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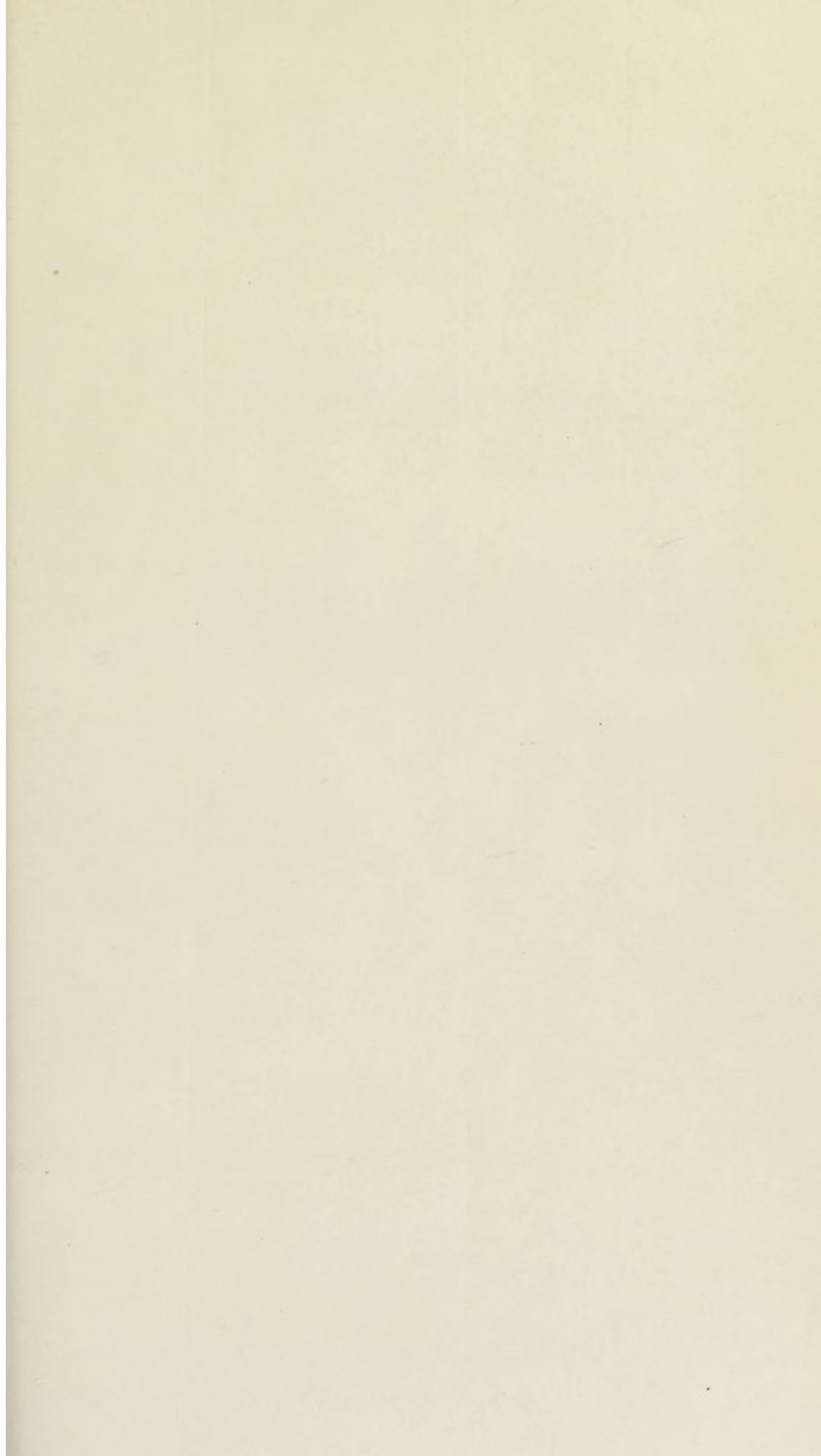
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ADMINISTRATIVE COUNTY OF ESSEX.

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1921.

WILLIAM A. BULLOUGH, M.B., M.Sc., D.P.H.

COUNTY MEDICAL OFFICER OF HEALTH.

Chelmsford :

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P R E F A C E .

*To the Chairman and Members of the Public Health and Housing Committee
of the Essex County Council.*

I have the honour to submit to you my Third Annual Report for the Administrative County for the year 1921. This is the 32nd Report which has been issued.

By circular 269, dated 28th December, 1921, the Ministry of Health state that Annual Reports of a full and detailed character (to be called survey reports) will normally be required at intervals of not less than five years, and that Annual Reports for 1919 or 1920 will be treated as constituting the first of the series of Survey Reports. In other years Annual Reports of a more simple character (to be called ordinary reports) will suffice. It is no longer necessary for me to make a digest of all annual and special reports from local Medical Officers of Health, as the Ministry will be satisfied if my annual report is devoted, in the main, to a consideration of the work for which the County Council is primarily responsible.

With these instructions in view the report for 1921 has been divided into four parts as follows :—

Part I. Vital Statistics and General Matters.

Part II. Combined Medical Service.

Part III. Tuberculosis.

Part IV. Maternity and Child Welfare.

I desire to again record my high appreciation of the co-operation and counsel of yourself and the members of the Committee during my third year of office. To my predecessor, Dr. J. C. Thresh, who has continued to render most valuable assistance, I wish to record my hearty thanks. I am also indebted to the Medical Officers of Health and other officials of Local Sanitary Authorities for their continued co-operation, and also to the Medical, Dental, Nursing, and Clerical Staffs for their loyalty throughout the year.

I am especially indebted to my Chief Assistant (Dr. T. P. Puddicombe), and to my Chief Clerk and Sanitary Inspector (Mr. A. Marsh) for their loyalty and help.

W. A. BULLOUGH,
County Medical Officer.

Public Health Department,
26, High Street,
Chelmsford.

31st May, 1922.

STAFF.

(1) Medical.

(a) *County Medical Officer, School Medical Officer and Chief Tuberculosis Officer—*

W. A. Bullough, M.B., Ch.B., M.Sc., D.P.H.

(b) *Chief Assistant County Medical Officer—*

T. P. Puddicombe, D.S.O., M.B., B.S., D.P.H.

(c) *Assistant County Medical Officers, performing combined duties of School Medical Inspector, Tuberculosis Officer and Child Welfare Officer for County Council, and also holding the appointment of Local Medical Officer of Health under Combined Medical Service Scheme—*

Name.	Qualifications.	Centre.
A. J. Williamson	.. D.S.O., M.A., M.D., D.P.H.	.. Lenden and Wiinstree
W. A. Milne	.. M.B., Ch.B., D.P.H.	.. Clacton
J. Ramsbottom	.. M.B., Ch.B., D.P.H.	.. Tendring

(d) *School Medical Inspectors and Child Welfare Officers—*(i) *Whole-time.*

Maud Bennett (Miss)	.. L.R.C.P., L.R.C.S.	.. Staasted
E. U. Vawdrey (Mrs.)	.. L.R.C.P., L.F.P.S.	.. Woodford
M. D. Rankine (Miss)	.. M.B., B.S., D.P.H.	.. Braintree
Charlotte Brown (Mrs.)	.. L.R.C.P., L.R.C.S.	.. Epping
W. B. Wood	.. M.D., Ch.B., D.P.H.	.. Tilbury

Also act as
Tuberculosis
Officers(ii) *Part-time (Temporary).*

E. D. Fountain	.. M.R.C.S., L.R.C.P.	.. Shceburynnes
----------------	-----------------------	-----------------

(e) *Child Welfare Officer only—*

H. Reynolds Brown	.. M.A., M.D., C.M. (Part-time)	.. Maldon
-------------------	---------------------------------	-----------

(f) *Tuberculosis Officers—*(i) *Consulting Surgeon in Surgical Tuberculosis.*

Sir Henry J. Gauvain, M.C., M.A., M.D., B.Ch.

(ii) *Whole-time.*

H. V. Crossfield	.. M.B., C.M.	.. Braintree
A. H. Jacob	.. L.R.C.P., L.R.C.S.	.. Romford
J. D. Macfie	.. M.B., Ch.B.	.. Chelmsford
J. Sorley	.. M.A., M.D., D.P.H.	.. Leyton & Walthamstow

(iii) *Part-time.*

W. F. Corfield	.. M.D., D.P.H.	.. Colchester
R. J. Ewart	.. M.D., D.Sc., D.P.H.	.. Barking
G. N. Meachen	.. M.D., B.S.	.. Southend-on-Sea

(See also (c) and (d)).

(2) Nursing.

Centre.	Name.	Qualifications.	Whole or part time.	Duties undertaken.		
				T.B.	S.N.	C.W.
Stansted	Barnett, B.	Gen. Training	Whole	Yes	Yes	Yes
Braintree	Skey, A. F.	"	"	"	"	"
Brentwood	Landon, D. M.	" & C.M.B.	"	"	"	"
Billericay	White, G. M.	" "	"	"	"	"
Tendring	Wallace, A. C.	" "	"	"	"	"
"	Steele, M.	"	"	"	"	"
Dunmow	Crocker, J. E.	" & C.M.B.	"	"	"	"
Epping	Cantelin, G. M.	King's Coll. Training	"	"	"	"
Halstead	Bennett, E. R.	Gen. Training & C.M.B.	"	"	"	"
Maldon	Philpott, A.	" "	"	"	"	"
Maldon R. and Burnham	Waterhouse, M.	King's Coll. Training..	"	"	"	"
Ongar	Mann, R. L.	Gen. Training	"	"	"	"
Saffron Walden	Southall, B.	" C.M.B. & R.S.I.	"	"	"	"
Halstead	Evans, E.	Gen. Training	"	"	"	"
Braintree and Witham	Roberts, P. M.	Gen. Training	"	"	"	"
Rochford	Hodges, J.	Gen. Training, C.M.B. & R.S.I.	"	"	"	"
Waltham Abbey	Bowes, E. M.	Gen. Trng. & C.M.B.	"	"	"	No
Chelmsford	McBain, M. M.	King's Coll. Training	"	"	"	"
Woodford	Carnall, E. F.	Gen. Training	"	"	"	"
Filbury	Levack, A.	Gen. Trng. & C.M.B.	"	"	"	"
Grays	Wall, A. D.	Gen. Training	"	"	"	"
Romford	Newby, A. E.	"	"	"	"	"
"	Taylor, A.	"	"	"	"	"
Ilford	Martin, M.	"	"	"	No	"
Leyton	Whitton, K.	"	"	"	"	"
"	Harris, T.	King's Coll. Training	"	"	"	"
Walthamstow	Harrison, J.	"	"	"	"	"
"	Brightman, A.	Gen. Training	"	"	"	"
Shoeburyness	Sears, M. A.	C.M.B. ..	Part	Yes	Yes	Yes
Walton-on-the- Naze	Sollars, A.	" "	"	"	"	"
Lexden and Winstree	Kerry, M.	Gen. Trng., C.M.B. & R.S.I.	"	"	"	Yes
"	Ling, L. E.	Gen. Trng. & C.M.B.	"	"	"	No
Clacton	Hawes, A. F.	Gen. Training	"	"	"	"
Wanstead	Brooker, R.	" & R.S.I.	"	"	"	"
Colchester	Sasse, A. W.	—	"	"	No	"
Harwich	Cockin, E. J.	Gen. Trng., C.M.B. & R.S.I.	"	"	"	"

PART I.

NATURAL AND SOCIAL CONDITIONS OF THE DISTRICT.

Population.

The decennial Census was held on 19th June, 1921 (postponed by reason of industrial unrest from 24th April, 1921). As might have been expected, the results show wide differences from the estimated figures of the various districts, this being largely due to the migration of population during the war period. The Census Act, 1920, unlike its predecessors, is a perpetual Act and contains provisions under which a census can be taken at quinquennial intervals, and local censuses can be taken at any time by the request and at the expense of the Local Authority. The Registrar-General sent out provisional figures on 18th August, 1921, in which the acreage and population of the Administrative County of Essex were shown as below, and for comparative purposes the figures for 1911 are also given:—

		Acreage.		Population.
1911	...	964,826	...	857,988 (excluding East Ham and Southend)
1921	...	964,443	...	918,111

Of the 47 Sanitary Districts 16 showed a decrease in population, the greatest being in Saffron Walden Rural (719), Halstead Rural (593), Ongar Rural (591), Harwich Borough (586), Belchamp Rural (457), Saffron Walden Borough (435), Halstead Urban (348).

Increases in population were most noticeable at Clacton-on-Sea Urban (7,272), Ilford Urban (7,003), Rochford Rural (4,729), Orsett Rural (4,461), Barking Urban (4,226), Romford Rural (4,141).

In view of the preliminary nature of the above-mentioned Census Report, the Registrar-General has for statistical purposes again furnished estimated population figures, as follows:—

	Estimated 1921.	Census 1921.
(1) For calculating birth-rates, the figure, which includes civilian and military population, is	912,605	918,111
(2) For calculating death-rates, the figure, which includes only civilian population, is	... 910,797	

A common population figure (estimated) was, however, furnished by the Registrar-General for every Sanitary District with the exception of Colchester and Harwich Boroughs, both of which contain an appreciable non-civilian population.

The usual summary, showing average number of persons per acre and acres per person, is set out overleaf:—

TABLE I.

	Area in Acres, 1921.	Population.				Persons per acre.	Acres per person. (Calculated on Census figures).
		Preliminary Census 1921.	Estimated population, 1921.				
			For Birth-rate.	For Death-rate.			
Municipal Boroughs (5)	26,516	89,639	89,120	87,312	3·3	0·29	
Urban Districts (25)	75,566	554,733	552,200	552,200	7·3	0·13	
Rural „ (17)	862,361	273,739	271,285	271,285	0·3	3·1	
	964,443	918,111	912,605	910,797	0·95	1·05	

PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

Essex is one of the Metropolitan Shires, and is the seventh of the Administrative Counties in respect of the number of inhabitants as shown by the Preliminary Census 1921. About one-half of the whole population of the County is centred in the south-western corner lying immediately adjacent to the Metropolis. The County in form is roughly a parallelogram measuring 48 miles from north to south and 63 from north-east to south-west.

In the County there are to be found populous urban areas, residential suburbs, wide agricultural districts, small manufacturing centres, residential seaside resorts, and a seafaring, fishing and dockside population.

Birth-rate.

For the Administrative County the fall in the birth-rate from 22·6 in 1920 to 20·0 in 1921 is by no means as significant as is the case in certain of the Sanitary Districts, a few examples of which are enumerated below :—

Sanitary District.	1920.	1921.
Tilbury Urban ...	37·9	22·6
Harwich Borough ...	31·1	24·4
Shoeburyness Urban ...	30·6	23·8
Tendring Rural ...	27·4	20·1
Bumpstead Rural ...	26·6	17·1
Chelmsford Rural ...	26·2	18·9

Last year there were four sanitary districts with rates exceeding 30·0, whereas in 1921 there was only one district (Barking Urban 26·7) with a rate over 25·0.

The birth-rate for 1920 was considerably above the average, largely due no doubt to a return to civilian life of a good many soldiers. It was therefore to be expected that the birth-rate for 1921 would swing back to something like normal. Economic considerations and lack of housing accommodation were also considerable factors in reducing the birth-rate. It will probably be in the national interests that the birth-rate should not be unduly large for the next decade, but all efforts should be made to encourage the best parents to have offspring, and, on the contrary, to discourage by proper means undesirable parents from having children, many of whom are subsequently neglected and very often become a charge on local or national expenditure.

Reference to Table 2 of the Appendix will reveal the following highest and lowest birth-rates:—

Highest.		Lowest.	
Barking Urban	... 26·7	Wanstead Urban	... 13·4
Harwich Borough	... 24·4	Clacton-on-Sea Urban...	14·6
Shoeburyness Urban	... 23·8	Saffron Walden Borough	15·8
Grays	... 23·5		

Death-rate.

