it is most important that signs of decay in milk teeth, should receive early attention. The Council admits to its treatment any child registered at school; for those not so placed it cannot provide, this is the sphere of the maternity and child welfare authorities.

"C. When these measures fail, treatment must be given for simple, orthodontic deformity, other than treatment by extraction, the only means at present of combating deformity. Here a word of thanks may be given to the great voluntary hospitals, dental schools, institutions and departments, where many of the worst cases of deformity are treated—these institutions would treat more but their accommodation is overwhelmed and the waiting lists are all too long.

"In paragraph A above is given the reason for instruction; a beginning has been made by the Consulting Dental Surgeon with intensive propaganda in the schools by giving weekly (or more often) simple lectures upon dental health and dental disease; audiences of parents, elder scholars and Care Committees have been gathered and arrangements made by the Principal Assistant Organiser, Miss Deverell. In some cases the children have written essays on the lectures. It is almost invariably the experience that head teachers have been at great pains to instil methods of dental hygiene into their charges, and in many schools the intimate structure of the teeth was perfectly understood. It is hoped that this tentative effort may be completed by organised propaganda against that which was described last year as the chief scourge of child life—dental disease.

" Arising out of the inspection by the Board of Education in 1926, opportunity was taken of the opening of the new " Prunella " centre in the East End to try out a special scheme embodying the following suggestions :—

A special dental scheme at the Prunella Centre.

" (a) That the centre should be used principally for the treatment of very early dental defect, and only to a minor extent for the relief of pain or the treatment of advanced cases. Children whose parents refused treatment to be excluded from the scheme of treatment and not reinspected. (b) That certain administrative changes should be made chiefly in the manner of notifying parents of dental defect among their children, and for the keeping of dental inspection records in more adequate detail. (c) That the Inspecting Dental Surgeon should treat only children coming from the schools visited by her. (d) That children found to require only extraction under gas as treatment for their diseases should be given a direct appointment (the parent being willing) for an anæsthetic session, so saving one visit to the centre. (e) That cases requiring slight treatment be charged less than those requiring advanced treatment.

" It was found, at the end of the first year that :—

" (a) The children showing early defect at 6 years of age, could be dealt with easily and effectively, if treatment were accepted. On the other hand, the centre was not kept adequately supplied with children, if the child was excluded whose parent refused treatment. However, the door was never bolted and locked, and many cases came in for treatment, driven by toothache. Nevertheless, evidence accumulated that the condition of the elder children was becoming worse. This part of the scheme was for these reasons, dropped, and reversion made to the normal methods—the open door and persuasion.

" (b) A new card was designed, recording directly in some detail, the dental condition of a child on inspection ; direct gas appointments were given. This involved fewer children being inspected per inspection session. The changes have worked well, and as by slight modification an increase in inspections per session has been secured, they have been continued.

" (c) This has been found practicable as far as " Prunella " centre is concerned, and is being continued there. It is found that people in London generally are inclined to visit the nearest centre of choice rather than the centre officially treating the school attended, and it is administratively impossible to ensure treatment being given by the inspecting dentist. Even on the fringe of the Prunella area, parents will seek another centre. Prunella, in its turn, treats patients which should perhaps be treated at Wapping. A water-tight compartment system in relation to the centres is, therefore, in London, impracticable.

" (d) Direct gas appointments have been given at inspections, and this method works fairly well. It is difficult, however, to explain fully, in a crowded hall, how to prepare a child for an anæsthetic, and to demonstrate the teeth that must come out. For the present this system is being continued.

" (e) Modifications in the Council's charges had already been instituted, and for fillings of an easy type a charge of one shilling is now made. This has been adopted not only at Prunella, but throughout the county.

" It is now an axiom that the best way of attacking the problem of dental decay is to concentrate on the child of 6 years of age. In conjunction with Miss K. M. Fry, therefore, investigation was made into the state of the first permanent molars, probably the most important human teeth, among children aged 7 years. These teeth erupt at about the sixth year.

The first permanent molars.

" Of 197 children examined by Miss Fry, 101, or 50 per cent., showed healthy teeth ; 85 children, or 42 per cent., had these very important teeth slightly decayed, but saveable ; while the remainder showed either a mixture of saveable and unsaveable teeth, or else unsaveable and hopeless decay. Only 8 of a possible 788 teeth had failed to erupt into place. It appears then, that from the point of view of the

preservation of the permanent teeth, the seventh and eighth years are of the chief importance. A child with, say, slight caries of the teeth at 6 years, has a parent who refuses treatment. If persuasion fails, at the ninth year, after causing pain and toxæmia, the tooth must be removed: a remedial operation rather than a preventive measure."

Classes for
stammerers.

During 1928 the number of children in attendance at the centres for stammering children was 269. Of these, 59 were discharged as cured, 38 as provisionally cured, and 29 left greatly improved, while the remainder was still in attendance at the end of the year.

During the past six months arrangements have been made for closer following-up and more co-operation with head teachers.

Miss M. A. Richardson, one of the instructresses, has devoted one session a week to visiting schools from which particularly difficult cases are sent. There is no doubt that this will be of great assistance in the treatment of cases where a sympathetic consideration of the children's particular difficulty is so essential. It is hoped that this will materially expedite their cure.

Mr. L. G. Bowman, the head master of the Jews' Free School, who has for some time past been keenly interested in the stammering child, writes:—"It is worthy of note that the training has a perceptible humanising influence on the character of the children. They improve in manner and deportment, and their general tone shows the effect on the spirit of the gradual mastering of their speech difficulties."

There is no doubt that the work of the centres has stimulated in teachers and parents a greater interest in this very distressing condition.

Personal Hygiene Scheme.

The number of examinations made by school nurses at rota visits during 1928 was 1,850,152, and verminous conditions were found in 233,108 cases, or 12·6 per cent., as compared with 13·1 per cent. of cases examined in 1927.

Particulars of the examinations and the results of the cleansing scheme during the past five years are given below:—

Year.	Examinations at rota visits.	Verminous conditions noted at rota visits.	Per cent.	Verminous children referred to centres.	Subsequently cleansed by parents.	Verminous children cleansed at centres.	Scabies cases bathed at centres.
1924	2,059,590	332,695	16·1	98,269	22,012	76,617	2,155
1925	1,937,588	323,020	16·6	112,806	27,647	85,159	2,077
1926	1,840,106	288,721	15·6	120,071	31,116	88,955	2,130
1927	1,990,201	261,135	13·1	123,279	27,031	96,248	2,609
1928	1,850,152	233,108	12·6	119,241	20,553	93,005	2,820

Of the 233,108 cases in which verminous conditions were noted, 139,852 (59·9 per cent.) were found to have nits only, while vermin or flea bites were found in 24,424 instances (10·6 per cent.). There was an increase of 211 cases of scabies during 1928.

Notices
issued and
action taken.

The number of verminous children whose condition was brought to the notice of parents by advice cards was 94,049, and of this number 44,249 attended voluntarily for cleansing. It was necessary to serve statutory notices in accordance with section 87 of the Education Act, 1921, in 26,308 cases, and as a result, 5,819 children attended the centres voluntarily. Of the remainder, 17,745 were found to be still verminous and were taken for compulsory cleansing. It was necessary to take proceedings in the police courts in 284 cases. Children conveyed by ambulance from outlying schools numbered 12,015, as compared with 11,102 in 1927.

Co-operation with the medical officers of the City of London and the metropolitan boroughs in remedying verminous conditions in the homes of children has been continued.

The decrease in the number of rota examinations made by the nurses was due to the demands made on their services as a result of an epidemic of measles which occurred in the early months of the year. Rota examinations.

The decrease in the percentage of verminous cases to the number examined is further evidence of the improvement in the cleanliness of the children to which reference has already been made. There has also been a noticeable improvement in the attitude of the parents, which may be attributed to their confidence in the nurses and the tactful manner in which the latter carry out their duties.

The number of children attending for warm baths during school hours was 40,555 in 1928, as compared with 40,371 in 1927. Use of public washing facilities.

Physical Education and the Teaching of Hygiene.

In their report to the Education Committee for the year ended July, 1928, the Organisers (Mr. A. H. A. Gem and Miss Grant S. Clark) in the section on Elementary Schools point out that of all cities, London has the greatest difficulties to contend with so far as playing fields are concerned, and as year succeeds year it is evident that the school playground, however imperfect, must be the centre of the school's physical activities. Report by the organisers of Physical education.

The syllabus lesson which provides postural and general training for every child should be the foundation of all school physical training and should be carried out whenever practicable in the school playground.

There has been a steady strengthening of the activity training which formerly was overshadowed by the formal exercises, and activities are selected with more discernment to the needs of the children and are much better planned and organised.

The organisers emphasise the superiority of short daily periods of exercise over more extended periods taken, say, only twice a week. The Council in July, 1927, circularised all schools informing the head teachers that it was desired that a minimum of one hundred minutes a week should be devoted to physical education and that this time should be distributed over not fewer than four days a week. Considerable progress has been made in adapting time-tables to this desired end.

With regard to organised games, so especially important for London children who have few natural opportunities for play in the open, it is reported that last season 211 football, 402 cricket and 374 netball pitches were available in the parks and open spaces. Facilities were provided for swimming lessons in public baths for 94,157 boys and 62,691 girls.

The remarkable work is detailed of the various All-London Association organised by the teachers who devote many hours out of school to these activities. Amongst these are the following:—

(1) *London Schools' Athletic Association*.—The above Association is composed of 25 affiliated district associations, covering some 750 schools. During the past year each of these districts held their own athletic meetings, and selected representatives to compete in the All-London Championships, which were held at the Stadium, Woolwich, on Saturday, June 30th. The Battersea Association were the winners of the boys' and South London the winners of the girls' championships. In many respects the recent meeting provided an even higher quality of performance than has been the case in former years.

(2) *London Schools' Amateur Boxing Association*.—The past year has shown a steady increase in the interest in schoolboy boxing. Very successful district and divisional eliminating competitions have been held, the number of competitors being 978 juniors, and 188 seniors, giving a total of 1,166 as compared with a total of 833 last year. There was a strong feeling that the quality of the boxing had advanced, and this belief had its confirmation when London competitors won fourteen out of sixteen Schoolboy Championships of Great Britain.

For some time the Executive has considered it highly desirable that the judging and refereeing at meetings should, wherever possible, be in the hands of teachers, owing to their more intimate knowledge of the capabilities and limitations of boys. This ideal has been hard to achieve, owing to a decided shortage of teachers with the necessary knowledge and experience, but those concerned have set themselves the task of training volunteers for this purpose; already a number have been equipped, and the association aims at training at least one hundred judges for the London area.

(3) *London Schools' Cricket Association*.—The scheme whereby many of the London clubs agreed to have parties of elementary schoolboys to their grounds in the evenings and to provide coaching has been further developed, and there are now 29 clubs offering this facility. It is estimated that during the course of last summer 830 boys have benefited in this manner.

The following representative matches have been played to date, with the results stated:—

London Public Schools, 123; Elementary Schools, 35, and 44 for 2 wickets.

London Elementary Schools, 109; Harrow School, 152.

London Elementary Schools, 158 for 8 wickets (dec.); Eton College, 44 for 0 wickets. Rain.

(4) *London Schools' Football Association*.—The Honorary Secretary of the above Association reports that the past year has proved a most successful one, showing the largest affiliation on record, viz., 44 district associations and six Central School Leagues, totalling 991 schools, of which nearly 600 are in the administrative county. He considers, however, that the London County Council districts are definitely behind the out-county districts in the standard of play, and quotes the following facts in support of his statement:—

(i.) Only one London County Council district appeared in the finals out of a possible six.

(ii.) In the five county matches only fifteen places out of a possible 55 were awarded to boys from London County Council schools.

He attributes this to lack of enclosed grounds in which respect the out-county areas are better served, and urges that the Council should provide an adequate number of enclosed practice grounds for elementary schoolboys.

(5) *London Schools' Netball Association*.—During the fifth year this association has grown rapidly, showing an increase of four senior and three junior leagues, with 90 new schools, and 126 more teams playing in district matches. The total membership of the association is now 21 senior leagues; 18 junior leagues.

These leagues account for 420 teams drawn from 261 schools, and a minimum of 2,940 girls take part in the various matches, quite apart from the netball played within the school. Thirty-seven matches were played between the champion district teams before the All-London Champions were found. The senior trophy was won by "The John Evelyn" School (*Deptford*), and the Junior Trophy by the "Peterborough" School (*Fulham, E.*).

The association organised a class for the training of umpires. This was held during the summer term, and was taken by an experienced games coach. It should prove of value in raising the standard of umpiring.

(6) *London Schools' Swimming Association*.—(a) *Swimming*.—The above association, quite rightly, consider their main effort should be to supplement the work of the London County Council in the endeavour to teach the largest possible number of children to swim. The success, or otherwise, of the work accomplished can therefore partly be judged by the number of 1st class swimming certificates gained. During the past year this has reached the number of 16,890, of which 7,875 certificates were gained by the boys and 9,015 by the girls.

The Hackney Branch again gained the greatest number of certificates for both boys and girls, with a total of 1,294, but if the reckoning is made on the average

number of certificates per department, the Hoxton Branch heads the list with an average of 19.5 per department. Tollington Park Central (*Islington, N.*) claims the greatest number of certificates for boys with a total of 65, whilst Greenwich Park Central (*Greenwich*) heads the list for the girls with a total of 66.

(b) *Life Saving*.—Once again the number of life-saving certificates gained by the girls far exceeds those credited to the boys. Advanced Certificates :—Boys, 1,170 ; Girls, 1,822. Total, 2,992. Elementary Certificates :—Boys, 1,977 ; Girls, 3,054. Total, 5,031. Grand total, 8,023.

The Hackney Branch gained the greatest number of certificates with a total of 874. Napier Street Boys' School (*Shoreditch*) gained the greatest number of both advanced and elementary certificates with 55 and 98 respectively ; whilst North Paddington Central Girls' School (*Paddington, N.*) headed the list for both advanced and elementary certificates with totals of 52 and 69 respectively.

The foundation for the above achievements is laid in the ordinary school swimming lesson, provided by the Council, which work is ably supplemented by the London Schools Swimming Association and its affiliated districts, to whom much credit is due.

"Health Classes" consist of small groups of children selected by the school doctor as requiring special attention in regard to drill. These children have a daily lesson taken by the most suitable teacher on the staff. Special arrangements for suitability of gymnastic costume and for attention to institutional requirements are made and the small size of the group makes it possible for the teacher to pay individual attention to the children. During the past year such classes have been held in 37 boys' and 52 girls' departments. The success achieved in some of these classes has shown head teachers the value of regular and frequent exercise, and has led to the institution of daily lessons throughout their schools. These classes are closely watched by the school doctors and the physical growth of the children is measured. Improvement in general nutrition, increase in chest expansion, and correction of postural defects are features of the reports made. Health classes.

Although it is recognised that a great deal of attention has been given to the teaching of hygiene and that very impressive work is being done in many schools, it has been felt that in the absence of a definite place on the school syllabus the importance of the subject has been insufficiently recognised, especially in the upper classes of boys' departments. As a result of discussions and examination anew of the question which arose during the consideration of the annual report of the Chief Medical Officer of the Board of Education for the year 1926, a very happy conclusion has been arrived at. Following a conference the Chief Inspector had with representative teachers, proposals were embodied and accepted by the Central Consultative Committee of Head Masters and Girls' Head Mistresses. These were :— Teaching of hygiene.

- (1) That hygiene should be taken on a syllabus.
- (2) That hygiene should be taken all through the school course.
- (3) That, say, between 11 and 14 years of age there should be a course of hygiene lessons, so called, *e.g.*, a fortnightly lesson for one year.
- (4) That the work done in school and in the domestic economy centre should be co-ordinated.

The Education Committee of the Council, in adopting these proposals (13.2.29) gave authority for the scheme outlined above to be issued in the form of a memorandum to the elementary schools. A copy of the handbook of suggestions on health education issued by the Board of Education has been sent to every school, and the handbook has been placed upon the requisition list for the use of teachers.

Open Air Education.

Provision for education in the open air during the past year included 7 open air schools accommodating 1,200 non-tuberculous children (the new school at Upton

House, Hackney, for 130 children having been opened on 23.4.28); 7 day open air schools for tuberculous children accommodating 540; 5 country and seaside convalescent camp schools accommodating 484 children for short periods, through which 4,600 children pass annually; and 171 day open air classes in school playgrounds, parks and open spaces, accommodating 4,040 children.

Day open-air
schools.

The seven open air schools with their situations and dates of opening are—Aspen House, Brixton (23.11.25); Brent Knoll, Forest Hill (26.4.27); Bow Road, Poplar (30.1.22); Holly Court, Highgate (18.7.27); Shooter's Hill, Plumstead (10.6.08); Stowey House, Clapham Common (14.6.20); and Upton House, Hackney (23.4.28). The number of children who passed the whole or part of the year in these schools was 1,826. The Council is pushing on with its programme for the erection of new open air schools and it is expected that two further schools will be organised during the year 1929.

Detailed reports have been received in each case from the assistant medical officers in charge of the medical work of these schools, of which the report of Dr. Vernon Wiley upon the oldest school, Shooter's Hill, and Dr. Banks Raffles upon the new school, Upton House, are selected for reproduction.

Shooter's-hill.
Dr. Vernon
Wiley.

"The 'First Open Air School' has done an excellent year's work, the very fine weather this year contributing largely. The following details of percentage attendance, hours of bright sunshine, mean temperature and rainfall are taken from records kept at the school by the pupils under the direction of the teaching staff.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Percentage attendance	86.0	84.2	88.0	88.6	88.0	87.6	84.5	—	84.2	82.7	83.0	83.3
Hours of bright sunshine	15½	45	33	32½	46½	64½	68	—	99½	30½	11½	7½
Mean Temp. (F.) ...	40.6	42.6	42.8	49.4	51.5	57.7	67.2	—	50.3	53.7	46.1	38.3
Rainfall (inches) ...	3.6	.78	1.32	1.40	0.91	.119	0.50	—	0.29	3.06	1.35	2.51

Average percentage attendance, 85.4 per cent. Total hours of bright sunshine, 454.

"In spite of the fact that this year the weather conditions were unusually good for open air school work, there were 48 days on which the weather was so bad that work out of doors was impossible. This fact should be borne in mind in view of the possible extension of the open air school idea in this country, for it has a direct bearing on the type of building needed. There are many days in which complete (closed-in) shelter from cold, wind and rain is necessary if hardship to the scholars and teachers is to be avoided—days in which partial shelter is not sufficient.

"Medical inspection was carried out fortnightly in term time. Children who left school during the year, 27 (20 boys and 7 girls). Malnutrition, anæmia and debility, 11; suspected tuberculosis 'pretubercular,' 6; tubercular adenitis (healed), 4; tubercular peritonitis (healed), 1; pulmonary fibrosis, 1; asthma with chronic bronchitis, 4. Of these children 19 appeared to be normal on leaving school, 2 were very much improved, whilst 4 (the cases of asthma) showed improvement in their general condition. Two cases were not definitely improved. Reasons for leaving.—20 left over age; 3 left district; 2 returned to elementary school; and 2 admitted to hospitals. Average duration of stay at school—3 years.

"New admissions during the year, 39 (26 boys and 13 girls). Healed tubercular pleurisy, 2; healed pulmonary tuberculosis, 4; suspected pulmonary tuberculosis, 2; tuberculosis contacts, 2; pre-tubercular (T.O.'s cases) 6; healed tubercular peritonitis, 1; pulmonary fibrosis following pneumonia, 2; asthma with chronic bronchitis, 1; bronchial catarrh, 4; phlyctenular conjunctivitis, 1; anæmia and debility, 11; digestive ailments (acidosis, cyclic vomiting, etc.) 2. Twenty-six of these children are attending dispensaries or hospitals. In 8 cases there is a bad family history of tuberculosis. As on previous occasions children chosen for admission were those likely to need open air regime all their school life.

"Remaining scholars (those having spent a year or more at the school and are still attending) 105 (63 boys and 42 girls). Of these 24 show great improvement, 76 have improved, and 5 have not improved. Of the 5 cases not improved, 2 are cases of relapsing phlyctenular conjunctivitis and 3 are cases of asthma with chronic bronchitis, both of which conditions are very much affected by cold winds and are, therefore, I consider, only benefited by a modified open air life. All these children were carefully weighed once a month. The average increase in weight for the year was 3.37 Kgs.

"*Casualties.*—The following casualties occurred during the year: scarlet fever, 6 cases; morbilli, 1 case; pertussis, 1 case; diphtheria, 1 case; varicella, 1 case; rheumatic pains, 1 case; tonsillitis, 1 case; impetigo, 2 cases; otorrhoea, 1 case; recurrence of activity with tubercular peritonitis, 1 case; accidents and injuries, 7 cases; bruises and sprains, 4 cases; injury with chisel at woodwork, 1 case; fracture (arm) 1 case; injury to eye by branch of tree (resulting in traumatic cataract, 1 case. The dietary has been satisfactory as regards quantity, nutritional value and cooking.

"This school opened on Monday, 23rd April, with 50 children, 28 boys and 22 girls, drawn principally from the Hackney and Shoreditch districts. The maximum number on the roll at any time was 156. Of this latter number, 3 children were returned to their ordinary schools, at the request of their parents, 2 became over school age, and two were withdrawn from the school on the removal of their parents from the district. This left on the books at the end of the year 149 children.

Upton House
School.
Dr. Banks
Raffle.

"An impressive fact was the improved school attendance of some of the children who had been formerly chronic 'out of school' cases. One boy in particular made practically complete attendance and his history showed that he had not made a full week's attendance for months previously. Through the kindness of the Divisional Officer it was possible to compare the present and past attendance returns for a number of the children. The most striking results are set out below:—

Child.	Percentage attendance 1928.				Percentage attendance 1927.			
	Sept.	Oct.	Nov.	Dec.	Sept.	Oct.	Nov.	Dec.
D. S.	75	100	84	90	70.7	nil	nil	nil
J. R.	97.7	93.1	88.6	81.1	nil	nil	nil	nil
W. M.	70.4	90.9	100	100	25	90.2	16.6	nil
B. W.	95.4	97.7	89.7	100	65	nil	nil	nil
R. F.	95.4	68.6	70.1	100	nil	nil	nil	nil
W. S.	93	97.7	100	100	70	25	16.6	nil

"*Infectious disease.*—The school has been remarkably free from infectious disease. There has only been one case of diphtheria (E.O., last attendance 15/11). This girl was infected from her cousin who lived in the same house.

"*Condition of the children on admission.*—The type of child presented for admission was generally that for which this type of open-air school is particularly suitable; those children who are debilitated rather than suffering from some coarse physical lesion. For example, at the present moment there is not a single child in the school with active tuberculosis. The defects from which the children were suffering were:—*Nutrition*—54 children were classed as having defective nutrition; of these 53 were marked '3' and 1 girl '4.' 52 were reported on as 'debilitated, anæmic and poorly nourished.' *Cervical glands*—In 14 cases the neck glands were more than palpable. In 2 children the occipital glands were enlarged due to scalp conditions, in 2 the enlargement of the glands was probably due to enlarged tonsils, and in 5 others teeth was the cause of the gland condition. In the remaining 5 cases no reason could be found beyond general debilitation. *Teeth*—20 children showed dental caries calling for immediate treatment. Steps were taken to have

the teeth treated. *Tonsils and adenoids*—In 6 cases the children were referred to the throat and nose specialist for treatment. *Eye conditions*—20 cases of defective vision were discovered at the second examination of the children. One child was found to have extensive corneal scarring, the result of ulceration. *Lungs*—33 children exhibited lung affections. In the majority of them, 20 cases, this was bronchitis, generally of a chronic nature. There were 4 cases of asthma, 1 of bronchiectasis, and 8 of the children showed definite signs of fibrosis. *Circulatory system*—There was only 1 case of organic disease of the heart. This was in a rheumatic child admitted after correspondence with Great Ormond-street Hospital. At a later date this child was returned to the elementary school as being unsuitable for the open-air school. Feeble cardiac action was noted in one child, and 5 were reported on as having defective circulation. 83 children were anæmic. *Rheumatism*—Very few children suffering from rheumatic conditions were presented for admission, and of these only 2 were accepted. *Nervous system*—7 children showed affections of the nervous system. There were 2 cases of slight chorea, 1 case of slight infantile paralysis, and 4 children were classed as nervously unstable.

"*Treatment*.—45 children were found to require treatment at the centres for 47 defects. The results of these recommendations were :—

Defect.	Treated.	Under treatment.	Untreated.	Total.
Enlarged tonsils and adenoids ...	2	1	3	6
Defective vision	10	5	5	20
Otorrhœa	—	2	—	2
Dental Caries	7	7	6	20
Total	19	14	14	47

"Thirty-five children were considered to be in need of further treatment other than set out above. Extra milk was ordered in six cases, cod liver oil in 24, and 5 children were given Parrish's chemical food. This last was provided out of a private fund at the school.

"109 children gained in height whilst 47 remained stationary. Regarding weight 151 children gained, 3 remained the same, and 2 lost weight. Of the 2 children who lost weight, the loss in each case being less than .5kg., 1 was a boy who showed an initial gain and then became a bad attender, the other was an unsatisfactory chest case which was referred back to hospital. The average gain in height of the children was 2 cm., and the average gain in weight 2.5 kgs. The average gain in height of the 50 children admitted in April was 2.3 cms., and their average increase in weight 2.7 kgs. It is interesting to note that of the 114 children on the roll when the school closed for the holidays in July, 22 lost weight during the holidays. The average loss in weight in these cases being rather more than .5 kg.

"With regard to improvement in physical condition other than that indicated by the above date it was found, as might be expected, that generally speaking the group of children who showed nothing more than poor nutrition and anæmia improved more than did those who had, e.g., some lung condition. *Cervical glands*—5 cases showed definite improvement. *Lungs*—Only 6 out of the 20 cases of bronchitis exhibited no amelioration of the usual winter symptoms. 4 of the children have not had any attacks during the colder weather, and in the other 10 the bronchitis has been of a slighter degree. *Circulatory system*—The case of organic heart disease is now off the roll. The child with feeble cardiac action remains the same, whilst 2 out of the 5 cases of defective circulation have definitely improved. 53 of the anæmic children still showed definite anæmia, but only 10 of them showed no improvement, either in facial colouring or in the appearance of the mucous membranes. In 30, then, of these anæmic children the condition had disappeared. (In the main these children were those suffering from that slight

form of anæmia due to poor home environment, and it was remarkable how quickly their facial colour improved after admission to the school.) *Rheumatism*—Of the 2 rheumatic cases admitted to the school 1 was the heart case subsequently returned to the elementary school, the other case is doing well. *Nervous system*—One of the cases of chorea became definitely worse and had to undergo a course of hospital treatment. The other has improved slightly. Three out of the 4 cases of nervous instability have improved.

“Upton House is a happy school and has arrived at the end of 1928 with its organisation wonderfully complete. Walking through the school it is difficult to believe that it has only been in existence since April last, and its maturity is strikingly evidenced in the attitude of parents towards it. Whereas in the early part of the year it was a question of persuading parents to send their children to the school, at the present time it is difficult to convince them that their children must wait to come through the appointed channels.”

School children recommended by the school doctors as needing a period of country life are sent all the year round to convalescent camp schools. Convalescent
camp
schools.

These include :—

- (1) The King's Canadian Camp School at Bushy Park, with places for 300 boys.
- (2) The Wanstead House School at Margate for 60 girls.
- (3) The Barham House School at St. Leonards for 64 girls.
- (4) Russell-Côtes Home, Parkstone, for 30 girls, conducted by the Shaftesbury Society.
- (5) Fairfield House, Broadstairs, for 50 girls, conducted by the “Save the Children” Fund.

Through these institutions no less than 3,017 boys and 1,583 girls passed during the year. The length of stay varies from one month to six months, but the majority of the children stay six weeks.

The question is asked whether short stay periods are of any permanent benefit. The answer is emphatically “Yes.” Every town worker, whatsoever his profession, or occupation, finds the benefit of a holiday once a year in the country or seaside, and sees the benefit to his children accruing therefrom; the children who are enabled by the Council's provision of camp schools to obtain a period in the country without loss of education are those who would otherwise be unable to obtain it, and they receive it just when it is most required. All who have had experience of hospital out-patient practice in London are familiar with the dictum continually repeated by the out-patient physician—“What your child requires, Ma'am, is a month or six weeks in the country.” The escape from the smoke pall of the city, the breathing of pure air, and the country regime puts new life into the city-bred child and does him even more good than the annual fortnight at the sea-side does the jaded town worker. To the improvement in health is to be added the educational value of the experience to the child. The “school journey” is established as an educational factor of deep importance. The visit to the camp school is even more effective and is the means of the acquirement of habits of thought and hygienic practice which forms a turning point in the lives of many of the children.

The subjoined table gives the average increase in weight of children admitted to the King's Canadian Camp School :— The King's
Canadian
School.
Average gain
in weight
per child
for 4 week
stay.

Date of admission.		No. admitted.	District.		Average gain in lbs. after 4 weeks' stay.	
October, 1927	4th...	66	Peckham...	...	3-0	
	11th	61	Camberwell	...	3-5	
	18th	72	Bethnal Green	...	2-4	
	25th	71	Lewisham and Woolwich	...	2-3	3-0*
February, 1928,	7th	69	Islington	...	2-9	3-5*
	14th	68	Bethnal Green	...	3-0	2-9*

<i>Date of admission.</i>		<i>No. admitted.</i>	<i>District.</i>	<i>Average gain in lbs. after 4 weeks' stay.</i>
February, 1928	21st	74	Lewisham and Woolwich	2.5
	29th	58	Fulham	3.1*
July, 1928,	3rd	71	Marylebone and King's Cross	2.4
	10th	70	Peckham	2.0
	17th	70	Islington	2.4
	24th	72	Fulham	4.2
				3.0

The figures marked (*) show the average gain after 6 weeks' stay.

Open-air
classes.

Good work continues to be done in open-air classes attached to the ordinary schools, and the increase in number of these classes shows that their usefulness and importance is being recognised by the head teachers of elementary schools. Many of these classes held in parks resemble very closely open-air day schools on a small scale. The number of such classes held during 1928 was 171, an increase of 20 over the number held in 1927. Twenty-seven of the classes continue throughout winter as well as summer. The number of children attending them amounted to 5,010.

Sixty-three of the classes accommodating 1,890 children were of types A and B, in which the pupils are debilitated and ailing children specially nominated by the school doctors. These types are kept under exceptional medical surveillance.

Special reports were received during the past year from the assistant medical officers on 65 open-air classes. In these reports emphasis is laid on the great improvement which took place in the mental alertness of the children; this was very marked in the case of children of apparently low mentality, and those of a nervous and fretful nature. In one class (White Lion-street School), 3 children who, at the commencement, were under observation as possibly M.D., were doing extremely well when examined in October. Cases of children with bronchitis and chest ailments have all shown great improvement. The freedom of children in these classes from colds and infectious diseases has again been noted, and also the general improvement in physical condition.

In view of the exceptional number of hours of sunshine last summer, it is interesting to note that the report on the Millwall class states that the improvement in facial colour was less marked than last year. The report on the Bow Creek class which is in the same neighbourhood refers to the smoky condition of the air, due to the proximity of factories and steamships. The benefit which continuous care in school affords to the children is manifested by the experience at the class held in Clissold Park, where there was a disappointing lapse in the condition of the children during the summer holiday, when several lost weight and were tired looking and pale again.

The parents of many of the children have expressed their delight at the great improvement in the health of their children while attending the classes. There is no doubt that the open-air classes are a valuable addition to the facilities for improving the health of the children.

Open-air
schools for
tuberculous
children.

In addition to the provision of treatment for tuberculous children in residential institutions, the Council continued the use of the open-air schools, specifically for children notified under the Tuberculosis Regulations, 1912, as suffering from tuberculosis of the lungs or of glands with no discharging sinuses. Including the new school, Nightingale House at Fort-road, Bermondsey, accommodating 125 children, opened at the beginning of the year, there are now seven of these schools.