The death-rate from all causes in the Administrative County for 1921 was 10·2, as against 10·6 in the previous year. This is a most remarkable figure and shows that Essex must be one of the healthiest counties in England. Highest and lowest death-rates, as recorded in Table 2 of the Appendix, are as follows:—

Highest.		Lowest.	
Urban—Wivenhoe	... 16·1	Urban—Shoeburyness	... 7·3
Brightlingsea	... 13·4	Walton-on-Naze	7·3
Epping	... 13·4	Frinton-on-Sea	7·9
Witham	... 12·9	Clacton-on-Sea...	8·4
Rural—Stansted	... 14·1	Tilbury	... 8·4
Saffron Walden	13·2		
Dunmow	... 12·8		

The exceptional features of the above figures are (1) the highest death-rates occurred in two adjoining riverside districts, whilst (2) the lowest death-rates are recorded at four seaside resorts and the Port of Tilbury, the latter being much less than the previous year when it registered the highest death-rate (16·4) in the County.

Infant Mortality.

The rate of infant mortality for the whole of the Administrative County for the year 1921 was 59·5, being slightly in excess of the figure (58·9) for the previous year. It is worthy of note that in one district (Bumpstead Rural) there were no deaths of infants under 1 year of age during the year. Other districts (see Table II. on page 10) have remarkably low rates, namely:—Clacton-on-Sea Urban 17·4, Loughton Urban 19·8, Maldon Borough 25·4, Frinton-on-Sea Urban 28·5. Experience during this year in respect of infant mortality in this County is all the more remarkable inasmuch as those factors which in former years were invariably associated with a high

TABLE II.

DEATH-RATE PER 1,000 POPULATION. DEATHS OF INFANTS PER 1,000 BORN.

SANITARY DISTRICTS.	Birth- rate. 1921.	Death-rate.		Infantile Mortality.			
		1921.	1911-20 (Average).	1921.	1921.		1911-20 (Average).
					Legiti- mate.	Illegiti- mate.	
URBAN—							
Barking ...	26.7	10.8	13.5	76.4	74.7	125.0	100.8
Braintree ...	21.6	10.5	13.4	39.4	41.6	—	65.5
Brentwood ...	18.3	12.3	11.5	78.7	84.0	—	63.8
Brightlingsea ...	19.3	13.4	13.6	69.8	48.7	500.0	69.7
Buckhurst Hill ...	21.4	9.9	11.6	66.0	69.3	—	77.0
Burnham-on-Crouch ...	17.0	12.3	13.1	34.4	37.0	—	60.3
Chelmsford B. ...	19.3	9.8	11.4	44.7	46.6	—	76.2
Chingford ...	16.5	11.4	10.2	83.3	72.3	500.0	76.3
Clacton-on-Sea ...	14.6	8.4	12.6	17.4	18.4	—	78.2
Colchester B. ...	20.7	10.6	12.6	65.2	63.9	90.9	74.1
Epping ...	16.8	13.4	12.5	42.8	30.3	250.0	61.0
Frinton-on-Sea ...	17.4	7.9	8.0	28.5	29.4	—	45.7
Grays ...	23.5	9.7	11.9	57.8	57.3	71.4	86.3
Halstead ...	21.1	10.8	14.5	47.6	48.7	—	55.3
Harwich B. ...	24.4	10.2	12.3	72.3	58.1	213.1	86.1
Ilford ...	17.4	8.7	9.7	50.9	41.2	263.1	66.3
Leyton ...	20.5	9.9	11.7	67.9	65.1	179.1	82.1
Loughton ...	17.7	10.9	10.4	19.8	21.2	—	70.9
Maldon B. ...	18.4	12.0	13.9	25.4	26.8	—	72.3
Romford ...	19.0	11.0	11.9	80.6	80.8	77.0	79.0
Saffron Walden B. ...	15.8	11.7	14.1	53.7	58.1	285.7	60.9
Shoeburyness ...	23.8	7.3	10.8	46.9	50.0	—	67.7
Tilbury ...	22.6	8.4	14.3	58.8	51.6	250.0	69.3
Waltham Holy Cross ...	19.6	11.2	12.2	37.0	37.8	—	79.5
Walthamstow ...	21.6	9.5	11.1	61.4	62.8	213.1	78.3
Walton-on-the-Naze ...	16.7	7.3	11.1	73.1	78.8	—	84.3
Wanstead ...	13.4	10.6	9.3	39.0	40.4	142.8	48.1
Witham ...	21.3	12.9	14.6	88.6	99.9	500.0	77.6
Wivenhoe ...	20.7	16.1	14.2	81.6	81.6	—	83.5
Woodford ...	17.1	9.7	10.5	68.5	68.3	76.9	10.3
RURAL—							
Belchamp ...	18.6	11.7	15.9	64.1	67.5	—	63.8
Billerica ...	18.4	10.3	12.1	72.4	67.0	166.6	55.6
Braintree ...	18.5	12.3	14.2	51.5	53.7	—	77.9
Bumpstead ...	17.1	12.5	14.7	—	—	—	74.8
Chelmsford ...	18.9	9.9	13.0	43.3	42.2	90.9	64.5
Dunmow ...	18.1	12.8	14.2	61.6	61.0	71.4	66.9
Epping ...	19.9	10.3	11.8	48.7	40.1	230.8	58.8
Halstead ...	19.0	11.6	13.6	32.2	33.9	—	63.3
Lexden and Winstree ...	17.5	10.8	13.3	68.0	63.1	142.9	66.8
Malton ...	19.8	10.8	13.2	58.8	52.1	188.0	54.4
Ongar ...	20.7	11.9	13.7	43.4	48.4	476.2	72.8
Orsett ...	22.3	9.7	11.6	62.8	58.8	187.5	74.1
Rochford ...	18.5	11.0	12.7	53.1	52.3	77.7	65.2
Romford ...	20.8	9.0	10.6	50.4	43.7	250.0	69.9
Saffron Walden ...	20.7	13.2	13.5	33.8	36.8	—	66.4
Stansted ...	20.3	14.1	13.4	87.0	74.6	500.0	73.0
Tendring ...	20.1	10.0	13.4	57.6	52.5	200.0	75.6
Totals—							
Rural ...	19.5	10.8	13.2	55.1	51.6	127.1	67.2
Urban ...	20.2	9.9	12.0	61.3	58.7	140.7	72.0
Administrative County	20.0	10.2	12.5	59.5	56.7	135.7	70.3

All the tributes of the
ason this river is the

the brothers and sisters. The reasons for this marked change are:—

- (1) the education of mothers in mothercraft and infant hygiene;
- (2) the greater consumption of dried milk; and
- (3) tarring of the roads and main streets of towns, which considerably curtails the dust nuisance.

There is no doubt that the trifling amount spent on Child Welfare has been of the most remunerative items in Local Government and National Expenditure.

SEWAGE WORKS AND RIVERS POLLUTION.

The agreement has been continued with Drs. Thresh and Beale, 91, Queen Victoria Street, London, E.C. 4, under which they carry out two inspections annually of the River Roding and collect, examine and report upon all samples taken; examine and report upon all samples of river water and sewage effluent collected for the County Medical Officer from other sources in the Administrative County.

Inspections were made of the Sewage Works which discharge their effluent into River Roding on 1st March, 1921, 10th May, 1921, 27th October, 1921, and 7th November, 1921, when 30 samples of river water and sewage effluent were collected. Results of the examinations of these samples were classed as passable with 15 exceptions, in which cases suitable communications were addressed to the Local Sanitary Authorities concerned.

During the year 14 inspections were also made of the sewage works in the main parts of the Administrative County, from which 15 samples were taken. Of these 2 were classed as good or passable and 13 as bad. In the latter cases appropriate action has been taken.

RIVER COLNE. Repeated complaints of offensive smells necessitated keeping the river under close observation. The source of pollution was traced and the firm responsible took effective steps to prevent their trade effluent entering the river.

RIVER CHELMER has been inspected many times at various points and action has been taken to prevent the continued pollution by two parishes near the source of the river.

THE HISTORY OF THE
CITY OF BOSTON
FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
BY
JOHN HUTCHINGS
OF THE BARRISTER AT LAW
IN THE SUPREME COURT OF JUDICATURE
IN NEW ENGLAND
AND
OF THE BARRISTER AT LAW
IN THE SUPREME COURT OF JUDICATURE
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is not surprising therefore that during this year's abnormally long drought many Rural Councils were much concerned in regard to the water supply of villages. In wells, ponds and streams dried up, and in several instances it became necessary to transport water considerable distances. Enquiries from the oldest inhabitants in some of the districts elicited the statement that such a scarcity of water had not to their knowledge occurred before. The position became so acute in London and Wales that the Ministry of Health deemed it advisable to ask all Local Authority Authorities to furnish information on the following points:—

- (a) The name and description of the source of the water supply.
- (b) The average yield in gallons per twenty-four hours for the year 1920.
- (c) The minimum yield per twenty-four hours during the year 1920.
- (d) The minimum yield per twenty-four hours resulting from the present drought.

Fortunately, the deep wells in Essex were not affected to any great extent as the water supplying them comes a long way underground and consequently the effects of drought may still have to be experienced.

Opportunity was taken by the County Medical Officer and his staff to inspect the various watersheds from their source onwards in the Administrative County. Samples were taken at various points of the rivers and tributaries enumerated in the Table below:—

TABLE III.

SHOWING DATES OF INSPECTIONS, NUMBER OF SAMPLES TAKEN, MINIMUM FLOW, ETC.

Watershed.	River and Tributary.	Date inspected.	No. of Samples taken.	Rough estimate of minimum flow.		Districts where Impurity Figure (3·0) exceeded.
				At	Galls. per day.	
Chelmer ...	Chelmer ...	16-6-21	10	Bishops Hall, Chelmsford	500,000	Thaxted, Felsted, Stebbing
	" ...	30-6-21	5	Besleigh Mill, Maldon	5,000,000	Sandford Mill, Little Baddow
	Ter ...	12-7-21	5	Ulting ...	500,000	Little and Great Leighs, Ulting.

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all the tributaries of the River Crouch were dried up, proving that in the driest this river is absolutely useless as a source of water supply.

In marked contrast the Rivers Chelmer and Blackwater maintained a considerable flow of water, and therefore may be considered as possible sources of water should other means fail to be adequate for the County's needs. An endeavour was made during the year to utilize a river for this purpose.—See following paragraph.

RIVER STOUR. In May, 1921, the South Essex and Southend Waterworks Companies applied unsuccessfully to Parliament for powers to abstract and impound from the River Stour to augment the supply for the southern portion of the County. The Committee considered the financial difficulties insurmountable.

Inspections of the river were carried out at different periods and samples of water were examined to provide data for the detailed evidence furnished by the County Medical Officer in support of the County Council's aim to safeguard the interests of the County. A good flow of water persisted throughout the drought, indicating that the source of the water is of deep seated origin.

SECURITY OF WATER SUPPLIES. With a view to assisting Local Sanitary Authorities, the Ministry of Health issued a circular in September, 1921, suggesting the best methods of dealing promptly with drinking water which becomes polluted, or which is suspected of spreading disease, are by boiling or by chlorination. If, however, alternative sources of pure water are readily available, they should be used; also, where the total quantity of water required is small, it should be borne in mind in this connection that rainwater, collected and stored under proper conditions, provides a very pure supply of drinking-water.

SHORTAGE OF WATER. As before stated, the Ministry of Health addressed enquiries to 2,000 Water Authorities and detailed information has therefore been obtained from all parts of the country. A report on the results of these enquiries was presented to a conference held on 25th January, 1922, at the Ministry of Health, at which the County Medical Officer was invited, and which was called "to consider measures could be taken in view of the shortage of water which now exists and which is not unlikely to increase in the near future." In that report it was stated (1) in 125 districts there was a water shortage, (2) 52 districts had a supply which was less than half the normal, (3) some districts were not feeling the shortage as such as those fed by the Pennine watersheds and the high moorland districts, (4) in several other districts the situation was serious. The chief points discussed in regard to the measures that may have to be taken in districts where there is an actual shortage of water were :—

- (1) The question of utilising sources of supply which would not generally be available for domestic purposes. For example, recourse may be had to a river which is generally not regarded as fit for drinking purposes. In such a case the water would have to be treated.

The first part of the paper is devoted to a general
discussion of the various methods of determining
the rate of reaction. It is shown that the
method of initial rates is the most reliable
and that the method of half-lives is the least
reliable. The method of initial rates is based
on the fact that the rate of reaction is
proportional to the concentration of the
reactants. The method of half-lives is based
on the fact that the half-life of a reaction
is independent of the initial concentration of
the reactants. The method of initial rates
is more reliable because it is based on a
direct measurement of the rate of reaction,
while the method of half-lives is based on
an indirect measurement of the rate of
reaction. The method of initial rates is
also more accurate because it is based on
a single measurement of the rate of
reaction, while the method of half-lives
is based on multiple measurements of the
rate of reaction. The method of initial
rates is also more convenient because it
does not require the measurement of the
half-life of a reaction. The method of
half-lives is only useful for reactions that
follow first-order kinetics. The method of
initial rates is useful for reactions that
follow any order of kinetics. The method
of initial rates is the most reliable and
accurate method of determining the rate of
reaction. The method of half-lives is the
least reliable and accurate method of
determining the rate of reaction.

- (2) The question of compensation water would have to be considered. The view of some experts has been expressed that a lot of water was being discharged as compensation water, in some cases to an unjustifiable extent, having regard to the needs of the community.
- (3) The general question of the pollution of underground water. Some kind of legal protection might be essential.

The conference finally decided that circulars (which were published in March and April, 1922) should be drawn up for the guidance of Local Sanitary Authorities and Water Authorities dealing with the following points :—

- (1) Conservation of existing supplies.
- (2) Supplementing existing supplies.
- (3) Assistance from the Ministry of Health.

SMALL-POX.

Small-pox is one of the most infectious diseases. Cases are always to be found in some parts of the world, and may therefore be introduced into England from abroad at any time.

It is satisfactory, therefore, to be able to report that not a single case of small-pox occurred in the Administrative County of Essex during the year. Notifications were received regarding 7 persons who had been in contact with cases occurring outside the County and who were entering the County. These were referred to the respective local Medical Officers for observation and necessary action.

As there appears to be some confusion in the minds of many people regarding the nature of the disease called "Alastrim," a few notes taken from a forthcoming work upon the subject by Dr. W. McConnel Wanklyn, Small-pox Consultant of the London County Council, are given below :—

"Alastrim" is a word which has found its way into the lay press and into lay conversation during the last two years, and the impression has been conveyed that a new disease has been discovered. The contrary is the fact; "Alastrim" is a new name for an old disease; "Alastrim" is simply small-pox.

This particular expression first appears in medical literature in the year 1910, having been used by Dr. Emilio Ribas, Chef du Service Sanitaire of the State of São Paulo, Brazil, in his report of a mild highly infectious fever then prevalent in that country. The word "alastrim" was the name commonly applied to this disorder in the Sertao of Bahia. Dr. Carini investigated this outbreak, and after detailing its clinical features, declared that it was impossible to doubt that the disease was *variola vera*, true small-pox.

An examination of cases described as "alastrim," as well as of the literature and photographs upon the subject, brings Dr. Wanklyn to the following conclusion :—
The word "alastrim" has no justification for existence or perpetuation in the

English language. It means nothing. There is one well recognised disease, chicken-pox, and another well recognised disease, small-pox; there occur a number of cases which are difficult for untrained observers to place with certainty in either the one group or the other; therefore recourse has been had to such terms as "varioid," "varioid varicella," "alastrim," and others. But there is no such intermediate or third disease, and therefore no occasion for a word to describe it. Mild forms of small-pox have often been termed atypical; but such cases have been reported in large numbers from all parts of the world, and on close examination are found to conform regularly to the type of the disease. Dr. Wanklyn refers to the pioneer work of Dr. T. F. Ricketts, who on the basis of a long experience laid down a reliable system for the differentiation of small-pox from chicken-pox and other diseases simulating it. Part of the method is to chart on a diagram of the human figure the spots which appear on the patient under examination, and to make as close an actual count as circumstances permit. The true nature of the disease can usually be deduced therefrom, especially when taken into account with other signs and symptoms. In small-pox the spots are centrifugal, that is, they usually increase in number towards the extremities, whereas in chicken-pox they usually increase in number towards the trunk of the body.

Dealing with the question of vaccination in his recent address on "The present position of Small-pox and Vaccination as affecting this Country," Dr. Wanklyn views with concern the increasing number of unvaccinated persons. He considers that the population in this country is susceptible to small-pox in a high degree. There are, in the main, but two classes of our community who are protected. One is rather less than half the infants, and the other is the personnel who served in the War. He estimates roughly "that in a population of 36,000,000, it is the case that 28,000,000 are partly or fully susceptible to an attack of small-pox if they be fully exposed to its infection; that is a most serious state of affairs, and makes the protection of these helpless people a task of the gravest anxiety."

It is gratifying to record that the London County Council have continued the arrangement whereby the services of Dr. Wanklyn are loaned to any Medical Officer of Health in the Administrative County on application to the County Medical Officer. During the year 5 applications were received, and in each instance Dr. Wanklyn was satisfied that the case was not small-pox. To have such an experienced man so readily available is very helpful, and is much appreciated by all concerned.

COUNTY LABORATORY.

This Laboratory has continued to give satisfaction throughout the whole year and Table IV. shows the number of specimens submitted for examination from each Sanitary District. It will be seen that the number of specimens continues to increase, showing that the services of the County Bacteriologist, Dr. J. F. Beale, are being appreciated more and more. The work is carried out at 91, Queen Victoria Street, London, E.C. 4; Telephone No. City 7116.

TABLE IV.

NUMBER OF SPECIMENS EXAMINED AT THE COUNTY LABORATORY,
YEAR 1921.

Sanitary District.		No. of Specimens.	Sanitary District,		No. of Specimens.
<i>Urban—</i>			<i>Rural—</i>		
Barking ...	...	610	Belchamp ...	...	6
Braintree ...	...	148	Billericay ...	...	137
Brentwood..	...	207	Braintree ...	...	106
Brightlingsea	...	42	Bumpstead	...	1
Buckhurst Hill	...	17	Chelmsford	...	87
Burnham-on-Crouch	...	26	Dunmow ...	...	89
Chelmsford Borough	...	338	Epping ...	...	53
Chingford ...	...	104	Halstead ...	...	42
Clacton-on-Sea	...	280	Lexden & Winstree	...	53
Colchester Borough	...	103	Maldon ...	...	95
Epping ...	...	96	Ongar ...	...	62
Frinton-on-Sea	...	4	Orsett ...	..	316
Grays ...	...	583	Rochford ...	...	72
Halstead ...	...	100	Romford ...	...	170
Harwich Borough	...	312	Saffron Walden	...	17
Ilford ...	...	337	Stansted ...	...	48
Leyton ...	...	1468	Tendring ...	...	113
Loughton ...	...	4			—
Maldon Borough	...	28	Total Rural	...	1467
Romford ...	...	517	„ Urban	...	6482
Saffron Walden Borough		23			—
Shoeburyness	...	14	Total for Adminis-		
Tilbury ...	...	7	trative County ...	...	7949
Waltham Holy Cross	...	63			==
Walthamstow	...	729	Total for 1920	...	6295
Walton-on-the-Naze	...	2			
Wanstead ...	...	57			
Witham ...	...	79			
Wivenhoe ...	...	7			
Woodford ...	...	177			
		6482			

Special permission was given to a Local Sanitary Authority to submit to the County Laboratory samples of milk from about 270 cows in their area. Thirty-three samples only were submitted for examination, and of these three were found to contain acid fast bacilli resembling microscopically the bovine tubercle bacilli, and three others were certified as unfit for human consumption. It was deemed necessary to have four samples submitted to guinea-pig inoculation with the result that the milk was certified to be unfit for human consumption.

Seventeen samples of milk have also been obtained from vendors who supply tuberculosis patients with extra nourishment on request from the County Council. In one instance acid fast bacilli, resembling microscopically tubercle bacilli, were found and the supply was stopped. The local Medical Officer of Health, accompanied by a Veterinary Surgeon, visited the farm from which the milk was obtained; further samples were taken and the results of the examinations confirmed the above diagnosis.

HOUSING.

The Ministry of Health again require local Medical Officers of Health to furnish in their Annual Reports in a prescribed form particulars regarding the housing conditions of the district, dealing with the matter under the following main headings :—

- (1) Houses erected.
- (2) Unfit Dwelling Houses.
- (3) Remedy of Defects without service of formal notices.
- (4) Action under Statutory powers.

At the time of writing very few Annual Reports have been received from the Local Medical Officers of Health, so that it is not possible to present a summary for the County. Reference, however, to the 1920 Reports shows that 32 of the 47 districts supplied information on Housing, and from these the following interesting figures have been extracted :—

Number of houses erected during 1920	...	...	888
" " inspected	...	...	28,504
" " definitely unfit for human habitation	...	...	694
" " not reasonably fit for human habitation	...	...	5,876
" defects remedied without formal notices	...	...	7,003
" " " with " "	...	...	594

There is evidence in the Annual Reports received for 1921 that this rate of inspections and repairs is being maintained with good results. The renovation of old cottages is certainly a factor in helping to solve the housing problem in these days of economy. It has been found that old cottages formerly condemned can, with a proportionate outlay, be made fit for human habitation and can also have the accommodation and conveniences improved and increased. Therefore, until the existing overcrowded conditions are a thing of the past, no house should be condemned outright if there is the slightest possible chance of re-establishing it in a habitable condition. From the small number of copies of Closing Orders received

from Local Sanitary Authorities under Section 69 of the Housing, Town Planning, etc. Act, 1909, it is evident that this phase is being observed by the Public Health Officials throughout the County.

As was stated in the Report for 1920, the greatest housing development in the County has taken place at Beacontree under the London County Council Scheme. Primarily it was intended to form a new township with accommodation for about 130,000 people. Present day conditions have, however, enforced a restriction of the scheme, but the nucleus has been established around which the greater scheme may develop at a more opportune time.

According to information kindly supplied by the County Architect, the Essex County Council have provided the following houses for small-holders during the year 1920-21 :—

No. of Houses erected	...	...	...	65
„ occupied	...	...	...	49

SALE OF FOOD AND DRUGS ACTS.

As in previous years, the supervision of the duties under these Acts was not undertaken by the County Medical Officer. Dr. Bernard J. Dyer, the County Analyst receives samples direct from the Food & Drugs Inspectors, and he has kindly furnished the following particulars of the work done during the period 1st December, 1920, to 30th November, 1921. Included in the table set out below are samples which have been submitted from two sources, viz., County Inspectors and Local Sanitary Authorities.

During the year the services of the Food and Drugs Inspectors were requisitioned in connection with obtaining samples from milk vendors who supply the County Sanatoria and also certain tuberculosis patients to whom extra nourishment had been granted by the County Council. By this means the County Medical Officer satisfied himself that the milk supplied was genuine, with one exception (see page 17).

On 9th September, 1921, the County Medical Officer gave evidence at the Chelmsford Court in the case of a sample of milk which was found to contain boric acid. The offender was fined £5 and costs.

ANNUAL SUMMARY.

December 1st, 1920, to November 30th, 1921.

	Samples Analysed.	Samples Unsatisfactory.	Percentage of Adulteration.
Northern District of the County ...	720	10	1·4
Southern District of the County .	871	37	4·2
Metropolitan District of the County	1213	42	3·5
Chingford Urban District Council...	12	—	3·0
Walthamstow Urban District Council	6	—	
Wanstead Urban District Council ..	1	—	
West Ham Union ...	11	1	
Woodford Urban District Council...	3	—	
	2837	90	3·2

	Samples analysed.	Samples unsatisfactory.
Baking Powder ...	58	—
Beef Sausages ...	1	—
Butter ...	351	1
Cake Powder ...	1	—
Cheese ...	49	—
Cocoa ...	16	—
Coffee ...	7	—
Cream ...	10	6
„ Preserved ...	4	—
Custard Powder ...	5	—
Dripping ..	18	—
Drugs :—		
Camphorated Oil ...	2	—
Epsom Salts ..	4	—
Liquorice Powder ...	1	—
Egg Powder ...	36	—
Fish, Tinned ...	1	—
Flour, Paisley ...	1	—
Ground Ginger...	1	—
Jam ...	3	—
Lard ...	306	1
„ Compound ...	1	—
Lemon Cheese ...	1	—
Lemon Squash...	1	1
Lime Juice ..	2	1
Margarine ...	344	—
Marmalade ...	1	—
Milk ...	1280	75
„ Condensed ...	3	—
„ Separated ...	13	—
„ Skim ...	9	—
„ Powder ...	1	—
Mince Meat ...	1	—
Mustard ...	7	—
„ Compound ...	2	—
Paste, Meat ...	1	—
„ Salmon and Shrimp ...	4	—
Pepper ...	35	—
Soda Water ...	1	—
Soderettes ...	1	—
Gas and Water ...	1	—
Water ...	1	—
Rice ...	46	—
Self-raising Flour ...	14	—
Sugar ...	3	—
„ Brown ...	46	—
„ Demerara ...	3	—
„ Granulated ...	3	—
„ Moist ...	1	—
Sweetmeats ...	5	—
Tea ...	23	—
Vinegar ...	105	5
Wheat, Shredded ...	1	—
Whisky ...	1	—
Wine, Raisin ...	1	—
	2837	90

PARTICULARS RELATING TO SAMPLES REPORTED ON DURING THE
WHOLE YEAR AS ADULTERATED OR UNSATISFACTORY.

One sample of butter contained more boric acid than is regarded as legitimate, 0.8 per cent.

Six samples sold as cream consisted of "preserved cream" containing boric acid quantity varying from 0.2 to 0.4 per cent. without the necessary declaration being given by the vendors, as required by the Milk and Cream Regulations.

One sample of lard, sold as lard, consisted of lard compound and contained 30 per cent. of cocoanut or palm nut oil.

Thirty-four samples of milk contained added water as follows:—

3 samples contained 4 per cent.

2	"	"	5	"
1 sample	"	"	6	"
5 samples	"	"	7	"
3	"	"	8	"
1 sample	"	"	9	"
5 samples	"	"	10	"
1 sample	"	"	11	"
2 samples	"	"	13	"
3	"	"	14	"
2	"	"	15	"
1 sample	"	"	17	"
1	"	"	18	"
1	"	"	19	"
1	"	"	21	"
2 samples	"	"	23	"

Thirty-four other samples of milk were deficient in fat—the percentage of deficiency, compared with the minimum normal quantity in genuine milk, being:—

In 8 cases 5 to 10 per cent.

" 10	" 11	" 15	"
" 5	" 16	" 20	"
" 3	" 21	" 25	"
" 4	" 26	" 30	"
" 1 case	31	per cent.	
" 1	" 50	"	
" 1	" 60	"	
" 1	" 70	"	

Four other samples of milk were low in both fat and non-fatty solids but gave inherent evidence of abnormality. Subsequent samples taken from the cows were also found to be abnormal.

Three samples of milk contained preservative in the form of boric acid—the quantity present being respectively 4, 5 and 6 grains per pint.

One sample of lemon squash contained salicylic acid in the proportion of 4 grain per pint, the presence of which was not declared.

One sample of lime juice contained salicylic acid in the proportion of 3·3 grain per pint, the presence of which was not declared.

Five samples of vinegar were deficient in strength to the extent of 8, 12, 5, 1, 13 and 13 per cent. of the minimum proper strength as regards acetic acid.

MILK AND CREAM REGULATIONS.

Milk and Cream not sold as Preserved Cream :—

(a) Number of samples examined for the presence of a preservative.		(b) Number in which Preservative was reported to be present and Percentage of Preservative found in each sample.	
Milk	1302	3	
		1 sample contained 4 grains of boric acid per pint. Vendor cautioned.	} Same vendor
		1 " " 6 " of boric acid per pint. Vendor fined £5.	
		1 " " 5 " of boric acid per pint. Vendor fined £4.	
Cream	10	6	
		1 sample contained 0·20 per cent. boric acid.	Informal sample
		1 " " 0·20 " " "	Vendor cautioned
		2 samples " 0·25 " " "	Vendors cautioned
		1 sample " 0·35 " " "	Informal sample.
		1 " " 0·40 " " "	Vendor cautioned

Cream sold as Preserved Cream :—

Correct statements made	...	...	4
Statements incorrect	...	...	—
			4

Percentage of Preservative found in each sample.	Percentage stated on statutory label.
·02	·04
·02	·04
·03	·04
·03	·04

Determination made of milk fat in cream sold as preserved cream :—

(1) above 35 per cent.	...	4
(2) below 35 " "	...	—
Total	...	4

ISOLATION HOSPITALS.

Under Section 21 of the Isolation Hospitals Act, 1893, the County Council may, if they deem it expedient so to do for the benefit of the County, contribute out of the County Rate, a capital or annual sum towards the *structural* and the *establishment* expenses of an Isolation Hospital or to either class of such expenses.

Section 2 of the Isolation Hospitals Act, 1901, extends the above provisions so as to include the power to contribute to any hospital provided by a Local Authority (including a joint board) within the meaning of the Public Health Act, 1875, for the reception of patients suffering from infectious disease, whether within the area of the County Council or not, but the consent of the Local Government Board (now Ministry of Health) shall be required to an annual contribution under this section by the County Council to a hospital, the cost of providing which, or of any permanent extension or enlargement of which, has been defrayed otherwise than out of borrowed money.

Particulars of the schemes for payment of grants to Isolation Hospitals under the above Acts have been outlined fully in previous reports. The scheme laid down on 10th November, 1904, providing a grant of £5 per bed was amplified in 1919 so as to include a grant of £10 to each hospital possessing a motor ambulance.

At the present time, the Administrative County is served by the following Isolation Hospitals:—

Hospitals to which grants are made.

Billericay
Braintree
Chelmsford
Clacton
Colchester
Dunmow
Grays and Orsett
Halstead
Ilford
Maldon
Rochford
Romford
Saffron Walden
Walthamstow
Waltham Holy Cross

Hospitals to which grants are not made.

Barking
Burnham
Epping
Harwich
Leyton
Wanstead

At the Annual Inspection in 1921, members of the Committee were impressed by the large number of unoccupied beds in several hospitals and by the fact that despite the small number of patients under treatment practically the full hospital staff had been maintained. In the discussion which followed, emphasis was laid upon the new system which had been created by motor ambulances. It is now quite as convenient to transfer a patient thirty or forty miles with ease, comfort, and safety, as it was formerly to move a patient three or four miles by horse ambulance. In these

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TABLE V.

Showing Accommodation, Number of Cases treated, Cost per Bed, etc., at those Isolation Hospitals, to which Grants were made for the Year ended 31st March, 1922.