The seven schools—Grove Hill-road (Camberwell), Elizabethan (Fulham), Geere House (Stepney), Kensal House (Paddington), Springwell House (Battersea), Stormont House (Hackney), and Nightingale House (Bermondsey), have together accommodation for 540 children. The number on the roll on 31st December, 1928, was 614, and the average attendance for the year ending 31st March, 1928, was 497.

Admission to the schools is granted on a certificate of a medical officer of the Council, and children returning home for a period of residential treatment in sanatorium are given preference. During the year 1928, 397 children were

admitted and 193 discharged. Of the latter, 34 were transferred as fit to attend elementary schools, 68 were fit for work, 39 were transferred to institutions for residential treatment for tuberculosis or admitted to hospitals for various reasons, 24 moved away, 8 were transferred to special schools, and 12 were discharged for other reasons. In addition, 4 children died.

In 1925, vocational classes were started at Springwell House and Stormont House Open-Air schools, with the object of training children in subjects likely to be of use to them in obtaining employment. Two classes are in operation at Springwell House School, one for boys and girls in commercial training which includes shorthand, typewriting, and general office routine, and the other for girls in millinery and lingerie. The vocational class at Stormont House is in needlework. Instruction is also given in gardening and carpentry. These do not rank as "vocational" subjects.

The following observations have been submitted by the medical officer of the Springwell House School:—

"The commercial class for boys and girls appears to be serving a useful purpose. Many of the children attending these classes remain at school when they are over 14 years of age, and suitable posts are fairly readily obtained for these special children. The position with regard to the dressmaking class, however, is not so satisfactory. It is fairly easy to find situations for the children trained in this work, but during periods of slackness they are put off and drift into other work. Moreover, the wage in this work is not high."

The following observations by the medical officer of the newly opened Nightingale House Open Air School are of interest:—

"A survey of the first year's work shows that, in the main, the provision of open air education for these children has been justified. Most of them have, in the past, undergone varying periods of sanatorium treatment necessitating a big break in their education. Many of them are therefore backward in the way of learning. All of them are below par in physique. On these grounds they would, individually, be much below standard when placed with normal children in an ordinary elementary school. Now, however, that they have been brought together in a special school where they themselves set the standard and special attention is paid to their physical welfare it is natural that, as a whole, they should be happier and make more progress. Open air, a good midday meal, and regular hours of rest are all of the greatest importance in the school curriculum, and play their part in bringing about an improvement in the health of the children.

"There has been a marked improvement in weight and height and the change in their expression and general tone has been striking. The standard of general cleanliness has improved and clothing, though still very poor, is becoming better."

During the year, authority was granted for instruction in swimming and two schools have taken advantage of this permission. Only children specially selected by the medical officer of the schools are allowed to participate.

School Journeys.

During the year 1928, 496 (480) School Journeys were held. The children taking part in them were examined in 494 cases before departure. In all 16,008 (15,971) children were examined, of these 119 (160) were certified as unfit to take part in the journeys. (The figures in brackets are those for the year 1927.) They were rejected on various grounds, *e.g.*, otorrhœa, 14; infectious disease or contacts, 9; heart, 10; temperature, 11; personal hygiene, 7. Nine children were also excluded from the school journey as they had not been vaccinated or were insufficiently

protected as there had been cases of smallpox in the district. A number of children were rejected provisionally on account of personal hygiene for further examination and were subsequently passed as fit.

Employment of School Children.

The applications during the year 1928 for medical certificates in connection with the employment of school children out of school hours under the by-laws numbered 4,518, of whom only 61 were girls.

The nature of the work for which certificates were granted was for boys (girls in brackets) : delivery of milk, 259 (0) ; delivery of newspapers, 2,627 (37) ; carrying of parcels, etc., 657 (9) ; in a shop, 347 (4) ; in a coal yard, 13 (0) ; industrial work at home, 7 (0) ; housework away from home, 21 (3) ; as a messenger, 62 (2) ; not stated 96 (1) ; in more than one occupation, 35 (1).

Certificates were refused on medical grounds in the cases of 88 boys and 4 girls ; in 147 cases the certificates were granted subject to medical treatment being obtained, and in 151 further cases other conditions were imposed. In 20 cases the provisional certificates were withdrawn on account of the non-compliance with the conditions under which the certificate was issued. There is a slight increase in the number of children compared with the year 1927, *i.e.*, 1928, 4,518, and 1927, 4,161.

Under the rules for certificates of children employed in stage entertainments, 204 children were examined and kept under observation. 180 of these were girls and only 24 boys. Five children were rejected outright on medical grounds, two with heart disease, 1 with general debility, and 1 who, in spite of all endeavour, refused to get attention to extensive dental decay. Thirty-three certificates were issued subject to medical treatment ; 23 of these required dental treatment, 7 required spectacles, 1 needed treatment for blepharitis and 1 for otorrhœa. Three children were found suffering from scabies and 1 was verminous. Certificates were withheld in these cases until treatment was arranged and the conditions cured.

Nursery Schools.

Nine voluntary nursery schools in London are aided by the Council by grants to the managers approximately equal to one-half their expenditure.

There is in addition a large nursery school (the Rachel McMillan) for 260 children on the " Stowage " site in Deptford aided by a 50 per cent. grant from the Council as regards 160 children, and wholly maintained by the Council as regards 100 children. A complete account of these schools is given in last year's report.

The Education Committee during the past year has again considered the question of the establishment of nursery schools, and has now come to the conclusions that there is room for more nursery schools in the Council's education system, and that the nursery schools should be of the " detached " type, *i.e.*, they should be conducted apart from infant departments of elementary schools.

Enquiries have been made into the approximate cost of building, equipping and maintaining two schools on an experimental basis. Various sites have been viewed and two which are already in the possession of the Council seem suitable. It is proposed that the programme of the Council's education work shall be extended to admit of the provision of two nursing schools as an experiment and for the aiding of additional voluntary schools.

The method of selection of the children for provided nursery schools within the age limits of two to five will be by the school medical officer on health grounds, consideration being given to the report of the school care committee on home conditions. The Education Committee is particularly anxious to link up the work of the nursery school with that of the infant welfare centres, and considers that joint representatives on the managing committees of centres and nursery schools in the same districts would do much to facilitate co-operation.

Children
engaged in
stage
entertain-
ments.

There have been made by interested social workers many enquiries concerning the suitability of particular sites and buildings for voluntary nursery school purposes and two applications for aid have been received from the managers of additional nursery schools already organised, one of which has been favourably received.

Milk Meals.

The total number of samples of milk analysed was 1,462. Of these 58 (less Supervision of dietaries. than 4 per cent.) were unsatisfactory, 10 containing added water and 48 showing a deficiency of fat. The maximum addition of water in any one sample was about 40 per cent., whilst in one case the abstraction of fat amounted to 54 per cent. The improvement in the general quality of the supplies which has been noted for some years past has been maintained.

Of the meals supplied to the children at various centres, 11 samples were examined in the Council's central laboratory, and, except in one instance, were found to be satisfactory.

Infectious Diseases (Schools).

In a vast town like London, comprising as it does the City and 28 metropolitan Introduction. boroughs, each possessing the statutory power of dealing with infectious illness within its own area, the task of co-ordinating the functions of the school medical service and of the local health services, of co-operating with 29 local medical officers, with school attendance staff, children's care committees, play centre organisations, hospitals and clinics, as well as with numerous other associations, committees or bodies interested in the child, either from the point of view of school attendance or home environment, is one to which the utmost resource, tact and experience must be brought to bear. It can be safely asserted, however, that the inherent difficulties of so complicated a machine have been overcome very largely by the establishment of harmonious relationships between the different authorities concerned, by the evolution of principles and rules with regard to the control of infectious illness among school children and by their application as the ripe fruit of knowledge of the methods by which infection is disseminated. Although much ground has been covered, there is still much to be learnt. To mention one field only it is as difficult even now to persuade many individuals as it was difficult to convince certain public health authorities a decade or so ago, of the futility of expecting school closure to prevent the spread of infectious illnesses in large urban communities like London, especially under modern conditions which provide so many opportunities outside the school for the spread of infection. In fact, it is only through inquiries to ascertain the reasons for the absence of children from school that the existence of the bulk of the cases of non-notifiable diseases are brought to light, whilst the medical and nursing observation which is now so closely maintained through the school medical service over children attending public elementary schools, reveals a large number of cases not only of non-notifiable diseases, but of missed cases of notifiable diseases such as scarlet fever and diphtheria. Local outbreaks of infectious disease, affecting children of school age, necessarily affect the schools attended by such children and, therefore, the congregation of children in school supplies the principal aid to investigation. To close the school would be to disperse the sources of supply of information and to lose the opportunity of medical supervision and inquiry. Again, the usefulness of the school organisation has been revealed in the opportunity it affords for propaganda. During the recent measles epidemic, borough medical officers of health were permitted to distribute measles advice leaflets, after they had been approved by the Council, throughout the schools, and there is little doubt that the timely warnings and counsel contained in these leaflets were of great value. The co-operation of school teachers and officials was also of very great service to the local health authorities in

discovering the early existence of cases of measles. Pamphlets, prepared by borough medical officers, regarding diphtheria immunisation schemes also have been distributed in the schools with the Council's approval, where the local authorities have adopted schemes for providing for the prevention of diphtheria by such means.

The constant visits of school doctors and school nurses cannot fail to be of inestimable help to school teachers, parents and children in the opportunity they afford for expert advice to be given with regard to infectious disease matters, as well as other aspects of the general life and health of the school child.

The value of the school as a means of observation and following-up during the outbreak of smallpox which visited certain parts of London during the year and in which a number of schools were affected, cannot be too strongly emphasised. The invasion of London by the mild form of smallpox which has been prevalent for so many years in the north and midland counties, was the most notable feature of the incidence of infectious diseases in London during the year. Of a total of 305 known cases of smallpox among persons of all ages in London, 110 occurred among children attending the Council's schools. Altogether 26 schools were affected, leaving out of account those schools from which non-suffering contacts only were excluded. The intensive following-up of absentees from these schools, together with the daily medical supervision, arrangements for mass vaccinations of children by the public vaccinators on the school premises, the ascertainment of parental consents in this connection, the dressing of arms after vaccination and a variety of other precautions involved a large amount of work, and in this connection it must be placed on record that the willing co-operation of school teachers and attendance officers was of considerable assistance to the local medical officers of health and to the school medical service in their efforts to stem the tide of infection. The fact that the outbreaks in affected areas were localised was an eloquent testimony to the success of the measures employed, especially when the fact is taken into consideration that London public health authorities had little or no first-hand acquaintance with a type of smallpox which is even more difficult to diagnose than is the better-known virulent type, and is more apt to be overlooked by reason of its characteristic mildness in many instances. Although the majority of cases were benign, however, some of the patients were affected with severe prostration or with profuse and even confluent rashes, indistinguishable from smallpox *major*. This fact in itself may give pause to those who are inclined to disregard the need of resorting to the only known preventive, viz., vaccination, against an illness which even though non-fatal may be in some cases painful and revolting during the stage of constitutional invasion and permanently scarring in its consequences. The facilities for using the school organisation in connection with vaccination of school children, have, there is little doubt, been the means of protecting a large number of children whose parents probably would not have taken the trouble to send them to the public vaccinator.

It will be noted in the table below that the incidence of diphtheria among school children has remained fairly constant as compared with the previous year, although scarlet fever showed a definite upward tendency. In fact, it will be noted that scarlet fever has been gradually rising the last few years, the total number of cases among school children in 1928 was the highest recorded since 1922, when 8,026 cases were reported following upon the epidemic year of 1921 with its 17,028 cases. It is, however, satisfactory to note that the type of illness generally has been very mild, and this fact in itself tends to swell the number of cases by the spread of infection through ambulant cases. On the other hand, diphtheria has lately shown a definite tendency towards unusual virulence in certain districts, and it is disquieting to find that in so many cases, children do not receive the early medical attention that is so necessary. The earlier diphtheria is diagnosed, the earlier anti-toxin can be administered and the greater are the chances of mitigating the severity of the

illness and of saving the child's life. The need for securing early medical advice and for medical practitioners to realise the importance of immediate administration of anti-toxin is the first principle in the prevention and cure of diphtheria. London, in spite of its advantages in the matter of hospital and medical services, remains one of the worst centres as regards the prevalence of diphtheria. The failure to seek early medical attention, previously referred to, probably plays a part, but this is doubtless a feature common to other populous towns. It has been pointed out from time to time also that the actual incidence reflected in the notifications is swollen by the addition of purely bacteriological cases. But even allowing for these reservations, the incidence of and mortality from diphtheria continue to give cause for anxiety. There is, therefore, all the more reason why public health authorities in London should study seriously and impartially the results of the modern method of determining susceptibility to the disease by the Schick test, and of securing the immunisation of young children who are likely to contract diphtheria by the inoculation of toxoid anti-toxin. This prophylactic measure has already been adopted by many authorities, in a greater or less degree, in many parts of Great Britain, including certain London boroughs, with, it is claimed, a beneficial outcome in the reduction of diphtheria among the immunised. A more detailed reference to this subject will be found on p. 128.

The task of inculcating modern methods of prevention, based upon scientific knowledge, is handicapped by popular prejudice or preconceived and erroneous ideas. An illustration is to be found in the popular attitude to what is now regarded as an axiom in preventive medicine, namely that the ordinary infectious diseases of school life are spread almost entirely by infected persons in the act of talking, coughing sneezing, etc., and not by inanimate objects. The desire for disinfection of supposedly infected articles, and more especially of school classrooms, is, perhaps, not so clamant as it was, but even now, faith in the magic powers of chemical disinfection of classrooms retains many adherents among the public and even in the ranks of school teachers and managers, etc. It is frequently argued that houses in which cases of infectious illness occur are disinfected and that what must be good for an infected house must be beneficial for the school also. The protagonists of this exploded theory do not appreciate that there is a vast difference between the two sets of circumstances and that, whereas the bedding and articles used in the room of an infectious patient are liable to be soiled by the discharges of the patient which may contain infectious material, the school is a place for healthy pupils and all ailing children are excluded from school by the operation of strict rules. It may happen occasionally that a child attends school in the early stage of infection and accidentally escapes for a brief period the close supervision which is exercised and may thus infect another child by personal contact, although the machinery is constantly being tightened up to prevent such occasional occurrences. The chance, however, of the furniture, school articles or the air of a well-ventilated room retaining infection, so as to require "disinfection," is so negligible as to be disregarded. Ordinary cleansing is necessary on general hygienic grounds and quite sufficient as a means of disinfection. Some local sanitary authorities have abandoned even terminal disinfection of the bedrooms occupied by infectious patients and rely upon "current" disinfection and the boiling of bed clothes or other articles personal to the sufferer. Medical officers of health, in increasing numbers, are coming to the conclusion that terminal disinfection of rooms occupied by infectious patients is valueless in preventing the occurrence of secondary cases of such illnesses as scarlet fever, diphtheria, etc., and their opinions are supported by the results obtained in districts where disinfection has been abandoned. Others, while reluctant to take the plunge of discontinuing a traditional practice, regard disinfection merely as a *placebo*. Investigations which have been carried out recently by the Board of Education have demonstrated that school books used by children in school are not capable of transmitting the common infectious diseases, *e.g.*, scarlet fever and diphtheria.

These remarks on disinfection are submitted in order to adjust the perspective of those persons who believe that disinfection of school classrooms is a necessary precaution against the spread of infection. Disinfection is costly and where unnecessary, a waste of public money.

In the matter of prevention of infectious illness in the schools, it should be the aim of the teaching staff to secure, as far as possible, that no child is sent to school in an ailing condition. For this purpose no opportunity of seeking the co-operation of parents to this end should be lost. The parent is the key to the situation, and yet it is from parents mainly that complaints and uninformed suggestions are received when outbreaks of infectious illness occur in the vicinity of a school and their children contract the prevalent disease. Almost invariably, the school is blamed for that for which the parents themselves are responsible to a large extent. If a child who exhibits signs of illness such as sore throat, headache, sickness, severe catarrhal symptoms, etc., is sent to school, the degree of risk to his schoolfellows is measured by the extent of the child's contact with other pupils either in school or on the way to school, and thereby careful parents suffer from the thoughtless. The only means of overcoming the parental attitude, which is probably very largely the outcome of ignorance rather than of apathy, is vigorous propaganda through the combined efforts of the officers of central and local authorities including teachers, school doctors, school nurses, medical officers of health, and health visitors. Even school attendance officers whose primary function is to secure maximum school attendance must have always before them the necessity of warning parents against sending ailing children to school.

The numbers of cases of infectious diseases reported by the teachers as occurring among school children during the course of the year, compared with similar figures in the preceding four years, are shown below :—

Year.	Diphtheria.	Scarlet fever.	Measles and German measles.	Whooping cough.	Chicken pox.	Mumps.	Scabies.	Ophthalmia.	Ringworm.
1924 ...	3,696	5,093	35,946	8,404	11,826	15,424	920	1,101	1,558
1925 ...	5,033	5,717	24,521	12,795	17,583	9,161	711	882	1,364
1926 ...	5,634	5,872	34,778	5,534	12,769	11,897	694	606	937
1927 ...	5,097	6,498	8,119	8,387	17,358	13,876	820	492	831
1928 ...	5,178	7,505	41,891	8,592	13,657	5,744	901	408	707

School inspections in connection with infectious illness.

Strict supervision of children attending the Council's schools is exercised and the visits of assistant medical officers and/or school nurses are paid to schools where cases of infectious illness have occurred among the pupils with a view to ensuring, as far as possible, that all sources of infection are eliminated in order that healthy children may continue to attend school without risk of infection due to school attendance.

The following table shows the numbers of schools visited and the numbers of children examined in connection with investigations into the occurrence of scarlet fever and diphtheria in the Council's schools during 1928 :—

Division.	Diphtheria.				Scarlet fever.			
	No. of visits.	No. of depts. visited.	No. of schools visited.	No. of children examined.	No. of visits.	No. of depts. visited.	No. of schools visited.	No. of children examined.
E. ...	31	28	24	4,054	44	33	26	4,490
N.E. ...	53	40	38	4,267	37	26	24	4,810
N.W. ...	62	42	37	5,274	32	27	22	3,225
S.E. ...	63	56	52	5,770	36	31	29	4,331
S.W. ...	72	53	45	8,986	38	35	31	5,232
London ...	281	219	196	28,351	187	152	132	22,088

Scarlet fever.

During 1928, 7,505 cases of scarlet fever were reported as occurring among children attending the Council's schools, and 132 schools were visited from time to

time by the Council's medical staff in connection with outbreaks of this disease. At these inspections over 22,088 children were examined. Scarlet fever in recent years has been of such a mild type that there has been much difficulty of control because many cases were unrecognised, some of them pursuing their usual occupations while still in an infectious condition.

In addition to investigations by medical officers, valuable work was done by school nurses in following up the medical officers' visits for scarlet fever and diphtheria, as well as in connection with minor infectious ailments. In 1928 the prevalence of diphtheria shewed a slight increase, 5,178 cases having been reported as occurring among school children as compared with 5,097 in the previous year.

During the year 196 schools were visited owing to outbreaks of diphtheria in the localities concerned, involving 281 visits by assistant medical officers, whilst in a number of these schools a nurse was also in attendance daily during the outbreak, with a view to advising the head teachers and swabbing suspects. In the course of these investigations and during ordinary medical inspections, etc., 6,406 swabs were bacteriologically examined in the Council's pathological laboratory, of which 659 showed the presence of micro-organisms indistinguishable from *B. Diphtheriæ*, and the remainder were negative. These 659 positive results related to 457 children, of whom 151 were officially notified as cases of diphtheria. In 22 cases which yielded several successive positive results tests were made for the virulence of the micro-organisms and 7 of them proved to be virulent, whilst 15 were avirulent. These latter cases were readmitted to school without further treatment.

Diphtheria is a disease of children of school age and younger, and in London it is an endemic disease, that is to say, cases continue to occur throughout the year. There is a regular seasonal prevalence every autumn, and the deaths of children, between the ages of 2 and 7 years, from the disease rise concurrently. In spite of improved sanitary conditions, better housing, more efficient medical supervision of children in the school and home, earlier diagnosis, earlier treatment and admission of cases to hospital, diphtheria in London has shewn no diminution in incidence and mortality during the past few years. It is true that since antitoxin treatment came into more or less general use in 1895, the case mortality per cent. has decreased from 17·8 in the period 1895-98, to 4·7 in the years 1923-26, and had fallen to as low a figure as 3·3 per cent. in 1927, yet the incidence of diphtheria has remained higher during the past nine years than for many years before the war, with a definite increase in the number of deaths. For example, whilst the average number of cases of diphtheria occurring among all persons annually between 1903 and 1919 was approximately 7,850 cases; in the period 1920-28, the average was 12,960. During the same periods the average annual numbers of deaths were approximately 633 (1903-1919), and 703 (1920-28). A noticeable feature of this general prevalence has been a tendency for the disease to become established in certain localities for long periods and to develop exacerbations of virulence from time to time in various districts.

It is now well known that diphtheria and certain other infectious diseases are subject to cyclic prevalences. The period 1903-19 was associated with comparative quiescence in the epidemic history of diphtheria. In the years 1920-21, especially the latter, there occurred an intensive outbreak of both scarlet fever and diphtheria in London and throughout the country, but whilst the incidence of scarlet fever has since diminished to a more normal level, that of diphtheria has remained relatively high in London, in spite of modern knowledge of the factors which favour the spread of the disease. Since the inception of the school medical service preventive measures in the schools have been progressively improved, and every possible effort has been put forth, through medical supervision, swabbing of throats, etc., exclusion of suspects, "carriers," etc., from school, to reduce the incidence in the schools to a minimum. Yet the disease continues to levy a heavy toll upon the health and lives of London children. It will thus be appropriate to review the means available for

Recent
increase in
diphtheria
in London.

controlling the disease. It is now thoroughly established that diphtheria strikes where the balance between immunity and susceptibility is weighed down in favour of the latter condition. This is true both as regards communities and individuals.

The
prevention of
diphtheria.

There are two aspects of the subject of prevention to be considered. *Firstly* there is the more modern method of active immunisation by means of inoculation which, it is claimed, protects the individual against attack, and *secondly* there is the general practice arising out of statutory public health enactments relating to isolation and hospital treatment of the patient, supervision of contacts, disinfection and the like, which are carried out in the interests of the patient and community after the individual has been attacked. These measures are described below :—

Schick test
and active
immunisa-
tion.

The Schick test is employed to demonstrate an individual's degree of susceptibility to diphtheria. The interpretation of the test by an expert medical technician will show in the large majority of instances whether the person will escape diphtheria altogether or whether he or she will contract the disease mildly or severely if infected, and will even indicate his or her power of making a good recovery.

Active immunisation with toxoid antitoxin (T.A.T.) is a means of increasing the individual's powers of resistance or in other words conferring immunity to the disease by a scientific and less ruthless method than that adopted by Nature, and in a much shorter space of time. Although this measure is now regarded by the medical profession as a well established means of protection against diphtheria and it is being practised successfully in a number of places, the lay public needs a good deal of education on the subject, and parents themselves will have to decide whether they will take advantage of this preventive measure.

In London 12 metropolitan boroughs, *viz.*, City of Westminster, Battersea, Camberwell, Deptford, Hackney, Holborn, Stoke Newington, Wandsworth, Marylebone, Lambeth, Finsbury and Poplar, have established immunisation clinics and have distributed propaganda leaflets on the subject. With the Council's consent the school organisation is assisting borough medical officers in the circulation of these leaflets in the districts concerned. Although these clinics were primarily intended for the immunisation of children of pre-school age, many of them are treating school children in addition. In districts where these facilities are not available it has been possible to arrange for school children and even teachers to be immunised at one or other of the Diphtheria Carrier Clinics referred to later on, when application for this protection has been specially made.

It may be mentioned that it is now a general practice to immunise young children without first determining their susceptibility to diphtheria by means of the Schick test. The reason for this practice is that the large majority of children living in towns are, in their early years if exposed to infection, liable to contract diphtheria and, by dispensing with the Schick test, unnecessary attendances at the clinic are avoided.

The following table shows the numbers of persons Schick tested and immunised at the borough council's Welfare centres and at institutions in London up to the end of 1928. The figures in brackets denote, for the purpose of comparison, the numbers which had been dealt with up to the end of 1926.

Where performed.	Schick tested.	Positive reactors.	Number immunised.
Borough Council's welfare centres ...	5,658 (1,132)	4,192 (831)	4,569 (662)
Residential institutions (including London children in out-county institutions)	12,420 (7,187)	4,839 (2,519)	4,481 (2,002)
Hospitals (including M.A.B. hospitals to April, 1928)	3,044 (1,500)	1,023 (420)	759 (420)
Totals	21,122 (9,819)	10,054 (3,770)	9,809 (3,084)

It will thus be noted that whilst the desirability of offering to the community the advantages of this method of protection against diphtheria is becoming increasingly recognised by the metropolitan borough councils and, although the numbers of persons actually dealt with are growing, the dilution of the total child population by so small a number of actively immunised persons, as shown in the above table, can exert but little effect upon the incidence of diphtheria as a whole. As has already been pointed out, schemes of active immunisation must depend for their success upon the amount and character of the efforts expended upon propaganda. In this connection it must be realised that education of the parents cannot be otherwise than a gradual process. Unfortunately parents do not realise the seriousness of diphtheria until an outbreak of the disease occurs among the susceptible community. Active immunity by means of toxoid anti-toxin, however, takes too long to become established for the necessary protection to be afforded in the presence of an outbreak, but when once it is established the effect is said to be lasting, at any rate sufficiently long to cover the period of school life, *i.e.*, at the ages when the disease is most dangerous to life.

The only method of conferring rapid or prompt protection upon persons who have been exposed to infection is by means of *passive* immunisation, *i.e.*, the administration of small doses of anti-toxin, the protective effect of which is only of three weeks' duration. This method, whilst practicable and commonly used in residential institutions, is not applicable to day schools. The Council is prepared to place at the disposal of metropolitan borough councils where immunisation schemes have been adopted, facilities for using the school organisation in the distribution of propaganda leaflets prepared by the borough medical officers, subject to their approval by the Education Committee. Up to the present applications by eight borough medical officers for the use of such facilities have been received and granted.

Judging from the experience in this country in districts, or in institutions, where immunisation schemes have been in force for a sufficient length of time, this method of prevention of diphtheria appears to afford an effective protection in all but a very small proportion of cases. Dr. O'Brien, Director of the Wellcome Research Laboratories, recently pointed out that the results of investigation carried out in those laboratories showed that 95 per cent. of persons immunised, when retested after 7 years, were still immune as demonstrated by negative reactions to the Schick test. Similarly, it was shown that, in 98 per cent. of persons Schick tested, a negative reaction persisted over such a period of time as to suggest that it was a lasting condition. In a certain small number of instances cases of diphtheria have been reported among those who have received the requisite three immunising doses, but in such cases, on closer investigation, it has been found that the person was not suffering from true diphtheria but from tonsilitis or some other condition simulating diphtheria, that the period required for completion of the immunising process had not elapsed, or that the person had not been retested after the requisite lapse of time to determine lasting immunity.

Very few instances have come to light of immunised persons contracting diphtheria after the full immunising course and after retesting, and judging from available records such cases are usually mild in character. Similarly, to explain the somewhat rare occasions on which a Schick negative reactor has been found to be suffering from diphtheria, it has been suggested that there may be certain individuals whose amount of natural anti-toxin is on the border line, subject to slight fluctuations and not constantly stable, according to the extent and frequency of exposure to mild doses of infection on which the normal individual is probably dependent for maintaining natural immunity. The exposure of such an individual to a massive dose of infection may possibly result in an attack of diphtheria developing when the natural anti-toxin is temporarily reduced. These anomalies, however, occur but rarely, and so add to the difficulty of investigation and explanation.

There is, however, accumulating evidence in this country and in Scotland, that where active immunisation has been adopted on a wide scale, particularly in institutions, it has been followed by a reduction in the incidence of, and the mortality from, diphtheria among the immunised. With regard to Edinburgh and Aberdeen, where Schick testing and active immunisation have been carried out in the elementary schools during the past few years, the figures published by the respective medical officers of health are interesting. They show that in Edinburgh, with over 11,000 immunised and 95,000 non-immunised children, the diphtheria attack rate was at least 10 times greater among the latter untreated children than amongst those who were protected, whilst the death-rate was nil among the immunised and 63 per 100,000 among the non-immunised.

In Aberdeen among approximately 8,000 children age 1-15 years, who had received the first series of inoculations and over 33,000 who had not been protected, the reported diphtheria incidence was proportionately nearly 7 times less among those who had been given preventive treatment. It is clear, however, that in larger urban communities considerable time must elapse before a sufficient number of children are immunised to allow of any reliable deductions to be drawn with regard to the effect upon the general incidence of diphtheria.

The following summary shows of the results of the work in connection with Schick testing and active immunisation in London and the rest of Great Britain up to the end of 1928. It is impossible at present to estimate to what extent Schick testing and immunisation are being practised by medical practitioners in a private capacity.

	Schick tested.	Positive.	Immunised.
London	21,122 (9,819)	10,054 (3,770)	9,809 (3,084)
Rest of England and Wales ...	38,224 (15,944)	18,542 (7,005)	21,392 (5,241)
Total of England and Wales ...	59,346 (25,774)	28,596 (10,775)	31,201 (8,325)
Scotland	42,904 (28,275)	26,205 (15,630)	31,960 (17,760)
Total of Great Britain	102,250 (54,049)	54,801 (26,405)	63,161 (26,085)

NOTE.—Comparable figures as ascertained at end of 1926 are shown in brackets.

General precautions against the spread of diphtheria.

At the present stage of development in London, therefore, active immunisation, whilst affording a means of protecting the individual, has not made sufficient progress to produce any material effect upon the incidence of diphtheria in the community, except in such places as hospitals and institutions where it is regularly applied.

At the present time, therefore, reliance must be placed very largely upon the methods hitherto regarded as necessary to prevent the spread of diphtheria.

When the principles of hygiene were first applied in general practice much emphasis was laid upon environmental influence as one of the most important factors in the spread of disease and the enactments of the Public Health Act of 1875, bear out this faith in *fomites* as the main, if not the only cause of the spread of infection generally. This theory of the mode of conveyance of infection is still held by the majority of the public.

Questions are asked from time to time of the Minister of Health in Parliament on the subject of infectious diseases, based on the erroneous assumption that endemic and epidemic illnesses can be prevented, and have in fact been controlled by good housing and sanitation alone. This line of reasoning is just as fallacious as to predicate that tuberculosis can be prevented by the prohibition of spitting, however desirable such a precaution may be on general hygienic grounds.

Diphtheria belongs to a large category of diseases which are disseminated from person to person through the medium of the respiratory channels, that is, in the act of coughing, sneezing, talking, etc. It is rarely, if ever, conveyed by means of *fomites* or inanimate objects. The part played by non-infected contacts, school rooms, books, desks, etc., is so slight that it can be disregarded. These facts are borne out in recent studies on the subject of disinfection and confirmed in the Board of Education's recent publication relating to school books.

The three principal sources of the spread of diphtheria therefore are :—

(1) Persons suffering from the disease.

(2) Persons who have recovered from the disease and for some reason retain the infection, or in whom the infection recurs. There is frequently some abnormality of the throat or nose to explain these cases.

(3) So-called healthy carriers who may have suffered from a transient sore throat or tonsillitis, or may be immune persons who harbour the germs.

The "carrier" problem has for years taxed the resources of public health authorities, especially the school medical service. During the investigation of outbreaks of diphtheria among children in the schools large numbers of children are bacteriologically examined and at times as many as 10 per cent. of swabs examined in connection with these enquiries are found to be carrying germs, indistinguishable under the microscope from diphtheria bacilli, in the nose or throat and occasionally the ear. Some of these micro-organisms, however, while resembling in all respects diphtheria germs, are found on further tests to be non-virulent. They do no harm, and children in whom they are discovered are readmitted to school. The percentage of non-virulent carriers varies according to the season, environment and prevalence of clinical diphtheria.