	Billericay.	Braintree.	Chelmsford.	Clacton.	Colchester.	Dunmow.	Grays and Orsett.	Halstead.	Ilford.	Malden.	Rochford.	Romford.	Saffron Walden.	Walthamstow.	Waltham Joint.
Number of Beds in Hospital ..	22	11	43	17	196	8	115	25	85	35	24	70	22	126	42
Number for purpose of Grant ..	22	8	21	17	58	8	20	16	72	10	12	42	14	91	42
Grant from County Council ..	£110	£40	£115	£85	£300	£40	£100	£80	£370	£60	£60	£220	£70	£465	£220
Cases treated during year:—															
Scarlet Fever ..	53	48	85	38	248	48	71	15	240	31	75	147	26	545	83
Diphtheria ..	35	8	54	24	154	17	127	9	127	17	17	146	11	263	70
Typhoid ..	1	2	2	..	3	..	..	1	4	..	1	7	..	..	3
Other Diseases ..	6	..	8	..	76	..	59	29	90	8	..	..	3	55	..
Total number of cases treated ..	95	58	149	62	481	65	257	54	461	56	93	300	40	863	161
Medical Staff ..	5	2	7	2	17-23	2	7	2	23	5	2	12	1	27	8
Expenditure for the year:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Payment of Loans ..	201 13 9	126 19 6	311 5 4	150 8 8	574 15 1	261 14 0	372 18 1	64 0 0	1,206 9 5	227 17 2	144 0 0	535 18 11	123 5 7	1,776 18 10	456 13 4
Interest on Loans ..	165 14 3	13 10 6	159 0 4	58 0 10	202 3 9	39 1 3	205 14 8	70 7 7	402 1 1	93 1 6	48 2 11	214 11 5	110 16 1	467 15 0	200 0 10
Structural Repairs ..	611 1 10½	12 7 0	139 13 8	36 0 0	794 8 8	334 19 11	805 9 11	125 8 11	1,353 8 7	237 11 8	59 14 11	561 17 4	132 1 6	1,591 5 4	429 4 4
Fuel (Patients and Staff) ..	888 18 2½	440 19 2	1,009 14 5	194 0 0	2,225 8 7	229 6 5	2,053 9 3	615 5 9	2,873 13 11	656 14 3	379 1 0	1,556 15 5	201 7 0½	5,296 1 6	504 2 2
Salab. and Pata. Expenses ..	981 16 2½	1,295 6 2	..	573 0 0	5,263 11 4	746 2 9	739 0 0	1,434 0 0	6,962 6 9	1,362 7 9	840 2 10	3,171 1 8	461 11 0½	12,221 1 0	2,351 9 8
Total ..	£ 2,849 4 3½	1,889 2 4	1,619 13 9	1,009 9 6	9,060 7 5	1,011 4 4	4,176 11 11	2,209 2 3	12,797 19 9	2,677 12 4	1,471 1 8	6,040 4 9	1,049 1 3	21,553 1 8	3,941 10 4
Cost per bed ..	129 10 2	171 14 9	37 13 4	59 7 7	46 4 6	201 8 1	36 6 4	88 7 3	150 11 3	73 2 11	61 5 11	86 5 9	47 13 8	169 9 4	93 16 11
Cost per case treated ..	29 10 10	32 11 5	10 17 5	16 5 7	18 16 8	24 15 9	16 5 1	40 18 2	27 15 2	46 0 6	15 16 4	20 2 8	26 4 6	24 14 10	24 9 7
.. year 1920-21 ..	29 4 9	31 14 1	19 2 9	15 14 3	23 13 0	39 16 9	22 17 2	56 19 8	32 8 7	52 0 10	11 17 2	20 1 3	57 16 1	29 12 3	16 13 9

* In some instances the figures relating to tuberculosis cases treated under the County Council scheme are included.

circumstances, there is no doubt that if Isolation Hospitals were now being built in the County for the first time, the whole population could be served by less than one half the existing hospitals.

During the year 1920 it was often the case that an Isolation Hospital in one part of the County was overtaxed with patients, whilst a hospital in an adjacent district more than fifteen or twenty miles away was empty. Interchange of beds, which could solve this difficulty, is however an exception and not the rule.

The County Council, however, decided to continue the present system of grants there was no doubt that it had led to a considerable number of improvements in staffing, administration and equipment of the Infectious Hospitals. It had also encouraged authorities to provide motor ambulances, (2) brought about uniformity in many ways, (3) ensured regular renovations, and (4) the annual inspection had improved the institutions generally.

A further annual inspection is about to be made and in Table V. is given information supplied by the Clerk to each Hospital Board with his application for a grant.

The question of making grants to those hospitals which were not erected out of County funds has also received consideration, and the Ministry of Health have been asked for their approval to such grants being made, subject to the conditions which apply to all the other Isolation Hospitals.

VOLUNTARY HOSPITALS.

On the 25th January, 1921, a special Committee (under the Chairmanship of the Right Honorable the Viscount Cave) was appointed by the Ministry of Health to consider the present financial position of the Voluntary Hospitals and make recommendations as to any action which should be taken to assist them. The Committee, by report dated 31st May, 1921, made thirteen recommendations, of which were the following :—

- (1) That a Hospitals Commission and Voluntary Hospitals Committees be formed.
- (2) That County Councils be empowered to contribute to the expenses of the Voluntary Hospitals Committees.
- (3) That Parliament be asked to sanction a temporary grant of £1,000,000 to be expended at the discretion of the Hospitals Commission and in the assistance of hospitals which require it.

By letter, dated 29th July, 1921, the Voluntary Hospitals Commission laid down regulations governing the establishment, position and functions of the Voluntary Hospitals Committee to be appointed for the Geographical County of Essex. The Committee was eventually appointed and held its first meeting on 10th January,

Subsequently, the following list of General and Cottage Hospitals in the Geographical County of Essex was furnished by the County Medical Officer to the Voluntary Hospitals Committee :—

LIST OF GENERAL AND COTTAGE HOSPITALS IN THE GEOGRAPHICAL
COUNTY OF ESSEX.

Name of Hospital.	Address.	No. of Beds.
(i) ESSEX HOSPITALS.		
(a) County Boroughs:—		
East Ham Passmore Edward Cottage	Shrewsbury Road, East Ham	25
Southend Victoria Hospital ...	Warrior Square, Southend-on-Sea	42 24 opening shortly
West Ham—		
Queen Mary's for the East End	West Ham Lane, Stratford	130
St. Mary's for Women and Children	Plaistow, E. 13 ...	58
Canning Town Women's Settlement	Balaam Street, Plaistow ...	26
Royal Albert Dock ...	Royal Albert Dock, Custom House, E. 16	52
Total for County Boroughs ...		357
(b) Administrative County:—		
Brentwood District Cottage ...	Shenfield Common, Brentwood	14
Forest ...	Buckhurst Hill ...	30
Braintree and Bocking ...	London Road, Braintree (new building opened 16th Dec., 1921)	10 2 private wards.
Chelmsford and Essex ...	London Road, Chelmsford ...	43
Clacton and District Cottage ...	Clacton-on-Sea ...	8
Essex County ...	Lexden Road, Colchester ...	128
Epping and District Cottage ...	Epping ...	11
Halstead Cottage ...	Halstead ...	13
Ilford Emergency ...	Abbey Road, Newbury Park	44
Victoria Cottage ...	Petits Lane, Romford ...	18
Saffron Walden General ...	Saffron Walden ...	60
Tilbury Passmore Edwards District Cottage	Tilbury ...	17
Walthamstow, Wanstead and Leyton Children's & General	Orford Road, Walthamstow	50
Woodford Jubilee ...	Broomhill Road, Woodford	17
Waltham Abbey War Memorial	Waltham Abbey ...	8
Walton, Mabel Greville Red Cross Convalescent Home	Walton-on-Naze ..	17
Eden Cottage ...	Hatfield Broad Oak ...	7
Total for Administrative County ...		497

(2) ANNEXES TO LONDON HOSPITALS, Etc.

Middlesex Branch ...	Clacton ...	90
Reckett Convalescent Home (Branch of the Gt. Northern)	Clacton ...	50
Forest Lodge Convalescent Home (Branch of London Hospital)	Whipps Cross ...	40
Poplar Hospital Convalescent Home	Naze Park, Walton-on-Naze	14
Samuel Lewis Convalescent Home	" "	41
King Edward Holiday Home (Branch of King Edward Institution, Spitalfields)	Sandon ...	about 20
Total Annexes to London Hospitals, etc.		255
GRAND TOTAL		1,109.

The following is a brief summary of the whole of the existing beds in the Administrative County of Essex, so far as it has been possible to obtain particulars of the Institutions set aside for the treatment of sick persons :—

(a) Voluntary Hospitals (see above list) ...	752
(b) Poor Law Infirmarys ...	2623
(c) County Council Sanatoria ...	220
(d) Other Sanatoria... ...	410
(e) Isolation Hospitals (including Small-pox) ...	1269
(f) Mental Institutions ...	7528
(g) Maternity Homes ...	32
(h) Convalescent Homes, Leper Colony, etc. ...	347
Total ...	13,181

VENEREAL DISEASES.

For the year 1921-22 provision was made in the Estimates for the diagnosis and treatment of Venereal Diseases as follows :—

Hospitals and Laboratories ...	£ 4,500
Salvarsan ...	200
Propaganda ...	100
Contingencies ...	25
	£4,825

In the Annual Report for 1919 full particulars were given regarding the arrangement which was established by the London and Home Counties for the diagnosis and treatment of Venereal Diseases at the London Hospitals. By letter, dated 24th

TABLE VI.

SHOWING TREATMENT CENTRES AND NUMBER OF PATIENTS TREATED DURING 1921.

Treatment Centre.	Patients from all Areas. Total Number treated for first time.	ESSEX PATIENTS.						
		Total Number treated for first time suffering from				Total Atten- dance of all Patients. No.	In- patient. Days.	Doses of Salvarsan Substitute given.
		Syphilis.	Soft Chancres.	Gonorr- hoea.	Not V.D.	Total.		
London Hospitals	25,418	271	12	361	229	873	2830	—
St. Bartholomews Hospital, London	758	23	—	14	—	37	—	20
Chelmsford	30	13	—	11	6	30	28	86
Colchester	111	57	—	23	30	110	206	491
Ipswich	354	17	—	7	2	26	133	74
Southend	221	13	1	10	11	35	—	149
	26,892	394	13	426	278	1111	3197	820
Total for 1920	31,897	517	28	510	282	1337	3537	2993
" 1919	28,983	467	22	546	234	1269	3571	2027
" 1918	16,372	320	10	267	113	710	2432	1360
" 1917	17,637	308	7	141	55	511	3057	839

March, 1921, the London County Council intimated that the scheme for diagnosis and treatment for the current year followed substantially the scheme at present in operation. It was estimated that the gross expenditure to the London County Council and the participating authorities would amount to £126,583, of which £94,938 was attributable to London. The estimated amount chargeable to Essex was £1,500, three-fourths of which would rank for Government grant. The actual cost to Essex is payable according to user at the end of the financial year. There can be no doubt that this mutual arrangement is both beneficial and economical to all the participating authorities, and is continuing to work satisfactorily to all concerned.

Agreements were also continued with the Chelmsford and Colchester Hospitals. At the latter hospital, by mutual arrangement between the County Council and the Hospital Board, improved accommodation was provided for the diagnosis and treatment of Venereal Diseases as and from 29th August, 1921.

It will be seen from Table VI. on page 26 that the total number of Essex patients treated for the first time is 226 less than the figure for 1920, but, on the other hand, the total attendances of the patients have increased.

The figures for the year may be regarded as generally satisfactory, but a most disappointing feature of the clinic work has been the large number of patients who discontinue treatment before the Medical Officer certifies them as cured or non-infectious. The proportion of such patients varies at the different centres, and presumably is influenced by the personnel of the clinics and also the personnel of the patients themselves. It may be said, however, that on the average 60 per cent. of the patients attending gratuitously at these public clinics discontinue their treatment before they are cured. This is a tremendous danger to the patients themselves as the disease will almost certainly recur in later months or years and ultimately they will undergo unnecessary suffering, and their death will be accelerated. From the standpoint of the State it means that they will be potential sources of infection, maybe to innocent wives and children, and also the State will have to nurse and maintain a good many of them in the various infirmaries, asylums and other institutions.

Educational propaganda is probably reaching the limits of its beneficent influence and it is more than possible that the general public are prepared for a radical step forward in the control of Venereal Disease. As in the case of Small-pox, Plague, Tuberculosis and many other diseases, that step is compulsory notification to the health authorities. It may be that for a period this notification should be a modified one, but there is every probability that in a few years Venereal Disease will be notified in just the same way as the other contagious diseases.

By Circular 202, dated 31st May, 1921, the Ministry of Health intimated that they had considered the practicability of adopting measures of self-disinfection amongst the civilian community, but after reviewing the question from all aspects they have decided as follows:—

"It is clear that this question is one which cannot be decided solely by reference to medical opinion—moral and social considerations of very great importance are involved in it. In the circumstances, the Government have decided that they cannot give official support to self-disinfection as a policy."

The Ministry, however, emphasise the importance of educational and propaganda work. In this connection the National Council for Combating Venereal Diseases arranged at their own expense for a tour to the coastal towns in the County by means of a cine-motor caravan. This commenced on 22nd August, 1921, and subsequently the following report was submitted by the National Council:—

"The educational campaign proper was inaugurated on Monday, August 22nd, at Shoeburyness; a meeting attended by about 80 persons was held. The original audience had been very much larger, but the unavoidable delay in the lecturer's arrival, on account of a breakdown on the road, caused many people to leave the hall before the meeting opened. In spite of this fact a collection of 9s. 10d. was taken.

"During the remainder of the period meetings were held at Grays (attendance 800), Clacton-on-Sea (attendance 150), Colchester (attendance 600), Walton-on-Naze, at which the Vicar took the chair (attendance 800), Brightlingsea (attendance 550), Wivenhoe Shipyards (attendance 400), and Wivenhoe, public meeting (attendance 80 to 100). Small meetings were held at Hatfield Peverel, Great Bentley and Ingatestone. The Tilbury meeting was unavoidably cancelled at the last moment owing to a breakdown of the caravan."

The County Council again made a special grant of £20 to the Ilford Propaganda Committee for the financial year 1921-22.

PLAGUE.

During the year a dead rat was forwarded to the County Laboratory with a request for an examination with a view to determining whether the rat was infected with Plague.

For the information of local Medical Officers of Health, it has been ascertained that all examinations of this kind are undertaken at the Government Laboratory, 22, Carlisle Place, London.

TRADE, HOUSE AND OTHER REFUSE.

The late County Medical Officer, in February, 1911, drew attention in a special report to the importation of house refuse and manurial matter from London into Essex. Enquiries proved that the waste matters so imported consisted of house refuse, road scrapings, gully sludge, market garbage, trade refuse from fish and greengrocers' shops, restaurants, &c., manure, builders' waste, &c. It was estimated at that time that London was producing 1,250,000 tons of refuse per year, about one-third of which was burnt in destructors, leaving about 800,000 tons to be removed to tips. By far the greatest proportion of the 800,000 tons was being dumped on the

Essex marshes along the northern bank of the Thames causing nuisances to arise from various causes, namely :—

- (a) unloading of barges into trucks ;
- (b) tipping of trucks on embankments ;
- (c) effluvium from fermenting refuse ;
- (d) smoke from burning tips ;
- (e) plague of flies in summer ;
- (f) rat infestation ;
- (g) dirty paper scattered by winds, &c.
- (h) fleas taken from tips by children when playing or working there ;
- (i) alleged infection of children (chiefly) by infected material in rubbish ;
- (j) pollution of marsh ditches.

These tips (including those in the neighbourhood of several towns in the County) are undoubtedly offensive to the eye and to the nose when near them, though greater care is being taken in the selection of sites for tips, and in some instances earth and lime are being used for covering the refuse. Complaints still arise at intervals showing the need for regulating this tipping. Apart from the unsightliness of the refuse, it undoubtedly causes unpleasantness and discomfort, and further, might be a danger to health both in course of transit and at the actual tips. It is suggested, therefore, that when opportunity occurs further powers should be acquired in accordance with the following clause, which has been submitted to the Clerk of the County Council for consideration, and which aims at placing such tipping on as hygienic a basis as possible :—

“ No Local Sanitary Authority (or contractors thereof) within or
 “ outside the Administrative County of Essex shall at any time hereafter
 “ dump trade, house, or other refuse in any part of the Administrative
 “ County of Essex without the special permission of the Local Sanitary
 “ Authority in whose area the refuse is to be deposited and the County
 “ Council of Essex, and unless such Local Sanitary Authority and County
 “ Council are satisfied regarding the quantity and nature of refuse to be
 “ deposited, mode of conveyance, and that no nuisance is likely to be created
 “ within the meaning of Section 91 of the Public Health Act 1875, either in
 “ course of transit or at the dump itself. The County Council and Local
 “ Sanitary Authority shall have power to make any necessary bye-laws.”

It is understood that the various London Boroughs are again considering what united action can be taken to meet the ever increasing difficulties attached to the refuse disposal from such a large aggregation of population. To dispose of this refuse by burning in destructors would be no light undertaking, but if found practicable it would undoubtedly be a most satisfactory solution to this vexed problem.

In small County towns everything is in favour of the disposal of refuse by burning in suitable destructors, whilst in villages the erection of a small incinerator on a suitable and accessible site is a ready method of getting rid of rubbish which

MENTAL DEFICIENCY ACT, 1913.

Dr. T. P. Puddicombe, Chief Assistant County Medical Officer, has continued to examine and report on all cases of suspected Mental Deficiency, his services being available both for the County Education Committee and the Local Control Authority, and also, through the latter, for advice on any case of suspected mental defect brought before the Justices.

During the year the number of cases sent for Institutional care has been restricted due to the orders of the Board of Control, but the work of ascertainment and certification has, however, continued.

Under the local Control Authority 116 individual cases (Males—48, Females—68) have been investigated, reported on and classed as follows:—

Class.			Males.		Females.
Feeble-minded	...	...	18	...	43
Imbeciles...	...	...	22	...	16
Idiots	...	...	3	...	2
Moral Imbeciles	...	...	1	...	0
Not classified under the Act	...	...	4	...	7

Valuable assistance has again been rendered by the Voluntary Association for the care of the Mentally Defective, who by the aid of their many local Committees and Visitors keep in close touch with all cases needing supervision. This Association has helped to create a better informed public opinion by holding conferences and meetings in various places during the year. An important conference was held at River Plate House, Finsbury Circus, London, on 12th October, 1921, when addresses were given and discussions took place upon after-care, employment, etc.

PART II.

COMBINED MEDICAL SERVICE.

(1) **Object of Scheme.** To secure by an agreement between Local Sanitary Authorities and County Council that one Medical Officer, who must possess the Diploma of Public Health, shall, in each Sanitary District, act in the following dual capacity:—

- (a) *Local Medical Officer of Health*, being directly responsible to the Local Sanitary Authority for all duties carried out under such appointment ;
- (b) *Assistant County Medical Officer*, working under the supervision of, and being responsible to the County Medical Officer for duties of Tuberculosis Officer, School Medical Inspector, Child Welfare Officer, Inspector of Midwives, Venereal Diseases Officer, etc.

Salary, £700 per annum, borne by the County Council and Local Sanitary Authority or groups thereof in equal proportions, unless otherwise agreed upon. Stationery and postages are provided by each Authority.

Applicants are selected and interviewed at a meeting of representatives of the Authorities concerned, and their recommendation is subsequently submitted to the respective Councils for confirmation.

(2) **Full Schemes in Operation.** Previous reports have given particulars of the appointment of Combined Medical Officers as follows:—

Sanitary District.	Acreage.	Population served, 1921.	Medical Officer of Health and Assistant County Medical Officer.	Date commenced duty.
Lexden & Winstree Rural (i)	69,485 ...	19,475 ...	A. J. Williamson, D.S.O., M.A., M.D., D.P.H.	1st April, 1920.
Clacton-on-Sea Urban (ii)	4,069 ...	17,049 ...	W. A. Milne, M.B., D.P.H.	1st June, 1920.
Tendring Rural (iii)	73,131 ...	21,720 ...	J. Ramsbottom, M.B., D.P.H.	1st Sept., 1920.

(i) Also acts as Assistant County Medical Officer in Wivenhoe Urban District.

(ii) Also acts as Assistant County Medical Officer in the Brightlingsea, Frinton and Walton Urban Districts.

(iii) Also acts as Assistant County Medical Officer in the Harwich Borough.

(a) **Lexden and Winstree Rural District.** This is a half-moon shaped district, covering the Borough of Colchester on the north, west and south ; it is chiefly agricultural and measures some twelve miles from north to south, and about six miles on the average from east to west.

Until the present appointment was made in April, 1920, separate Medical Officers were carrying out the various public health duties shown below, necessitating a good deal of overlapping and unnecessary travelling and expense:—

- (i) Local Medical Officer of Health.
- (ii) Tuberculosis Officer.
- (iii) School Medical Inspector.
- (iv) Inspector of Midwives.

The arrangement for a combined medical officer on the lines enumerated in paragraph (1) was entered into by the Rural District Council for a period of twelve months, on the expiration of which period any necessary adjustment between the Authorities concerned was to be considered. From the Rural Council's intimation, dated 21st April, 1921, that they had no points in this connection needing review, it may justifiably be assumed that they are satisfied with the scheme, which has also worked well from the County Council's point of view, and which will therefore be continued until either Council decides otherwise.

Dr. A. J. Williamson quickly applied himself to the consolidation of the public health activities in the area, and his two years' experience in this post affords valuable evidence of the workableness as well as the efficaciousness of the combined medical scheme. He says:—

"I cannot recall an instance that has revealed the incompatibility of the various duties, nor has any friction arisen between the Authorities. The division of duties in the present case is as nearly as possible an equal one, and the time taken in carrying them out is practically one-half for County Council and one-half for District Council, so that the arrangement whereby each of these pays one-half the salary and allowances of the officer is a fair one. The fact that the combined scheme has been in operation in this district for two years and that it has worked smoothly, is proof sufficient that it is a workable arrangement."

As to the advantages of there being one local Medical Officer, Dr. Williamson says:—

"Among the advantages are saving of time and travelling costs to the Medical Officer, absence of confusion in the mind of the public as to which Medical Officer attends to the various public health activities, avoidance of unnecessary annoyance also, in that only one doctor invades the home.

"Undoubtedly, there is saving in travelling expenses. I need only refer to my diary to show how economy is effected, e.g.:—

' 1.2.22—afternoon—To Wakes Colne, visited school and examined 2 children re eyesight—to Aldham, took sample of water from new well, also visited a T.B. case to Marks Tey, where I interviewed the District Nurse-Midwife.

"Total mileage, about 17, and time taken for 4 visits, 1 S.M.O., 1 M.O.H., 1 T.O. and 1 Inspector of Midwives, 2½ hours."

Looking to the future, Dr. Williamson thinks that—

“A preferable arrangement would be to have as unit area a district of 50,000 population, with a senior and a junior Medical Officer. In this way administrative expenses would be reduced as only one office would be required, and the arrangement would be more convenient in case of sickness of the Officers or for holidays. A clerk or part-time clerk could then be employed, and this would relieve the Medical Officers of work that at present makes needless demands on their time.

“Finally, I think the combined medical scheme is the best thing that has happened in the County since I have known it, and I could only wish to see it further improved.”

It should be remembered that Dr. Williamson served as County Tuberculosis Officer in Chelmsford, Ilford, Barking and Romford areas from 15th January, 1914, 31st March, 1920, except for the period when he was on military service.

(b) Clacton Urban District. This rapidly-growing seaside resort is situated towards the North-Eastern corner of the County. When first the combined medical scheme was mooted, it was hoped to include the contiguous districts of Frinton and Walton, so as to consolidate the whole of the public health activities of these well-known seaside places. Unfortunately, the full scheme matured in Clacton-on-Sea only, but a lesser scheme was applied to Frinton and Walton and so to Brightlingsea Urban Districts by the Clacton Medical Officer also acting Assistant County Medical Officer in those three districts.

Prior to this scheme there were, as in the case of Lexden and Winstree Rural District, four Medical Officers travelling over the same ground in their different capacities. The advent of Dr. W. A. Milne on 1st June, 1920, brought about the required co-ordination of duties, and as Dr. Milne stated in his Annual Report the combined appointment represented a radical change in the public health administration of a town of the size of Clacton.”

It is recognised that the public health machinery at seaside towns needs to be efficient and efficient in order to cope with the added responsibilities presented by the influx of visitors in the Summer. Dr. Milne readily achieved this at Clacton, and the experience gained by his Council and himself affords ample evidence in favour of the continuance of the combined scheme. Dr. Milne writes:—

“By virtue of the dual appointment we have been able to arrange for the carrying on in the same premises of Maternity and Child Welfare, which is in the hands of the local District Council, and of School Clinics and Treatment of Tuberculosis, which come within the province of the County Council.

“An arrangement has been made between the County Council and the Clacton Nursing Association (of which I am a member) for the supervision of mentally defective children and school nursing.”

As regards consolidation of work, Dr. Milne considers this to be the main point, as—

- "(a) Overlapping of duties is avoided.
- "(b) One official instead of several visiting the homes is less likely to cause irritation.
- "(c) A broader outlook on preventive medicine is obtained and better work for the community, as a whole, is done.
- "(d) Children can be followed up throughout their whole career from birth to leaving school, and this can be more efficiently done by one person.
- "(e) Co-operation between County Council and Local Council enables more active measures being taken in the prevention and control of Tuberculosis.

"Candidly," Dr. Milne concludes, "I can think of no disadvantages, nor has my Council to my knowledge had cause to regret the scheme. I can imagine, however, that the scheme would not work in all cases. Much depends on the County Medical Officer of Health and the local Medical Officer of Health, their readiness to co-operate, and their willingness to sink individual prejudices."

(c) Tendring Rural District. This is the third largest Rural District in the County, being divided into 27 Parishes. It is mainly agricultural and lies in the extreme north-eastern part of the County, and measures roughly 10 miles by 12 miles. Here again four Medical Officers were engaged in their various duties, and there was not the slightest difficulty in the County Council arriving at an arrangement with the Rural District Council.

Dr. J. Ramsbottom commenced duty on 1st September, 1920, and in presenting to his Council his Annual Report for 1920 states:—"This is not only my first Report, but it is also the first Annual Report presented to you since the establishment of the combined medical services in your district, whereby the local Medical Officer of Health, in the capacity of Assistant County Medical Officer, acts as School Medical Inspector, Tuberculosis Officer and Inspector of Midwives for the same area. There are great possibilities in this combined service, for, with adequate non-professional assistance, an efficient and unified, yet very economical, public health service should be evolved."

Since that time, Dr. Ramsbottom has had ample opportunities of proving the efficacy or otherwise of a combined medical service in such a widely scattered area. He is now of opinion that "the combined medical service in Tendring Rural works very satisfactorily, and no cause for regret on the part of the Rural Council has been brought to my notice. As regards notified cases of Tuberculosis, these can be kept under control without too many officials. As Assistant County Medical Officer, I attend to the educational and medical sides of tuberculosis cases, whilst as local Medical Officer I have control of the question of sanitation, housing

and overcrowding. Procedure in regard to school closure and exclusions is also simplified. When carrying out medical inspection of schools, I frequently meet sanitary defects which are outside school premises, and therefore outside the direct control of the School Authorities. As local Medical Officer of Health, I can deal with them. I have not found any instances where the duties as Assistant County Medical Officer have been incompatible with those of local Medical Officer of Health."

Dr. Ramsbottom has not found any disadvantages in connection with the scheme, but on the other hand enumerates the following advantages:—

- "(i) The Assistant County Medical Officer is within reach of parents, teachers, medical practitioners, manufacturers, farmers, property owners, etc., the area being smaller.
- "(ii) He is resident in the district and therefore better known.
- "(iii) He is better acquainted with local circumstances and conditions; local voluntary agencies, and other interested parties (many of whom are members of the Rural District Council).
- "(iv) He is better acquainted with the local Medical Practitioners.
- "(v) It is most convenient in case of epidemics to have the services combined.
- "(vi) I consider there is a great saving in travelling expenses. Whenever I undertake a journey to a particular part of my district I often act in every capacity (*i.e.*, as S.M.I., T.O., M.O.H., C.W.O.), the result of this being—
 - "(a) Shorter journeys owing to a smaller area under one man.
 - "(b) All journeys can be undertaken by road.
 - "(c) Under the combined system, one journey often represents 3 or 4 much longer journeys under the separate system undertaken by the T.O., S.M.I., M.O.H., etc., and therefore by 3 or 4 different medical men.

"*Example.* On Tuesday, February 7th, I undertook the following programme:—

" Visited Harwich Dispensary	...	...	as T.O.
" Parkeston Council Schools	vs Influenza	as S.M.I. and	M.O.H.
" New Building, Ramsey	vs Well	...	as M.O.H.
" Hagger, Wix	...	...	as T.O.
" Mistley School	vs Influenza	...	as S.M.I. and
			M.O.H.
" Manningtree Wesleyan School		...	as ditto.
" " C. of E. School		...	as ditto.
" Inspected well and took sample of water from			
new Council Houses at Elmstead		...	as M.O.H.

"From the above example the travelling saved can be estimated. Three medical men would have to travel over the same distance to make the same visits, whilst they would probably be stationed well outside the area visited."

In conclusion, Dr. Ramsbottom suggests certain minor administrative improvements which are receiving consideration.

(d) *County Council.* From the County Public Health Department's point of view, the combined medical service has worked satisfactorily and efficiently, and has achieved all that was expected of it. With proper safeguards, it is a sound workable investment for both County Council and Local Sanitary Authority, establishing as it does a central pivot around which revolves the whole of the preventive and remedial public health measures of the area.

Remarks upon salient features of the whole scheme may be summed up under the following headings :—

- (i) Nature of work.
- (ii) Difficulties.
- (iii) Conclusions.

(i) *Nature of work.* As Assistant County Medical Officer, duties in regard to Tuberculosis, Medical Inspection, Child Welfare, supervision of midwives and Venereal Diseases have to be carried out, and experience has proved that the bulk of the work is in connection with the two first-named.

For several years past public health legislation has tended more and more to discriminate between (1) personal and (2) impersonal factors by making the County Councils responsible for the former, and the Local Sanitary Authorities for the latter. This is most noticeable in the following comparatively recent Acts and Regulations which deal with persons and which create County Councils as the administrative authority :—

- Midwives Acts, 1902 and 1918.
- Notification of Births Acts, 1907 and 1915.
- Education (Administrative Provisions) Act, 1907.
- National Health Insurance Act, 1911 (Sanatorium Benefit).
- Public Health (Prevention and Treatment of Disease) Act, 1913.
- Mental Deficiency Act, 1913.
- Public Health (Venereal) Regulations, 1916.
- Maternity and Child Welfare Act, 1918.
- Blind Persons Act, 1920.
- Public Health (Tuberculosis) Act, 1921.

This discrimination between individual and environment has created a breach between the work of County Councils and Local Sanitary Authorities, each having its own Medical Officers covering the same ground and visiting the same places on different phases of preventive medicine. The examples already quoted by the

Combined Medical Officers substantiate this view, particularly in relation to tuberculosis and medical inspection of school children. As regards the former, it is greatly to the advantage of each patient if he can be kept under observation by one Medical Officer from the clinical as well as environmental points of view.

Under the Public Health (Tuberculosis) Regulations the local Medical Officer of Health receives notifications of persons suffering from Tuberculosis, keeps a confidential register of them, and forwards particulars to County Medical Officer each week. He is also required "to make such enquiries and take such steps as may be necessary or desirable for investigating the source of infection, for preventing the spread of infection, and for removing conditions favourable to infection." To secure co-operation between the local Medical Officer of Health and Tuberculosis Officer, Local Sanitary Authorities were urged to appoint the latter as Assistant Medical Officer of Health. This, however, was done in only a few cases, with the result that there were, in most districts in the County, two medical officers keeping each case of Tuberculosis under observation from different standpoints. This is avoided by the combined medical service.

Medical inspection of school children presents similar features. A school is a "house" within the meaning of the Public Health Acts, and is therefore under the supervision of the Local Medical Officer of Health. The school is also inspected by the County School Medical Inspector who, at the same time, supervises the health of the children, but if he proceeds to investigate home conditions or search for contacts of infectious cases he may be trespassing within the domain of the Local Medical Officer of Health. In respect to the closing of schools when infectious diseases are prevalent, the Local Medical Officer of Health may, according to Article 57 of the Code, advise closure on public health grounds, whilst under Article 45 (b) the County School Medical Officer may approve closure on financial grounds owing to reduced attendance. As a rule, each notifies the other when closure takes place.

(ii) *Difficulties.* These have been chiefly of a topographical nature, as the existing boundaries of the various Sanitary Districts have prevented the setting up of a standard area as regards acreage and population.

The present scheme is by no means the first to aim at securing a combination of districts for the purpose of appointing Medical Officers of Health. Section 286 of the Public Health Act, 1875, provides for powers to effect such a combination of districts, namely :—

"286. Where it appears to the Local Government Board, on any representation made to it, that the appointment of a Medical Officer of Health for two or more districts situated wholly or partly in the same County would diminish expense, or otherwise be for the advantage of such districts, the Local Government Board may by order unite such districts for the purpose of appointing a Medical Officer of Health, and may make regulations as to the mode of his appointment and removal by representatives of the Authorities of the constituent districts, and as to the meetings from time to time of such representatives, and the proportion in which the expenses of the appointment and of the salary and expenses of such Officer are to be borne by such Authorities, and as to any other matters (including the necessary expenses of such representatives) which, in the opinion of the said Board, require regulation for the purposes of this section : and no

other Medical Officer of Health shall be appointed for any constituent district, except as an assistant to the Officer appointed for the united district.