Diphtheria
carrier
clinics.

Children harbouring true diphtheria germs without any symptoms of diphtheria, however, present serious difficulties. The isolation hospital, which is intended for treatment of the sick, is not the right place for the healthy carrier, although when they are taken to a private doctor they are frequently notified as cases of diphtheria and removed to hospital, only to be discharged in a short while to their families and social life where they are liable to spread the disease all over again. In fact some of these carriers have previously been in hospital as cases of clinical diphtheria.

A certain percentage of "carriers" quickly lose their capacity for harbouring the germs, whilst others remain obstinate to treatment for long periods. It has for years been evident to medical officers engaged upon epidemiological work that the reason for this persistence in carrying diphtheria micro-organisms must be looked for in some abnormality of the throat and nose as has already been pointed out.

It was for this reason that the suggestion was made in November, 1926, that a special clinic should be established for such cases at Guy's Hospital.

A provisional start had actually been made in July, 1926, as a result of conversations between the medical staff of the Council and Guy's Hospital. The difficulties which had been experienced in dealing with these cases was quickly appreciated by Mr. Eason, the medical superintendent, and he accordingly called in Mr. Layton, the throat surgeon, and Prof. Eyre, the bacteriologist, to the informal discussions, in order to explore the possibilities of setting up a special clinic, attached to the hospital, for the treatment of individual cases and the study of the causation and cure of the "carrier" condition generally. It was accordingly arranged that cases should be dealt with weekly on Wednesday afternoons, and Messrs. L. W. and R. J. Cann were appointed to carry out the work under the direction of Mr. Layton and Prof. Eyre, and they have given practically the whole time to the work for the last 2½ years. Although the clinic was primarily established to deal with school children referred for treatment by the School Medical Officer, it was realised that children under school age also required to be dealt with, inasmuch as they played

an equally important, if not greater, part in the spread of infection. The clinic has, therefore, accepted for treatment cases of pre-school age referred by the Medical Officer of Health of the Borough.

It must be understood that the initiation and carrying on of the clinic necessitated a good deal of preliminary work on the part of the surgeon and bacteriologist, and special equipment had to be provided. Further, each individual case requires specialised attention. For instance, the surgeon must survey the whole field of the mucous membranes of the throat, nose and ear in order to discover the existence of any abnormal conditions, and, if found, to decide whether the pathological state in question is responsible for providing a habitat for the diphtheria germs—there may be more than one seat of the mischief—and he must also make up his mind whether the infection is superficial and, therefore, vegetative, or if the bacilli are entrenched in a more deep seated part necessitating removal by operation.

The bacteriologist, on the other hand, is required to make a similar exhaustive survey and by regional swabbings to discover the site of the "germ factory." On isolating the germ he must test it for virulence or pathogenicity and ascertain whether the child is an immune person.

These requirements are set out in some detail in order to show that the time and labour involved in dealing with such cases cannot be estimated on the same plane as ordinary straightforward minor ailment cases.

The clinic proved to be a success, and a year later (27th October, 1927) an extension of these clinics was granted at three other hospitals, viz., London, St. Mary's and St. Thomas's Hospitals, if arrangements could be completed, at a cost not exceeding £200 for the financial year (1928-29). As a result two additional clinics have been provided, one at St. Mary's Hospital (Inoculation Department), and the other at the London Hospital (O.P. Department). Unfortunately the negotiations with St. Thomas's Hospital could not be brought to fruition, owing to practical difficulties at the hospital.

The existence of these clinics has served the dual purpose of making special provision for the treatment of the obstinate diphtheria carrier, who has for long been a source of difficulty both to the medical practitioner and to the public health service, and of providing facilities for the intensive study of the conditions which give rise to the "carrier" state.

The deductions arrived at, more especially at Guy's Hospital, where the scheme has been in operation for a longer period, confirm to a large extent the observations of the school medical service over a large number of years. The more important results which have been learned are as here set out:—

Young children constitute the large proportion of "carrier" cases, and many of them are under 5 years of age. The propensity to harbour the germs is found especially among those children who have recovered from a clinical attack. The inability to throw off the infection is due to a pathological condition of the mucous membrane. In young children the site is usually in the nose, due to such conditions as deflected septum, adenoids, etc., whilst in others it is usually to be found in enlarged tonsils deep down in the crypts where no antiseptic can penetrate.

Altogether 217 children have been treated at these clinics, of which 175 were at Guy's Hospital, 26 at the London Hospital and 16 at St. Mary's Hospital. In 22 cases the tonsils and adenoids were removed, mostly at the London Hospital, where 16 of such operations were performed among the 26 children referred for treatment. The following table giving an analysis of 140 cases referred to Guy's Hospital will be of interest:—

Cases referred to clinic.	Discharged as not true carriers.	Doubtful.	True carriers.	Nose cases.	Nose and ear.	Nose and throat.	Throat only.	Operation.
140	70	24	46	16	1	18	11	4

The report of the Medical Superintendent of Guy's Hospital has proved of considerable value in throwing more light on the problem of the diphtheria carrier. The following notes are largely based upon this report.

Carriers are divisible into those in whom :—

- (a) The infection is entirely in the nose.
- (b) The infection is in both nose and throat.
- (c) The infection is in the ear as well as the nose.
- (d) The infection is in the throat only—usually the tonsils.

The nasal cases (simple and complicated) formed the majority and were generally difficult to treat. In such cases an operation for removal of unhealthy tonsils or adenoids was insufficient to remove the infection. Many of these cases were found to occur in children susceptible to diphtheria, and although harbouring the germs, they neither developed the disease nor became immune. It appears that in these cases the bacilli lived a purely saprophytic existence in the nasal discharges, having no direct contact with the mucous membrane of the nose. Apart from clearing up any nasal abnormality or the use of mild nasal douches these children were treated with autogenous vaccines or with a polyvalent vaccine prepared from 12 virulent strains of the *Bacillus Diphtheriæ*.

With regard to ear cases, it may be stated that most ear discharges contain diphtheroid organisms of some kind, and these are usually avirulent. When virulent diphtheria germs are found in such cases they are traceable, as a rule, to infection by a true "carrier." Some years ago a severe outbreak of diphtheria at one of the Council's schools was traceable to a number of children with ear discharge who attended the building for attention by the school nurse. The attendance of these children was thereupon discontinued and the outbreak came to an end. Cases of this kind are treated like nasal "carriers," viz., by means of douches and autogenous vaccines.

The treatment of children harbouring diphtheria germs in the throat is more clearly defined inasmuch as the site of infection is to be found in the tonsillar crypts. If a section of the tonsils is made the micro-organisms will be found deep down at the base of the crypts, even after a series of negative swabbings has been taken, thus showing the futility of relying upon negative bacteriological results as a proof of freedom from infection in such cases.

The following broad conclusions may, therefore, be drawn as a result of the experience obtained up to the present at the diphtheria carrier clinics :—

(1) In cases where the diphtheria bacilli are confined to the tonsils, the condition invariably clears up after tonsillectomy has been performed.

(2) Diphtheria micro-organisms found in the nose live a purely saprophytic existence and are due to nasal abnormalities of various kinds, which provide a suitable habitat for the existence and multiplication of the germs. When the causative defect is cured the bacilli disappear not only from the nose but from other parts which have been infected from this source. The cure of nasal abnormalities may even exhaust the skill of the expert rhinologist and may be a very difficult and trying procedure, especially in young children. The treatment varies from the removal of foreign bodies, *e.g.*, peas, and on one occasion a sponge, to the clearing up of infection in the nasal sinuses. Each case demands careful examination and individual attention.

(3) A polyvalent vaccine was used as a routine composed of 12 virulent strains of diphtheria germs isolated from carriers. Usually four injections are given at weekly intervals of doses containing 5, 10, 15 and 20 million dead germs respectively.

It is hoped that these conclusions may be of value in furthering the study and practical treatment of a condition which has been the source of much anxiety and perplexity to public health and school medical authorities and which is undoubtedly

an important factor in the spread of diphtheria and consequently in the causation of much preventable loss of young lives.

Measles.
Review of
1927-28
epidemic.

Epidemics of measles appear with regularity every two years. They usually commence in the latter part of the autumn and continue to prevail until the susceptible material, that is to say children who have not previously suffered from the disease, has been exhausted, up to a point where the ratio of immune to non-immune persons is sufficiently high to withstand the "infection pressure." This process usually takes about six months from the start of the epidemic. During the succeeding eighteen months the proportion of susceptible children gradually rises again, mainly as a result of new births, until the loss of "mass immunity" reaches a point conducive to rapid spread of the disease. The result of observation on children of school age has shown that it is necessary for at least one-third of the children to be susceptible before measles spreads. Although cases of measles occur endemically during this non-epidemic period, the general incidence of the disease remains fairly constantly on a low level, and the number of deaths are more or less negligible. During time of prevalence the disease tends to become more virulent as the epidemic curve rises and the result is reflected in the mortality figures, especially among children under 5 years of age.

It has to be accepted that every method of control which has essayed to check the spread of measles during epidemics has failed. The investigations of the Ministry of Health into methods of immunisation against measles, to which reference is made in my report of 11th November, 1926, has not yet provided a solution of the problem. This means of protection is provided by the use of serum obtained from convalescent cases of the disease, and it will thus be obvious that, as applied to the community in times of epidemics, the employment of such a measure is impracticable.

Fortunately, however, much amelioration of the consequences of an epidemic is possible by means which are at the disposal of Public Health authorities.

Epidemics have always been accompanied by high mortality, and it is the aim of the Council, in co-operation with the metropolitan borough councils, to concentrate upon the prevention of the complications of measles which too often bring death or serious injury to those children who do not receive proper medical attention and efficient nursing at an early stage of the illness.

Ignorance or apathy of parents with regard to the serious nature of measles (not only among the very poor) and congestion of population contribute to the risks of children.

Many suffering children would fail to receive the timely succour which is available to the public if they were not diligently sought and speedily found in school and in the home by teachers and school nurses, by attendance officers and by the officers of the borough councils.

The
incidence of
and mortality
from measles
during the
1927-28
epidemic.

The true incidence of measles cannot be estimated with any degree of accuracy owing to the fact that it is not a notifiable disease except in two boroughs (Paddington and Fulham), and in seven boroughs as regards the first case in a household (Greenwich, Hampstead, Lambeth, St. Pancras, Southwark, Battersea and Finsbury). Even if it were generally notifiable a considerable proportion of cases would doubtless escape notification owing to the disinclination of many parents to consult a doctor when their children contract measles which is commonly regarded as a trivial complaint, whereas in fact it is responsible for more loss of life during the biennial epidemics than scarlet fever and diphtheria combined.

A reasonable estimation of the prevalence of the disease is, however, obtainable through the reports received from head teachers of the Council's schools. The 1927-28 epidemic may be said to have commenced about the end of November when the school notifications commenced to rise above the normal. It reached its culmination about the third or fourth week in March when 2,807 cases were reported (week ending 24th March). The epidemic did not actually subside until about the end of June. It must, however, be realised that the disease was not prevalent through-

out the whole of London during the entire seven months, December to June. In a large town like London an epidemic among the child population, whose movements are largely confined to a circumscribed area around their homes, takes some time in migrating from one district to another before it has spent itself.

During the seven months ended 30th June, 1928, 41,477 cases were reported as occurring among children attending the Council's schools. It is probable, therefore, that a total of approximately 100,000 cases occurred among persons of all ages in London.

The incidence corresponds closely with previous epidemics as will be noted below :

Cases reported from schools.

1923-4	(6 months ended 31st May, 1924)	..	41,261 cases.
1925-6	(6 do. 30th April, 1926)	..	39,387 cases.
1927-8	(7 do. 30th June, 1928)	..	41,477 cases.

The case rate was highest in Battersea, Greenwich, Deptford, Stoke Newington and Islington. The incidence in the west and north-western districts, *viz.*, Paddington, Kensington, Hammersmith and Hampstead was also relatively high. The districts least affected in proportion to the school population were Poplar, Stepney, Bethnal Green, Southwark, Chelsea and Westminster, *i.e.*, in some of the most congested and poorer areas (*see* table below). The lower prevalence in schools situated in the poorer class districts is explained by the fact that generally speaking the children suffer from measles before they reach school age, whereas in the better residential neighbourhoods they live somewhat more sheltered lives before they go to school.

INCIDENCE OF MEASLES AMONG SCHOOL CHILDREN FOR THE SEVEN MONTHS ENDED
30TH JUNE, 1928.

NUMBERS OF CASES OF MEASLES REPORTED BY HEAD TEACHERS.

School Medical Division and Metropolitan Borough.	December, 4 weeks.	January, 4 weeks.	February, 4 weeks.	March, 5 weeks.	April, 4 weeks.	May, 4 weeks.	June, 4 weeks.	Total, 29 weeks.	Approximate rate per 1,000 children in average attendance (1927-28).	Rate per 1,000 above or below mean for London.
<i>N.W.</i>										
Paddington ...	17	21	63	377	488	182	29	1,177	86	+13
Kensington ...	28	96	133	601	228	125	55	1,266	87	+14
Hammersmith ...	33	89	340	497	187	102	87	1,335	86	+13
Fulham ...	86	159	403	509	118	56	31	1,362	66	-7
Chelsea ...	52	15	11	21	71	147	31	348	54	-19
Westminster ...	2	8	18	73	93	258	89	541	60	-13
St. Marylebone ...	1	13	151	308	70	37	43	623	67	-6
Hampstead ...	34	26	125	92	87	74	26	464	90	+17
St. Pancras ...	19	88	320	810	344	146	113	1,840	72	-1
Total ...	272	515	1,564	3,288	1,686	1,127	504	8,956	69	-4
<i>N.E.</i>										
Islington ...	364	647	1,193	1,007	177	243	156	3,787	91	+18
Stoke Newington	3	4	102	226	43	9	2	427	92	+19
Hackney ...	390	654	611	421	88	66	89	2,319	81	+8
Holborn ...	4	4	95	91	35	41	9	279	73	0
Finsbury ...	119	361	205	62	14	34	64	859	73	0
Shoreditch ...	192	433	330	173	21	44	92	1,285	79	+6
Total ...	1,072	2,141	2,536	1,980	378	437	412	8,956	84	+11

School Medical Division and Metropolitan Borough.	December, 4 weeks.	January, 4 weeks.	February, 4 weeks.	March, 5 weeks.	April, 4 weeks.	May, 4 weeks.	June, 4 weeks.	Total, 29 weeks.	Approximate rate per 1,000 children in average attendance (1927-28).	Rate per 1,000 above or below mean for London.
<i>E.</i>										
Stepney ...	362	353	550	643	116	109	79	2,212	55	—18
Poplar ...	180	109	155	313	51	79	64	951	38	—35
City of London ...	1	42	33	20	5	1	1	103	64	—9
Bethnal Green ...	87	105	321	476	95	66	41	1,191	60	—13
Total ...	630	609	1,059	1,452	267	255	185	4,457	51	—22
<i>S.E.</i>										
Bermondsey ...	288	347	401	219	66	83	53	1,457	71	—2
Camberwell ...	182	356	807	760	187	213	208	2,713	76	+3
Deptford ...	2	29	124	615	238	160	91	1,259	93	+20
Greenwich ...	34	68	75	188	343	442	276	1,426	93	+20
Lewisham ...	23	56	316	424	157	274	333	1,583	71	—2
Woolwich ...	3	11	194	520	295	379	224	1,626	71	—2
Total ...	532	867	1,917	2,726	1,286	1,551	1,185	10,064	79	+6
<i>S.W.</i>										
Southwark ...	274	376	302	296	102	95	149	1,594	52	—21
Lambeth ...	100	155	533	1,076	258	169	134	2,425	72	—1
Battersea ...	33	51	220	1,047	397	156	208	2,112	102	+29
Wandsworth ...	65	99	478	1,330	475	344	122	2,913	76	+3
Total ...	472	681	1,533	3,749	1,232	764	613	9,044	73	—
London Total ...	2,978	4,813	8,609	13,195	4,849	4,134	2,899	41,477	73	—

Mortality.—The epidemic on the whole was more virulent than its predecessor of 1925-26. The deaths during the 6 months ended 31st May having numbered 1,357, as compared with 1,034 during 6 months (November to April) of 1925-26. The following table shows the monthly distribution of deaths :—

	December (5 weeks).	January.	February.	March (5 weeks).	April.	May.	Total.
No. of deaths ...	96	163	200	450	309	139	1,357

Out of 1,357 deaths at all ages, 1,249 occurred among children under five years of age (*see* tabular statement below) :—

Age.	0—1.	1—2.	2—5.	5—15	15 and over.	Total.
No. of deaths ...	280	575	394	106	2	1,357

That a good deal of the loss of life due to measles can be prevented by energetic and systematic action on the part of the public health authorities is evidenced by the fact that considerable headway has been made in this direction in recent years. The following table taken from my annual report for 1927 illustrates this point. The two columns are not strictly comparable as the incidence relates to school children only, whereas the deaths are those occurring among all persons,

but the figures suffice to indicate that whereas the actual prevalence remains stationary within comparatively small limits, the mortality has progressively declined during the past four quinquennia.

Quinquennium.	No. of cases reported among school children.	No. of deaths (all ages).
1908-12... ..	116,921	10,197
1913-17... ..	112,185	8,040
1918-22... ..	110,650	4,818
1923-27... ..	117,151	3,170

It is hoped that persistent intensive action by the adoption of improved methods of control will have the effect of still further reducing the mortality from measles and its complications.

The Control of Measles.—The fact that measles is infectious as soon as the catarrhal symptoms develop, when the patient appears to be suffering from an ordinary "cold," and that the diagnostic rash is not seen for another three or four days, renders any effective control of the actual occurrence of cases practically impossible, as far as general administration and supervision are concerned. The School Medical Service in London has had a unique opportunity of studying the problem of the epidemicity and behaviour of measles throughout the last quarter of a century and much useful information has been gained. As a result of the observations made during this long period attempts have been made in a variety of ways to prevent the spread of measles by direct action in the schools. For example, school or class closure was at one time considered to be the only practicable method of prevention until it was shown that this policy was valueless, inasmuch as closure was not resorted to until the outbreak had become well established, and by that time the damage had been done, all the "susceptibles" having already been exposed to infection. School closure as a means of prevention was superseded by the policy of excluding, for selected periods, unprotected children from classrooms on receiving reports of the first cases of measles. This new scheme, however, was found to be as ineffective as general school or class closure. A prominent obstacle to preventive action was, and always has been, the difficulty of securing sufficiently early knowledge of the first cases and, therefore, for some years past attention has been concentrated upon speeding up the machinery of voluntary school notification. The hopelessness of attempting to control the spread of measles by means of the school organisation, having regard, *inter alia*, to the numerous opportunities of infection outside the school, has led the Council to co-operate with metropolitan boroughs through its school medical service and school attendance staff, in concentrating upon the prevention of mortality and complications due to measles. The present scheme, which was inaugurated in 1921 as a result of a conference between the Council and the metropolitan borough councils, is an attempt to assist in the solution of the problem. The scheme agreed upon has for its sole object the reduction of mortality and mitigation of complications following measles, which give rise to many of the physical disabilities found among school children, including tuberculosis, bronchitis, deafness, blindness, general debility, etc.

The special procedure has been applied during the past three epidemics and an endeavour has been made to profit by the experiences thus gained. One important innovation which emerged as a result of observations of the working of the scheme was one which it was thought, would have the dual effect of securing the desired object more effectively and with more economy of effort. It was felt that by concentrating upon the overcrowded insanitary and slum areas, where measles mortality is notoriously high, owing to want of medical attention and proper nursing, and paying less attention to the better class residential areas where parents can better afford the services of a private doctor, greater efficiency would result. This is borne out in a report on the epidemic in Lewisham by the medical officer of health of that

residential borough, in which he points out that it is becoming increasingly rare to find no doctor in attendance. This principle of directing special attention to overcrowded and insanitary areas was adopted during the prevalence last winter and spring, and although tangible results were not altogether reflected in the mortality figures, due probably to the greater virulence of the epidemic, there is no doubt that this method of attack is the right one and should be pursued.

The plan of campaign is based upon the correlation of the powers of the Council as the school authority and those of the metropolitan borough as the public health authority. The Council undertakes to ascertain, through its school nursing service, teachers and school attendance staff, the earliest possible information of cases of measles. For this purpose the school nurses visit daily the schools affected with measles as directed by the school medical officer, for the purpose of excluding any suspected cases and of informing immediately the divisional officer (education) of any suspicious absentees concerning whom the cause of absence is not known at the school. Any cases of measles thus disclosed are reported at once to the borough medical officer concerned, who arranges for removal to hospital or the provision of domiciliary nursing assistance as the circumstances dictate.

In addition to the direct action thus taken, advisory leaflets approved by the Council were distributed by borough medical officers through the school organisation in all districts as they became affected.

During the 29 weeks of measles prevalence, 3,611 sessions were devoted by school nurses to the work of supervision, which is equivalent to the whole time of approximately 12 nurses. During the epidemic of 1925-26, in a shorter period 4,876 sessions were worked, equivalent to the full time of 28 nurses. This economy of labour was due partly to the fact, as already stated, that the special procedure was very largely limited to the poorer class areas, and partly to improvements in the methods of working.

Complaints were received from time to time from various sources, *e.g.*, local associations, individual head teachers, etc., of the withdrawal of the nurses from their routine work in the schools. It is obvious that emergency work of such dimensions lasting over a period of six months must necessarily entail some adjustment of the routine work, not only of the nurses, but of other officers of the Council and the metropolitan boroughs engaged on these duties. It is to be borne in mind that the consent of the Board of Education to the abolition of systematic weighing and measuring as an integral part of the medical inspection of school children has made part of the service of the school nurses available for more important duties, such as those relating to the control of infectious disease. The time devoted by the nurses and the results of their visits is shown in the following table:—

Division.	No. of hours devoted to measles work.	No. of definite cases of measles excluded by nurse and reported to M.O.H.	No. of suspicious cases excluded by nurse.	No. of absentees reported to D.O.	No. of suspicious cases excluded by nurse which subsequently proved to be measles.	No. of suspicious absentees reported to D.O. which were confirmed as definite cases of measles.
East ...	875	32	510	4,403	214	1,257
North-east ...	1,953	62	586	6,488	242	1,380
North-west ...	1,652	455	916	5,623	425	1,588
South-east ...	2,764	26	631	5,598	231	1,753
South-west ...	1,785	93	906	6,987	505	2,437
London ...	9,029	668	3,549	29,099	1,617	8,415
=3,611 Sessions.						

Action taken in boroughs and views of medical officers of health.—As a result of a questionnaire sent to the borough medical officers in regard to the scheme

of control and generally as to the action taken during the epidemic, it was ascertained that 16 of the medical officers of health thought that the special procedure was valuable and should be continued, inasmuch as the existence of cases was brought to their notice at an earlier date. In one borough (Deptford) the information had been so valuable as to enable compulsory notification to be discontinued. In certain other boroughs no definite expression of opinion was offered, and one medical officer of health, in whose borough (Finsbury) measles is notifiable as regards the first cases in a household, did not think the scheme was of any material assistance to him.

Generally speaking, the local resources of the borough for dealing with the outbreak were said to be adequate, but in some boroughs the amount of work was so heavy that many cases were left unvisited. In a few instances additional visiting staff was temporarily appointed.

The following table shows the number of homes in which nursing assistance was provided by 28 borough authorities, the number of cases removed to M.A.B. and other hospitals, and the number of deaths occurring (a) at home, and (b) in hospitals:—

	Nursing assistance.	Removed to hospitals.		Deaths.	
		M.A.B.	Others.	At home.	In hospital.
No. of cases— (28 boroughs only)	1,403 homes.	6,702	988	341	898

The mortality among those treated in hospital was, therefore, 11·9 per cent. On the question of hospital treatment it may be mentioned that difficulties were experienced in securing immediate removal of patients at the height of the epidemic and the delays which occurred were no doubt largely responsible for the heavy proportion of deaths among those so treated, as no doubt in many instances complications such as broncho-pneumonia may already have supervened before admission to hospital.

Although the Metropolitan Asylums Board had agreed to allocate more beds to the treatment of measles it was impossible to provide accommodation for all cases of measles requiring hospital treatment at the height of the epidemic and early in January, 1928, the Board communicated with borough medical officers making them responsible for the selection of the most urgent cases.

Dr. Sowden, medical officer of health of St. Pancras, provided some very useful, though disturbing, information in regard to hospital treatment as regards the cases in his borough, and in this connection the following table is illuminating:—

Ages.	Total number of cases.			Removed to M.A.B. hospitals.			Removed to Highgate Hospital.			Nursed at home.			Cases outside boro'.
	No.	Died.	%	No.	Died.	%	No.	Died.	%	No.	Died.	%	
Under 1 ...	199	30	15·08	46	6	13·04	24	17	70·83	129	5	3·88	
1 and under 2	454	51	11·23	84	11	13·10	68	29	42·65	302	10	3·31	
2 and under 3	485	17	3·50	82	7	8·54	37	8	21·62	366	2	0·55	
3 and under 4	495	9	1·82	71	4	5·63	37	3	8·11	387	2	0·52	
4 and under 5	553	2	0·36	45	1	2·22	26	—	—	482	—	—	
5 and over...	1,412	10	0·07	98	4	4·08	50	1	2·00	1,264	5	0·40	
Totals ...	3,598	189	3·30	426	33	7·70	242	58	23·90	2,930	24	0·80	4

Dr. Sowden points out that when children of the same age group are compared, there is a striking contrast between the mortality rates in hospital and those at home, in favour of the latter. He states that whilst possibly the more severe cases were selected for hospital treatment, it is doubtful whether this is the whole explanation as medical officers of health were required to base their selection upon home

conditions rather than gravity of illness. To account for the heavy mortality in Highgate Hospital the medical superintendent considered that overcrowding of the wards was the most important cause. He stated that little pressure had been expected in view of the special preparation made by the M.A.B., and that two of the wards were out of use owing to building operations.

Furthermore, it must be pointed out with regard to the treatment of measles at Poor Law Hospitals, that cases must be admitted to such institutions if application is made and there is no doubt that many cases of measles were already suffering from complications of one kind or another when admitted.

In at least two hospitals (Hospital for Sick Children, Great Ormond Street, and East London Children's Hospital, Shadwell) special wards are reserved for the treatment of complications associated with measles.

The question of the hospital treatment of measles is a difficult one. On the one hand it is always dangerous to remove a person suffering from pneumonia—one of the most grave and common complications of measles—and on the other hand it is almost impossible to regard with equanimity the retention of such a case in an unsatisfactory and unhygienic environment where there are no facilities for proper care of the patient.

Reverting to the general administration of the measles scheme, it is necessary to mention that in the Borough of Wandsworth special arrangements were made with the medical officer of health whereby the health visitors met the school nurses in consultation and were made responsible for visiting the suspicious absentees discovered by the nurses. This system was much more effective inasmuch as it saved time by dispensing with the visit of the attendance officers. For this purpose five additional health visitors were temporarily appointed. Dr. Caley, medical officer of health, was definitely of the opinion that the modified scheme had been fully justified by the greater efficiency of the results obtained as compared with the procedure in previous epidemics. He also pointed out that while it was not easy to assess the effect of the scheme on the case mortality and the amount of disability following measles, it was significant that there was a definite fall in the number of deaths in the first six months of the year, *i.e.*, 34 as compared with 50 in the corresponding period of 1926, 60 in 1924, and 70 in 1922.

He added that most of the cases recovered from the disease without any complications ensuing.

This reduced mortality, in view of the increased number of deaths in London as a whole for the epidemic under review, seems to point to the efficacy of the modified procedure as applied to Wandsworth.

The next epidemic of measles is due towards the end of 1929, and it is hoped that, as a result of the experience gained in recent epidemics, the administrative control of measles will have greater elasticity and be more efficient in its application.

Of the 305 known cases of smallpox which occurred in London during the year 110 were children on the rolls of the Council's Schools. None had been vaccinated.

Parts of the boroughs of Lambeth, Poplar and Wandsworth were the chief centres of infection and twenty-six schools were affected. In the majority of instances the suffering child had been absent from school before the illness commenced. Where there was suspicion or knowledge that a child had been in school while actually sickening for smallpox, the school was placed under special medical supervision.

A somewhat extensive outbreak of smallpox in Wandsworth in April and May was a premonition that smallpox had come to stay and the medical and nursing staff were warned of the need for special vigilance.

Facilities were provided by the Metropolitan Asylums Board for the Council's medical officers working in schools to attend practical demonstrations of smallpox diagnosis at one of the smallpox hospitals.

From time to time representations were made that, for the sake of convenience the Public Vaccinator should be allowed to vaccinate at the school children whose parents had written consenting to the vaccination.

About 6,000 children at 37 schools were vaccinated at school in this way.

The number of cases of whooping cough reported from the schools during the year was 8,592 as compared with 8,387 in 1927. The incidence in preceding years will be found in the table on page 126. The school nurses visited sixteen schools where outbreaks occurred, for the purpose of observation and of advising head teachers. Whooping cough.

There was a considerable decrease in the number of cases of chickenpox reported as occurring among school children during 1928, namely, 13,657 cases as compared with 17,358 in 1927. Figures for previous years will be found in the table on page 126. The prevalence of this disease necessitated the school nurses visiting 74 schools for the purpose of examining the children and giving advice. Chickenpox.

Only 5,744 cases of mumps were reported by head teachers during the year as compared with 13,876 in 1927 (see table on page 126). This disease had been more than usually prevalent during the preceding five years, and the sudden decrease is noteworthy. During the year 40 schools were visited by school nurses in connection with the prevalence of the disease. Mumps.

The continuous decline of cases of ophthalmia among school children is eloquent of the useful work which is being carried out in connection with the medical treatment of minor ailments in school children. Only 408 cases were reported during the year as compared with 606 in 1926, 882 (1925), 1,101 (1924) and 1,881 (1923). Ophthalmia.

Ringworm continues to decline as will be noted in the table below.

Ringworm and favus.

Year.	Fresh cases.	Cured cases.	Cases outstanding at the end of the year.	Percentage of cures effected by X-ray treatment.
1919	3,447	3,103	1,259	57
1920	3,983	3,856	1,332	56
1921	3,473	3,765	999	61
1922	2,766	2,918	818	65
1923	2,322	2,395	705	69
1924	1,724	1,924	482	70
1925	1,518	1,611	373	71
1926	1,029	1,141	228	76
1927	896	868	249	76
1928	684	745	170	76

During 1928, of the specimens of hair stumps sent in by school nurses, 1,371 were examined in the Council's laboratory, and of these 482 contained ringworm fungus (398 small spore and 84 large spore) and 3 proved to be favus.

Two fresh cases of favus were discovered during the year, one of which was cured during the course of the year.

The arrangement by which, in November, 1925, the Metropolitan Asylums Board provided special accommodation for children between the ages of three and 16 years who are suffering from the sequelæ of encephalitis lethargica, has been continued. During 1928, 30 children were admitted (including 12 re-admissions) and 32 were discharged, leaving 69 under treatment on 31st December, 1928, including 3 children who have been there since November, 1925, and 3 others who were admitted in December, 1925. A more detailed review of encephalitis lethargica was contained in the Annual Reports of the School Medical Officer for 1926 and 1927. Encephalitis lethargica.

The children in the Council's residential, special and industrial schools were remarkably free from infectious diseases during the year. Residential special and industrial schools and places of detention.

There was nothing in the nature of an "outbreak" of disease at any of the institutions. A group of 4 cases of chickenpox occurred at the Homerton Deaf

School, Penn, Bucks, and during the general epidemic period 5 cases of measles at Ponton Road Place of Detention were reported.

In September, in consequence of a report that 14 boys at Portslade School were isolated suffering from ringworm, an assistant superintendent of nurses from the Public Health Department visited the school, but found that not one of the boys in the school was suffering from ringworm.

Defective Children.

Admission
examinations

The total number of examinations conducted under the Education Act during the year was 24,432. 5,419 examinations with a view to admission to special schools were conducted. The following table shows the number of children nominated for examination and the recommendations made :—

Defect.	Number nominated.		Suitable for admission to						Returned to elementary school.		Invalided.		Notified under M.D. Act.	
	B.	G.	Blind school.		Myope class.		Swanley.		B.	G.	B.	G.	B.	G.
Ocular ...	523	632	24	21	139	158	44	51	276	334	40	68	—	—
			Deaf school.		Hard of hearing class.									
			B.	G.	B.	G.								
Aural ...	131	135	19	27	26	26			83	82	3	—	—	—
			P.D. school.		Open-air school.									
			B.	G.	B.	G.								
P.D. ...	786	782	546	527	19	6			132	167	89	82	—	—
			M.D. school.											
			B.		G.									
M.D. ...	1,204	879	391		341				647	412	92	59	74*	67*
			Epileptic colony.											
			B.		G.									
Epileptic ...	184	163	76		49				71	82	37	32	—	—
	2,828	2,591	1,284		1,206				1,209	1,077	261	241	74	67
	5,419		2,490						2,286		502		141	

* Of these, 69 boys and 52 girls were imbeciles ; 3 boys and 14 girls were idiots ; and 2 boys and 1 girl were feeble-minded (1 boy and 1 girl suffering from post encephalitis lethargica and 1 boy from blindness and epilepsy).

Examinations were also conducted in 107 cases with a view to ascertaining their fitness for education in industrial or reformatory schools with the following results :—

Recommended as suitable for				Boys.	Girls.	Total.
Reformatory school	...	...		17	1	18
Industrial school	...	...		52	14	66
M.D. industrial school	...	...		11	—	11
Dealt with under M.D. Act by being sent to institutions				7	4	11
Unfit for training (high myopia)	...			1	—	1
				88	19	107

Rota visits
to the
schools.

The special schools were visited at least once a quarter and every child present was seen at least once during the year, the total examinations amounting to 18,174 ; in addition 732 special examinations were made of children already on the rolls of

special schools in connection with applications for non-enforcement of attendance at special schools and for similar reasons.

As a result of the visits and re-examinations the following reclassification took place: 25 were transferred from schools for the physically defective to schools for the mentally defective; 1 from a school for the deaf to a school for the mentally defective; 3 from schools for the partially blind to schools for the mentally defective; 1 from a school for the hard-of-hearing to a school for the mentally defective; 2 from schools for the mentally defective to schools for the physically defective; 1 from a school for the partially blind to a school for the blind; 1 from a school for the mentally defective to a school for the partially blind; 1 from a school for the physically defective to a school for the partially blind; 10 from schools for the blind to schools for the partially blind; 3 from schools for the mentally defective to schools for the deaf; 7 from schools for the hard of hearing to schools for the deaf; 2 from schools for the mentally defective to schools for the hard-of-hearing; 1 from a school for the physically defective to a school for the hard-of-hearing; 4 from schools for the deaf to schools for the hard-of-hearing; 1 from a school for the partially blind to Swanley; 1 from a school for the mentally defective to an open-air school; 6 from schools for the physically defective to open-air schools; 75 were excluded as imbecile; and 41 were invalided on medical grounds. In certain other cases advice was given with regard to boarded-out children, and one girl from an industrial school was found to be in an unsatisfactory condition of health and was re-admitted to Ponton Road Place of Detention for observation. She was suffering from acute chorea and later had to be dealt with under the Lunacy Acts.

The following statement shows the nature of the conditions found among the children certified as suitable for admission to physically defective schools at the admission examinations during the year:—

<i>Morbid condition.</i>	<i>Boys.</i>	<i>Girls.</i>	<i>Total.</i>	<i>Morbid condition.</i>	<i>Boys.</i>	<i>Girls.</i>	<i>Total.</i>
Infantile paralysis ...	55	53	108	Non tuberculosis arth-			
Cerebral paralysis ...	12	5	17	ritis	12	6	18
Various paralyses ...	23	14	37	Rheumatism, chorea,			
Tuberculosis of bones and				etc.	36	37	73
joints	112	91	203	Heart disease—			
Osteomyelitis	11	6	17	Congenital	27	17	44
Rickets and resulting				Acquired valvular ...	140	194	334
deformities	13	10	23	Acquired non-valvular	15	29	44
Congenital deformities...	30	25	55	Other diseases chiefly			
Traumata and amputa-				medical	35	27	62
tions	25	13	38				
					546	527	1,073

There were also 562 cases returned on improvement to elementary schools or, when over 14 years of age, excluded as no longer certifiable; the details are as follows:—

R=Returned on improvement to elementary schools.

E=Over 14 years of age, excluded as no longer certifiable.

Special Schools—Physically defective, R. 155, E. 164; mentally defective, R. 27, E. 120; blind, R. 0, E. 3; deaf, R. 5, E. 6; myope and partially blind, R. 5, E. 48; hard of hearing, R. 18, E. 11. Total, R. 210, E. 352.

The following table shows the number of children who improved to such an extent that they were able to return from the special (P.D.) schools to the ordinary elementary schools or are "no longer certifiable" as defective between the ages of 14 and 16 years.

Defect.	Cases passed no longer certifiable.	Cases passed fit to return to elementary school.
Heart	59	40
Rheumatism	4	11
Tuberculosis	23	26
Infantile paralysis	35	15
Rickets and deformities from this cause	4	8
Various traumata	7	6
Congenital deformities	18	33
Non tuberculous arthritis and synovitis, including pseudo-coxalgia	2	3
Miscellaneous—Nervous conditions, ataxia, etc.	—	2
Chorea	4	5
Anæmia	—	2
Bronchiectasis	1	3
Osteomyelitis	7	1
	164	155

The following statement shows an analysis of the 470 cases for admission to special (P.D.) schools, in which the children were either returned to elementary schools or invalided.

Condition from which child was or had been suffering.	Returned to elementary schools.		Condition from which child was or had been suffering.	Returned to elementary schools.	
	Invalided.			Invalided.	
Tuberculosis, actual or suspected of bones, joints, glands, etc.	19	13	Kidney disease	1	—
Congenital deformities ...	25	15	Skin conditions	4	1
Rickets and deformities from this cause	13	13	Various chest conditions, bronchiectasis, empyema, etc.	3	4
Fragilitas ossium	1	—	Infantile paralysis ...	17	11
Osteomyelitis	6	3	Cerebral paralysis ...	3	25
Various traumata	8	2	Epilepsy	2	7
Heart, congenital	29	8	Encephalitis lethargica ...	9	11
Heart, valvular	40	30	Pseudo-hypertrophic muscular dystrophy	1	3
Heart, non-valvular ...	13	7	Miscellaneous—Nervous conditions, ataxia, etc.	23	3
Anæmia	14	3			
Rheumatism and chorea...	68	22			
				299	171

Residential schools.

There are 10 residential schools (3 industrial, 2 for blind, 2 for deaf, 1 for defective deaf, 1 for mentally defective boys and 1 for mentally defective girls), with a total accommodation for 712 residential, and 222 day scholars. To each institution is allocated a medical officer, and provision has been made for dental inspection and treatment. During the year, 542 boys were admitted to Pentonville Road Place of Detention, and 290 girls and infants to Ponton Road Place of Detention.

After-careers of children formerly attending special schools.

Return for year ended 31st December, 1928, of the after-careers of children formerly attending special schools for the mentally defective, apart from those whose names have been forward to the Local Control Authority for action under the Mental Deficiency Acts, 1913–1927 :—

	M.	F.	Total.
1. Number of children born in or subsequent to 1910 who have left special (mentally defective) schools and who have been on the books of the association as "after-care" cases ...	744	578	1,322
2. Number of these who—			
(a) Have since died	2	—	2
(b) Are known to be incapable by reason of mental or physical defect of undertaking employment	26	35	61
(c) Have been subsequently dealt with under M.D. Act ...	14	11	25

	M.	F.	Total.
3. Number employed in—			
(a) Industrial or manual occupations (<i>i.e.</i> , factory work, and trade or part of a trade)	473	313	786
(b) Agricultural or rural occupations	7	—	7
(c) Domestic occupations (<i>i.e.</i> , servants sleeping in or out, lift boys and those “helping at home”)	19	145	164
(d) Commercial (<i>i.e.</i> , shop assistants or selling behind a counter), professional (or Army and Navy), clerical (office boys and girls)	8	2	10
(e) Blind alley or other precarious occupations (<i>i.e.</i> , van boys, newsboys, errand boys or girls selling from a barrow) ...	105	8	113
4. Judged to be employable but out of work	63	50	113
5. Number whose careers have not been traced or who have left the neighbourhood	27	14	41
Total analysed under headings 2, 3, 4 and 5 ...	744	578	1,322

An investigation was made during the year of the records of 4,061 children Orthopaedics. who were in the P.D. schools of London at Easter, 1928. The following table shows the number in attendance at P.D. Special Schools, Easter, 1928, and the special defect classified in sex and age groups.

Condition.	Age 5—14 years.		Age 14 + years.		Grand total M. and F.	Percentage.
	M.	F.	M.	F.		
Rickets—Rickety deformities... ..	34	35	1	8	78	1.9
Congenital Defects	102	72	18	31	223	5.5
Traumata	72	23	16	4	115	2.8
Amputation after disease	5	—	2	—	7	.2
Fragilitas Ossium	4	1	1	1	7	.2
Osteomyelitis	42	23	10	4	79	1.9
Non-Tuberculous Arthritis	26	25	3	7	61	1.5
T.B. bones and joints—Spine ...	110	84	27	36	257	17.9
“ “ Hip ...	103	81	31	46	261	
“ “ Knee ...	62	40	20	8	130	
“ “ Elbow ...	2	2	3	—	7	
“ “ Ankle ...	18	9	6	4	37	
“ “ Various ...	17	14	2	1	34	19.0
Paralyses Infantile—Upper ...	14	13	4	3	34	
“ “ Lower ...	298	208	89	82	677	
“ “ Upper and Lower ...	15	20	16	9	60	3.1
Hemiplegia	58	47	10	10	125	
Spastic Diplegia	52	68	7	13	140	3.4
Other Paralyses	27	19	2	1	49	1.2
Heart Congenital	87	116	16	32	251	6.2
“ Valvular	307	426	90	175	998	24.6
“ Non-Valvular	34	43	8	5	90	2.2
Rheumatism—Chorea	47	97	3	19	166	4.1
Tuberculous Peritonitis	2	5	1	1	9	.2
Pseudo Hypertrophic and other Muscular Dystrophies	16	5	—	1	22	.5
Epilepsy	—	2	—	—	2	.0
Encephalitis	5	6	1	—	12	.3
Various chest conditions, Bronchiectasis, Empyema, etc. ...	17	10	3	3	33	.8
Anæmia	7	2	1	1	11	.3
Nephritis, etc.	3	1	1	1	6	.1
Various	42	24	11	3	80	2.0
Total ...	1,628	1,521	403	509	4,061	

The matter of the use of apparatus was also considered with the following results :—

Suffering from medical disorders or conditions for which apparatus was not applicable	1,977=48.7%
Still wearing apparatus	1,353=33.3%

Had discarded their apparatus on advice	{ Improved ...	637=15.8%
	{ Not Improved ...	68= 1.6%
Deemed to require apparatus but this declined with or without medical advice	... ..	26= .6%

If consideration be given only to the proportion of cases for which apparatus must at some time have been needed, it appears that approximately 65 per cent. still wear apparatus and 34 per cent. have discarded it. As, however, many of the cases are young, they will be relieved before the school-leaving age. This method of ascertainment has one fallacy, which tends to exaggerate the numbers. After a period of being able to get about without apparatus a child is deemed no longer defective and is returned to the ordinary school or allowed to leave for work if over 14. In the year 1928, some 140 children who at one time had needed apparatus were passed as no longer certifiable, and 90 were returned to the elementary schools, which greatly raises the proportion of those who have derived very material benefits.

The proportion who can discard apparatus depends on the condition from which they suffer, for example, over 40 per cent. of the children who had suffered from tuberculosis of bones and joints seen in the P.D. schools had been able to discard their apparatus, and most would be allowed so to do after a further interval; but of the sufferers from infantile paralysis, many of whom have "flail" limbs, only 19 per cent. were able to give up apparatus; most of the remainder would find it advisable to wear apparatus throughout their lives for the sake of stability.

The following table shows for each of the common varieties of crippling defects the percentages in which (a) apparatus is worn; (b) apparatus is not required; (c) apparatus is not worn, or has been discarded with or without medical advice.

Condition.	Apparatus worn.	Apparatus not required or discarded on improvement.	Apparatus not worn or discarded with or without advice.
Rickets—Rickety deformities	43.6	50.0	6.4
Congenital defects	41.3	55.1	3.6
Traumata	60.0	38.3	1.7
Amputation after disease	100.0	—	—
Osteomyelitis	34.2	64.6	1.2
Non-tuberculous arthritis	37.7	60.7	1.6
Tb. Spine	57.6	39.3	3.1
„ Hip	62.4	33.7	3.9
„ Knee	71.6	25.4	3.0
Infantile Paralysis	79.6	15.0	5.4

Swimming
for P.D.
children.

Dr. Duncan reports on the effects of swimming lessons which have been given out of school hours to certain physically defective girls at the Frogmore P.D. school. The experiment was made possible by the kindness of Miss Wytelaw, the honorary secretary of the Care Committee of the school, who has taken the girls to the swimming baths, accompanied them in the water on every occasion, encouraged their confidence and taught many of them to swim despite their disabilities.

In all there were in the class, 21 girls, of whom 14 suffered from infantile paralysis of one or both lower limbs, 5 from arrested tuberculosis of bones or joints, 1 from rickets and scoliosis, and 1 from right hemiplegia. Considerable progress was made in the case of all but the last, the hemiplegic case, who was taken as an experiment for several occasions, but it was found that her limbs became more rigid in the water, and that the rigidity lasted for some little time after coming out of the bath. It was apparent in the case of infantile paralysis that the muscular impairment was no barrier to learning to swim. The children were delighted to find that with the support given by the water they could move more freely and easily than on land. The initial nervousness was got over at least as quickly as with normal children of the same class. In four cases the improvement in the muscular

condition was most noteworthy, and in one case was commented upon most favourably by the hospital orthopædic surgeon under whom the girl was being treated. The children's club has been affiliated to the London Swimming Association and the children attend on an equal footing with normal children and compete for their certificates exactly on the same terms as the others. The certificates obtained have been:— $\frac{1}{4}$ mile, 1; 100 yards, 3; 50 yards, 4; 20 yards, 3; length, 1.

The remainder either cannot swim as yet or can swim less than the width of the baths. Their certificates are their most precious possessions. The chief benefit is undoubtedly psychological—the knowledge that they can compete with and in some cases beat normal children at a physical sport gives that self-confidence and assurance which is so difficult under ordinary circumstances to instil into the cripple child. They have all improved in general health and, according to the headmistress, in intelligence.

The following table shows the number of cases notified to the local authority by the Education Authority under section 2 (2) of the Mental Deficiency Act, 1913, during the year 1928:—

The figures in brackets are those for the previous year.

					Boys.	Girls.	Cases notified to the local authority.
(a) Feeble-minded—							
(1) Leavers	...	...	...	...	66 (49)	85 (74)	
(2) Detrimental	...	...	...	...	3 (2)	6 (4)	
(3) Special circumstances	...	...	...	...	3 (0)	0 (0)	
(4) Ineducable	...	...	...	...	0 (0)	0 (1)	
(b) Imbecile	...	...	...	...	96 (79)	79 (73)	
(c) Idiot	...	...	...	...	6 (5)	12 (5)	
*(d) Moral imbecile	...	...	...	...	1 (0)	1 (0)	
Total	358	(292)	...	...	175 (135)	183 (157)	

* The Mental Deficiency (Amendment) Act came into operation as from 1st January, 1928, but the Board of Education regulations applicable thereto did not come into force until the following October. In the interval the child had been examined and deemed to be a moral imbecile and so notified to the local authority.

The medical work of the Special Schools for the deaf is under the charge of Mr. Yearsley, who reports that the character of the work, after the sudden increase in volume, due to the special investigation as to the number of deaf children in the elementary schools, has returned this year still more to the ordinary type, and 338 children only were seen in comparison with 450 in 1927.

Again adopting the plan of comparing three years, in the following table showing the work done, the numbers are placed in parallel columns:—

Fit for				1928.		1927.		1926.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.
Central School	...	...	...	3	0.9	3	0.7	4	0.5
Elementary School	...	...	...	19	5.6	23	5.1	73	9.6
„ „ and Treatment	...	...	...	9	2.7	15	3.3	53	7.0
„ „ Front Row	...	...	...	80	23.7	106	23.5	190	24.9
„ „ „ „	...	...	...	54	16.0	78	17.3	137	17.9
and Treatment	...	...	...			
Hard of Hearing	...	...	...	61	18.0	80	17.8	149	19.5
Deaf, Normal	...	...	...	50	14.8	74	16.4	68	8.9
„ and Defective	...	...	...	12	3.5	7	1.6	12	1.6
Physically Defective	...	...	...	2	0.6	3	0.7	—	0.0
Mentally Defective	...	...	}	18	5.3	8	1.8	18	2.4
Imbecile	...	...				1	0.2	2	0.3
Advice Given	...	...	...	28	8.3	44	9.8	42	5.5
Invalided	...	...	...	2	0.6	8	1.8	15	1.9
Total	...	...	...	338	100.0	450	100.0	763	100.0

Diseases of the Nervous System were responsible for 8.4 per cent. of the acquired cases, all being due to meningitis, in the majority of which the basic cause was not ascertainable. The infectious and infective diseases were responsible for 28.1 per cent. A noteworthy point is the very small incidence this year, among the causes, of congenital syphilis, one case only being seen.

The number of mastoids which had been performed upon the acquired cases seen this year was 1 on the right ear alone, none on the left ear alone and 10 on both ears.

The following table gives a summary of the cases of educational deafness seen at the County Hall in the 10 years 1919-1928 inclusive, and, since the total number reaches over 1,500, some reliance may be placed upon the conclusions which may be drawn therefrom:—

Survey of cases seen during the past ten years.

	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	Totals.	
1. CONGENITAL.												
1. True Hered. Deaf ...	9	11	8	9	7	5	10	4	14	6	83	
2. Sporadic Df. Birth ...	28	29	32	56	26	33	23	31	26	21	305	
3. Cong. Cerebellr. Ataxy	0	0	0	0	1	0	0	0	0	0	1	
4. Aphasia ...	0	2	1	0	7	1	2	1	0	1	15	404
2. ACQUIRED.												
1. <i>Diseases of Nervous System.</i>												
(a) Infantile Genl. Paralysis ...	1	0	0	0	0	0	0	0	0	0	1	
(b) Meningitis—												
(1) Ep. Cer. Spl. ...	2	9	4	1	5	1	2	1	3	1	29	
(2) Influenzal... ..	1	0	0	0	0	0	0	0	1	0	2	
(3) Measles	3	2	0	1	0	0	1	1	0	0	8	
(4) Scarlatina	0	2	0	1	0	0	0	0	0	0	3	
(5) Pneumonic	1	1	3	0	0	0	2	0	0	2	9	
(6) Tuberculous	0	0	3	0	0	0	0	0	0	0	3	
(7) Traumatic	1	0	2	2	0	1	0	1	0	0	7	
(8) Cause Unknown	12	7	1	5	5	7	7	3	5	3	55	
(c) Hydrocephalus ...	0	0	0	1	1	0	0	0	0	0	2	119
2. <i>Infectious Fevers.</i>												
(1) Scarlatina	4	5	4	4	12	9	7	9	10	5	69	
(2) Measles	5	5	10	7	19	6	7	12	11	8	90	
(3) Diphtheria	3	0	1	2	3	1	5	6	3	0	24	
(4) Pertussis	5	1	2	1	5	3	0	4	2	1	24	
(5) Influenza	1	1	2	0	4	1	0	1	1	2	13	
(6) Enceph. leth.	0	0	0	0	0	0	0	0	1	0	1	
(7) Mumps	0	0	0	0	0	0	0	0	2	1	3	224
3. <i>Other Infective Diseases.</i>												
(1) Acute Rheumatism	0	0	0	0	0	0	0	0	0	1	1	
(2) Chorea	0	0	0	0	0	0	0	0	1	0	1	
(3) Tubercle	2	1	2	2	0	0	0	0	0	0	7	
(4) Pneumonia	1	1	0	1	2	2	0	3	2	1	13	
(5) Cong. Syphilis ...	11	12	9	7	6	9	5	7	3	1	70	92
4. <i>Primary Ear Diseases.</i>												
Middle Ear Catarrh	34	38	24	20	33	30	39	56	30	21	325	
„ „ Suppn.	21	43	30	28	29	14	34	40	23	16	278	
Results of Middle Ear Suppn.	6	2	1	4	2	0	6	13	1	4	39	
Otosclerosis	0	2	0	3	0	0	0	0	0	1	6	648
5. <i>Injuries....</i>	5	3	5	5	2	1	4	5	4	0	34	34
3. DOUBTFUL ORIGIN. ...	21	21	14	17	9	8	11	9	6	3	119	1,521
												119
												1,630

Congenital Cases.—It will be noted that the congenital cases were 404 out of 1,521, or 26.09 per cent., so that the cases of deafness from birth were only just over

a quarter of the whole. About half a century ago, it was asserted by the investigators of that time that the proportion of congenital to acquired cases was greater, but Mygind, when he published his survey of the statistics of all countries in 1894, prophesied that in course of time better knowledge and superior methods of investigation would show that the congenital cases formed far less than instead of more than half of the total number. True Hereditary Deafness was proved in 83 cases, 20·54 per cent. of all the congenital cases.

Of Sporadic Deaf Birth there were 305 examples, 75·49 per cent. of the congenital cases. This group is always unsatisfactory, because at present the absolute knowledge of their causation is practically nil. Kerr Love, before the war, sought to show that a certain percentage could be referred with certainty to Congenital Syphilis, and there is no doubt that this is so. Unfortunately, however, the Wassermann test, upon which he based his argument, has been shown recently by McDonagh and others to be untrustworthy. Indeed, McDonagh has pointed out that it may be positive in some cases of chronic intestinal intoxication from which all possibility of syphilis can be conclusively excluded. During the past 2 years the conviction has grown that intestinal intoxication plays a very definite and important part in the production of deafness, and since the condition is demonstrably hereditary and its signs have been noted in an appreciable number of congenitally deaf children, both of the sporadic and hereditary types and also in their parents. In this fact may lie the elucidation of a considerable proportion of the cases which have so long baffled otologists. The lesion is probably cortical, but until a number of investigations into the histology of the cortex and of the big ganglia of deaf-mute brains have been made, the hypothesis here suggested must rest upon clinical grounds only. The observations presented to the International Congress of Otology, at Copenhagen in 1928 (Yearsley), suggest that there is a connection between certain cases of congenital deafness and that hereditary condition which manifesting itself after birth goes under the unsatisfactory name of "otosclerosis."

Among the Congenital cases, the rare condition of deafness in Congenital Cerebellar Ataxy is represented by 1 case.

Acquired Cases.—These cases numbered 1,117 or 72·7 per cent. of the whole. They may be grouped into three primary groups of which the proportions are as follows :—

1. Diseases of the Nervous System	...	...	...	119	10·6 per cent.
2. Infectious and Infective Diseases	...	...	...	316	28·3 „
3. Primary Ear Disease and Injuries	...	...	...	682	61·15 „

The first of these groups, that of Diseases of the Nervous System, is occupied almost entirely by cases of meningitis. There were, during the past 10 years, 2 cases of deafness due to Hydrocephalus and 1 due to Infantile General Paralysis. The primary causes of the meningitis cases are indicated in the general analysis (page 84) and, as is usual in all statistics of this nature, the greatest number comes under the head of "causes unknown." There is need for an investigation into the etiology of these cases, with a view to better classification and prevention.

Of the Infectious Fevers, measles and scarlet fever are responsible for the greatest number of cases, the former being slightly in excess. Diphtheria is less in evidence than it used to be. The other Infective Diseases are made up largely of pneumonia and congenital syphilis. The incidence of the latter during the past 10 years has been :—11-12-9-7-6-9-5-7-3-1. These figures appear to suggest that the improved methods of dealing with Syphilis are yielding good results.

The cases of Acquired Deafness due to Primary Ear Disease always form the largest group. The figures given speak for themselves. Otosclerosis occupies about 0·9 per cent. only, the great bulk consisting of middle ear suppuration, middle ear catarrh, and their results. The vast majority of these cases are the result of tonsils and adenoids.

Injuries to the Ear, due to concussion, fracture of the skull, etc., were only 34, or 3.04 per cent. of the acquired cases. In the statistics of the older observers, injuries occupied a far more important place. This was, however, due to the fact that the statements of parents were too much relied upon. The examples now entered are those only in which investigation has proved that definite injury could be proved as a cause.

At the end of 1928, 44 girls were being taught under sight-saving conditions, namely, 23 at Clapton Secondary and 21 at Peckham Secondary Schools. At Raine's Foundation School there were 7 boys. Myopes in secondary schools.

Myope classes at secondary schools have now been in existence for over 2 years and, so far, the results have been, with very few exceptions, satisfactory. The mean average increase in 24 girls who have been examined regularly for 1 or 2 years has been 0.24 dioptré per eye per year, an increase, if anything, slightly less than amongst children attending the Myope classes of elementary schools. The boys, few in number, have been examined over shorter periods and the progress of their myopia cannot fairly be judged, but the indication is that it is taking place at a rather greater rate than amongst the girls. Owing to choroidal degeneration it is probable that one boy may be required to leave school at 14. In spite of repeated advice to the contrary, he has been doing close work out of school.

In school the recommendations as to treatment of myopia are strictly adhered to. Experiment is being made with the "touch" method of typewriting at both Clapton and Peckham. The keys of the typewriter are blackened and, instead of the usual ribbon, carbon is inserted between two sheets of paper so that the writing is invisible to the operator. The girls sit upright, looking in front of them, and type to music from special rhythmic typing records in a gramophone. This typing is simply a substitute for essay or other work in large writing done to hand in to the teacher, and the myopes do not themselves read the script even after it is completed. A large size of type is, to a limited extent, used for examination questions in subjects such as arithmetic, which the children have themselves to read. Modifications are made in the work allowed according to the degree and progress of the myopia.

In the junior classes myopes take a good place, but as the work gets harder the difficulty of working without books increases.

Myope classes for both sexes were started in the Ensham and Hugh Myddelton Central Schools after Easter, 1928. The numbers in attendance at the end of the year were 17 at the former and 18 at the latter school, with an almost equal division of boys and girls. At each school the Myopes have a special room with their own teacher and apparatus, where most of their work is done. Subjects such as singing, art, French and science are taken with the ordinary children under the teachers of those subjects. Both classes are now well organised for work under sight saving conditions. Myopes in central schools.

As in the secondary school myope classes, the children's eyes are medically examined at least every six months. At the admission examination leaflets are handed to the parents, as follows:— Advice to parents of myopes attending secondary and central schools.

"Your child suffers from a considerable defect of the eyes so that it is short-sighted. Secondary education under ordinary conditions would cause eyestrain and lead to increase in the visual defect. Besides, the weakness of the sight seriously handicaps the child when close work has to be done.

"To meet the needs of short-sighted children, classes have been formed in connection with secondary and central schools, where those parts of the school work which would be harmful to children with delicate eyes may be taken in better and easier circumstances.

"Children taught under sight-saving conditions participate with others in all lessons that can be learned by listening to the teacher. For lessons that need reading or writing, instead of using books and pens, each child has a special desk

with a blackboard, writing being done with chalk either on the blackboard or on large sheets of paper pinned thereon. Some children are for limited periods allowed to read selected books with large print, whilst others with more serious defects of vision are in preparation hours read to by a teacher or a normal sighted child. Science, handwork and drawing lessons and physical exercises are all modified to meet the special needs of the short-sighted, and homework and sewing are prohibited. At regular intervals the eyes of the children are examined by the Council's eye doctor, who suggests alterations in the class work if necessary.

"When taught under sight-saving conditions such as the above, it has been found that myopic children can hold their own with normal-sighted children. But it is essential that their parents and friends should realise that a secondary or central school regime is not for such children a step to a subsequent career of clerical or sedentary work, or any work requiring habitual close application, for such work is injurious to short-sighted eyes and risks serious breakdown. Parents are particularly asked to take their share in the scheme for the protection of their children's eyes, by discouraging reading and close work at home. The children might be read to by others in the family, or encouraged to listen-in."

Examination of Employees in the Education Service and Scholars.

7,454 entrants to the permanent service and candidates for the award of scholarships presented themselves for examination during the year. The following table indicates the numbers submitted for each grade and the results of the examinations :—

Status.	Number examined.		Number fit.		Number rejected.		Number who withdrew after being referred for remediable defects or were not due for re-examination until 1929.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Permanent service ...	438	478	408	470	23	4	7	4
Teaching awards ...	290	891	269	826	10	19	11	46
Scholarships—								
Myopes ...	4	11	4	11	—	—	—	—
Others ...	2,794	2,625	2,714	2,575	52	29	28	21
Total ...	*3,526	*4,005	3,395	3,882	85	52	46	71
	7,531		7,277		137		117	

* Including 22 permanent service cases (11 M., 11 F.), 41 teaching awards (6 M., 35 F.), and 14 scholarships (7 M., 7 F.) referred from 1927.

The causes of rejection were mainly defects of vision, unsatisfactory general health and morbid conditions of heart. The total number of examinations was 9,014, an increase of 6 per cent. when compared with the previous year. Some of the candidates were referred for one or more remediable defects.

There are also referred to the Public Health Department special cases in which medical advice is required. Particulars in regard to these cases are set out in the Annual Report for 1925. The number of examinations made was 3,505. The major part of these were teachers, of whom 633 were men and 2,457 women. In connection with sick leave, 1,848, or 64 per cent. of the teachers were over 40 years of age; this figure is an increase of 3 per cent. on that of the previous year.

The report for the year 1925 contained the results of a survey of the infirmities which had led to a premature termination of the teacher's career, either by death or disablement. Continuing this survey special attention has been paid to those suffering from tuberculosis. During the period from the 1st April, 1921, to the

Cases specially referred.

Health of teachers.

31st December, 1928, there were 229 new cases of pulmonary tuberculosis (viz., 81 males and 148 females), the after-history of which may be outlined as follows :—

Returned to duty	...	...	...	...	...	...	...	...	104
Appointments lapsed or resigned	...	...	...	...	...	...	...	...	67
Died	...	...	...	...	...	...	...	...	40
Still current at the end of the year	...	...	...	...	...	...	...	...	18

In these cases the length of service prior to the appearance of the illness was noted and arranged in five year intervals, viz. :—

<i>Years of service.</i>	<i>No. of cases.</i>	<i>Years of service.</i>	<i>No. of cases.</i>
1 to 5 years	59	20 to 25 years	31
5 to 10 "	45	25 to 30 "	15
10 to 15 "	33	30 to 35 "	8
15 to 20 "	35	35 to 40 "	3

The greater frequency in the early years is in agreement with the fact that the maximum incidence of the disease in the general population falls in the decade 20 to 30.

The subjoined table shows in percentages the results from the early age group compared with those of the subsequent groups :—

					<i>Date of onset.</i>	
					<i>Early group</i>	<i>Other groups (from</i>
					<i>(within 5 years.)</i>	<i>5 years to 40 years.)</i>
<i>After-history.</i>						
Resumed	...	...	...	...	53	43
Lapsed or resigned	...	...	...	...	29	29
Died	...	...	...	...	12	19
Current at end of year	...	...	...	...	7	8

During the year all applicants for the admission to the Council's course of Physical education were examined, the number being 398. Of this number 14 were rejected. Physical education of teachers.

The arrangements made in 1922, whereby medical aid could be given in the event of cases of accident or sudden illness at the County Hall, were continued in 1928 and aid was rendered and advice given in 366 cases. Generally the cases were of a minor character, but of the 46 cases of injury, 3 were serious—in two cases, a broken arm, and in one case, head wounds and concussion. Accidents and sudden illness at County Hall.

TABLE I.

MEDICAL INSPECTIONS, 1928.