" Provided that no Urban District containing a population of 25,000 and upwards, or (in the case of a Borough) having a separate Court of Quarter Sessions, shall be included in any union of districts formed under this section without the consent of the Local Authority of such District or Borough.

" Not less than 28 days' notice that it is proposed to make an order under this section shall be given by the Local Government Board to the Local Authority of any district proposed to be included in the union, and if within 21 days after such notice has been given to any such Authority they give notice to the Local Government Board that they object to the proposal, the Local Government Board may include their district in the union by a provisional order but not otherwise."

This provision has been taken advantage of in Essex and many other Counties, with satisfactory results. Its chief drawback, however, is the very large area which had to be created before Rural Sanitary Authorities concerned could meet the cost of a whole-time Medical Officer, as is evident from four such areas in Essex, only one of which (Chelmsford, etc.), now remains:—

Group No.	Sanitary Districts included.	Acreage.	Population.	Medical Officer.
1.	Chelmsford Rural	... 83,045	24,618	John F. Macdonald, M.D., Ch.B., D.P.H.
	Maldon Rural	... 82,342	16,470	
	Rochford Rural	... 55,003	22,854	
		220,390	63,942	
2.	Lexden & Winstree Rural	69,485	19,475	Now under combined medical service.
	Tendring Rural	... 73,131	21,720	
	Clacton Urban	... 4,069	17,049	
		146,685	58,244	
3.	Braintree Urban	... 2,224	6,980	Combined medical ser- vice agreed upon.
	" Rural	... 62,348	18,777	
	Halstead "	... 647	5,916	
	" Rural	... 38,712	9,739	
	Belchamp "	... 26,500	4,219	
	Dunmow "	... 73,503	15,356	
	Witham Urban	... 3,713	3,719	—
		207,647	64,706	
4.	Saffron Walden Borough	7,502	5,876	Combined medical ser- vice agreed upon.
	" Rural	... 59,975	10,091	
	Bumpstead Rural	... 11,874	2,376	
5	Sanitary Districts in Suffolk, Cambridge and Hertfordshire	... 110,419	33,298	—
		189,770	51,641	

The establishment of a combined medical service displaces such widely scattered posts, saves travelling, and brings the Medical Officer into closer touch with health work in a smaller area. Even the area for a combined medical service could be improved and be more economical if it were feasible to split up sanitary districts in order to aim at an area of a standard size as regards acreage and population.

(iii) *Conclusions.* It might be argued that circumstances may arise in which the duties and obligations of a Medical Officer of Health would clash with those pertaining to an Assistant County Medical Officer. So far none has arisen, but this may be due to the personal factors referred to by Dr. Milne.

Another possible objection is that any one man cannot be expected to be an "omnibus expert," i.e., able to deal equally well with exceptional cases which may occur in the duties of a Tuberculosis Officer or School Medical Inspector. The reply to this is that a fund of common sense and adaptability is quite sufficient for the demands made on a Medical Officer in charge of scattered Rural districts. It is not suggested that this plan is suitable for the totally different needs of a populous urban area.

From a careful review of the experience gained and of the reports submitted by existing Combined Medical Officers, the following claims may be put forward in support of this co-ordinative policy :—

- (1) That there is avoidance of overlapping and unnecessary travelling.
- (2) That the service is efficient, economical, and a sound investment from all points of view.
- (3) That the prestige of the Medical Officer is raised, and that the many and varied duties add greater interest to his work.
- (4) That the Public Health (Tuberculosis) Regulations and Treatment of Tuberculosis generally can be more efficiently carried out.
- (5) That the duties of Medical Inspection of School Children are of great assistance in combating outbreaks of infectious disease.
- (6) That the continuity of supervision and treatment of child-life and a common public health policy are maintained throughout the area.
- (7) That confusion in the minds of parents, teachers, medical practitioners, property owners, etc., is avoided.
- (8) That the relationships between the Local Sanitary Authorities and the County Council are more harmonious.
- (9) That the service could be improved if the boundaries of Local Sanitary Districts could be re-arranged.
- (10) That the same policy has, with equal success, been applied, wherever possible, to the County Council's dental and nursing service.

(3) Partial Schemes in operation.

(a) *Barking.* By agreement with the Barking Urban Council Dr. R. J. Ewart, Local Medical Officer of Health, has undertaken (since 1st April, 1920), the duties of County Tuberculosis Officer for that district. The arrangement continues to work satisfactorily with benefit to all concerned.

(b) *Colchester.* A similar agreement was made with the Colchester Borough on 13th July, 1920, since when Dr. W. F. Corfield, Medical Officer of Health, has also performed the duties of County Tuberculosis Officer in his district, with excellent results.

(c) *Tilbury.* In December, 1921, the Tilbury Urban Council intimated that their part-time Medical Officer of Health had resigned, and that they had been advised by the Ministry of Health to approach the County Council on the question of the combined medical service. The County Medical Officer met representatives of the Tilbury Council in consultation on 5th December, 1921, when the possibility of grouping adjacent sanitary areas under one combined medical service scheme was discussed. Pending such a scheme fructifying, the County Council have agreed to permit Dr. W. B. Wood, the Assistant County Medical Officer for the district, to also act as Local Medical Officer of Health for Tilbury, from 1st April, 1922. This arrangement, which has already received the sanction of the Ministry of Health, is much to be commended, in view of the importance and size of Tilbury Dock and its attendant population.

(4) Prospective Schemes.

(a) *North Essex.* From the successful working of the combined medical scheme, its extension in the County is to be expected when opportunity affords. Therefore, it is highly satisfactory to report that agreements have been reached with groups of Local Sanitary Authorities, as shown below, which means that practically the whole of the northern half of the Administrative County will shortly have a combined medical service. As soon as the Ministry of Health give their approval, the appointments will be made—

Area No.	Sanitary Districts included.			Acreage.		Population.
1.	Halstead Urban	...	...	647	...	5,916
	„ Rural	...	...	38,712	..	9,739
	Belchamp Rural	...	...	26,500	...	4,219
	Bumpstead Rural (i.)	...	...	11,874	...	2,376
Totals ...				77,733		22,250

(i) Inclusion possible, but not yet definitely agreed upon.

Area No.	Sanitary Districts included.			Acreage.		Population.
3.	Braintree Urban	...	...	2,224	...	6,980
	" Rural	...	...	62,348	...	18,777
	Dunmow Rural	...	...	73,503	...	15,356
Totals ...				138,075	...	41,113

N.B.—It is anticipated that a part-time lady assistant may give some help in the above rather large area.

3.	Saffron Walden Borough...	...	7,502	...	5,876
	" " Rural	...	59,975	...	10,091
	Stansted Rural (ii)	...	22,954	...	6,830
Totals ...				90,431	22,797

(ii) For duties as Assistant County Medical Officer only.

(b) Waltham Abbey. The County Medical Officer met the Waltham Abbey Urban District Council in consultation on 9th January, 1922, when the following two schemes were the most favourably received by them:—

Scheme (1).

Combining with adjacent Sanitary Authorities with a view to reaching the minimum population of 25,000.

Scheme (2).

Appointment of a combined Medical Officer for the Waltham Abbey Urban District who would perform County Council duties in Waltham Abbey and in a fairly large district surrounding Waltham Abbey.

The matter is at present receiving consideration.

PART III.

TUBERCULOSIS.

Notifications.

A summary of the notifications of Tuberculosis made in the Administrative County of Essex during the period from 2nd January, 1921, to 31st December, 1921, is given below:—

TABLE VIII.

SHOWING SUMMARY OF NOTIFICATIONS OF TUBERCULOSIS IN ESSEX DURING THE PERIOD FROM THE 2ND JANUARY, 1921, TO THE 31ST DECEMBER, 1921.

		Notifications on Form A.												
		Number of Primary Notifications.											Total Notifica- tions on Form A.	
Age periods	...	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards		Total Primary Notifications
Pulmonary Males	...	2	13	11	18	62	71	97	99	66	38	10	487	526
„ Females	...	3	6	29	32	70	82	103	93	40	20	10	488	517
Non-pulmonary Males	...	8	22	17	13	15	9	10	4	6	8	1	113	117
„ Females	...	5	14	18	21	13	15	15	7	2	6	—	116	121
Totals 1921	...	18	55	75	84	160	177	225	203	114	72	21	1204	1281
„ 1920	...	9	41	84	84	163	144	208	140	100	38	23	1034	1097
„ 1919	...	12	83	158	119	150	138	295	206	109	61	14	1345	1440

Age periods	Notifications on Form B.					Number of Notifications on Form C.	
	Number of Primary Notifications.				Total Notifications on Form B.	Poor Law Institutions.	Sanatoria.
	Under 5	5 to 10	10 to 15	Total Primary Notifications.			
Pulmonary Males	—	3	5	8	8	8	208
„ Females	—	4	2	6	6	1	165
Non-pulmonary Males	—	3	1	4	4	—	7
„ Females	1	3	1	5	5	—	5
Totals 1921	1	13	9	23	23	9	385
„ 1920	3	15	13	31	33	30	313
„ 1919	—	19	10	29	29	72	410

TOTALS.

Form "A" (Medical Practitioners)	...	...	1281
" "B" (School Medical Inspectors)	...	...	23
" "C" (Poor Law)	...	...	9
" " (Sanatoria)	...	...	385
			1698

The total notifications for the past eight years are as follows:—

Year.	No. of Notifications.
1914	3495
1915	2200
1916	2121
1917	2268
1918	1992
1919	1951
1920	1473
1921	1698

It was recognised that the figure for 1920 was phenomenally low, and there is ground for satisfaction that even with the increase of 225 for the year 1921, the notifications are still well below the figure for 1919, and further are now less than one-half of the total notifications made in 1914.

TABLE IX.

SHOWING NUMBER OF DEATHS FROM TUBERCULOSIS IN ENGLAND AND WALES AND ESSEX DURING THE YEARS 1911—1921.

Year.	Pulmonary.		Non-Pulmonary.		Total.	
	Essex.	England and Wales.	Essex.	England and Wales.	Essex.	England and Wales.
1911	939	39232	332	13888	1271	53120
1912	922	38083	288	11903	1210	50051
1913	900	37055	323	12421	1223	49476
1914	870	38637	233	11661	1103	50298
1915	802	41050	266	12512	1068	53562
1916	762	40747	237	12151	999	52898
1917	883	42152	224	12609	1112	54761
1918	920	44971	231	11733	1151	56704
1919	715	36662	205	9650	920	46312
1920	573	33469	174	9076	747	42545
1921	664	†	163	†	827	†

The figures for 1915 onwards relate to civilians only.

†Not available at time of printing.

Deaths.

Table IX. gives the numbers of deaths at all ages from (a) Pulmonary and (b) Non-Pulmonary Tuberculosis in the County of Essex, as compared with England and Wales since the inception of Sanatorium benefit in 1911.

(a) **Pulmonary.** It will be seen that the number of deaths in the County of Essex for 1921 shews a decrease on the figure for 1911 of almost $33\frac{1}{2}$ per cent., even though there is an increase of 91 over the figure for the year 1920 which was to be expected from the greater number of notified cases.

(b) **Non-Pulmonary.** Here again a comparison of the number of deaths in 1921 with those occurring in 1911 shews an even greater decrease, being over 50 per cent. less. It would seem that the facilities for the diagnosis and treatment of this disease which have been rapidly extending and improving during the past ten years, are having the desired effect.

TREATMENT OF TUBERCULOSIS.

Estimates, 1921-22.

Provision was made in these estimates for the diagnosis and treatment of Tuberculosis, as follows:—

Nature of Services.				Amount.
				£
Tuberculosis Officers	...	...	...	4,915
Nurses	...	...	...	2,120
Dispensaries	...	...	...	2,750
County Council Sanatoria	...	...	...	18,835
Other Sanatoria	...	...	...	19,000
Shelters	...	...	...	450
Dental Treatment	...	...	...	500
Extra Nourishment	...	...	...	1,100
After-Care and Propaganda	...	...	...	200
Sundries	...	...	...	360
				£50,230

General.

Consolidation and co-ordination of the arrangements for the diagnosis and treatment of Tuberculosis were achieved during the year in various ways.

The National Health Insurance Act, 1920, enacted that Sanatorium benefit should, on a date to be appointed, cease to be included among the benefits conferred upon insured persons by Part I. of the National Insurance Act, 1911. An Order was made by the National Health Insurance Joint Committee fixing 1st May, 1921, as the appointed day.

By Circular 190, dated 31st March, 1921, the Ministry of Health intimated that and from 1st May, 1921, it would rest with County and County Borough Councils to provide treatment for insured persons as well as for other members of the community. Accordingly, the work in regard to insured persons (including ex-Service men) was transferred from the Essex Insurance Committee to the Essex County Council without the slightest interruption in the course of treatment of any patient. This was due in no small measure to the able manner with which Mr. A. J. Wylie, Clerk of the Essex Insurance Committee, dealt with the various points of the transfer. Reference should also be made to County Alderman J. H. Burrows, Chairman of the Essex Insurance Committee, and Dr. A. Butler Harris, Chairman of the Sanatorium Benefit Sub-Committee, whose never-failing interest in Tuberculosis patients did much to secure better conditions in connection with the scheme for the treatment of Tuberculosis, and whose help and co-operation were invaluable.

Another feature of the year was the Public Health (Tuberculosis) Act, 1921, which came into force on 12th May, 1921, and which made further provision with respect to arrangements by Local Authorities for the treatment of Tuberculosis. By this Act all Local Authorities with schemes of treatment which had been approved by the Local Government Board or Ministry of Health were deemed to have made adequate arrangements for the treatment of Tuberculosis so long as such schemes (with any approved modifications) continue in operation. Other provisions were made in regard to After-Care, Joint Committees, etc.

In the Tables set out below, an attempt is made to summarise the many and varied duties carried out by the Tuberculosis Officers and Nurses, and the treatment given to patients suffering from Tuberculosis. The effect of the revised scheme which resulted from the conferences between members of the County Council, Insurance Committee and Medical and Panel Committee referred to in the report for 1919) whereby the Dispensaries became chiefly consultative centres and clearing houses, has been evident throughout the year, resulting in a marked decrease in the attendances of patients. This has enabled the Tuberculosis Officers and Nurses to devote more time to other work, as is revealed in the following figures:—

TABLE X.

SHewing DISPENSARY ATTENDANCES, EXAMINATIONS, ETC., FOR THE YEARS 1920 AND 1921.

Attendances, etc.	1920. Number.	1921. Number.
Dispensary attendances ...	25,774	21,618
Contacts and suspects examined ...	2,132	3,444
Patients examined at request of medical practitioners or Ministry of Pensions ...	1,874	1,976
Sputa specimens examined ...	2,896	3,105
Domiciliary visits by Tuberculosis Officers	1,753	1,877
„ „ „ Nurses ...	10,253	11,891

TABLE XI.

SHEWING TREATMENT GRANTED TO PATIENTS DURING 1920 AND 1921.

Kind.			1920. Number.	1921. Number.
Dispensary	...	...	2,804	2,524
Sanatoria	...	...	738	953
Domiciliary (including Shelters)	...	...	421	463
Observation	...	...	1,367	1,581
			—	—
			5,330	5,521
Patients discharged...	..	...	1,206	948
			—	—
Totals at end of year	...	...	4,124	4,573
			—	—

TABLE XII.

SHEWING NUMBER OF BEDS PROVIDED AND NUMBER OF PATIENTS TREATED.

Name of Institution.	Kind of Patient treated.		Number of Beds.		No. of Patients treated.	
			1920.	1921.	1920.	1921.
Harold Court	...	Males	47	49	157	186
Orsett	...	"	12	14	67	67
Ilford	...	"	19	19	76	81
Colchester	...	"	12	12	62	57
Other	...	"	6	34	21	112
Black Notley	...	Females	34	35	151	178
Chingford	...	"	14	16	77	69
Halstead...	...	"	12	9	61	40
Other	...	"	2	34	6	96
High Beech (Surgical)	...	Children	32	31	71	61
Sible Hedingham	...	"	23	35	83	104
Nayland	...	"	7	19	15	34
Other	...	"	16	32	84	102
			236	339	931	1187

Dispensaries and Visiting Stations.