ELEMENTARY AND SPECIAL SCHOOLS.

(a) ROUTINE INSPECTIONS.

(b) OTHER INSPECTIONS.

Age group.	Boys.	Girls.	Total.		Boys.	Girls.	Total.
Entrants	37,222	37,105	74,327	Special inspections* {	(1) 18,942	18,708	37,650
Age 8	37,925	37,218	75,143		(2) 26,360	24,822	51,182
Age 12	29,125	28,659	57,784	Re-inspections	—	—	187,480
Leavers	29,854	29,448	59,302				
Total—							
Elementary schools	134,126	132,430	266,556				
Special Schools	1,158	878	2,036				

* (1) Special cases where individual notes are made. (2) Cases seen *en masse* where individual notes are not made unless noted for treatment or observation, e.g., camp school nominations, school journey children etc. (infectious disease contacts are not included in this figure).

TABLE II.

(a) DEFECTS FOUND AT MEDICAL INSPECTIONS IN 1928.

ELEMENTARY AND SPECIAL SCHOOLS.

Disease or defect.	Routine inspections.				Special inspections.	
	Defects.				Defects.	
	Requiring treatment.		Requiring observation.		Requiring treatment.	Requiring observation only.
	E.S.	S.S.	E.S.	S.S.		
Malnutrition	904	7	985	2	562	181
SKIN—						
Ringworm—Head	14	—	—	—	50	17
Body	33	—	2	—	31	4
Scabies	99	—	1	—	341	60
Impetigo	354	1	9	—	486	36
Other disease (non-tubercular) ...	1,178	8	106	1	780	116
EYE—						
Blepharitis	1,025	6	93	—	271	33
Conjunctivitis	348	4	22	—	280	19
Keratitis	3	—	1	—	18	3
Corneal opacities and ulcers ...	19	—	8	—	43	10
Defective vision (excluding squint) ...	20,895	166	7,042	85	3,675	415
Squint	1,622	8	503	3	550	63
Other conditions	205	2	60	—	189	29
EAR—						
Defective hearing	475	10	218	4	260	161
Otitis media	1,734	39	531	4	771	158
Other ear disease or defect	729	11	156	—	263	60
NOSE AND THROAT—						
Enlarged tonsils	10,745	56	8,760	32	2,812	549
Adenoids	1,242	9	624	1	440	81
Enlarged tonsils and adenoids ...	3,292	19	804	1	795	52
Other conditions	1,287	7	441	4	545	169
Enlarged cervical glands (non-tubercular)	641	4	2,005	5	218	307
Defective speech	129	—	185	2	145	55
Teeth, dental disease or defect ...	80,969	426	939	7	5,359	104
HEART AND CIRCULATION—						
Heart disease—Organic	35	—	120	2	12	5
Functional	23	—	276	—	2	4
Not stated	259	2	3,844	20	568	1,029
Anæmia	1,208	7	1,091	—	1,065	302
LUNGS—						
Bronchitis	1,179	2	1,418	2	412	186
Other non-tubercular	255	1	947	3	246	302

Disease or defect.	Routine inspections.				Special inspections.	
	Defects.				Defects.	
	Requiring treatment.		Requiring observation.		Requiring treatment.	Requiring observation only.
	E.S.	S.S.	E.S.	S.S.		
TUBERCULOSIS—						
Pulmonary—Definite	10	—	12	—	14	2
Suspected	18	—	56	1	51	134
Non-pulmonary—Glands	23	—	14	—	36	19
Spine	—	—	2	—	2	1
Hip	—	—	2	—	3	12
Bones and joints	4	—	6	—	7	9
Skin	6	—	5	—	1	2
Other forms... ..	7	1	7	—	18	16
NERVOUS—						
Epilepsy	28	—	52	2	159	80
Chorea	108	—	83	—	261	199
Paralysis	32	1	44	2	214	139
Other conditions	144	1	242	—		
DEFORMITIES—						
Rickets	93	—	43	—	67	10
Spinal curvature	658	4	280	4	161	33
Other	789	8	414	2	169	54
Other conditions	3,344	19	1,576	9	4,260	1,518
					(including 685 men- tal cases)	(including 276 men- tal cases)

(b) CHILDREN FOUND AT ROUTINE MEDICAL INSPECTION TO REQUIRE TREATMENT
(EXCLUDING UNCLEANLINESS AND DENTAL DISEASE).

Age group.	Inspected.	Found to require treatment.	Percentage requiring treatment.
Entrants	74,327	12,875	17.3
Age 8	75,143	14,858	19.8
Age 12	57,784	11,676	20.2
Leavers (age 13½)	59,302	10,311	17.4
Total Elementary Schools ...	266,556	49,720	18.7
Total Special Schools ...	2,036	370	18.2

TABLE III.

EXCEPTIONAL CHILDREN IN LONDON IN 1928.

BLIND (including partially blind)—		Boys.	Girls.	Total.
(i.) Suitable for training in a school or class for the totally blind	Attending certified schools or classes for the blind	122	124	246
	Attending public elementary schools	—	—	—
	At other institutions	7	8	15
	At no school or institution	4	9	13
(ii.) Suitable for training in a school or class for the partially blind	Attending certified schools or classes for the partially blind	432	546	978
	Attending public elementary schools	8	10	18
	At other institutions	1	—	1
	At no school or institution	4	3	7
DEAF (including deaf and dumb and partially deaf)—				
(i.) Suitable for training in a school or class for the totally deaf or deaf and dumb	Attending certified schools or classes for the deaf	303	259	562
	Attending public elementary schools	—	1	1
	At other institutions	28	28	56
	At no school or institution	5	6	11

DEAF—continued.

Boys. Girls. Total.

(ii.) Suitable for training in a school or class for the partially deaf	Attending certified schools or classes for the partially deaf	88	94	182
	Attending public elementary schools	2	1	3
	At other institutions	2	—	2
	At no school or institution	—	1	1

MENTALLY DEFECTIVE.

Feeble-minded (cases not notifiable to the Local Control Authorities)	Attending certified schools for mentally defective children	3,162	2,265	5,427
	Attending public elementary schools	8	8	16
	*At other Institutions	327	168	495
	At no school or institution	69	47	116

EPILEPTICS.

Suffering from severe epilepsy	Attending certified special schools for epileptics	64	33	97
	In institutions other than certified special schools	11	10	21
	††Attending public elementary schools	12	12	24
	At no school or institution	54	49	103
Suffering from epilepsy which is not severe (Note.—This includes children under observation on account of a suspicion of possible epilepsy.)	Attending public elementary schools—			
	Ordinary... ..	228	230	458
	Special	63	46	109
	At no school or institution	—	—	—

PHYSICALLY DEFECTIVE.

Infectious pulmonary and glandular tuberculosis	*At sanatoria or sanatorium schools approved by the Ministry of Health or the Board of Education	37	80	117
	At certified day open-air schools	142	108	250
	At other institutions	3	3	6
	At no school or institution	22	12	34
Non-infectious but active pulmonary and glandular tuberculosis	*At sanatoria or sanatorium schools approved by the Ministry of Health or the Board of Education	70	108	178
	At certified residential open-air schools	—	—	—
	At certified day open-air schools	212	162	374
	†At public elementary schools	70	63	133
	At other institutions	4	5	9
	At no school or institution	—	—	—
Delicate children (e.g., pre- or latent tuberculosis, malnutrition, debility, anæmia, etc.)	At certified residential open-air schools	3,017	1,583	4,600
	At certified day open-air schools	1,102	724	1,826
	At public elementary schools	3,965	3,270	7,235
	*At other institutions	79	60	139
	At no school or institution	128	127	255
Active non-pulmonary tuberculosis (Note.—Cases of more or less quiescent tuberculosis attend the special day cripple schools)	*At sanatoria or hospital schools approved by the Ministry of Health or the Board of Education	395	298	693
	†At public elementary schools	28	20	48
	At other institutions	—	1	1
	At no school or institution	26	20	46
Crippled children (other than those with active tuberculous disease), e.g., children suffering from paralysis, etc., and including those with severe heart disease	At certified hospital schools	29	23	52
	At certified residential cripple schools	32	23	55
	*At certified day cripple schools	2,009	1,975	3,984
	At public elementary schools	990	1,215	2,205
	*At other institutions	337	339	676
	At no school or institution	232	340	572

* Some of these may have come to the notice of the school medical officer, but have been dealt with throughout by the Guardians.

† Discovered at medical inspections and referred for treatment.

†† Awaiting admission to Colony.

** These figures include about 1,000 children suffering from non-pulmonary tuberculosis more or less quiescent, or from the after-effects of such disease.

TABLE IV.
DEFECTS TREATED DURING 1928.

TREATMENT TABLE

GROUP I.—MINOR AILMENTS (EXCLUDING UNCLEANLINESS, FOR WHICH SEE GROUP V.).

Disease or defect.	Defects treated or under treatment.		
	Under Council's scheme.	Otherwise.	Total.
SKIN.			
Ringworm—Head	516*	229	745†
Ringworm—Body.			
Scabies	1,695		
Impetigo	1,125		
Other skin diseases			
EYE DISEASE.			
(External and other, but excluding cases falling in Group II.)	97,918	1,543	102,281
EAR DISEASE.	2,820		
Cases in which operative treatment (<i>e.g.</i> , mastoid operations, etc.) is given are excluded.			
MISCELLANEOUS.			
(Minor injuries, bruses, sores, chilblains, etc.)			
	101,254	1,772	103,026

* 449 by X-Ray.

† 569 by X-Ray.

GROUP II.—DEFECTIVE VISION AND SQUINT (EXCLUDING EYE DEFECTS TREATED AS MINOR AILMENTS, GROUP I.).

Defect or disease.	Defects dealt with.		
	Under Council's scheme.	Otherwise.	Total.
Errors of Refraction (including Squint, but excluding operations for Squint)	38,500	1,837	42,821
Other defect or disease of the eyes (excluding those in Group I.).	2,484 (estimated)		

Children for whom glasses were prescribed under Council's scheme ... 28,977 } 89.3 %
 „ who obtained or received glasses under Council's scheme ... 25,887 }

GROUP III.—TREATMENT OF DEFECTS OF THROAT AND NOSE.

Number of defects.				
Received operative treatment.			Received other forms of treatment.	Total number treated.
Under Council's scheme.	Private practitioner or hospital.	Total.		
15,036	*2,336	17,372	5,126	22,498

* 107 by private practitioners, 2,229 at hospitals.

GROUP IV.—DENTAL DEFECTS.—1928.

(1) Number of children who were—

(a) Inspected by the Dentist—Age Groups—

5 years and under	9,279	10 years	32,441
6 " " " " " " " " " "	31,979	11 " " " " " " " "	31,711
7 " " " " " " " " " "	39,868	12 " " " " " " " "	8,762
8 " " " " " " " " " "	12,082	13 " " " " " " " "	14,744
9 " " " " " " " " " "	38,336	14 years and over	7,077

Total ... 226,279

(b) Found to require treatment, 156,001 (68·9 per cent.).

(c) Actually treated, 129,255 (including (d)).

(d) Re-treated as the result of periodical examination, 4,665.

(2) Half-days devoted to—Inspection, 2,058.

Treatment, 16,626—Total 18,684.

(3) Attendances by children for treatment, 215,570.

(4) Fillings—Permanent teeth, 84,646.

Temporary " 32,172—Total 116,818.

(5) Extractions—Permanent teeth, 51,323.

Temporary " 355,425—Total 406,748.

(6) Administrations of general anæsthetics for extractions, 75,367.

(7) Other operations—Permanent teeth }
 Temporary " } Total 26,512.

GROUP V.—CLEANLINESS—1928.

(a) Average number of visits per school made during year by school nurse, 6.

(b) Examinations of children in the schools by school nurses, 1,850,152.

(c) Instances of uncleanness, 233,108.

(d) Children cleansed under Council's arrangements, 104,504.

(e) Cases in which legal proceedings were taken (Section 87, Education Act, 1921), 284.

CHAPTER III.

PUBLIC HEALTH.

The responsibility in London for the public provision of treatment for tuberculosis rests on the Council, which in 1914 prepared a comprehensive scheme, revised in October, 1922.* Under this scheme the Council arranges for the provision of residential treatment required through a public authority (other than poor law guardians) and Exchequer grant of 50 per cent. is paid on the Council's approved expenditure. The metropolitan borough councils provide or arrange for the provision of dispensary treatment and the Council contributes 25 per cent. of the approved cost, the Exchequer contributing 50 per cent. Various particulars in regard to the work done under the scheme are given in Chapter I of this volume (pp. 28-29 and 40-42).

One of the chief problems in the sphere of after-care of tuberculous persons is that of suitable employment on discharge from sanatorium treatment. This question has been under constant consideration, and during the year a comprehensive report on the subject was prepared by the county medical officer.** The Council has always been anxious to encourage promising schemes of employment but in its view the question is one of a national and not of merely local policy. The question was proposed for investigation at the authoritative enquiry suggested by the National Association for the Prevention of Tuberculosis into the working of tuberculosis schemes throughout the country. The Minister of Health did not see his way to accede to the request for the holding of this inquiry, but with regard to employment he stated that he was in a position to encourage the provision of further workshops for tuberculous patients in two or three large towns, and he expressed the opinion that any inquiry into the question should be deferred until experience was available of the result of these experiments and further experience had been gained from the village settlements and workshops already established. The Council asked the Minister to inform it in due course of the results obtained.

Surveys are made at five-yearly intervals of the condition of persons discharged from residential treatment. Two of these surveys have been completed in respect of adults and children discharged in 1921 and 1922.

The tuberculosis dispensary service was the subject of special survey in 1919†. Developments of the service are made from time to time with the approval of the Council and the Minister of Health.

Experimental arrangements in connection with the dispensary service for treatment in suitable cases by artificial light in out-patient departments of approved hospitals and other centres were continued for a further year from 1st April, 1928. Experience so far indicates that the best results are obtained when light treatment is given in conjunction with residential treatment at institutions in the country.

The Council's scheme for the diagnosis and treatment of venereal diseases in the county provides for the participation of certain authorities near London in the facilities afforded by selected hospitals for the purpose. The arrangements for 1928 provide for free treatment and diagnosis for in-patients and out-patients at 23 hospitals and for the reception of patients for treatment at seven hostels. All-day clinics have been established at five of the hospitals, and arrangements have been approved for the provision of an all-day clinic to serve the western district of the county. Practitioners secure, at the cost of the Council, scientific reports for diagnosis purposes on materials obtained from patients suspected to be suffering

* *Scheme for the treatment of tuberculosis in London.* No. 2183. Price 4d.

** *Employment of tuberculous patients.* No. 2545. Price 1s.

† *Tuberculosis in London. Report of the Public Health Committee.* 1st July, 1920. No. 2035. Price 6d.

from venereal disease, and approved practitioners may obtain from hospitals, at the cost of the Council, salvarsan or its substitutes. The cost of diagnosis and treatment at hospitals and hostels is borne as to 75 per cent. by the Ministry of Health and as to the remaining 25 per cent. by the Council and the participating authorities according to the user of the facilities available. Details of cases treated in 1928 and preceding years are given in Chapter I, pp. 38-39.

The scheme provides in general terms for lectures and addresses to selected audiences, and for the publication and dissemination of information. The British Social Hygiene Council exercises on behalf of the Council certain of its powers relating to propaganda work.

The Council has decided as an experiment for one year from 1st April, 1928, to make grants to approved rescue and preventive homes for the reception of women and girls suffering from venereal diseases under conditions providing that they shall be in possession of a certificate to be given by the medical officer of the treatment centre attended that, although still in need of treatment, they can safely be allowed to mix with others in the homes.

Osteomyelitis, etc.

The Council has accepted an offer of the Metropolitan Asylums Board to permit the use of certain vacant accommodation at Queen Mary's Hospital, Carshalton, for London children suffering from osteomyelitis or congenital malformations requiring surgical treatment. The procedure for selecting and dealing with such cases will follow generally that laid down as regards children suffering from poliomyelitis.

The Invalid Children's Aid Association will assess and collect contributions towards cost of treatment, which will be remitted to the Metropolitan Asylums Board without deduction.

Health propaganda.

Applications were received from certain metropolitan borough councils for contributions, under the powers which the Council obtained in 1926, towards expenditure on health propaganda, but the Council decided for the present not to make any financial contribution towards such expenditure but to continue the practice under which the county medical officer renders such assistance as is desired and is possible, by way of information, lectures, etc., in connection with "Health Weeks" and the like.

Paratyphoid fever.

A serious outbreak of paratyphoid fever occurred in London and adjacent districts during July, 1928. A full report on the outbreak was submitted by the county medical officer, and copies of the report as a private and confidential document were supplied in December, 1928, to the Minister of Health and local medical officers of health concerned or interested.*

Vaccination.

The Council decided not to support a proposal of the St. Albans City Council that legislation should be promoted to provide for compulsory vaccination and re-vaccination or the compulsory isolation of contacts and other persons suspected of suffering from smallpox or other infectious disease.

Tuberculous Milk.

Under the Milk and Dairies (Consolidation) Act, 1915, which came into operation on 1st September, 1925, and superseded as from 1st September, 1926, Part IV. of the London County Council (General Powers) Act, 1907, samples of milk coming into London from places outside the county are taken and examined. Information is sent immediately upon discovery of tubercle-infected samples of milk to the medical officer of health for the county concerned, who is responsible for the examination of the cows at the farm whence the sample emanated.

Under the altered arrangements visits by the veterinary inspector in the public health department to the provinces to examine cows are unnecessary, and his work is limited to that arising in connection with the inspection of cows in London cowsheds and periodical visits to the Council's industrial schools and mental hospitals. The performance of this work will occupy only about one-half of the time at present given, and the Council has accordingly substituted for the position of full-time

veterinary inspector one of half-time temporary veterinary inspector, subject to periodical review.

Particulars of the examination of samples of milk consigned to London and of samples of milk taken at the Council's mental hospitals during 1928 are given in Chapter I (p. 34). Particulars of inspections of the cows in London cowsheds, and examination of samples of their milk are also given.

Parliamentary powers were obtained requiring that any premises used or proposed to be used for the manufacture for sale, storage for sale or sale of ice cream or other similar commodity in the administrative county of London (except premises occupied as a factory or workshop, respecting which notice is required under section 127 of the Factory and Workshops Act, 1901, and premises used as a hotel, restaurant or club) shall be registered with the sanitary authority. These powers will be enforced by the metropolitan borough councils.

At the request of the Metropolitan Boroughs' Standing Joint Committee, the Council made by-laws prohibiting persons carrying on the business of a rag and bone dealer from selling or distributing any article of food or any balloon or toy from any part of the premises used in connection with their business or from any cart, barrow, etc., used for the collection or disposal of rags or other like articles. The by-laws will be enforced by the metropolitan borough councils.

Part I of the Children Act, 1908, requires 48 hours' notice to be given of the reception for hire or reward of a nurse-infant under the age of seven years, and empowers the local authority (in London the Council) to fix the number of infants which may be kept in any dwelling. At the end of 1928, 3,052 nurse-infants and the premises of 2,146 foster-mothers were subject to inspection. Power is given to remove to a place of safety an infant found to be in the charge of a foster-mother who is unfit to have the care of it or in premises which are overcrowded, dangerous or insanitary. There is power also to exempt either partially or wholly premises which are so conducted as to render ordinary inspection unnecessary. Particulars of action taken in recent years are as follows:—

Year.	Infants removed from foster-mothers.	Exemptions.	Deaths.	Infringements discovered.	Cautions.	Prosecutions.	Convictions.
1921 ..	20	3	42	302	285	26	26
1922 ..	14	3	52	279	266	13	13
1923 ..	6	3*	53	303	292	11	10
1924 ..	7	4*	26	274	267	7	7
1925 ..	3	1*	38	263	261	2	2
1926 ..	4	1*	26	214	210	4	3
1927 ..	4	—	34	222	217	5	5
1928 ..	5	—	33	153	148	5	4

* Partial.

The Nursing Homes Registration Act, 1927, came into operation on 1st July, 1928, and as from that date repealed Part IV (Lying-in Homes) of the London County Council (General Powers) Act, 1921. The Act of 1927 provides generally that a nursing home, viz., any premises used or intended to be used for the reception of, and the providing of nursing for, persons suffering from any sickness, injury or infirmity, including a maternity home, cannot be carried on unless it is registered in accordance with the provisions of that Act. In the County of London the Council is the supervising authority under the Act. It has powers of delegation (other than in respect of the making of by-laws under the Act) to the metropolitan borough councils, but has decided for the present not to delegate.

At the end of 1927, there were 245 registered lying-in homes. During the six months to 30th June, 1928, 14 were added to the register and 56 were removed therefrom owing to discontinuance of user, etc., leaving a net total of 203. Ninety-six of these lying-in homes, at which only maternity cases were received or at which

only rooms approved for maternity cases before 1st July, 1928, were used for other types of cases were transferred to the new register of nursing homes and registration certificates under the new Act were issued.

During 1928 a net total of 257 applications (after allowing for 31 subsequently withdrawn or found to be made unnecessarily) was received for registration of nursing homes, including 90 in respect of previously registered lying-in homes in which, however, rooms other than those approved for maternity cases were used for the nursing of patients. The work of inspection necessary to ensure adequate standards as regards staffing, equipment, sanitation, means of escape in case of fire and fire precautions, has proceeded during the year, and on 31st December, 1928, 128 applications had been dealt with. In 125 cases certificates of registration were granted subject, in all but 10 instances, to the carrying out of requirements. Three applications were refused on grounds of unsatisfactoriness. During the period 1st July, 1928, to 31st December, 1928, registration was cancelled in respect of 24 nursing homes (including 11 lying-in homes) at the request of the keepers.

The Council has been notified of 24 hospitals and institutions which come within provisions of the Act excluding them from its operation. 98 applications for exemption of hospitals or institutions on the ground of their not being carried on for profit have been received, and 59 have so far been granted for one year in the first instance.

The Council has made by-laws prescribing the records to be kept of patients received into nursing homes and other matters, and requiring notifications to be given of any death occurring in such homes. The Council has placed on sale a form of record book for use by persons carrying on nursing homes.

Midwives.

The powers and duties of the Council in relation to midwives are contained in the Midwives Acts, 1902 to 1926.

Under the Midwives Act, 1902, the duties of the Council, as the local supervising authority for London, were chiefly disciplinary in connection with the conduct, professional or otherwise, of midwives or persons practising as midwives in London. The Council was also required to suspend from practice any midwife, if such suspension appeared to be necessary in order to prevent the spread of infection. The Midwives Act, 1918, passed to amend the Act of 1902, enlarged the Council's responsibilities, the chief alteration dealing with the provision of medical assistance for midwives. By section 14, midwives are required to summon medical aid in an emergency as defined by the rules of the Central Midwives Board. The fees of the medical man so called in are payable by the Council (in accordance with a scale fixed by the Local Government Board and amended by the Ministry of Health) which has power to recover them from the patient, her husband, or other person liable to maintain her, unless it can be shown that such person is unable to pay the fees. This Act also empowered the Council to pay, if it thought fit, to any midwife suspended by it from practice to prevent the spread of infection, such reasonable compensation for loss of practice as in the circumstances might seem just. It also gave power to the Council to aid the training of midwives and to make grants for the purpose.

The Act of 1926 amends the provisions of the Act of 1902 with regard to the practice of midwifery by uncertified persons, either male or female. It also repeals the discretionary powers conferred upon local supervising authorities in respect of compensation for loss of practice to any midwife suspended from practice to prevent the spread of infection, and entitles her to recover such amount as is reasonable in the circumstances of the case unless she herself had been in default. The Act confers upon local supervising authorities power, subject to the sanction of the Minister of Health, to make arrangements with pregnant women in their respective areas for the payment of agreed sums, in instalments or otherwise, to cover liability in respect of the fees of medical practitioners called in under the provisions of section 14 of the Act of 1918.

Notifications by midwives of intention to practise during the year 1928 numbered 822 ; of intention to practise for specific periods less than a year, 19 ; and of having acted in specific cases, 13.

During the year 1927 the Council reported to the Central Midwives Board that one *prima facie* case of malpractice, negligence or misconduct on the part of a certified midwife had been established. The Board found certain of the charges to be proved but postponed sentence with a view to further consideration on receipt of reports from the Council as to the conduct and methods of practice of the midwife at the end of three, six and nine months. As the result of these reports the Board removed the name of the midwife from the Midwives' Roll.

During the year 1928 one *prima facie* case against a midwife was reported to the Board, which found certain of the charges to be proved and censured the midwife severely. In five other cases of infringements of the rules of the Board which did not appear to be sufficiently serious to warrant submission to the Board, the midwives were orally cautioned to observe strictly the rules of the Board in their practice.

Owing to the difficulty of assessing the sums to be recovered from patients, their husbands or other persons liable to maintain them in respect of the fees of medical practitioners called in by midwives to the patients, the Council, in 1921, adopted a scale of assessments graduated according to net income, after allowing a deduction in respect of each maintainable child or other dependant. From 1st April, 1928, to 31st March, 1929, the Council's expenditure under section 14 of the Act of 1918 was approximately £4,250 the sums recovered during the same period amounting to £996 approximately. During the year 1928 the Council suspended 15 midwives from practice for short periods to prevent the spread of infection, and awarded compensation amounting to £49 8s. 6d.

An arrangement was made with Middlesex County Council whereby midwives practising in Middlesex were enabled to attend courses of lectures and practical demonstrations in ante-natal, post-natal and general midwifery, which were held during the autumn and winter sessions, on the same terms as those practising in London, any deficit on the course being shared by the two authorities on the basis of user.

Under section 5 of the Act of 1902, as amended by section 2 of the Act of 1918, any adverse balance in the accounts of the Central Midwives Board is apportioned between the councils of the several counties and county boroughs in proportion to population at the last census, and the Council's proportion for the year 1928 was £488 10s. 5d.

In pursuance of instructions of the Council for the preparation of a report as to the sanitary condition, number, distribution and adequacy of the public conveniences for men and women in London, including the parks and open spaces, and the hours during which they are available, information was obtained from the authorities concerned, who also afforded facilities for any necessary inspections, and the county medical officer prepared a comprehensive report on the subject.* In the report some points and questions are raised as to matters requiring consideration, but the survey shows that, speaking generally, and in spite of some imperfections, a very satisfactory standard of sanitary provision has been attained. The provision of public conveniences in London being primarily a matter for the City Corporation and the metropolitan borough councils, their observations on the report have been invited and the matter will be further considered when their replies have been received.

Particulars are given in Chapter I, p. 31, of the result of the census of homeless persons taken in February, 1928. The total numbers of homeless persons found

Public Con-
veniences.

Census of
homeless
persons.

* *Public conveniences in London.* No. 2613. Price 2d.

in the streets, on staircases and under arches at the censuses in recent years were :— 1915, 178; 1916, 44; 1917, 28; 1918, 9; 1919, 8; 1920, 51; 1921, 56; 1922, 112; 1923, 141; 1924, 82; 1925, 118; 1926, 103; 1927, 101; and 1928, 78.

Common
lodging-
houses.

Particulars with regard to common lodging-houses licensed by the Council are as follows :—

Year.	Houses licensed.	Lodgers authorised.	Prosecutions.	Convictions.	Penalties and costs.	Cases of infectious disease
1921.. ..	181	18,503	1	1	£3 18s.	1
1922.. ..	178	17,948	1	1	£3	2
1923.. ..	175	17,700	5	5	£19 10s.	2
1924.. ..	174	17,519	nil	nil	nil	1
1925.. ..	168	16,930	3	3	£8 19s. 6d.	1
1926.. ..	164	16,967	1	1	£2 2s.	2
1927.. ..	164	17,059	nil	nil	nil	1
1928.. ..	157	16,281	2	2	£4 2s.	7

On the occasion of the census of homeless persons in February, 1928, 125 children were found in common lodging-houses in London as compared with the average of about 50 in recent previous years. The large majority were accommodated in houses conducted by charitable organisations, which are either in touch with the local infant welfare centres or have trained staff of their own. Even so, the whole atmosphere and associations of a common lodging-house cannot but be regarded as bad for any child, and anything longer than a temporary stay is undesirable. It was considered that the time had come when steps should be taken definitely to discourage the admission of children at the ordinary type of common lodging-house, and an intimation was conveyed to all keepers of common lodging-houses that the Council looked to them to co-operate with it in excluding children up to the maximum school age (14 years) except on emergency for one night, unless the house had been specifically approved by the Council as having suitable accommodation for children. Even at houses with approved accommodation for children, it was the Council's view that children should not be kept there for an indefinite period, and that all possible steps should be taken by the keepers in such cases to secure that other arrangements are made, if possible, within a reasonable time.

Seamen's
lodging-
houses.

Particulars of seamen's lodging-houses licensed by the Council are as follows :—

Year.	Houses licensed.	Lodgers authorised.	Prosecutions.	Convictions.	Penalties and costs.	Cases of infectious disease.
1921.. ..	51	1,287	13	11	£130 10s. 6d.	1
1922.. ..	44	1,170	1	1	—	1
1923.. ..	36	1,089	4	4	£40	1
1924.. ..	38	1,128	4	4	£14 3s.	2
1925.. ..	33	1,092	7	7	£41 8s.	—
1926.. ..	34	1,073	1	1	£5 2s.	1
1927.. ..	31	1,061	6	5	£46 5s.	—
1928.. ..	27	1,044	5	5	£21 7s.	1

Offensive
businesses.

The following table gives particulars of licensed slaughterhouses, knackers yards and registered offensive businesses :—

Year.	Slaughterhouses.	Knackers' yards.	Offensive businesses.
1921	158	4	60
1922	153	4	60
1923	147	4	101
1924	136	4	230
1925	132	4	209
1926	122	4	165
1927	115	4	171
1928	110	3	169

During 1928 sanction was given in four cases to the establishment anew of the business of a dresser of fur-skins and also to the establishment anew of the business of a slaughterer of poultry, a slaughterer of cattle and a catgut manufacturer. In one instance the period for which the carrying on of the business of a dresser of fur-skins was authorised was extended.

The numbers of cowhouses licensed by the Council in the past five years were Cowhouses, as follows :—1924, 89 ; 1925, 84 ; 1926, 75 ; 1927, 65 ; 1928, 55.

Proceedings as indicated below were taken by the Council during 1928 with Smoke Nuisance. regard to smoke nuisance from railway and road locomotives, and some proceedings were also instituted by the sanitary authorities in respect of smoke nuisance from trade premises. As regards railway locomotives, section 114 of the Railway Clauses Consolidation Act, 1845, requires that every locomotive shall be constructed on the principle of consuming its own smoke, and section 19 of the Regulation of Railways Act, 1868, enacts that, if a locomotive fails to do this, the railway company shall be guilty of an offence.

Particulars of the work carried out during the year in connection with the suppression of smoke nuisance are as follows :—

(1) *Railway locomotives* :—Nuisances reported—18. Prosecutions—11. Convictions—11. Total of fines and costs imposed—£39.

(2) *Road locomotives* :—Nuisances reported—5. Prosecutions—1. Convictions—1. Total of fines imposed—10s.

(3) *Premises* :—Reports made as to alleged nuisances—282. Cases in which legal proceedings were taken by metropolitan borough councils as the result of such reports—3.

The necessity for combating smoke nuisance is increasingly recognised and action taken in respect of nuisances caused by public utility institutions was strongly supported by the general public. It is felt that the interest shown by the public in this matter will assist materially in securing an improvement of existing conditions.

The Diseases of Animals Acts, 1894 to 1927, the object of which is the suppression Diseases of Animals of contagious diseases in animals, naturally do not affect London so much as they do the country. In London, apart from swine fever, attention is now principally directed to glanders, anthrax, rabies, parasitic mange and foot and mouth disease, diseases which are communicable to man. The Acts are supplemented by Orders issued by the Minister of Agriculture and Fisheries. During 1928 the incidence of the principal animal diseases so far as London is concerned was as follows :—Glanders including farcy, nil ; swine fever, 1 outbreak in which 98 animals were involved ; anthrax, nil ; parasitic mange, 29 outbreaks involving 71 animals ; foot and mouth disease, nil.

The Minister of Agriculture and Fisheries has issued an Order entitled the Anthrax. Anthrax Order of 1928, which came into operation on 1st October, 1928, and revokes the Anthrax Order of 1910. The scope of the Order has been extended so as to cover any four footed mammal kept in captivity (except mammals in certain licensed pathological institutes) and is thus applicable to such animals in any public or private zoological collection. The Order also prohibits the cutting of the skin of a diseased or suspected carcase except by a veterinary surgeon.

Swine fever has been very prevalent throughout Great Britain during the past Swine fever. few years but only 1 outbreak was dealt with in London during 1928. During the year, 19,813 swine were examined at feeder's premises.

The most efficacious measures for stamping out hydrophobia are muzzling, the Rabies. seizure of all stray dogs and the regulation of the importation of dogs. Under the Dogs Act, 1906, which revoked all then existing muzzling regulations, regulations requiring the wearing of collars by dogs while on a highway have been made by the Council. Under these regulations, 23,276 dogs were seized by the police during 1928.

Of this number, 7,742 were claimed by their owners and the remainder were sent to the Dogs' Home for sale or destruction.

Nine cases of suspected rabies in London were reported during the year but the existence of the disease was not confirmed by the veterinary inspectors, the suspicious symptoms being proved to arise from other causes.

Parasitic
mange.

The conditions under which trade horses are fed and worked in London, tend to encourage the spread of parasitic mange. During 1928 the returns of cases in London showed a considerable decrease. The following figures relate to 1928 :— Outbreaks, 19 ; horses affected, 71 ; infringements, 5 ; all of which were dealt with by written cautions. For the purposes of comparison, it may be pointed out that the number of outbreaks in 1927 was 65, affecting 127 horses.

Foot and
mouth
disease.

In consequence of an outbreak of foot and mouth disease at Mitcham, the Minister of Agriculture and Fisheries made an Order on 28th January, 1928, declaring a district within a radius of 15 miles of the infected place to be an " infected area " for the purposes of the Foot and Mouth Disease (Infected Areas Restrictions) Order of 1925. This area included nearly the whole of the County of London. As no further case of the disease was disclosed, the Order was modified on 11th February, 1928, so far as the portion of the County north of the Thames was concerned, and the remainder of the County was released from movement restrictions on 2nd March, 1928.

In consequence of another outbreak in Kent, a similar Order was made on 20th October 1928, which included a portion of the County of London south of the river Thames, but London was again released from restriction on 4th November, 1928.

In the case of both outbreaks, the necessary steps were taken to bring to the notice of the persons concerned the provisions of the Orders of which the effect is to prohibit the movement of animals out of the infected area and to permit movement within or into such area only under licence.

In connection with an outbreak of foot-and-mouth disease at Wexford, Ireland, in February, 1928, arrangements were made for all animals in transit from Ireland to London to be examined for symptoms of the disease. All the animals were intended for immediate slaughter, and the Council satisfied itself that this was carried out.

There were 17 infringements of the Foot-and-Mouth Disease (Infected Areas Restrictions) Order of 1925, which were dealt with by means of written cautions.

Enforcement
of orders.

To ensure that the requirements of the several Orders in force from time to time are being observed, and that the animals are not caused unnecessary suffering during transit and are free from signs of disease, the Council's inspectors pay numerous visits to railway wharves, depots, etc., where animals in transit are collected. The visits during 1928 numbered 2,914, the animals examined being—horses 2,332, cattle 57,990, sheep 84,203, swine 53,606, making a total of 198,131. There were 63 infringements, 54 written cautions, 9 cases of legal proceedings and 7 convictions with 6 penalties and costs amounting to £79 12s. 0d.

An Order entitled the Movement of Animals (Records) Order, 1925, which had for its object the provision of a ready means of tracing animals which may have been in contact with diseased or suspected animals, was issued by the Minister of Agriculture and Fisheries and came into force on 1st February, 1926. It requires with certain exceptions, records to be kept by any person who moves or permits any animal to be moved to or from any premises. No infringements of the Order were reported.

An Order entitled the Foot-and-Mouth Disease (Boiling of Animals Foodstuffs) Order, dated 7th February, 1928, was issued by the Minister of Agriculture and Fisheries, which came into operation on 1st March, 1928, and revoked existing Orders. The new Order not only made it an offence to bring the materials specified in the Order into contact with animals or to give them to animals as food before such materials were boiled, but also made it an offence to permit any animals to be brought

into contact with the materials referred to unless and until such materials had been boiled. The Order placed the burden of compliance both upon the person having possession or charge of any of the foodstuffs or materials specified and also upon any person having animals in his charge. Power was given to the Minister to exempt by licence any proprietary foodstuff from the provisions of the Order.

The Minister of Agriculture and Fisheries issued an Order entitled the Foot-and-Mouth Disease Order of 1928, which came into operation on 1st April, 1928, and consolidated and revised the existing Foot-and-Mouth Disease Order of 1895, and amending Orders, and included certain amendments which experience of the epidemics in recent years had proved to be desirable. Effect was given in the Order to certain recommendations of the Departmental Committee on Foot-and-Mouth Disease of 1925.

Article 23 of the Order provided that all regulations made by local authorities require confirmation by the Minister, and that any existing regulations made under article 10 of the Order of 1895 would cease to operate as from 1st July, 1928, unless they had been submitted to and confirmed by the Minister. The Council on 21st October, 1924, and 22nd June, 1926, made regulations in accordance with the provisions contained in article 10 (1) (b) of the 1895 Order with regard to the cleansing of road vehicles used for animals. These regulations imposed under the new Order and new regulations relating to the cleansing and disinfection of lairs and of vehicles used for the conveyance of animals, made by the Council on 26th June, 1928, came into force on 1st July, 1928.

An Order entitled the Sheep Scab Order of 1928, which consolidated and amended in certain respects the previously existing Sheep Scab Orders (including the Sheep (Double Dipping) Order of 1920), was issued by the Minister of Agriculture and Fisheries, and came into force on 1st April, 1928. The object of the Order is to secure the maximum of effect in checking the spread of infection consistent with the interests of the sheep trade. A number of new provisions are included in the Order. Sheep scab.

The Minister of Agriculture and Fisheries issued Orders entitled the Cattle Plague Order of 1928 and the Pleuro-Pneumonia Order of 1928, which came into force on 1st April, 1928. The Orders re-enact with amendments the Orders of 1895 relating to these diseases. Cattle plague and pleuro pneumonia.

Instructions to persons responsible for the removal of bulls and unfit animals from railway premises to the Metropolitan Cattle Market and abattoirs were issued during the year. Transit of animals.

CHAPTER IV.

MAIN DRAINAGE.

The district drained by the London main drainage system has an area of nearly 159 square miles with an estimated population of 5,600,000. This includes an area of nearly 43 square miles, with a population of 1,113,270 outside London. The out-county districts draining into the London main drainage system and the years of admission are as follows—Acton (part before 1855 and part from 1905); part of Croydon (before 1855); Willesden, metropolitan area (before 1855); part of Beckenham (1873); part of Hornsey (1874); Tottenham and Wood Green (1891); West Ham (1900); East Ham—part (1900); Willesden, Brent area (1911); Leyton (1927), and Walthamstow (1928). Very small parts of other districts are also drained into the London system. The London County Council (Ilford and Barking Drainage) Act, 1928, authorises the drainage of the areas mentioned into the London main drainage system. When these areas drain into the London system, 19 square miles, containing an estimated population of 150,000, will be added. Drainage area and statistics.

The quantities of sewage, etc., dealt with during 1928 were as follows :—

Sewage treated—						Million gallons.
Northern outfall	..	..	..	..	..	61,505.6
„ „ (daily average)	..	..	..	..	..	168.0
Southern outfall	..	..	..	..	..	37,675.5
„ „ (daily average)	..	..	..	..	..	102.9
Sludge sent to sea—						Tons.
Northern outfall	..	..	..	..	..	1,853,220
„ „ (daily average)	..	..	..	..	..	5,063
Southern outfall	..	..	..	..	..	931,398
„ „ (daily average)	..	..	..	..	..	2,545

The sludge vessels made 1,949 trips and travelled altogether 215,360 nautical miles.

Sewage
treatment.

The constantly increasing flow of sewage to the main drainage outfalls necessitated consideration of the question of the possibility of dealing with the sewage by the methods at present in operation, namely, precipitation of the solids by natural means in channels at the outfalls, the discharge of the resulting effluent into the River Thames at the outfalls and the sending of the solid parts of the sewage to sea in sludge ships. When the outfalls were completed by the Metropolitan Board of Works about the year 1875, the average daily quantity of sewage flowing to the outfalls was 139 million gallons. New methods of sewage treatment were adopted between the years 1890 and 1893; the average daily flow having, at the latter date, risen to 186 million gallons. At the present time the average daily flow is 270 million gallons. A report made in the year 1891 by Sir Benjamin Baker and the then chief engineer of the Council (the late Sir Alexander Binnie) put at 300 million gallons a day the maximum quantity which should be concentrated at the present outfalls. Experience has proved that the calls which are being made upon the London main drainage system and on the capacity of the river as a final place of disposal, have reached a point when further steps should be taken. Alternative methods are (1) the transference of the outfalls to a point nearer to, or on, the sea coast, and (2) purification of sewage at the outfalls. The cost of the first alternative has not been estimated, but there is no doubt that vast capital expenditure would be entailed. Nor can the certainty of opposition from areas adjacent to that selected for any new outfall be disregarded.

Improved methods of sewage treatment have been installed in several provincial towns, and some of these were inspected by the Main Drainage Committee in the year 1920. As the result of this visit experimental plant was installed at the Southern outfall in connection with the biological treatment of sewage on the activated sludge basis, using various types of apparatus. At an early stage the experiments established the fact that London sewage responded to treatment with activated sludge. Later experiments were directed towards the treatment of the effluent discharged into the river from the settling or sedimentation channels and it has been found that effluent can be more expeditiously dealt with than crude sewage. The tanks have been altered from time to time and the quantities of liquid which can be dealt with have been largely increased. The existing experimental plant reached an ultimate capacity of about 150,000 gallons of sedimented effluent a day.

In view of the success attained with the comparatively small experimental plant the Council was advised that the work of purifying the effluent should be commenced at the Northern outfall on a practical scale, with a plant capable of treating from 5 to 10 million gallons a day.

Before committing itself to any definite action, the Council felt that, in a matter of such magnitude and of so technical a nature, the evidence should as far as possible, be conclusive. The advice of Professor W. E. Adeney, D.Sc., F.R.C.Sc.I.,

F.I.C., and Professor H. R. Kenwood, C.M.G., M.B., C.M., L.R.C.P., D.P.H., was therefore sought. Their advice endorsed that submitted by the Council's technical officers. The estimated cost of the installation of plant capable of treating from 5 to 10 million gallons a day is £250,000, and the Council approved an estimate of this amount for the purpose. Such a plant can only be regarded as the first unit and the ultimate extent to which it may be necessary to instal plant at one or both outfalls in order to secure an effluent which may be regarded as sufficiently satisfactory for discharge into a tidal river such as the river Thames is a matter upon which no expression of opinion can be given at present. Extreme caution is advocated, and the gradual building up, or otherwise, in the light of experience gained in the thorough testing of preceding units of plant. In these circumstances the installation of a first unit of plant at the Northern outfall must be regarded as experimental.

In the meantime work on the experimental plant installed at the Southern outfall is being continued and the Council has authorised arrangements for research into the composition of sludge sent to sea. The water content of the sludge is on the average 93 per cent., and reductions in this respect would be a matter of considerable economy.

During a part of the month of August it was considered advisable to resort to treatment of the sewage with chemicals. The total expenditure in this respect amounted to £852.

The solids, known as sludge, which are obtained from the sewage after sedimentation at the outfalls, are conveyed to, and deposited in, the Black Deep in the Thames estuary. The Deep is also used by other authorities for the deposit of waste materials and the cost of buoying the deposit area is apportioned among the various authorities using it for deposit purposes. The Council's proportion for the year 1928 amounted to £290 6s. 2d. Deposit of sludge at sea.

The re-organisation of the Council's fleet of sludge vessels has been completed and the fleet now consists of five vessels, namely, the *Bazalgette* (commissioned in 1887 and re-conditioned in 1921) of 1,000 tons capacity, and the *Henry Ward* (commissioned in 1923), the *J. H. Hunter* (commissioned in 1924), the *G. W. Humphreys* (commissioned in 1925), and the *John Perring* (commissioned in 1926), each of about 1,500 tons capacity. During the year the *J. H. Hunter* became due for her first quadrennial survey by Lloyd's and the work entailed was carried out at a cost of £1,990. The *John Perring* and the *Bazalgette* underwent annual overhauls at a total cost of £1,230. Sludge vessels.

The loading of sludge vessels at the Northern outfall is effected by pumping direct or by gravitation from the overhead sludge tanks. The pumping engines were obsolete and uneconomical and, to maintain them in working order, heavy repairs would have been necessary. The Council therefore decided to instal two new steam engines and direct-coupled centrifugal pumps in the main engine-house. The total estimated cost of the proposed works is £6,500. Northern outfall.

The removal of hard deposit in the lower sludge store entailed an expenditure of £500 in the year and the new pumping arrangements, when completed, should prevent such accumulations in future.

Works have been undertaken at a cost of £288 to prevent the flooding of the river water tanks by sub-soil water.

The construction of two overhead sludge tanks at the Southern outfall, each capable of holding 1,500 tons, similar to those erected at the Northern outfall, has been continued during the year. In addition to the tenders set out in the report for the year 1927 for various parts of the work the undermentioned tenders were accepted in 1928 :—Davy Brothers, Limited, Sheffield, for the supply and erection of two weir penstocks, £800, and the Sheepbridge Coal and Iron Company, Limited, Chesterfield, for the erection of cast-iron pipes and valves, £931 5s. Alterations Southern outfall.

to the sludge settling channels at the outfall are being carried out by direct employment of labour at an estimated cost of £1,900. The total expenditure involved will, it is estimated, amount to £23,000.

An accumulation of sand and other material in the lower sludge store at the outfall, which was of many years' standing, had become so consolidated that it was necessary to employ manual labour to break it up. The cost of this work, including the removal of the material, has been £820. The work of repairing and strengthening the main chimney at the outfall was carried out at a cost of £689 10s.

Several of the piles and rubbing pieces of the pier at the outfall had become defective and repairs were also necessary to the upper and lower dolphins. The repairs were carried out by labour directly employed at a total cost of £720.

The return wall at the eastern end of the wharf wall at the outfall was repaired at a cost of £240.

The store keeping and issuing arrangements at the outfall have been re-organised and simplified. Expenditure amounting to £126 has been incurred for bins, etc.

Abbey Mills
pumping
station.

The condition of the seven boilers in the west boiler-house at Abbey Mills pumping station, which had been working for nearly 35 years, was such that consideration had to be given to the question of their renewal or alternatively to the provision of some form of motive power other than steam. The boilers in question supply steam for driving the beam engines and pumps in the main engine-house. In addition to the main engine-house, which was constructed in the year 1869, there are two other engine-houses. The second engine-house was built in the year 1894 to deal principally with sewage and storm water from the Isle of Dogs, and it has recently been re-organised. The third engine-house was erected in the year 1912, for the purpose of pumping storm water, and contains seven gas-driven engines and pumps. The total pumping capacity of the station is about 1,300 tons a minute.

The area served by the station is 34 square miles in extent on the north side of the river and includes all the low-lying lands on this side. Sewage brought by the low level sewers is pumped continuously, and at times of rainfall large quantities of storm water flow to the station. Except at low tide, the low-lying parts of the City of London, Westminster, Stepney, Hackney and part of Poplar are entirely dependent upon Abbey-mills pumping station for the prevention of flooding. Even at low tide the relief given by the storm overflows from these areas can only be relatively small, and from time to time complaints are received of flooding in these areas during heavy rainfall.

In recent years the rate of discharge of storm water into the sewers has been greatly increased by the waterproofing of road surfaces. It has therefore been considered advisable to increase the pumping capacity here by the installation of modern machinery in the main engine-house. The present building is spacious and would lend itself to a gradual replacement of the machinery without much interference with the working of the station, a matter of considerable moment. Each of the four bays of the building could accommodate, in place of the two beam pumping sets at present installed, two centrifugal pumping sets with a pumping capacity more than three times as great. Such a scheme would increase the total pumping capacity of the whole station by about 60 per cent., namely, from 1,300 tons to 2,100 tons a minute approximately. After careful consideration the Council decided to adopt electricity as the motive power for the new plant and approved an estimate of £141,000 for the reorganisation of the main engine-house on the lines indicated above. The tender submitted by W. H. Allen, Sons and Company, Limited, Bedford, for the supply and erection of four pumping sets for £36,917 and for an option exercisable by the Council to purchase four additional sets at a price not exceeding £23,985, was accepted on 13th December, 1928.

The embankment, known as the Long Wall, fronting on the Channelsea river forms the flood prevention bank to a considerable area of land, including the site

of Abbey-mills pumping station. The exceptional tide of 6th-7th January, 1928, flowed over the bank and damaged it to a small extent. An examination of the bank showed, however, that it required strengthening. Owing to its nature the work was entrusted to C. J. Wills and Sons, Limited, contractors for the development of certain of the Council's housing estates. The total cost of the work amounted to £4,500.

The overhaul of the gas-driven plant has been proceeding continuously since the year 1926 by means of directly employed labour. It was decided to complete the work by contract, and the tender of the London Graving Dock Company, Limited, amounting to £3,014 15s. 0d., was accepted for the purpose.

Owing to the continual state of dampness of the superintendent's house at Deptford pumping station, caused by percolation and vapour from the adjacent cooling ponds, the Council decided to erect new quarters for the superintendent in another part of the station grounds at a cost of approximately £1,460, and to utilise the old quarters for offices, store and other purposes. No. 5 beam engine has been overhauled at a cost of £670.

The roof of the engine-house at the Western pumping station was constructed between the years 1872 and 1876 of ornamental copper tiles laid on boarding. The tiles had become distorted and leakage ensued. It was decided to replace the tiles on the central portion of the roof by copper sheeting laid on the existing boarding, and the tender, amounting to £404 0s. 2d., submitted by Messrs. Frank Dunne and Company, was accepted for the work. The roofs over the filth screens and over the boiler-house were also defective, and repairs thereto have been carried out at a cost of £440.

Two cast-iron centrifugal pumps installed in 1923 were found to be corroded by the chemical action of the sewage, and it was decided to instal bronze pumps in their place. The tender of H. Watson and Sons, Limited, Newcastle-on-Tyne, to supply the bronze pumps for £923 was accepted.

Apparatus to quicken the starting of the pumps at Heathwall and Lots-road storm-water pumping stations has been installed at a cost of £225 and £294 respectively.

The steel pipes used for the hydraulic operation of a penstock in Manchester-road, Poplar, from the Isle of Dogs pumping station were found to have been corroded by acids in the soil and copper piping has been substituted at a cost of £376.

The flooding of Shad Thames pumping station by the high tide on 6th to 7th January, 1928, necessitated opening out and cleaning the engines, which was undertaken at a cost of £271. The engines were overhauled during the year at an estimated cost of £258, and their lubrication improved at an estimated cost of £225.

In order to facilitate pedestrian traffic between areas on each side of the northern outfall sewer embankment, there being no means of crossing the embankment between High-street South and Boundary-road, East Ham, a distance of about 1,440 yards, the Council assented to the formation by the East Ham Corporation of a footpath, with steps over the embankment, between Lonsdale-avenue on the north side and Fabian-street on the south.

From time to time subsidences have occurred in roadways on the sites of shafts sunk in connection with the construction of the southern outfall sewer No. 2 and the southern high-level sewer No. 2, due to the consolidation of the material used for filling in the excavations. A further subsidence occurred during the year in Mycenæ-road, Greenwich, and it has been made good at a cost of £247.

During the night of 27th to 28th July, 1928, a length of the Eastern Counties sewer which was being reconstructed collapsed following heavy rain which fell in the night. The down local line of the London and North Eastern Railway, under which the sewer ran, subsided, and adjoining lines were affected. Railway traffic was resumed in the afternoon of 28th July, 1928. Flooding of property in the neighbour-

Deptford
pumping
station.

Western
pumping
station.

North Wool-
wich pumping
station.

Heathwall
and Lots-
road pumping
stations.

Isle of Dogs
pumping
station.

Shad Thames
pumping
station.

Outfall,
intercepting
and main
sewers.

hood occurred. Steps were at once taken to deal with the situation and a diversion of the sewer around the damaged portion was put in hand. The sewer adjacent to the portion which collapsed appeared to be in fairly good condition, but it tended to get further under the railway. It was therefore decided to divert a further length of the sewer clear of the railway. The estimated cost of this work and of filling in the old sewer to be abandoned is £9,000.

Repairs, etc., have been carried out during the year to intercepting and main sewers as follows:—

	<i>Approximate cost.</i>				
	£				
Eastern Counties sewer	2,700
King's Scholars' Pond sewer	3,040
London-bridge sewer	2,270
Regent-street sewer	3,480
Ratcliff Highway sewer	3,640
Fleet sewer	1,260
Wick-lane sewer	2,490
Nightingale-lane sewer	2,750
Ranelagh sewer	2,440
Battle-bridge sewer	643
Effra sewer	2,600
Effra Branch sewer	1,000
Southern High-level sewer No. 1 extension	2,565
River Graveney	755
Earl Boundary sewer	550

The collapse of the Eastern Counties sewer involved the hiring, at the shortest possible notice, of pumping plant, and to meet future emergencies the Council decided to obtain pumping plant at an estimated cost of £700.

The work of removing from the sewers deposits which accumulate there is one of considerable magnitude. For this purpose the county is divided into four districts, each district being made the subject of a separate contract. Contracts are based upon prices for the cartage and disposal of the deposit which is removed from the sewers by the Council's staff. The cost of this work in 1928 was approximately £3,500.

Flood relief
works.

The Council on 22nd July, 1919, had before it a comprehensive scheme of works to mitigate floodings in various parts of London on both sides of the river Thames during times of heavy rainfall. The scheme, which is described in the Annual Report for 1920 (Vol. III., p. 121), specified seventeen works and the total estimated cost, based on pre-war conditions, was £2,467,150.

The first work undertaken was the construction of the north-eastern storm relief sewer from Kelvin-road, Highbury, to the Thames at Shadwell, which was commenced in 1921.

In order to provide additional employment the Council on various dates subsequently decided to accelerate the work on other portions of the 1919 scheme, particularly those which would provide work suitable for unskilled or partly skilled labour. The works selected were the improvement of the river Graveney, the Wandle Valley sewer, the Charlton storm relief sewer, flood relief works at Hammer-smith, the enlargement of the Isle of Dogs and Abbey Mills pumping stations, the south-western storm relief sewer, storm relief sewers in Lewisham and Woolwich and the north-western storm relief sewer. All these works have been approved for grant by the Unemployment Grants Committee.

A further item in the scheme, the construction of the Beverley Brook relief culvert, which was commenced in 1925, did not rank for Government grant.

Of the 17 specified works included in the scheme of 1919, 10 have been completed or are in hand. The estimated final cost shows an increase of about 72 per cent. on pre-war figures.

The completed works comprise the improvement of the river Graveney completed in January, 1923 (cost, approximately £200,000), the Wandle Valley sewer (first portion) completed in January, 1924 (£175,000), Charlton storm relief sewer completed in March, 1924 (£150,000) the north-eastern storm relief sewer completed in September, 1924 (£700,000), the Beverley Brook relief culvert completed in September, 1926 (£38,450), the Lewisham Branch sewer completed in October, 1926 (£246,656), enlargement of Abbey-mills pumping station completed in 1926 (£37,700), north western storm relief sewer completed in September, 1927 (£465,000).

The formal opening of Hammersmith storm water pumping station was performed by the Chairman of the Council (Sir John Gatti, J.P.), on 20th January, 1928. The station deals with storm water from Hammersmith and parts of Fulham and Kensington. Two new low-level sewers bring the storm water to the pumping station. The equipment of the station consists of five 4-cylinder gas engines, each 480 B.H.P. coupled directly to five centrifugal pumps, each having a discharging capacity of 200 tons of storm water a minute. The approximate cost of the station and the new sewers was £250,000.

Hammersmith
pumping
station

On 28th October, 1928, a rainstorm occurred, which put the capacity of the station to a severe test. The storm lasted for nearly $4\frac{1}{2}$ hours and was heavy and widespread. At the height of the storm the five pumps were put into operation simultaneously for the first time and worked together for 1 hour. During the storm a total quantity of $32\frac{1}{2}$ million gallons of water was pumped from the station into the river Thames.

In addition to the pumping carried out at Abbey Mills pumping station in connection with the drainage of the low-lying areas in Poplar and the Isle of Dogs, storm water from these areas is pumped direct into the Thames at the Isle of Dogs pumping station, and the general flood relief scheme of 1919 provided for the enlargement of this station and the substitution of gas for steam power. During the year the enlargement of the station was completed at a cost of approximately £51,750.

Isle of Dogs
pumping
station

Shad Thames pumping station, opened in 1909, was designed to accommodate six pumping sets, but as a first instalment three only were put in. The flood relief scheme of 1919 included proposals for completing the equipment of this station. The second instalment, consisting of three engines and pumps, is being added at an approximate cost of £22,000. The installation of the machinery is almost complete.

Shad Thames
pumping
station.

The scheme of relief sewers in Lewisham and Woolwich is described in the Annual Report for 1923 (Vol. III., p. 128). The scheme provided for branches of the Lewisham branch sewer to Hither-green and Lee-green respectively. The Council decided to undertake the construction of the sewer to Hither-green at an estimated cost of £57,000. The tender, amounting to £53,004 13s. 5d., submitted by Messrs. Kinnear, Moodie and Company, Victoria-street, S.W.1, for the construction of the sewer was accepted on 26th May, 1927, and the sewer was put into use in August, 1928.

Storm relief
sewers in
Lewisham
and
Woolwich.

The Streatham and Balham storm relief sewer was constructed in 1912. It receives the overflow of the main and local sewers at Tooting Bec-road, and discharges into the River Graveney at Collier's-wood. A further extension which would tap the main sewer further along its course and increase its usefulness was provided for. The Council decided to proceed with the construction of an extension of the sewer to Ritherdon-road, a length of about 400 yards, at an estimated cost of £12,000.

Streatham
and Balham
storm relief
sewer
extension

The tender, amounting to £10,207 5s. submitted by Mr. Harold E. West, Westminster, S.W., for the construction of the sewer was accepted on 17th June, 1927, and the sewer was put into use in October, 1928.

Further
works for
relief of
flooding.

Further works in connection with the relief of floodings, not specifically included in the original scheme, namely, a diversion of drainage from the southern outfall sewer No. 2 into the southern high-level sewer No. 2; and a diversion of drainage from the Ravensbourne and Lee-green sewer into the southern outfall sewer No. 1 were completed during the year at a cost of £3,550 and £2,600 respectively.

Three small storm outlets from the northern low-level sewer No. 1 in the neighbourhood of Horseferry-road, Westminster, afforded some relief during heavy storms, but more relief is required. An opportunity for securing additional discharging capacity for storm water in the vicinity arose owing to the fact that the Westminster Electric Supply Corporation's power station in Horseferry-road was being converted into a transformer station and that, in consequence, the present cooling water supply from the river Thames was not required. The pipes and subway forming part of the cooling water system were easily adaptable as an efficient storm overflow, and it was decided to acquire and adapt the pipes and subway for the purpose at a cost of approximately £5,000.

The Savoy-street sewer drains an area of nearly 200 acres of land at a level considerably above high tide and discharges into the low-level sewers. At the point of junction with the northern low-level sewer No. 1 there is a storm overflow into the river Thames, but this overflow can only come into operation at low tide. By a reconstruction of the outlet the greater part of the storm water in the sewer may be made to pass direct into the river Thames at all states of the tide and only the dry weather flow and a proportion of storm water will be discharged into the low-level sewer. This improvement will have the effect of keeping a large quantity of water out of the low-level sewer and, thereby, reducing the tendency of the sewer to surcharge and to cause flooding. The estimated cost of the work proposed is £4,500.

Buildings,
etc., over
sewers.

Under section 204 of the Metropolis Management Act, 1855, and section 68 of the Metropolis Management (Amendment) Act, 1862, no building or any other encroachment may be erected in, over or under any sewer vested in the Council or any such sewer diverted except with the Council's consent. During 1927 the Council gave its consent in 33 such cases.

Local sewers.

Section 69 of the Metropolis Management Act, 1855, provides that no local sewer shall be made without the approval of the Council. During 1928 the construction or reconstruction of 49,830 feet of local sewers of various sizes has been sanctioned.

Out-county
drainage.

The discharge of sewage from Walthamstow into the London main drainage system, which was authorised by the London County Council (General Powers) Act, 1925, commenced on 1st April, 1928.

For some time past the Barking Town Urban District Council and the Ilford Corporation have experienced difficulties in connection with the drainage of the areas under their respective control owing to rapid development for building purposes. The Council's Becontree housing estate lies partly within these areas. Proposals have been made for the establishment of sewage works on the Ripple marshes, but these proposals have not been acceptable to the Council, among others, and they have been opposed. On the other hand, the Council had been pressing the Barking Town Urban District Council to find an outlet for the drainage of the part of the Becontree housing estate in the urban district in order that the erection of houses might proceed on this part of the estate. In these circumstances consideration was given to the question of bringing the districts into the London main drainage system.

The area of the Barking Town Urban District is 3,805 acres, and the population is estimated at 40,000 persons. The Borough of Ilford comprises an area of 8,496 acres, with an estimated population of about 110,000 persons. Based upon average quantities, the total quantity of sewage discharging from these areas is approximately $4\frac{1}{2}$ million gallons a day. Compared with the quantity of sewage discharging to the Council's Northern main drainage outfall, over 160 million gallons a day, these quantities are comparatively small, and will, under any conditions which can be estimated of increases of population in the two districts remain so. So far, therefore, as the engineering aspect of the question is concerned there appeared to be no practical difficulty in receiving the sewage from the two districts into the London main drainage system. Negotiations took place, and ultimately terms were agreed, which included a payment by the two authorities jointly of £1,000 a year for 30 years in respect of discharged capital on main drainage works and annual payments in two instalments calculated on a net annual value basis (including the value on which contributions are made in respect of Crown property) and based upon the portion of the rate levied by the Council attributable to main drainage purposes, including administrative costs calculated at not exceeding 5 per cent. Agreement was also reached upon the engineering aspects of the matter, providing for the limitation of the quantity of sewage to be discharged to 50 gallons a day for each head of population, the disposal of storm water, etc. In view of the urgency of the matter the Council decided to make application to Parliament in the session of 1928 to sanction the arrangement, and the London County Council (Ilford and Barking Drainage) Act, 1928, was passed.

An agreement has been entered into with the Beckenham Urban District Council for the drainage of certain houses erected in Kingshall-road, Beckenham, payment being made on the same basis as that in respect of the part of Beckenham draining into the London main drainage system under the provisions of the Beckenham Sewerage Act, 1873.

Following upon a cessation of work by the crews of the sludge vessels on 1st Staff. January, 1926, a conference took place between representatives of the Council and representatives of the officers and men, when a resumption of work was agreed upon subject to certain conditions. One of the conditions was as follows: "That the Council will immediately consider the methods by which wages on the sludge vessels services shall be fixed in future. In this connection it will be considered whether these can be fixed by a method other than the Maritime Board." It appeared to the Council that the most convenient method to be adopted would be for the Council to fix rates of pay in the light of awards made from time to time by the National Maritime Board with regard to home trade vessels. Various trade associations and trades unions, representative of similar types of employees to those employed on the sludge vessels, were consulted, but their views were so varied in character that practically no assistance could be derived therefrom. In the circumstances the Council decided to defer dealing with the matter until any application should be made from the employees concerned for revision of the rates of wages, provided that the Council should be at liberty at any time to review such rates of wages.

CHAPTER V.

HOUSING.

Powers and
duties of the
Council.