At the conclusion of 1921, the Dispensaries and Visiting Stations enumerated below were open and under the charge of the Tuberculosis Officers named—see also full list of Medical Staff on pages 5 and 6:—

- (1) BRAINTREE ... *Tuberculosis Officer* ... J. D. Macfie, M.B., Ch. B.
Sanatoria ... Black Notley, Halstead and Sible Hedingham.

- Dispensaries* ... Braintree, Co-operative Buildings, Wednesdays. 11.30 a.m. to 1 p.m.
 Dunmow, 18, Mount Pleasant Terrace, The Causeway, 1st & 3rd Tuesdays each month, 10.30 to 11.30 a.m.
 Halstead, 43, North Street, 1st & 3rd Thursdays each month, 12.15 to 1.15 p.m.
 Saffron Walden, The Adult School Room, High Street, 1st & 3rd Tuesdays each month, 12.30 to 2.30 p.m.
- 2) COLCHESTER ... *Tuberculosis Officer* ... *W. F. Corfield, M.D., M.R.C.S., D.P.H.
Sanatorium ... Colchester.
Dispensary ... Colchester, St. John's Street, Tuesdays, 10.30 a.m. to 12.30 p.m., Thursdays, 10.30 a.m. to 12.30 p.m.
- 2a) CLACTON ... *Tuberculosis Officer* .. *W. A. Milne, M.B., Ch. B., D.P.H.
Dispensary ... Clacton, Skelmersdale Road, Fridays, 11 a.m. to 12 noon.
- 2b) HARWICH ... *Tuberculosis Officer* ... *J. Ramsbottom, M.B., Ch. B., D.P.H.
Dispensary ... Harwich, c/o Mr. Woodward, Corner Chemist, 1, Church Street, Tuesdays, 11 a.m. to 12 noon.
- 2c) LEXDEN AND WINSTREE. *Tuberculosis Officer* ... *A. J. Williamson, D.S.O., M.A., M.D., D.P.H.
Dispensary ... Colchester, St. John's Street.
- 3) CHELMSFORD ... *Tuberculosis Officer* ... J. D. Macfie, M.B., Ch. B.
Dispensaries ... Chelmsford, General Hospital, London Road, Fridays, 2 to 4 p.m.
 Maldon, 114, High Street, ^{2nd and 4th} Tuesdays, ^{in each month} 10.30 to 11.30 a.m.
- 4) EPPING ... *Tuberculosis Officer* ... *Charlotte Brown, L.R.C.P., L.R.C.S., L.R.F.P.S., M.D. (Brux.)
Sanatoria ... Chingford and High Beech.
Dispensaries ... Epping, Victoria Buildings, 2nd & 4th Wednesdays each month, 10.30 to 11.30 a.m.
 Waltham Abbey, 31, Greenyard, Mondays, 11 a.m. to 12 noon.
 Leyton, 180, High Road, Mondays, ^{2.0 p.m.} ~~2.30~~ to ~~4 p.m.~~ ^{5.30 p.m.} (children only).
- 5) LEYTON ... *Tuberculosis Officer* ... J. Sorley, M.A., M.D., LL.B., D.P.H.
Dispensaries ... Walthamstow, 334, Hoe Street, Mondays, 2 to 4 p.m., Tuesdays, 10 a.m. to 12 noon, and 6 to 8 p.m., Wednesdays, 10 to 12 noon (new cases only). Fridays, 10 a.m. to 12 noon (children only), and 2 to 4 p.m. (contacts)

Leyton, 150, High Road, Wednesdays, 10 a.m. to 12 noon and ~~4 to 6 p.m.~~ ^{6.0 to 8.0 p.m.} Thursdays 10 a.m. to 12 noon (new cases only), and 6 to 8 p.m.

- (6) ILFORD ... *Tuberculosis Officer*... H. V. Crossfield, M.B., C.M.
Sanatorium ... Ilford.
Dispensary .. Ilford, 38, Oakfield Road, Tuesdays, 3 to 5 p.m., Fridays, 4 to 6 p.m.
 (Also assists at Leyton Dispensary.)
- (6a) ROMFORD ... *Tuberculosis Officer*... A. H. Jacob, L.R.C.P., L.R.C.S.
Sanatorium ... Harold Court.
Dispensary ... Romford, 29, Eastern Road, Tuesdays and Fridays, 9.30 a.m. to 12.30 p.m.
- (6b) BARKING ... *Tuberculosis Officer*... *R. J. Ewart, M.D., D.Sc., F.R.C.S. D.P.H.
Dispensary .. Barking, 37, Linton Road, Mondays, 4 to 6 p.m., Thursdays, 10.30 a.m. to 12.30 p.m.
- (7) GRAYS ... *Tuberculosis Officer*... W. B. Wood, M.D., M.R.C.S., D.P.H.
Sanatorium ... Orsett.
Dispensary ... Grays, Hilldrop House, 61, London Road
 Mondays, ~~10.30 a.m. to 1.30 p.m.~~ ^{4 p.m. to 6 p.m.}
 Thursdays, ~~10.30 a.m. to 1.30 p.m.~~ ^{4 p.m. to 6 p.m.}
- (8) SOUTHBEND ... *Tuberculosis Officer*... *G. N. Meachen, M.D., M.R.C.S. L.R.C.P.
Dispensary ... Southend, 30, Clarence Street, Mondays, Thursdays and Saturdays, 2.30 to 4.30 p.m. (men, 2.30, women, 3.15), Tuesdays 6.30 to 8.30 p.m. (men only), Fridays 6.30 to 8.30 p.m. (women only).

*Part-time Tuberculosis Officers.

Reference has already been made to the growing practice of using the Dispensaries as consultative centres and clearing houses which anticipated the suggestions contained in Circular No. 257, dated 3rd November, 1931. The Ministry of Health stated in that circular that patients should not be treated at the Dispensaries on a large scale and over prolonged periods with bottles of medicine, cod liver oil, etc., and medicines should not be given to ensure their attendance. They should rather be educated gradually out of the belief in the efficacy of drugs and be taught the value of personal advice and of instruction in a hygienic mode of life.

It can be claimed that in Essex this educative treatment has been applied with success as is revealed by the expenditure on drugs, etc., during the past four financial years, namely :—

Medicament.	Actual Expenditure.			Estimated.
	1919-20.	1920-1	1921-2.	1922-3.
	£	£	£	£
Drugs and Prescriptions	...	1586	1749	1045
Oil and Malt ...	...	...	...	500

Further, all patients (adults and children) with the exception of ex-service men and strictly necessitous cases, were required from 1st October, 1921, to pay for medicaments issued at the following rates:—

Oil and Malt, Parrish's Food, etc.	..	...	Cost price
Prescription	...	...	1s. each.

From this source £16 10s. 8d. was paid into the County Funds during the last quarter of 1921. So far there has been no evidence that the adoption of this system has inflicted any hardship, whereas on the other hand some patients have welcomed the opportunity of paying for treatment received.

Tuberculosis Nurses.

(i) **Health Visitors.** A full list of Health Visitors in the service of the County Council on 31st December, 1921, is given on page 6. As will be seen from that list all the Health Visitors (with five exceptions) undertake combined nursing duties in relation to Tuberculosis, School and Child Welfare—a practice which works efficiently and economically and which avoids overlapping.

(ii) **Complementary Nursing Service.** The County Council has an agreement with the County Nursing Association whereby the services of 100 District Nurse-Midwives employed by affiliated Nursing Associations are utilised. The Health Visitor exercises general supervision, but the District Nurse carries out the necessary remedial measures.

Sanatorium Treatment.

(i) **Beds.** A list of beds provided for tuberculosis cases is given in Table XII. on page 47 and these may be summarised as follows:—

	No. of Beds.
County Council Institutions	150
Isolation and other Hospitals under Agreement	70
Other Institutions at short notice or as required	119
	339

(ii) **County Institutions.** As regards the County Council's four Institutions, the following Table contains particulars (kindly supplied by the County Accountant) regarding number of beds and cost per patient per week. In each case the weekly cost is much less for 1921 than was the case in 1920.

TABLE XIII.

Showing for each County Sanatorium number of beds, administrative expenses, and cost per week per patient, for the year ended 31st March, 1922.

(Kindly supplied by the County Accountant.)

Institution.	Kind of cases treated.	No. of beds on 31.3.22.	Average No. of		Salaries and Wages.	Provisions.	Medical Appliances.	Rent, Rates, Insurance, &c.	Heating, cleaning, laundry.	Necessaries.	Domestic Utensils, Furniture, &c.	Repairs and Renewals.	Postages, Travelling Expenses.	Other Payments.	Total.	Cost per patient per week.	Cost per person (including staff) per week.
			Patients.	Resident Staff.													
Black Notley	Females (adults)	32	31	8.5	£ 546	1083	£ 56	£ 90	£ 203	£ 48	£ 35	£ 256	£ 72	£ 87	£ 2176	£ 1 10 9	£ 1 4 2
Harold Court	Males (adults)	49	47.5	15.4	1170	2969	92	123	653	84	191	755	102	97	6236	2 10 6	1 18 1
High Beech ...	Children (non-pulmonary)	31	34	12.3	1127	978	213	144	305	78	41	149	32	213	3280	1 17 1	1 7 2
Sible Hedingham ...	Children (pulmonary)	36	32.8	7.5	537	764	84	220	146	29	12	123	75	89	1984	1 3 3	18 11

N.B.—The Harold Court Farm Accounts are excluded from this Table, with the exception of £675 charged under the heading of "Provisions" for produce supplied to the Sanatorium.

Each Institution has been carried on successfully throughout the year, due in a small measure to the continued zeal and energy of the Medical Superintendents, Matrons, Nurses and Domestic Staff. At High Beech and Sible Hedingham where children are accommodated, the help of the Teachers has been of great value, both from the disciplinary as well as educational point of view.

Extensions and improvements have been carried out at the Harold Court sanatorium for men throughout the whole year. Patients certified by the Medical Superintendent as fit for employment have given a great deal of practical assistance. Each patient was engaged in his own trade as joiner, painter, cobbler, gardener, poultry-keeper, &c. Shelters have been made and repaired; an incinerator has been erected; improvements and alterations to buildings carried out; paths, shelters and most of the outside woodwork have been painted, etc.

This experiment has not only been of practical value (all work being valued by the County Architect) but has proved beneficial to the patients, keeping them usefully employed and restoring their confidence in their physical capacity when ultimately discharged to the ordinary conditions of life. A grant is made to each working patient to a maximum of five shillings per week, subject to the following conditions:—

- (a) That the work undertaken is essential at the time.
- (b) That such work is only undertaken in, or for, County Council Institutions or purposes.
- (c) That the total cost of such work is less than would be charged by outside contractors, if it were put out to tender.
- (d) That patients are not retained in the Institution for employment purposes only.

As regards 22 patients sent from Essex for courses of combined treatment and training to Papworth, Preston Hall and Nayland Training Colonies, it cannot be said from enquiries which have been made that the results achieved are on the whole satisfactory. Experience has shewn that there are many difficulties in the way of training consumptive ex-service men in an occupation different from that which they have followed hitherto. It is easy to advise these men to seek a job in the open air, but of what value to a farmer is an unskilled hand, an untrained eye and an inexperienced brain. Some patients would certainly benefit under ideal colony conditions, but very few could stand the strain of ordinary farm life.

In only a very few cases has change of employment been successful, as economic conditions of competitive labour have to be contended with. This experience, therefore, leaves us with the following two alternatives only: (1) that a man must return to his own trade, or (2) that he should remain permanently at a colony. As regards (1), a patient must have good nourishing food, and he is in a far better position with the education derived at a sanatorium or colony to provide it from the wages at his old trade, even if the conditions are not as hygienic as they should be, than would probably be the case in a new occupation in an ideal environment.

As regards (2), Dr. P. C. Varrier Jones, Medical Director, Papworth Tuberculosis Colony, aptly sums up the position as follows:—"Let communities started in which our consumptive soldier can live in his own home, shielded from the fierce competition of the outside world, a self-respecting worker, an economic asset. Let employment be found, the model factory erected, the hours of the day properly regulated, a fair wage paid."

In view of the need for securing the most economical utilization of residential institutions, it was found necessary to request the Tuberculosis Officers to bear in mind the following order of priority when making recommendations for Sanatorium treatment:—

- (i) Patients in whom arrest of the disease may be reasonably expected.
- (ii) Patients in whom the disease is not likely to be arrested permanently but who might reasonably be expected to resume part-time employment as a result of institutional treatment.
- (iii) Patients in need of a short course for educational purposes.
- (iv) Patients who are a danger to others, particularly young children, owing to bad home environment, and for whom the provision of a shelter would not be sufficient.

The greatest need at the present time is accommodation for female advanced cases. For the period commencing 1st October, 1919, and expiring 1st May, 1922, the Ministry of Health approved of the use for this purpose of a Ward Block at the Halstead Isolation Hospital, with excellent results to all concerned. Since the approval was withdrawn, the difficulties attending the isolation of female advanced cases have been great, except in those areas where the Boards of Guardians readily admitted such cases to their Infirmaries, some of which are admirably adapted for this purpose.

As regards male advanced cases, the Harold Court Sanatorium has been of inestimable service, and consequently little difficulty has attended this type of case.

At the High Beech Hospital for Surgical Tuberculosis, excellent results are being obtained under the able supervision of Sir Henry J. Gauvain, whose invaluable services have led the County Council to appoint him as Consulting Surgeon for Surgical Tuberculosis for the whole of the Administrative County, with effect from 1st January, 1922. During last autumn, Sir Henry Gauvain presented a carefully prepared scheme for improving the facilities for treatment at High Beech, but financial and other exigencies have unfortunately prevented the Committee from putting his suggestion into force.

Railway Vouchers. During the year an arrangement was made with the various Railway Companies in Essex whereby printed railway vouchers are issued direct from the Public Health Department to necessitous patients. This voucher, when presented by the patient at the Station named thereon, and is exchanged for a ticket.

the destination required. Under this system a considerable amount of time and expense is saved, and each railway submits an account monthly, to which are attached the cancelled railway vouchers.

Extra Nourishment. On the 3rd November, 1921, the Ministry of Health advised that the classes of patients likely to benefit to the greatest extent from grants extra nourishment are the following:—

- (i) Patients who have received an adequate course of sanatorium treatment and whose medical condition is such that, with the grant of extra nourishment, they may be expected to maintain or recover full working capacity, and
- (ii) Patients in whose cases ultimate arrest of the disease may reasonably be anticipated, and who are waiting for admission to a sanatorium.

Financial circumstances must be also taken into account, and grants are not made except to patients who cannot reasonably be expected to incur the necessary additional expenditure from their own resources. In consequence, a considerable reduction was made in the estimates, as will be seen below:—

Year.					Amount.
1921-22	...	...	...	..	£1,100
1922-23	...	...	...	...	£355

During the year 1921 extra nourishment was granted to 257 patients, 87 being taken over from the Essex Insurance Committee on 1st May, 1921. Naturally it has proved difficult to avoid creating disappointment by withholding the nourishment which has been granted so readily in the past. The problem had, however, to be faced sooner or later, as undoubtedly in many cases the County Council's duties are overlapping those of the Boards of Guardians—to whom many cases have hitherto been referred under the revised regulations.

In order to ascertain that the milk supplied as extra nourishment for tuberculosis patients was of a good quality, the Foods and Drugs Inspectors were asked in 17 instances to obtain two samples of milk from each vendor, one for chemical examination and the other for bacteriological examination. As regards the former every sample of milk was certified by the Public Analyst as genuine, but as regards the latter, in one instance acid fast bacilli resembling microscopically tuberculous bacilli were found. Arrangements were made with the local Medical Officer of Health for this particular supply of milk to be stopped until certified free from these bacilli.

Dental Treatment.

The County Council's scheme, outlined in the Annual Report for 1919, has been continued. Under this scheme 77 patients were treated, having 327 extractions and 148 fillings. In addition 14 patients had scalings.

It has long been recognised that if a patient is to derive the fullest possible benefit, particularly from sanatorium treatment, he must first have his teeth attended to.

Consequently dental treatment has been made one of the conditions which must be complied with before any patient is admitted to a County Sanatorium.