Prior to the passing of the Housing Act, 1925, which came into force on 1st July, 1925, and which reproduced in a consolidated form the permanent law relating to the housing of the working classes, the powers of the Council in this matter were derived from the Housing Acts, 1890 to 1924. The financial provisions of the Housing, etc., Act, 1923, and the Housing (Financial Provisions) Act, 1924, dealing with Exchequer contributions towards the cost of the construction of houses are not incorporated in the Act of 1925, but are continued as separate enactments. These Acts were passed for the purpose of encouraging building in the immediate future, and are thus in the nature of temporary expedients. Particulars of the provisions of these Acts are set out in the Annual Report for 1924 (vol. III., pp. 142 and 143). Apart from administrative duties, the main divisions of the Council's housing work are (i) the provision of new dwellings to meet the need for additional accommodation, and (ii) the improvement or reconstruction of unhealthy areas, including the provision of dwellings for rehousing persons of the working classes displaced.

Revision of
State
contribu-
tions and of
scheme of
financial
assistance by
the Council.

The contributions payable by the State towards the cost of the construction of houses, both by local authorities and private enterprise, are subject to revision every two years. Reductions in the amounts of the State grants in respect of houses not completed before 1st October, 1927, were made by the Housing Acts (Revision of Contributions) Order, 1926, and the situation was further reviewed by the Minister of Health towards the end of 1928 after consultation with representatives of the Council and of associations of other local authorities in the country.

The Council, both by letter and through its representatives at the conference with the Minister, urged the desirability of retaining the existing rates of State grant for houses completed by 31st March, 1931, and of arranging for higher rates of State grant for new housing accommodation in or near the central areas of London as compared with houses on outlying cottage estates; and the representatives of the several associations also pressed for no reduction of State grant being made.

Subsequently on 19th December, 1928, an Order entitled the Housing Acts (Revision of Contributions) Order, 1928, was issued by the Minister of Health and the Scottish Board of Health limiting the period of the operation of the subsidy provisions of the Housing, etc., Act, 1923, and further modifying the rate of State grant under the Housing (Financial Provisions) Act, 1924. The Council's request for higher rates of grant for new dwellings in or near the central areas was not conceded.

The Order provides that so far as respects houses in England and Wales which have not been completed before 1st October, 1929, no State or other grant under the Act of 1923 shall be made, and that the State grants under the Act of 1924 shall be further reduced from £7 10s. to £6 a year for each house for 40 years. The Order also further reduces from £1 17s. 6d. to £1 10s. a year for each house for 40 years in respect of houses not completed before 1st October, 1929, the maximum amount of the supplemental grants which may be made by the Council under the Act of 1924 to the City Corporation and metropolitan borough councils and to private enterprise, towards the cost of housing schemes undertaken by them.

The following table sets out (A) the original rates of subsidy payable by the State and by the Council, (B) the rates as amended in consequence of the first re-

vision made by the Minister in 1926, and (C) the new rates prescribed by the Order of 1928 :—

	Housing, etc., Act, 1923—Grant for each house for 20 years.			Housing (Financial Provisions) Act, 1924—Grant for each house for 40 years.	
	To the City Corporation or a metropolitan borough council.	To purchaser or builder of a new house for own occupation.	To public utility society or the like or person maintaining a house for letting at weekly rent.	To the City Corporation or a metropolitan borough council.	To public utility society or the like.
<i>A. Original grant :—</i>					
(i) State grant ...	£6 a year	£6 a year	£6 a year	£9 a year	£9 a year
(ii) Council's grant	Not exceeding £3 a year (supplemental to State grant)	†£6 a year (or lump sum of £75)	†£9 a year (†£8 a year if house has more than 2 bedrooms)	Not exceeding £2 5s. a year (supplemental to State grant)	†Not exceeding £11 5s. a year.
<i>B. Existing grant, i.e., for houses not completed before 1st October, 1927 :—</i>					
(i) State grant ...	£4 a year	£4 a year	£4 a year	£7 10s. a year	£7 10s. a year
(ii) Council's grant	Not exceeding £2 a year (supplemental to State grant)	†Lump sum of £50	†£6 a year	Not exceeding £1 17s. 6d. a year (supplemental to State grant)	†Not exceeding £9 7s. 6d. a year.
<i>C. Revised grant, i.e., for houses not completed before 1st October, 1929 :—</i>					
(i) State grant ...	Nil	Nil	Nil	£6 a year	£6 a year
(ii) Council's grant	Nil	Nil	Nil	Not exceeding £1 10s. a year (supplemental to State grant)	†Not exceeding £7 10s. a year.

† Including State grant.

In the case of public utility societies, housing associations, etc., and private enterprise, grants-in-aid are made by the Council in approved cases, the State grant being subsequently paid by the Minister of Health to the Council, and the net expenditure by the Council is represented by the difference between the Council's grant and that made by the State. The Council's contributions towards housings schemes of the City Corporation or metropolitan borough councils are also limited to approved cases, and are supplemental to the State grants which are paid direct to those authorities.

The expression "house" includes a self-contained flat or tenement.

The review of the rates of State grant in respect of new (i.e., additional) housing accommodation does not affect the State contribution under section 1 (3) of the Housing, etc., Act, 1923, towards the cost of slum clearance and re-housing schemes, namely, "not exceeding one-half of the estimated average annual loss likely to be incurred by the local authority in carrying out the scheme."

The question of the action to be taken by the Council consequent upon the terms of the new Order was under consideration at the end of the year.

Up to 31st December, 1928, the Council had approved proposals submitted by private builders for the erection of 3,250 houses and flats to qualify for subsidy on completion, 1,006 of which will be maintained for letting. The number of houses approved during the year was 633.

Certificates of personal qualification to receive the promised subsidy were issued during the year to prospective owner-occupiers of 199 houses included in

Houses approved for grant.

those mentioned above, the total number of personal certificates issued since the inception of the scheme up to 31st December, 1928, being 2,001.

Legislation.

A question having arisen with regard to the basis of computation of State grant towards the cost of improvement or reconstruction schemes carried out by either the Council or a metropolitan borough council at the joint expense of both, the Council on 26th June, 1928, decided to promote legislation in the session of Parliament of 1929 to provide that any payment or contribution by any metropolitan borough council towards the expenses incurred by the Council, or any payment or contribution by the Council towards the expenses incurred by any metropolitan borough council, in carrying into effect any such scheme shall be disregarded for the purpose of ascertaining the amount of any State grant in respect of such scheme. The object of this legislation is to make it quite clear that the Minister of Health is empowered to make a State contribution in respect of any scheme up to one-half of the estimated combined loss to be incurred by the two authorities and not limited to one-half of the loss to be incurred by the authority actually carrying out the scheme.

Houses, etc., completed.

Since the war, the Council has, up to 31st December, 1928, completed 34,005 houses and flats. The houses and flats completed during the year 1928 totalled 9,920. Altogether since the completion of the first dwellings in 1894, the Council has provided 43,990 tenements and houses and three lodging-houses with 1,880 cubicles. The total estimated population of the Council's dwellings on 31st December, 1928, was nearly 200,000 persons. These figures cover the whole of the Council's housing operations for the periods mentioned, including rehousing in connection with schemes for the clearance of unhealthy areas and other public improvements.

The programme of work in hand is very considerable, comprising the erection of about 13,500 additional houses under Part III. of the Housing Act, 1925, apart from the rehousing required under slum clearance schemes.

Clearance schemes.

As already indicated, the Minister of Health is empowered to make State contributions towards the expenses incurred by local authorities in carrying out improvement or reconstruction schemes under Part II. of the Housing Act, 1925, such contributions being limited to one-half of the estimated average annual loss to be incurred by the local authority in carrying out the scheme. A comprehensive programme of slum clearance is being carried out by the Council with the aid of State contributions on this basis. The schemes now in operation or about to be commenced are 13 in number and include 23 separate areas comprising 99.47 acres. The displacement of 28,513 persons of the working classes is involved and rehousing accommodation for about an equivalent number has to be provided, of whom not fewer than 19,870 have to be accommodated within the limits of the improvement areas.

Housing policy.

The year witnessed the inception of a new and important phase of the Council's housing policy. Immediately after the war the Council was compelled, owing to the acute housing shortage, largely to devote its energies to the provision of the greatest practicable number of houses in the shortest possible time by the readiest means available, that is to say, by the development of large cottage estates in the suburban districts. Now that so much has been done in this direction the Council has felt that the time has arrived when special attention should be paid to the needs of those workers in London who require to reside near their places of employment. A proposal to provide under Part III. of the Housing Act, 1925, new block dwellings in or near the central areas of London, quite distinct from rehousing operations, was agreed in principle by the Council on 24th July, 1928, and the Council on 22nd January, 1929, approved a capital estimate of £250,000 for the acquisition of the first instalment of sites for the purpose. These new dwellings will be of a type superior to those provided by the Council for rehousing purposes. Before the close of the year several sites had been provisionally selected and others were under consideration.

When deciding to embark on this new housing work, which it is anticipated will soon assume considerable proportions, the Council thought it well to defer the development of most of the remainder of its large estate at Becontree, Essex, so far as the erection by the Council of houses for letting was concerned. This decision is referred to under "Becontree" below.

The rehousing of the poorer people displaced by clearance schemes presents serious difficulties and various methods are being employed to meet their needs. Dwellings of a simplified type of planning with normal finish and others of normal planning with a reduced standard of finish are being provided by the Council to be let at lower rents than those usually charged for the normal type of dwellings. Particulars of the simplified type of planning are given in the Annual Report for 1925 (vol. III., pp. 189-90). As a further measure for dealing with the problem of providing suitable accommodation for the poorer class of tenants the Council on 24th July, 1928, also approved a proposal for the acquisition of limited amounts of existing house property for rehousing persons displaced from slum clearance or other areas. Something has already been done in this direction, and further blocks of property are being considered with a view to their utilisation for this purpose.

Particulars of housing schemes carried out or in progress of execution by the Council during the year under Part III. of the Housing Act, 1925, are as follows:—

The estate known as Becontree, situated in the County of Essex, between Chadwell Heath on the north and Ripple-road on the south, comprises about 2,770 acres, and was purchased with the aid of compulsory powers obtained in 1920. The development of the estate is being carried out by C. J. Wills and Sons, Limited, on a cost basis with a variable fee to the contractor. This type of contract termed a "value-cost" contract, is described later (see St. Helier estate, p. 184). About two-thirds of the area of the estate which is available for the erection of houses, namely, the portions in the borough of Ilford and the urban district of Dagenham, has been or is being developed. No development of the portion of the estate in the urban district of Barking Town has so far been undertaken as no drainage facilities have hitherto been available in that area. This difficulty will not be removed as regards the portion west of Gale-street until the arrangements contemplated in the London County Council (Ilford and Barking Drainage) Bill, 1928, for carrying the sewage from those areas into the London system are made, and these cannot be carried into full effect before the end of 1930. Arrangements are, however, being made for the portion of the estate in the Barking area immediately adjoining the Dagenham area (*i.e.*, east of Gale-street) to be permanently drained into the Dagenham sewerage system.

Of the houses which have been completed at Becontree, the majority have been let to families removing from the county of London. Many of these moved to Becontree, particularly in the earlier stages of its development, because it was the only estate upon which they could find accommodation reasonably suited to their needs and in spite of the fact that some extra time and expense in travelling were involved. During the winter of 1927-28 some difficulty was experienced in letting the full number of houses of the larger types on the estate, and although the number of empty houses subsequently fell, it appeared that the production of houses of this type at the estate had for the time overtaken the demand.

Having regard to the foregoing considerations the Council came to the conclusion, that it was desirable that time should be afforded for the estate to consolidate and settle down and for industry to become established in that district, and that an opportunity should be given for mixed development of the estate and particularly the provision by private enterprise of a number of houses for sale. It was accordingly decided on 24th July, 1928, that the development of the portion of the estate in the Barking Town urban district to the west of Gale-street should be deferred so far as the erection by the Council of houses for letting was concerned.

At the end of the year, about 16,100 houses on the estate had been completed, about 1,163 were in course of construction, and orders had been issued to the contractors for the erection of about 449 others. The question of proceeding with the development of a further section of the estate (about 1,150 houses), namely the section in the Barking Town urban district east of Gale-street, was under consideration at the end of the year. The estate is capable of being developed to the extent of a total of about 26,000 houses and flats, with a total population of about 130,000.

The period during which orders may be given under the existing contract for the development of Becontree has been extended to 31st December, 1930.

During the year an additional site on the estate was sold to the Church of England authorities for the erection of a church and two sites were sold to the Baptist church authorities and the Congregational Church authorities respectively for the erection of churches.

Six further sites were sold to the Essex County Council for the erection of new elementary schools and one site for the erection of a central school. A site was leased to the British Association of Residential Settlements for social purposes, and an option was given to the Association to purchase the site. Other sites were let on building lease for 99 years, for the erection of shops, a billiards hall and a residence for a doctor.

Two areas of land adjoining the Wantz stream, with a total area of about 8½ acres were transferred free of cost for the land to the Dagenham Urban District Council for use as an open space, and two sites were given to the District Council for the construction of public conveniences.

An agreement was entered into with the District Council for the widening by the Council of three existing roads, Halbitt-street, Oxlow-lane and Little Oxlow-lane, subject to a contribution by the District Council of £28,000 towards the cost. Arrangements were made for the fencing and planting of the land between the carriageways of the portion of Becontree-avenue in Ilford preparatory to the road being taken over by the Ilford Corporation.

Certain strips of land were surrendered by the Council for the reconstruction and widening of Broad-street by the District Council. An offer of the District Council to pay £3,200 in settlement of an outstanding debt of £6,655 in respect of the cost of certain sewer works carried out by the Council for the District Council was accepted, and the Council agreed, subject to the consent of the Minister of Health, to regard the remainder of the sum, namely, £3,455, as a contribution towards the cost of the reconstruction and widening of Broad-street.

On 24th January, 1928, the Council after considering offers received as the result of public advertisement agreed to let on lease five sites at Becontree for the erection of new refreshment houses (four with full licences and one with a beer licence) to take the place of four existing beerhouses on the estate, subject to the necessary licences being obtained by the prospective lessees from the licensing justices. The refusal by the justices of two of the applications for licences and the view apparently taken by the justices that one of the beerhouses, which it was proposed to remove, should remain on its present site made it necessary for the Council to reconsider the matter. The Council accordingly on 31st July, 1928, approved an amended scheme which contemplates the establishment of six new refreshment houses (two with full licences, one with a beer and wine licence, and three with beer licences) and two off-licences in place of the four existing beerhouses.

Arrangements were made for the planting of trees including the provision of guards in the footways of certain roads on the estate.

After protracted negotiation with a view to obtaining the installation of electricity for lighting in new houses at Becontree, arrangements have now been made for the County of London Electric Supply Company, Limited, to instal electricity for lighting in not fewer than 1,000 houses on the estate free of cost to the Council.

and for the Gas Light and Coke Company to instal gas in such houses only for cooking and heating purposes, subject to payment by the Council of £1 for the gas mantel register to be provided by the gas company in the second bedroom of each house. The houses previously erected on the estate were installed with gas for lighting as well as cooking, etc., but in some cases electricity is now being substituted for lighting.

The provision of hospital accommodation for the Thames-side area, which includes Becontree, has been a matter of earnest consideration for several years and a definite scheme for the area has now been formulated for the establishment of a new voluntary general hospital of some 300 to 400 beds. An arrangement has been made, under the supervision and with the support of King Edward's Hospital Fund for London, and with the concurrence of the Minister of Health, for the authorities of the Ilford Emergency Hospital to use their existing cottage hospital as a nucleus for the new general hospital which will be erected contiguously. The hospital will be administered by a board of management constituted from each of the several districts to be served by it, and each district will be safeguarded as regards its right of treatment. H.M. the King has graciously consented to the new hospital being named "The King George Hospital" and T.M. the King and Queen have shown their sympathy with the scheme by contributing to the funds. The authorities of King Edward's Hospital Fund for London agreed to make a first contribution of £10,000 towards the capital cost and the Council on 6th November, 1928, agreed to contribute £10,000 subject to adequate voluntary contributions being forthcoming from other sources. The Chairman of the Council (who had taken an active part in the question from its inception) and the Lord Mayor of the City of London issued a joint public appeal for funds.

The Council, both directly and through the Minister of Transport, has repeatedly urged upon the railway companies concerned the need for improvements in railway facilities for Becontree. In connection with the London, Midland and Scottish Railway Bill, 1927, an undertaking was given in the House of Commons that the railway company would put forward proposals within two years, i.e., by March 1929, for improving the services on the Southend and Tilbury lines passing through or near the estate. On several occasions in 1928 the Council pressed the company to state what progress had been made with the formulation of their proposals and in November, 1928, a conference was held between representatives of the Council and the Company to discuss the general outlines of the company's scheme which, so far as it related to Becontree, included provision for the extension of the Metropolitan District Railway electric train service from Barking to Dagenham, improvements of the steam train services from Fenchurch Street and Broad Street and the provision of a new railway station (in place of the existing halt) at Gale-street on the estate. The Council viewed with favour the main features of the company's proposals which were being considered in detail at the end of the year. Adequate land has been reserved at Becontree for the widening of the Southend line, for the station at Gale-street, and for a goods yard, sidings, etc.

The Council in August, 1928 urged upon the Minister of Transport and the railway companies concerned the need for widening certain bridges at or near Becontree over the London and North Eastern Railway and the London, Midland and Scottish Railway and suggested that the Minister should convene a conference at which the whole question could be discussed. A preliminary conference was arranged to be held in January, 1929, between representatives of the Council, the Ministry of Transport and the several highway authorities.

The total area of Bellingham (Lewisham) is 252 acres, and, under the main Bellingham contract, completed in 1923, for the development of the portion of the estate devoted to working-class dwellings (176½ acres), 2,096 houses and flats have been erected. A few vacant plots were left, on which 32 additional houses are now being erected

by Messrs. Blackwell and Meyer, whose tender amounting to £14,179 was accepted in November, 1928. The portion of the estate south of Southend-lane, at present used as a golf course, has been reserved with a view to the erection by private enterprise of houses of a higher value than those usually provided by the Council.

Downham.

The housing estate at Downham (Lewisham and Bromley), which is about 522 acres in extent, was acquired under compulsory powers. The estate is being developed by Holland and Hannen and Cubitts, Limited, under a "value-cost" contract.

At the end of the year about 5,039 houses had been completed, and 848 houses were in course of construction. A site on the estate has been let on building lease to Barclay, Perkins and Company, Limited, for the erection of a licensed refreshment house to be known as "Downham Tavern." A full licence for the premises has been granted and the building is being erected in accordance with plans approved by the Council as freeholder.

During the year a site on the estate was sold to the Church of England authorities for the erection of a mission hall or church, and another site was sold to the London Baptist Property Board, Limited, for the erection of a church and a for use as a works depot. Two sites were let on building lease to medical practitioners for the erection of residences and surgeries. Areas of about 20·2 acres and 16·61 acres of land on the estate were appropriated as playing fields for elementary and higher education purposes respectively. The appropriation of nine houses at Downham for the accommodation of schoolkeepers on the estate and of one house for the accommodation of the groundsman of the playing field for elementary schools was also approved.

As a result of representations by the Lewisham Metropolitan Borough Council the work on 16 houses in Whitefoot-lane, of which only the foundations had been constructed, was temporarily suspended, without prejudice, in order to enable the borough council if it so desired, after consultation with the Ministry of Transport, to formulate a scheme for a widening and diversion of Whitefoot-lane.

Roehampton estate.

The development of 93 acres of Roehampton estate, Wandsworth, by the erection of 1,212 working-class dwellings was completed in 1927. The remainder of the estate (about 53 acres) has been leased for the erection of houses of a higher value. During the year a site was leased for the erection of a hall for various forms of philanthropic work. The railway siding and other works, including a cart road, provided by the Council at Barnes station in connection with the development of the estate, were sold to the Southern Railway Company for £350.

White Hart-lane estate.

White Hart-lane estate, Tottenham, is now fully developed. A house erected before the war, which recently became unsafe through subsidence of the sub-soil, has been rebuilt on new foundations.

During the year a site was let to the Tottenham Urban District Council for the erection of conveniences.

The Council since before the war has collected the rates with the weekly rents of the pre-war houses on the estate. Agreements for limited periods have now been entered into with the Tottenham and Wood Green Urban District Councils whereby the Council will also collect the rates with the weekly rents of the post-war houses and flats on the estate, subject in each case to payment by the District Council to the Council of a commission for the service rendered.

Watling estate.

The development of Watling estate (390 acres), on the east side of Edgware road, Hendon, which is being carried out by C. J. Wills and Sons, Limited, under a "value-cost" contract, was commenced early in 1926, and is now nearly finished. By 31st December, 1928, 3,775 of the 4,021 houses and flats had been completed. About 74 acres of land on the west side of Edgware-road were acquired by the Council with the main portion of the estate. During the year about 8 acres of this land were appropriated for use as a playing field for the William Ellis School, St. Pancras, and

the remaining 66 acres were sold for the erection of dwelling-houses by private enterprise.

During the year the Council sold a site on the estate for the erection of a Salvation Army citadel. The Council also sold a site to the Middlesex County Council for a secondary school, two sites to the Hendon Urban District Council for elementary schools, and one site to the Vicar of St. Alphage for a church hall and school. A strip of land was sold to the London Electric Railway Company for addition to their sports ground, and the London and North-Eastern Railway Company agreed to convey to the Council two strips of land in exchange for a strip of land required for the future widening of the railway. Other sites were let on building lease for 99 years for the erection of shops or business premises. A site was let on lease for 21 years for the erection of a meeting hall and for sports purposes. A site was let on lease for 99 years to a doctor for the erection of a residence and surgery, and two houses were let on lease for 21 years for the purpose of a dental practice and a medical practice respectively.

Offers were invited by public advertisement for a 99 years' lease, on the basis of the payment of a premium and ground rent, of a site for the erection of a refreshment house of improved type for the supply of food and alcoholic and non-alcoholic liquors to the public on and off the premises. As the result of consideration of the offers received, the Council decided to let on building lease for 99 years to Watney, Combe, Reid and Company, Limited, a site having an area of about one acre with frontage to Orange Hill-road and Deansbrook-lane on condition that the house shall be available for the general entertainment and refreshment of the population, that persons employed on the premises shall not have any direct pecuniary interest in encouraging the sale of alcoholic liquor, and subject to the necessary liquor licence being obtained by the prospective lessees from the licensing justices.

In connection with the proposal of the Hendon Urban District Council to widen Deansbrook-lane and Deans-lane the Council surrendered certain strips of land for addition to the public way.

Castelnau estate, Barnes (51½ acres), was purchased under compulsory powers obtained in 1925 and 1927, and was developed on a "value-cost" contract by Henry Boot and Sons (London), Limited, by the erection of 644 houses, mainly on their pier and panel system of concrete construction. The estate was completed during the year. Castelnau estate.

An area of about 3 acres has been reserved as a public open space, and the question of the arrangements for the lay-out and maintenance of the ground is still under consideration. The outfall works for the surface water drainage from the estate were constructed by the Council for the Barnes Urban District Council, and the payment to be made by the District Council in respect of the cost of the work has now been agreed at £1,689 6s. 1d.

Wormholt estate was partly developed by the Hammersmith Metropolitan Borough Council, and the remainder (68 acres) was purchased by the Council for £58,500. The site adjoins the Council's Old Oak estate, with which it is combined for purposes of administration. Wormholt estate.

On 31st July, 1928, the Council decided to erect 14 additional houses, making a total for the estate of 785 lettings. The estate, which was completed towards the end of 1928, was developed under a "value-cost" contract, by Wilson Lovatt and Sons, Limited.

Nearly all the houses have been allocated for a term of years to meet the special needs of individual metropolitan borough councils, subject to payment of annual contributions under agreements in pursuance of section 14 of the Housing (Financial Provisions) Act, 1924, as mentioned in the Annual Report for 1926 (vol. III, p. 181). During the year agreements were entered into for the allocation of 50 additional houses or flats, each to the Westminster City Council (100 in all) and the Paddington

Metropolitan Borough Council (150 in all). A site on the estate was appropriated for the erection of an elementary school. Certain strips of land bordering on Western-avenue and Old Oak Common-lane were surrendered for addition to the public way.

St. Helier
estate.

St. Helier estate, Morden and Carshalton, is being acquired under compulsory powers obtained in 1926 and 1927. After allowing for open spaces and buildings for various purposes other than dwelling accommodation, the estate will be capable of providing in all for about 10,000 houses.

The first section to be developed is the north-western portion, about 255 acres in extent, in the urban district of Merton and Morden, nearest to the Morden station of the London Electric Railway. The lay-out plan for the first section provides for the erection of about 2,776 houses and flats, including a few blocks of flats in three-storey buildings. Sites have been reserved for places of worship and other public buildings, schools, shops, etc. A site of nearly 12 acres has been set apart for an open space or playing-fields, and another site of about 3 acres for an extension of the public recreation ground of the Merton and Morden Urban District Council, and it is proposed to retain some existing properties. Provision is also made for three estate offices, with superintendent's quarters and workshops. The section is divided in the centre by the Sutton by-pass arterial road, which runs from north to south, and the length of this road on the section is about one mile. The development of the land on either side of the arterial road has been designed with special regard to its use by fast main road traffic, and the number of cross-roads has been limited to two. It is proposed to construct roads 40 feet wide on each side of the arterial road and parallel to it at distances of about 400 feet; and the intervening strips of land will be developed by means of *culs-de-sac* entered from the 40-foot roads. The *culs-de-sac* will be connected with the arterial road by greens with footpaths with no direct means of access for wheeled traffic to or from the arterial road. Between these greens there will be a number of houses facing the arterial road, but their gardens will be entered from footpaths running behind other greens. The estimate of the capital expenditure involved in the development of the first section of the estate, including the construction of roads and sewers, is £1,764,000.

Following the line of action pursued by the Council in the larger housing contracts entered into since the war, it was decided to have the whole of the development work at St. Helier estate, including the construction of roads and sewers and the erection of the houses, carried out under a "value-cost" contract and to employ one master contractor only who would be solely responsible to the Council. Under such an arrangement the Council finances the undertaking and bears the actual cost of the work, and the contractor is remunerated for his services by a fee computed on the measured value of the work and increased or decreased on a definite scale according as the actual cost is respectively less or greater than the measured value.

C. J. Wills and Sons, Limited, had had a long experience in the development of other estates for the Council (Becontree, Watling estate, etc.), and as a result had built up organisations from which the Council wished, if possible, to continue to reap the benefits in the economic and rapid construction of houses at St. Helier estate. After negotiation, the Council therefore, on 31st July, 1928, decided to enter into a contract with the company for the development of St. Helier estate upon the terms and conditions of their contract for the development of Watling estate, but at a percentage of $1\frac{1}{4}$ on the revised total value of the work (as compared with $2\frac{1}{2}$ per cent. for Watling estate), subject to variation as indicated above after a comparison of the actual cost with the measured value. The schedule of values for inclusion in the contract to apply to the first section of the estate was subsequently agreed with the contractors and the arrangements for the work to be commenced

were well advanced at the end of the year. The schedule of values for the first section is subject to revision for further work on the estate if necessary.

On 28th February, 1928, the Council decided to convey to the Southern Railway Company, without payment, about 12 acres of land needed for the construction of the new Wimbledon to Sutton railway across the estate, with a station in a central position, subject to the company undertaking to construct the station at the same time as the railway and to maintain a service of trains to and from the station when the railway is in operation. Additional land, with an area of about two acres, was subsequently sold to the company, at £450 an acre, for the purpose of securing increased width for the railway.

The Council on 11th December, 1928, appropriated the main portion of the site of the disused school in Harwood-road, Fulham, for the erection of block dwellings under Part III. of the Housing Act, 1925, and the remainder of the site for the widening of New King's-road and Harwood-road. The old school buildings will of course be demolished. The area of the housing site is .76 of an acre, and plans have been approved for the erection thereon of a five-storey block of dwellings to contain 44 tenements and 8 lock-up shops. The scheme also provides for 12 perambulator and cycle sheds. This constitutes the first instalment of the dwellings proposed in pursuance of the new policy of the Council for the provision in or near the central areas of London of accommodation under Part III. of the Act. (see p. 178).

Harwood-road site, Fulham.

The first example of the repair and adaptation by the Council of existing house property for working-class accommodation (see p. 179) is afforded by a block of 39 houses at Twyford-street, Islington. The property was originally acquired for the erection of a new school on the site, but, the school not now being required, the houses are being repaired and adapted for occupation by families displaced by clearance schemes.

Twyford-street site.

Particulars are given below of the various schemes being carried out by the Council for the clearance and reconstruction of unhealthy areas under Part II. of the Housing Act, 1925.

Clearance schemes.

The Tabard-street, etc., scheme deals with the Tabard-street and Grotto-place areas, Southwark, and the Crosby-row area, Bermondsey, comprising in all about 18½ acres. The clearance of the three areas involves the displacement of 4,550 persons of the working class, and the Council is required under the confirming Order, made in 1912, as amended by the modification Order issued by the Minister of Health in July, 1926, to provide rehousing accommodation for not fewer than 3,580 persons, of whom not fewer than 2,580 are to be rehoused on the Tabard-street area. Accommodation has been provided on the main portion of the Tabard-street area, known as Tabard Garden estate, for 2,380 persons in seven blocks of dwellings and one cottage. Two further blocks with accommodation for 236 persons will be erected on an adjacent site in Law-street included in the scheme. The remainder of the rehousing accommodation has been provided at East Hill estate, Wandsworth.

Tabard-street, etc., scheme.

On 18th December, 1928, the Council decided to let on lease for 99 years at a rent of £65 a year a site in Nebraska-street, on the estate, to Church Army Housing, Limited, for the erection of working-class dwellings.

The Brady-street scheme, which was confirmed by the Minister of Health in 1922, relates to an area of about 7 acres in the Metropolitan Borough of Bethnal Green. About 1,865 persons of the working classes will be displaced, and accommodation has to be provided for 1,600 persons on the cleared site (Collingwood-estate), and for 265 persons elsewhere. Accommodation for 1,390 persons has already been provided under the scheme, and on 18th December, 1928, the Council approved a capital estimate of £29,600 for the erection on the area of two further blocks of dwellings (Blackwood House and Harvey House), comprising in all 50 tenements of the normal type, with accommodation for 320 persons, and 4 lock-up shops on the ground floor of Harvey House. The tender of Rowley Brothers Limited,

Brady-street scheme.

amounting to £26,656, for the work, has been accepted, and the buildings are due to be completed towards the end of 1929.

The central open space (about 1 acre) to be formed on the estate will be maintained as an estate garden, but as an experiment it will be available for the first 12 months also for the use of the general public.

Arrangements were made during the year for the Bethnal Green Metropolitan Borough Council to carry out at an approved schedule of charges the paving works in connection with the diversion and widening to 40 feet of Mercer-on-street between Pereira-street and Collingwood-street. A strip of land has also been surrendered for addition to the public way to enable Collingwood-street between Bath-street and Mercer-on-street to be widened to a width of 20 feet from the centre of the road, and arrangements have been made for the Borough Council to carry out the necessary paving works, free of cost to the Council.

Ware-street
scheme.

The scheme for dealing with the Ware-street area (Whitmore-estate), Hoxton (8½ acres), which was confirmed by the Minister of Health in 1922, involves the displacement of about 2,648 persons of the working classes, and the Council is required to provide rehousing accommodation for that number, of whom not fewer than 2,160 are to be accommodated within the area. Up to the end of 1927, rehousing accommodation for 1,144 persons had been provided on the area and elsewhere.

During 1928 three blocks of dwellings (part of Stringer Houses and Fletcher House), comprising 66 tenements (48 of the simplified type and 18 of the normal type) with accommodation for 328 persons, were completed. On 24th July, 1928, the Council approved a capital estimate of £11,830 for the erection of a further block of dwellings (part of Stringer Houses), comprising 32 tenements of the simplified type with accommodation for 144 persons. The building work, which is due to be completed in October, 1929, is being carried out by Rowley Brothers Limited, as an extension of their contract and supplemental agreement for the erection of the three Horner Houses completed in 1927, and the three further blocks completed in 1928.

During the year two licensed premises on the area were acquired by the Council as de-licensed premises.

Hickman's-
folly
scheme.

Another unhealthy area which is being cleared by the Council is the Hickman's-folly area, Bermondsey (6 acres), to be known after reconstruction as Dickens estate. About 1,660 persons of the working classes will be displaced, and under the scheme, as confirmed by the Minister of Health in 1923, accommodation has to be provided for this number of persons, of whom not fewer than 1,000 are to be accommodated within the area. Accommodation for 494 persons has already been provided on the area in Pickwick House (302 persons) and Oliver House (192 persons). On 22nd May, 1928, the Council approved a capital estimate for the erection of a further block of dwellings (Dombey House) of the normal type, comprising 28 tenements, with accommodation for 152 persons. The tender of Rowley Brothers, Limited, amounting to £12,683, for the work has been accepted and the building is due to be completed in May, 1929.

A site was sold during the year for the reinstatement of certain existing club premises on the area required for demolition.

Bell-lane and
Ellen-street
scheme.

The Bell-lane and Ellen-street scheme, which was confirmed by the Minister of Health towards the end of 1923, provides for the clearance and reconstruction of two areas known as the Bell-lane area, Spitalfields (4 acres), and the Ellen-street area, St. George-in-the-East (1½ acres). Dwellings have to be provided for the accommodation of 1,705 persons of the working classes, of whom not fewer than 600 are to be accommodated within the Bell-lane area, and the remainder elsewhere. The name Holland-estate has been selected for the Bell-lane area when reconstructed. Accommodation for 364 persons has already been provided on the area in Carter House (204 persons), and Bernard House (160 persons).

On 31st July and 11th December, 1928, the Council approved a capital estimate of £38,117 for the erection of (i) the first section of block 3 of dwellings, to be known as Brune House, and an estate store, (ii) 9 shops and workrooms in Shepherd-street, (iii) a portion of another building in Shepherd-street, comprising 1 shop with dwelling accommodation over it, and (iv) three shops with dwelling accommodation over them and three stores in connection with the shops in Wentworth-street. Brune House has been designed to contain in all 99 tenements of the normal type, to afford accommodation for 590 persons, and the first section will comprise 44 tenements with accommodation for 268 persons. The tender of Mr. A. T. Rowley, amounting to £29,493, for the works under items (i), (ii) and (iii) above has been accepted together with his offer to undertake the work under item (iv) at the same rates and prices as those contained in his tender. The building work is due to be commenced in January, 1929. The question of the method of utilising the Ellen-street area when cleared was under consideration at the end of the year.

The Prusom-street scheme, as confirmed by the Minister of Health, with modifications, in 1924, deals with an area about $8\frac{1}{2}$ acres in extent in Wapping, to be known, when re-constructed, as Wapping-estate. The scheme involves the displacement of 2,601 persons of the working classes and rehousing accommodation has to be provided for an equal number, of whom not fewer than 1,000 are to be accommodated on certain defined lands within the area. Accommodation for 184 persons has already been provided on the area in Willoughby House. On 18th December, 1928, the Council approved a supplemental capital estimate of £4,000 to cover the cost of the acquisition by agreement for the purposes of the scheme of certain additional properties lying to the north-west of Green-bank between Raymond-street and Old Gravel-lane. Prusom-street scheme.

During 1928 blocks 2 to 5 of dwellings (Chancellor, Flinders, Frobisher and Franklin Houses), comprising 96 tenements of the simplified type with 264 rooms, to afford accommodation for 528 persons, were completed. On 26th June, 1928, the Council approved a capital estimate of £34,380 for the erection of two further blocks, to be known as Fenner and Jackman Houses, comprising 51 tenements (20 of the simplified type and 31 of the normal type) with accommodation for 286 persons, with 8 lock-up shops on the ground floor of Jackman House, and 3 shop premises with dwelling accommodation over them in Old Gravel-lane. The building work, which was commenced in August, 1928, is being carried out by Canonbury Construction Company, Limited, as an extension of their contract for the erection of blocks 2 to 5. Two of the shop premises to be erected in Old Gravel-lane are being fitted with special trade appliances, the cost of which (£515) will be repaid with interest by the tenants by instalments.

Arrangements were made during the year for the Stepney Metropolitan Borough Council to make up, free of cost to the Council, a strip of land to be added to the public way for the purpose of widening Green-bank.

The scheme made by the Council for the clearance of the three insanitary areas in the Metropolitan Borough of Poplar, known as the Baker's-alley ($1\frac{1}{2}$ acres), Birchfield-street ($\frac{3}{4}$ acre) and Bromley-place ($\frac{3}{4}$ acre) areas, was confirmed by the Minister of Health in 1924. Rehousing accommodation has to be provided for not fewer than 740 persons (190 on the Birchfield-street area). One block of dwellings (Birchfield House) with accommodation for 190 persons, has been erected on the Birchfield-street area. Re-housing accommodation for a further 432 persons has been provided at East Hill-estate, Wandsworth (200 persons), and Shore-estate, South Hackney (232 persons). Baker's-alley, Birchfield-street and Bromley-place scheme.

During the year the Council, with the consent of the Minister of Health, acquired by agreement for £800 an additional property for improving the Baker's-alley area.

The Bromley-place area has to be laid out as an open space and the Baker's-alley area may be disposed of or utilised by the Council for any purpose with the consent of the Minister of Health. The manner of dealing with the latter area was being considered at the end of the year.

George's-road and Brand-street scheme.

The scheme, confirmed by the Minister of Health in 1925, for dealing with the two unhealthy areas, known as the George's-road and Brand-street areas, Holloway (4 $\frac{3}{4}$ acres), involves the displacement of 1,320 persons of the working classes. Rehousing accommodation has to be provided for an equal number of persons, of whom 1,044 will be accommodated on the cleared areas (Ring Cross-estate). Accommodation for the remaining 276 persons has been provided on Shore-estate, South Hackney.

Branston and Rollit Houses on the Brand-street area, containing flats for 292 persons, have been completed. On 28th February and 23rd October, 1928, the Council approved a capital estimate of £66,439 for the erection of two blocks of dwellings, to be known as Radford and Hartnoll Houses, on the George's-road area. The buildings will comprise in all 135 tenements (111 of the normal type and 24 of the simplified type) with accommodation for 752 persons. The tender of Gee, Walker and Slater, Limited, amounting to £62,161, for the building work and for the work of diverting Milton-place to provide an outlet into George's-road was accepted. Radford House is due to be completed in October, 1929, and Hartnoll House in November, 1929.

During the year the Council accepted the offer of the Gas Light and Coke Company to instal gas for cooking in the tenements of Radford and Hartnoll Houses, subject to the payment by the Council of £1 a tenement, and of the Islington Metropolitan Borough Council to lay the necessary cables and to supply electricity for lighting, provided that the wiring of the tenements was undertaken by the Council.

On 31st July, 1928, the Council decided to appropriate a site on the George's-road area for elementary education purposes for the erection of a central and junior school.

Watergate-street scheme.

The Watergate-street scheme deals with an unhealthy area in Deptford and Greenwich, known as the Watergate-street area, about 7 $\frac{1}{2}$ acres in extent. The area adjoins and will form part of an existing housing estate, known as Hughes Fields-estate. The confirmation Order made in 1926 requires the Council to provide rehousing accommodation within the area for 1,927 persons. Blake and Hawkins Houses, with accommodation for 396 persons, have already been built.

On 28th February, 1928, the Council approved a capital estimate of £22,700 in respect of the erection of the third block of dwellings, to be known as Clinton House, on the estate. The building will comprise 87 tenements of the normal type with accommodation for 232 persons. The tender of A. E. Symes, Limited, amounting to £19,454, for the work was accepted, and the work is due to be completed in August, 1929.

On 31st July and 23rd October, 1928, the Council approved a capital estimate of £32,360 for the erection of five further blocks, to be known as Watergate Houses. The buildings will be three storeys in height, with three-room and four-room tenements on each floor, and will comprise in all 48 tenements with accommodation for 336 persons. The tender of R. J. Rowley, Limited, amounting to £29,784, was accepted for the building work, which was commenced in November, 1928.

On 15th May, 1928, the Council decided to enter into an agreement for the re-instatement of one of the three licensed premises on the area, and, in order to enable effect to be given to the proposal, the Minister of Health made an Order, dated 14th June, 1928, entitled the County of London (Watergate-street Improvement Scheme) Order 1926 Amendment Order, 1928. The licences of the two other licensed premises on the area have been extinguished on the grounds of redundancy,

and on 24th January, 1928, the Council agreed under section 47 of the Housing Act, 1925, to pay a moiety (£2,749) of the compensation payable to the compensation authority under the Licensing (Consolidation) Act, 1910, in the case of one of the two licences.

In order to comply with the conditions under which they receive their pensions, the pensioners of Sir John Evelyn's Charity, at present living in the area, will be afforded the opportunity of continuing to reside in the ecclesiastical parish of St. Nicholas, Deptford.

During the year the Council accepted the offer of the London Electric Supply Corporation, Limited, to install electric lighting in the tenements in Watergate Houses and of the South Metropolitan Gas Company to install gas for cooking and heating, in each case free of cost to the Council.

The scheme for dealing with the Ossulston-street area, St. Pancras (about 8 acres), involves the displacement of about 2,557 persons of the working class and the confirming order requires that rehousing accommodation for not fewer than that number shall be provided within the area. The name Ossulston estate has been selected for the area when reconstructed.

Ossulston-street scheme.

The area naturally divides itself into three sections—the northern, between Hampden-street and Phoenix-street; the central, between Phoenix-street and Christ Church and its school; and the southern, between Christ Church and Weir's-passage.

On 1st February, 1928, the Minister of Health (the Right Honourable Neville Chamberlain, M.P.) laid the foundation stone of the dwellings to be erected on the area, the stone being on the central section.

On 6th March and 10th July, 1928, the Council approved a capital estimate of £66,500 for the erection of dwellings on the central section of the area. These dwellings will vary in height from three to six storeys and will contain 87 working-class tenements with accommodation for 550 persons, 14 lock-up shops, accommodation for a maternity and child welfare centre and a Salvation Army meeting hall. These dwellings will be provided with a central hot water system and an installation for cooking and heating, as well as lighting, by electricity. The tender of J. E. Billings and Company, Limited, amounting to £55,468, for the building work was accepted, and at the end of the year the work was well in hand.

On 18th December, 1928, the Council approved a capital estimate of £24,920 for the erection of the first portion of dwellings, to comprise 39 tenements with accommodation for 234 persons, on the northern section of the area, and the work is to be carried out by J. E. Billings and Company, Limited, as an extension of their contract for the development of the central section of the area.

On 30th October, 1928, the Council decided to lease a site on the area to the St. Pancras Metropolitan Borough Council for the erection of a transformer sub-station in connection with the supply of electricity to the dwellings.

The Council on 8th November, 1927, decided to enter into agreements with the respective owners of two fully licensed public-houses on the area for the reinstatement of the premises on other sites in the area. To enable effect to be given to these proposals the Minister of Health, on 11th May, 1928, issued the necessary amending Order, entitled the London County Council (Ossulston-street Improvement Scheme) Order 1926 Amendment Order, 1928.

The China-walk, etc., scheme deals with four unhealthy areas known as the China-walk area, Lambeth; the Hatfield-street and Hankey-place areas, Southwark; and the Wyndham-road area, Camberwell. The scheme, as confirmed by the Minister in 1927, requires accommodation to be provided for 3,350 persons, of whom not fewer than 2,200 are to be accommodated within the areas included in the scheme, leaving a balance of accommodation for 1,150 persons to be provided elsewhere. Accommodation for 958 persons has been provided on Kennings-estate, Kennington.

China-walk, etc. scheme.

China-walk
area.

The China-walk area when reconstructed will be known as China-walk estate. On 22nd May, 1928, the Council approved a capital estimate of £32,375 for the erection of the first three blocks of dwellings (Coalport, Davenport and Derby Houses) on the estate. These buildings will comprise 59 tenements with accommodation of the normal type for 374 persons. The tender of Mr. A. T. Rowley, amounting to £29,208, was accepted for the building work, which was well in hand at the end of the year. On 20th November, 1928, the Council approved a capital estimate of £10,400 for the erection of a further block, to be known as Minton House, comprising 17 tenements with accommodation for 106 persons, 9 costermongers' barrow sheds and 4 workshops. The block will be of the normal type, but with the reduced standard of finish referred to on page 179. The building work, which was commenced in November, 1928, is being carried out by Mr. A. T. Rowley as an extension of his contract for the erection of Coalport, Davenport and Derby Houses. During the year the Council accepted the offers of the South London Electric Supply Corporation, Limited, to install electricity for lighting in all four blocks, free of cost to the Council, and of the Gas Light and Coke Company to install gas for cooking and heating at a charge to the Council of £1 a tenement.

Hatfield-
street area.

Most, if not all, of the Hatfield-street area ($2\frac{3}{4}$ acres), which is situated in an industrial district, will when cleared be devoted to commercial purposes. Agreements were entered into in 1926 with two commercial companies owning property in the area for the retention by them of the cleared sites for the extension of their businesses, and on 8th May and 31st July, 1928, the Council decided to enter into further agreements with these companies (J. Sainsbury, Limited, and the Associated Iliffe Press, Limited) for a sale and exchange of lands in the area.

Hankey-place
area.

It is proposed to erect on the Hankey-place area one block of dwellings, to be known as Medway House, comprising 27 tenements of the normal type with accommodation for 152 persons. On 4th December, 1928, the Council approved a capital estimate of £14,080 for the building work.

Hankey-
place site.

Particulars are given in the Annual Report of the Council, 1927 (Vol. III., p. 204) of the housing site ($\frac{1}{2}$ acre) acquired by the Council at Hankey-place, Southwark, comprising a billiards hall (formerly a Wesleyan Methodist Chapel) and a disused burial ground. The incidental expenses, including the cost of the removal of the human remains, proved to be larger than was originally anticipated, and the Council on 4th December, 1928, approved a supplemental capital estimate of £500 in addition to the £5,000 previously approved for the acquisition of the property and the preparation of the site for building. A portion (about $\frac{1}{3}$ acre) of the site has been leased to Church Army Housing, Limited, for 99 years at a rent of £100 a year, for the erection of dwellings, and the remainder has been appropriated for an open space, which will be maintained by the Council.

Wyndham-
road site.

The name Comber-estate has been selected for the new dwellings to be erected on the Wyndham-road area and the adjoining 4 acres of land acquired under Part III. of the Act of 1925. The first block of dwellings known as Moffat House, comprising 42 tenements of the normal type with accommodation for 254 persons, was completed during the year, and was appropriated for rehousing purposes in connection with certain street improvement schemes. On 31st July, 1928, the Council approved a capital estimate of £42,162 for the erection of two further blocks, to be known as Livingstone and Speke Houses, and accepted the tender of R. J. Rowley, Limited, amounting to £36,308, for the building work. Livingstone House will comprise 56 tenements with accommodation for 320 persons, an estate office, workshop and store, and Speke House will contain 17 tenements with accommodation for 106 persons. Both the buildings will be of the normal type, but Speke House will be constructed with the reduced standard of finish. (See page 179.) The buildings are due to be completed by December, 1929.

During the year the Council accepted the offers of the County of London Electric Supply Company, Limited, and the South Metropolitan Gas Company, respectively, for the installation of electricity for lighting and gas for cooking and heating in Moffat, Livingstone and Speke Houses, in each case free of cost to the Council.

The scheme for the clearance of the Basing-place and Blue Anchor-lane areas, Camberwell (about 3 acres), as confirmed by the Minister of Health in 1927, requires that rehousing accommodation for 756 persons, which is the estimated number of persons to be displaced from the two areas, shall be provided by the Council in new dwellings to be erected on the Blue Anchor-lane area. The Basing-place area will not be used for housing. The Blue Anchor-lane area (to be known as Oliver Goldsmith-estate) is being developed by the erection of two blocks of dwellings (Wakefield and Primrose Houses) of the normal type, comprising in all 121 tenements with accommodation for 766 persons, 12 lock-up shops on the ground floor of Primrose House, 13 costermongers' barrow sheds, and an estate workshop and store. On 18th December, 1928, the Council approved a capital estimate of £1,950 in respect of the construction of the foundations of a portion of Wakefield House.

The scheme made by the Council in 1927 for the clearance of the Carlisle-street area, St. Marylebone (about 7.92 acres), was duly submitted to the Minister of Health for confirmation, and a public local inquiry into the proposal was held on 7th, 8th, 18th and 19th June, 1928. At the end of the year the decision of the Minister was still awaited.

On 26th June, 1928, the Council decided to purchase by agreement from the Portman Estate the freehold of their property (comprising about one-half of the property included by the Council in the scheme) in advance of the confirmation of the scheme by the Minister of Health. The freehold of the Church of England non-provided school in North-street, not covered by the original scheme, was also included in the purchase.

On 10th July and 23rd October, 1928, the Council decided to enter into provisional agreements (subject to confirmation of the scheme by the Minister of Health) with the trustees of St. John's Wood Roman Catholic school, St. Marylebone, and with the Keepers and Governors of Harrow School and Messrs. Villiers, respectively, with regard to certain of their properties included in the scheme. By these agreements the clearance of parts of the areas will be secured without the necessity for the Council to acquire certain freehold interests and without detriment to the site required for the erection of new dwellings on the area.

East Hill estate, Wandsworth (8 acres), was purchased in 1924 for the purpose of providing rehousing accommodation in connection with the clearance of unhealthy areas. Accommodation for 3,254 persons in 13 blocks of dwellings will be provided on the estate, to be allocated to various clearance schemes as indicated in the Annual Report for 1926 (Vol. III., p. 189). Eleven blocks of dwellings of the normal type, five storeys in height, with accommodation for 3,014 persons in 492 tenements have been completed.

On 22nd May, 1928, the Council approved a capital estimate of £24,590 for the erection of the two remaining blocks (Yarmouth and Lowestoft Houses) comprising in all 32 tenements with accommodation for 240 persons. These buildings are of the normal type of planning, but only four storeys high. One room in each tenement is fitted for use as a bed-sitting room which can be furnished by the tenant and let to a lodger if required. The tender of J. E. Billings and Company, Limited, amounting to £22,381, for the building work was accepted and at the end of the year the work was well in hand.

On 7th February, 1928, the Council accepted the tender of J. E. Billings and Company, Limited, amounting to £1,970, for paving the remaining footways and finishing the carriageways adjacent to all the blocks of dwellings then completed on the estate.

During the year arrangements were made for the provision, at a cost not exceeding £315, of 21 perambulator and cycle sheds on the estate.

Hornsey-rise
estate.

The Hornsey Rise estate, Islington (3 acres), was purchased by the Council in 1925 and the accommodation for 1,168 persons provided thereon has been allocated for rehousing persons of the working class displaced in connection with the acquisition of properties for the education service. The estate, which comprises three blocks of dwellings (188 tenements) of the normal type was completed in January, 1928.

During the year the Council accepted the tender, amounting to £464, of Messrs. R. C. Cutting and Company for the provision of lightning conductors on the dwellings which are built on high ground and somewhat exposed to storms from the south-west. Arrangements were also made for the laying out, at a cost not exceeding £860, of the gardens adjoining the dwellings.

Kenning's
estate.

Kenning's estate (White Hart-street site), Kennington (about 2½ acres), was taken on building lease for 120 years from the Duchy of Cornwall. The estate, which comprises seven blocks of dwellings (two of the simplified and five of the normal type) to accommodate 958 persons in 169 tenements, was completed in November, 1928. The accommodation has been allocated for rehousing purposes in connection with the China-walk, etc., scheme.

Shore estate.

Shore estate (Well-street site), South Hackney (3 acres), was taken on building lease for 99 years from the Governors of St. Thomas's Hospital. The first two blocks of dwellings, one of the simplified and one of the normal type and known as Grendon and Kendal Houses, respectively, were completed during the year. The accommodation for 508 persons in 92 tenements in these two blocks has been appropriated for rehousing purposes in connection with the Baker's-alley, etc., scheme (232 persons) and the George's-road and Brand-street scheme (276 persons).

On 31st July, 1928, the Council approved a capital estimate of £22,040 for the erection of a further block of dwellings of the normal type (to be known as Tornay House), which will be a replica of Kendal House and will comprise 44 tenements with accommodation for 268 persons, an estate workshop and store, and 10 perambulator sheds. The building work, which was commenced in July, 1928, is being carried out by Rowley Brothers, Limited, as an extension of their contract for the erection of Grendon and Kendal Houses.

Rents.

Particulars of the rents fixed by the Council from time to time for its working-class dwellings will be found in the Annual Reports for previous years. Weekly net rents (exclusive of rates and water charges) for further accommodation provided both at cottage estates and in block dwellings were fixed by the Council during the year 1928 as follows:—

Cottage estates.—Becontree (Dagenham No. 11 section, about 2,058 houses and flats).—Houses—3 rooms, 10s. 6d. to 11s.; 4 rooms (non-parlour), 11s., to 14s.; 4 rooms (parlour), 12s. 3d. to 14s. 3d.; 5 rooms, 12s. 9d. to 14s. 3d. Flats—2 rooms, 8s. to 8s. 6d.; 3 rooms, 8s. 9d. to 9s. 9d.; 4 rooms (non-parlour), 10s. 3d. and 10s. 9d.; 4 rooms (parlour) 12s. Downham (1,106 further houses and flats)—Houses—3 rooms, 12s. and 12s. 6d.; 4 rooms (non-parlour), 12s. 6d. to 14s.; 4 rooms (parlour), 13s. 6d. to 15s.; 5 rooms, 14s. 6d. to 15s. 3d. Flats—2 rooms, 10s. to 10s. 6d.; 3 rooms, 10s. to 11s.; 4 rooms, 11s. 6d. to 12s. Watling-estate (2,004 further houses and flats)—Houses—3 rooms, 12s. and 12s. 6d.; 4 rooms (non-parlour), 12s. 6d. to 15s. 6d.; 4 rooms (parlour), 13s. 6d. to 15s. 6d.; 5 rooms, 14s. 9d. to 15s. 9d. Flats—2 rooms, 10s. and 10s. 3d.; 3 rooms, 10s. 6d. to 11s. 6d.; 4 rooms (non-parlour) 12s. to 12s. 6d.; 4 rooms (parlour), 13s. Wormholt-estate (122 further houses and flats)—Houses—3 rooms, 12s.; 4 rooms (non-parlour), 13s.; 4 rooms (parlour), 14s. 6d.; 5 rooms, 15s. 6d. Flats—3 rooms, 10s. 6d. to 11s. 6d.; 4 rooms, 11s. 6d. to 12s. 6d.

Block dwellings.—Collingwood-estate (Codrington House)—2 rooms, 8s. to 8s. 6d.; 3 rooms, 9s. 6d. to 11s. 3d.; 4 rooms, 11s. 6d. to 12s. 6d. Comber-estate

(Moffat House)—2 rooms, 9s. to 10s.; 3 rooms, 11s. 3d. to 13s. 6d.; 4 rooms, 13s. 6d. to 14s. 6d.; 5 rooms, 15s. 6d. to 16s. 6d. Shore-estate (Grendon House)—2 rooms, 6s. to 7s.; 3 rooms, 8s. to 9s. (Kendal House)—2 rooms, 8s. to 9s. 6d.; 3 rooms, 10s. to 12s. 6d.; 4 rooms, 11s. 6d. to 13s. 6d.; 5 rooms, 14s. 6d. to 16s. Wapping-estate (Chancellor, Flinders, Frobisher and Franklin Houses)—2 rooms, 5s. 6d. to 7s.; 3 rooms, 7s. 6d. to 9s.; 4 rooms, 9s. 9d. to 11s. Whitmore-estate (Stringer Houses—Blocks 6 and 8)—1 room, 5s. 9d. and 6s. 3d.; 2 rooms, 7s. 3d. and 7s. 9d.; 3 rooms, 9s. 3d. and 9s. 9d. (Fletcher House)—2 rooms, 9s. 6d. and 10s.; 3 rooms, 11s. to 12s. 3d.

During the year 1,459 families were displaced by the Council in connection with the carrying out of slum clearance schemes. Of this total, 802 families (55 per cent.) were provided with accommodation in the Council's dwellings, 453 (31 per cent.) were transferred to premises belonging to the Council and maintained temporarily pending demolition for the purpose for which they were acquired; and the remaining 204 families (14 per cent.) removed to property not belonging to the Council. The families housed temporarily will in due course be offered permanent accommodation on the Council's estates. Rehousing.

During the year the Council made grants not exceeding £150 in all, out of interest on deposits paid by tenants on taking up tenancies, for prizes for the best kept gardens and window boxes on the Council's estates, and contributions to the local funds for judging the various competitions. The Council also made a contribution of £20 towards the judging expenses of the London Gardens Guild. Prizes for gardens and window boxes.

During the year the Council accepted the offer of the Bethnal Green Metropolitan Borough Council to supply electricity to tenants at the Council's Boundary-street estate who so desired; permission was also given, on certain conditions, to the Fixed Price Light Company, Limited, to wire the Council's existing dwellings in Poplar so as to render available electricity for lighting purposes to tenants who desired such a supply. Council's dwellings—Supply of electricity.

One of the results of the disastrous Thames flood of 7th January, 1928, was that considerable damage was caused to the property of some of the Council's tenants at Millbank-estate, Westminster, and of the tenants of some old property in Bermondsey, which had been acquired by the Council for demolition in connection with the Hickman's-folly improvement scheme. The superintendent's quarters at Millbank were also flooded and his furniture and other property injured by the water. Considerable distress and suffering were occasioned to the tenants concerned and immediate steps were taken by the Council to ameliorate their condition by the provision of temporary sleeping accommodation, supplies of bedding, and of coal, etc., to enable them to dry their tenements and effects affected by the flood waters. Thames floods—Housing estates.

The actual losses sustained by the Council's tenants (and by the superintendent) through the effects of the flood were also made good by the Council, the payments to tenants being made in the first place out of the local voluntary relief funds established to deal with the matter, the amounts so paid being reimbursed by the Council. The total outlay was about £525 in the case of Millbank-estate and about £159 in the case of the Hickman's-folly area. There was no loss of life among the Council's tenants, and no material damage was caused to the structure of any of the dwellings erected by the Council itself.

Considerable distress was also caused by the flood to many dwellers in riparian metropolitan boroughs, a number of houses being rendered either permanently or temporarily uninhabitable, and the Council made arrangements for preferential treatment to be granted in the allocation of accommodation on its housing estates to families so displaced.

The average number of workmen employed by contractors on the Council's Staff housing development operations at the end of the year was about 4,100. About 800 men, including 41 workmen caretakers, were continually engaged during the year on

works of maintenance and repair at the Council's dwellings and estates, while the local management staff, including superintendents, 8 caretakers (whole time) estate clerks, porters, etc., numbered about 160, and women workers, *i.e.* laundresses, bedmakers, etc., about 50.

Building
contracts—
Employment
of appren-
tices.

With a view to the augmentation of the supply of skilled labour available in the building industry, it has been the practice for some years to include in the Council's house-building contracts a clause requiring the employment of a certain proportion of apprentices in the carrying out of such works. The clause was inserted after consultation between representatives of the building trades and of the Ministry of Health, and the Minister of Health made it a requirement for his approval of works for purposes of State grant. Having regard, however, to the changed condition of the building industry, it was decided in June, 1928, at the suggestion of the Local Building Industry Committee and with the approval of the Minister of Health, that for the present the requirement as to the employment of apprentices should be discontinued. The clause has therefore been omitted from house-building contracts entered into by the Council since October, 1928.

Housing
handbook
and hand
map.

Early in 1928 the Council published, at the price of 2s. 6d. a copy, a handbook containing an account of its housing activities up to the end of 1927, with particular reference to post-war housing schemes, together with a folder map of Greater London with the Council's housing estates marked thereon. The map, with some brief particulars of the various estates of the Council printed on the back, has also been issued separately.

Grants to
metropolitan
borough
councils.

During the year the Council agreed to make supplemental contributions from the County rate under section 1(6) of the Housing, etc., Act, 1923, or section 2(5) of the Housing (Financial Provisions) Act, 1924, towards the undermentioned schemes of metropolitan borough councils, the grants being of the amounts stated in brackets. The contributions under the Act of 1923 are for a period of 20 years in each case, and those under the Act of 1924 for a period of 40 years in each case:—

Housing, etc., Act, 1923.—Greenwich Metropolitan Borough Council.—300 houses on Charlton-park estate and 12 maisonettes in Coombedale-road (£3 a dwelling a year); 76 additional houses on Charlton-park estate (£2 a house a year).

Kensington Royal Borough Council.—117 tenements on St. Quintin-park estate (£1 10s. a tenement a year) and 14 tenements in Thresher's-place (£2 a tenement a year).

Wandsworth Metropolitan Borough Council.—24 tenements on Southfields estate (£2 a tenement a year) and 6 tenements on Furzedown estate (£3 a tenement a year).

Woolwich Metropolitan Borough Council.—60 houses on Eltham estate (£3 a house a year).

Housing (Financial Provisions) Act, 1924.—Bethnal Green Metropolitan Borough Council.—32 tenements in Parmiter-street (£2 5s. a tenement a year).

Islington Metropolitan Borough Council.—102 tenements in Tyndale-place (£2 5s. a tenement a year).

Finsbury Metropolitan Borough Council.—15 tenements at Southampton-street (£2 5s. a tenement a year); 12 tenements at Mantell-street (£2 5s. a tenement a year); 29 further tenements at Mantell-street (£1 17s. 6d. a tenement a year).

Poplar Metropolitan Borough Council.—80 tenements in River-street and Naval-row (£1 a tenement a year).

St. Marylebone Metropolitan Borough Council.—18 tenements in Fisherton-street (£1 a tenement a year).

Woolwich Metropolitan Borough Council.—32 additional houses on Eltham estate (£1 a tenement a year), making a total of 1,248 houses in respect of which the Council has agreed to make a supplemental contribution under the Act of 1924.

During the year the Westminster City Council applied for a supplemental contribution from the County rate under section 2(5) of the Housing (Financial Provisions) Act, 1924, in respect of 77 flats erected by the City Council, in Esher-street. The Council did not see its way to approve the scheme for the purposes of grant, on the grounds that the cost of the site and buildings was exceptionally high and that the rents proposed to be charged were too low.

Returns as to the progress of housing in Greater London since the war are submitted to the Council periodically. The latest return for 1928 brings the figures up to 31st December, 1928.

Housing
progress in
Greater
London.

The total number of new houses and flats provided in Greater London during the whole period from 1920 to 1928 inclusive was 201,015 which includes 70,183 provided by local authorities. The number provided during 1928 was 42,097, of which 14,730 were provided by local authorities.

The question of the continuance of the Rent Restrictions Acts engaged the attention of the Council during the year, but while the matter was under consideration the Minister of Health, announced in the House of Commons on 26th July, 1928, the intention of H.M. Government to provide for the continuance of the Acts in their present form for another year, *i.e.*, until 25th December, 1929, by including them in the Expiring Laws Continuance Bill. This was afterwards done. In the circumstances no representations were made by the Council in the matter.

Rent
Restrictions
Acts—
Continuance.

The Council's action in earlier years with regard to workmen's trains at cheap fares was dealt with in the Annual Report for 1920 (Vol. I., p. 77). In the Annual Reports for 1923 (Vol. III., pp. 139-40), 1924 (Vol. III., p. 153), and 1926 (Vol. III., p. 192) particulars are given of the proceedings before the Railway Rates Tribunal at which representations were made by the Council on the subject of the charges to be made for workmen's fares and season tickets on London railways. The new scale for workmen's fares, particulars of which are given in the Annual Report for 1927 (Vol. III., pp. 209-10), as well as the standard charges approved by the Tribunal in respect of goods, ordinary passenger fares and season ticket rates, came into operation on 1st January, 1928. The new scales of charges are subject to revision at the end of the first complete financial year according as they produced more or less than the standard revenue ascertained by the Tribunal.

Workmen's
trains.