Contributions by Patients.

(1) Children. Contributions from parents were first asked for in August, 1914, but the system was not regularized until June, 1916. The system was further improved on 1st January, 1920, when a scale was established under which all parents (except in necessitous cases) are required to contribute weekly sums based upon their weekly incomes.

Most parents gladly avail themselves of the opportunity to assist in this way and in no case has a child been deprived of treatment thereby. During the year ended 31st December, 1921, the sum of £898 0s. 5d. was collected from parents by the County Accountant.

(2) Adults. It is now considered by the Ministry of Health that local authorities should require a contribution towards the cost of the residential treatment of persons suffering from tuberculosis (other than ex-service men whose disease has been held to be attributable to or aggravated by war service) in cases where the financial circumstances of the patient are such as to justify a charge. In this connection care is to be taken not to deter persons who are in need of treatment from accepting treatment.

After careful consideration the County Council, who had previously secured contributions from several well-to-do patients, agreed to adopt as a guide the same scale for adults as for children, subject to the following:—

- (i) That accepted and unaccepted ex-service patients be regarded for all purposes as necessitous.
- (ii) That all other adult patients be dealt with on their merits.
- (iii) That in calculating the contributions to be paid by adult patients, the income received by the patient whilst incapacitated should only be considered.

This scheme did not come into operation until 1st April, 1922.

After-Care.

The After-Care Associations at Barking, Chelmsford, Colchester, Ilford Leyton, and Saffron Walden have continued to assist Tuberculosis patients in their respective districts.

The functions of these Associations, which were enumerated in the Annual Report for 1919, have been strictly adhered to, and apart from the difficulty in raising funds, these Associations have been a great boon to the localities, and experience proves that no scheme for the treatment of Tuberculosis is complete without a network of these Associations throughout the County.

PART IV.

MATERNITY AND CHILD WELFARE ACT, 1918.
NOTIFICATION OF BIRTHS ACTS, 1907 & 1913.

(1) *County Area.* As and from 1st April, 1921, the County Council became responsible for administering the above Acts in the following 25 Sanitary Districts which, according to the 1921 preliminary Census, have a total population of 4,320:—

Municipal Boroughs.	Urban Districts.	Rural Districts.
Maldon	Braintree	Belchamp
Saffron Walden	Brentwood	Billericay
	Brightlingsea	Braintree
	Burnham-on-Crouch	Bumpstead
	Epping	Dunmow
	Frinton-on-Sea	Epping
	Halstead	Halstead
	Shoeburyness	Ongar
	Walton-on-the-Naze	Rochford
	Witham	Saffron Walden
	Wivenhoe	Stansted
		Tendring.

(2) *Scheme.* Briefly, the Scheme submitted to and approved by the Ministry of Health consisted of the undermentioned services for 1921-22:—

Service.	Estimated Cost, 1921-22.
	£
Nursing Association for Midwifery Service (proportion)	3,960
Health Visitors (8 whole-time) ...	1,200
„ (Allowances) ...	240
Medical Service ...	800
Child Welfare Centres ...	340
Grants to Midwives ...	200
Fees to Doctors called in ...	800
Inspection of Midwives ...	300
Other Payments ...	320
	£8,160

(3) *Medical Service.* A full list of the County Medical Staff is given on page 5 and of these 10 devote part of their time to Child Welfare work by attending Centres, giving "Talks" to parents, etc. The principle of combined medical service has been followed.

(4) *Nursing Service.* The Scheme allowed for the provision of 8 whole-time Child Welfare Nurses in the special area, but with the advantages derived from the

combined nursing service and with the assistance of the District Nurse-Midwives, it has been possible to carry out the work during the six months of 1921 with the appointment of 5 additional whole-time and 2 part-time Health Visitors. At the end of the year, therefore, the Health Visiting Staff consisted of the following:—

(1) Whole-time appointments—				
(a)	School Nursing	...	...	11
(b)	Tuberculosis	...	...	12
(c)	Child Welfare	...	...	5
(2)	Part-time appointments	...	...	8

16 whole-time and 3 part-time Health Visitors undertake Child Welfare, School Nursing and Tuberculosis work, 5 whole-time and 2 part-time undertake Tuberculosis work only, whilst 7 whole-time and 3 part-time undertake the duties of School and Tuberculosis Nursing.

These Health Visitors' duties are definitely laid down by General Instructions. In regard to the Child Welfare section of their work, notifications of births are received by the County Medical Officer and then transmitted to the appropriate Health Visitor. The forms have been devised so that they become also a record of visits, and thus the usual infant record card is not required, and clerical work is reduced to a minimum. The Health Visitor then deals with the notifications as follows:—

- (a) Sends to District Nurse-Midwife all notifications of births which have occurred in her practice;
- (b) Retains all other notifications.

Supervision of the cases is then undertaken by the respective nurses, and the Health Visitor is required to meet the District Nurse-Midwives in her area each quarter to ensure co-operation and the collating of statistics on a prescribed form. Ante-natal work is allocated, as far as possible, in a similar manner, and the duties at the various Child Welfare Centres are also divided when necessary. A pamphlet on "How to take care of Baby" is distributed to each mother.

Summary of work done during the period 1st July, 1921, to 31st December, 1921.

Notifications received.	Health Visitors. No. of post-natal visits.			D.N.-Ms. No. of visits.			Total visits.	
				Pre-natal.	Post-natal.		Pre-natal.	Post-natal.
1787	...	3898	...	1678	2080	...	1678	5978

From the Returns received from Registrars, it was ascertained that 89 births had not been notified, but the proportion is diminishing as the scheme becomes better known.

(5) *Child Welfare Centres.* The aim has been to maintain these on a voluntary basis under the control of Local Voluntary Committees, to whom a grant is made by the County Council, provided the Terms of Reference set out below are adopted. Twelve Centres have been continued or established on this basis, and in addition

There are Centres at Witham, Stansted and Braintree, which do not accept a grant. In some instances, the Centre is held on the same premises as those used for School Clinic purposes:—

(a) *Terms of Reference for Local Child Welfare Sub-Committees.*

The powers under the above-mentioned Acts are now vested in the County Council, who desire to maintain the local interest in the Child Welfare work by assisting existing Local Child Welfare Sub-Committees or by assisting in the establishment of new Sub-Committees. To this end the County Council are prepared to make a grant of not exceeding £20 per annum, but in no case to exceed £5 per 1,000 population, to each Local Child Welfare Sub-Committee and to supply, if required, a Medical Officer and Health Visitor, provided the conditions enumerated below, which are chiefly in connection with the supervision of the Child Welfare Centres, are complied with:—

- (1) To elect a Chairman, Vice-Chairman and Secretary.
- (2) To meet monthly or oftener as required.
- (3) To co-opt such members as the County Council may require.
- (4) To provide and furnish, in the ordinary way, suitable rooms in which the Centre can be held, and also to provide for their cleaning, lighting and heating. Special equipment will be supplied by the County Council.
(Sunday Schools, Institute Buildings, School Clinics, etc., are generally suitable for this purpose).
- (5) To raise funds to meet current expenses, including assisting necessitous cases in providing medicaments, home helps, spectacles, etc., and paying travelling fares to and from treatment centres, convalescent homes, etc.
- (6) To submit to the County Medical Officer an Annual Report, which shall include a Statement of Accounts.
- (7) To receive reports (written or verbal) from the County Medical Officer, Child Welfare Officer and Health Visitor for consideration and necessary action.
- (8) To arrange, through the Child Welfare Officer and Health Visitor or otherwise, for sympathetic enquiries to be made into the home circumstances of necessitous cases.
- (9) To arrange for educational propaganda at Child Welfare Centres, schools, public meetings, etc.
(The services of the Child Welfare Officer and Health Visitor will be available for this purpose).
- (10) To assist, when required, the District Education Sub-Committee in the care of school children.
- (11) To submit, from time to time, to the County Medical Officer, suggestions regarding necessary improvements in the Child Welfare work.

(b) *List of approved Centres.*

Address.	Population served.	Sessions.	Grant.		
			£	s.	d.
Progressive Club, Maldon ...	6,589	Once a week (Tuesday).	20	0	0
Trinity House, Halstead ...	5,916	Once a fortnight (Friday).	20	0	0
Council Offices, Shoeburyness	6,414	Once a week (Thursday).	20	0	0
Central Hall, High Street, ... Saffron Walden.	5,876	Once a week (Friday, 2.30 to 4.15 p.m.)	20	0	0
Church House, New Road, ... Brentwood.	6,870	Once a fortnight (Friday).	12	10	0
Epping ...	6,197	Weekly	20	0	0
Women's Institute Club Room, Harlow.	3,249	Once a fortnight (Thursday).	10	0	0
Parochial Hall, Junction Road, Warley.	5,974	Once a fortnight (Wednesday, 3 to 4 p.m.)	12	10	0
Reading Room, Pilgrims Hatch	5,670	Once a fortnight (Tuesday, 3 p.m.)	10	0	0
Council Cottages, Matching Tye	554	Once a fortnight (Friday).	5	0	0
Parish Room, Sheering ...	664	Once a month (Thursday).	5	0	0
Debden and Widdington ...	993	Once a month (Wednesday).	5	0	0

(6) *Provision of Milk.* Supplies of milk at less than cost price to necessitous cases were stopped when the Ministry of Health indicated by Circular 234, dated 26th August, 1921, that the Grant to Local Authorities for this purpose was reduced from 50 per cent. to 5 per cent. A further Circular 267, dated 13th December, 1921, however, intimated that the Ministry had decided to revert to the original grant of 50 per cent., whereupon the County Council set aside for the year 1922-23 the sum of £500 for the provision of milk in necessitous cases, in accordance with the Ministry's requirements.

During the year 1921 "Glaxo" was supplied from the Central Office at cost price to necessitous cases, either through the Health Visitors or the Child Welfare Centres, and this arrangement has been much appreciated.

(7) *District Combined Committees.* The County Education Area is divided into 19 District Sub-Committee areas. Suggestions have been made for the establishment in each District Education Sub-Committee's area of a District Combined Committee consisting of members of existing Care of Children's Committee and representatives from the County Council, Local Authorities, Welfare Centres,

Women's Institutes, etc. Such a Combined Committee would be responsible for the supervision locally of preventive and remedial measures in connection with the health of mothers, school children and infants, and it was suggested that the Clerks of the District Education Sub-Committees should act as Clerks to the District Combined Committees.

In the Halstead and Belchamp Districts the existing Care Committees have divided themselves into two Special Joint Committees, one for the Halstead District and the other for the Belchamp District. These Committees have representatives from Local Sanitary Authorities, Boards of Guardians, etc., and have adopted the County Council's Terms of Reference mentioned above, and will supervise locally School Medical Inspection, Child Welfare and other Public Health work.

When the present financial exigencies are removed, it is hoped that it will be possible to arrange for additional combined School and Child Welfare Clinics to be established in various parts of these areas. Meanwhile, these Committees are doing what they possibly can to secure assistance for any necessitous cases which are brought to their notice.

The Clerks to the various District Education Sub-Committees have shown a willingness to assist in promoting an efficient Child Welfare Service, and have continued their valuable work in connection with School Medical Inspection.

Midwives Acts, 1902 & 1918.

(a) *Practising Midwives.* During the year under review 272 midwives notified their intention to practise in the Administrative County. Of these, 238 were actually in practice at the end of the year 1921. These midwives are classified as follows:—

Total No. of Midwives in practice at end of year.	Dependent	Trained Independent.	<i>Bona fide</i> , including untrained and L.O.S. Certificated.
238 ...	123	... 73	... 42

The total number of births which occurred during the year 1921 was 18,298, of these, 7,166 (39·1 per cent.) were attended by midwives in the capacity of a midwife, and 2,616 (14·3 per cent.) as maternity nurses under the supervision of medical practitioners.

At the end of the year each midwife was asked to state the number of confinement cases which she attended as a midwife during the year 1921, and it was found that 8 trained and 18 untrained midwives attended 10 or less cases each; 45 trained and 4 untrained attended 11—20 cases each; 27 trained and 3 untrained attended 21—40 cases each; 6 trained and 1 untrained, 41—60 cases each; 15 trained and 4 untrained, 61—100 cases each, and 7 trained and 12 untrained midwives attended over 100 cases each. In addition, the midwives at the Leytonstone and Walthamstow P.N.U.s attended 653 cases as midwives.

(b) *Notifications.* The following list shows the number of notifications received from certified midwives in accordance with the rules of the Central Midwives Board during the year as compared with the previous year :—

	1920.	1921.
Records of Medical Aid	1090	1083
Records of Still-birth	132	122
Deaths of Mothers	1	4
Deaths of Infants	19	17
Artificial Feeding	63	39
Liability to be a Source of Infection	31	46
Laying-out for Burial	95	102
Ophthalmia Neonatorum or Discharging Eyes	85	99

The 1,083 cases (15·2 per cent.) where midwives sought the assistance of doctors were for various reasons, namely :—

Albuminuria	7 cases.	Placenta Adherent	53 cases.
Dangerous Feebleness of Infant	41 „	Placenta Praevia	5 „
Eclampsia	2 „	Premature Birth	67 „
Hæmorrhage :—		Prolonged Labour	169 „
Ante-partum	22 „	Presentation (abnormal)	57 „
Post-partum	23 „	Pyrexia (High Temp.)	65 „
Instrumental Assistance	6 „	Purulent Discharge	1 „
Malformation of Child	7 „	Rigid Os.	2 „
Miscarriage, Abortion	24 „	Ruptured Perineum	206 „
Miscellaneous Causes	188 „	Spina Bifida	4 „
Ophthalmia Neonatorum or Discharging Eyes	99 „	Still-birth	15 „
		Uterine Inertia	20 „

(c) *Visits.* Six hundred and twenty-three (623) routine visits were made to midwives during the year and with few exceptions, the mode of practice, equipment and records, etc., were found to be quite satisfactory.

In no case was it found necessary to report a midwife's conduct to the Central Midwives Board.

(d) *Doctors' Fees.* In accordance with the Midwives Act, 1918, the County Council paid the sum of £811 7s. 6d. as fees to medical practitioners, and recovered from parents during the year the sum of £174 16s. 0d.

Lectures to Midwives.

An excellent syllabus of lectures was again arranged under the auspices of the Essex Midwives' Association, the midwives being invited to the following Centres, at each of which six lectures were given during the winter months :—Chelmsford, Clacton, Leytonstone, Saffron Walden and Southend-on-Sea.

Essex County Nursing Association.

(a) *General.* For the ^{four quarters of the year 1922.} period 1st January, 1921, to 31st December, 1921, the following grants were paid by the County Council to the County Nursing Association in accordance with the Agreement:—

	£	s.	d.
(a) Cost of training District Nurse-Midwives ...	660	0	0
(b) Maintenance of two emergency nurses ...	50	0	0
(c) Grants to affiliated District Nursing Associations ...	4307	2	1
(d) Equipping District Nurse-Midwives for new areas ...	5577	16	3
(e) Clerical and organizing expenses ...	130	0	0
	320	0	0
	240	0	0
	300	0	0
Total ...	£5,687	16	3
	5387	2	1

The County Council and the County Nursing Association continue to work in close co-operation, there being five members of the Public Health and Housing Committee appointed as representatives on the Association's Executive Committee, and on the other hand two members of the Association are co-opted members of the County Council's Maternity and Child Welfare Sub-Committee.

Steps were taken by the County Council early in 1921 to enter into a revised Agreement with the Association for a further three years from 1st April, 1921, but owing to the present need for economy, the Ministry of Health have not seen their way to approve the Agreement for more than one year ending 31st March, 1922. Further negotiations are therefore taking place.

There is no doubt that the efforts of the County Nursing Association during the past few years have culminated in the provision of a District Nursing Service, of which the County is justly proud, and it is hoped that the Association's excellent work will not be hampered in the future by the economy campaign.

Meetings of the Association's Executive Committee are held on the first Friday of each month, to which are submitted reports on the work done during the previous month. These reports reveal the following interesting figures:—

(i) Affiliated District Nursing Associations.

Number affiliated on 1st January, 1921	...	103
" during the year	...	15
Total	...	118

(ii) Parishes.

Number in the County (excluding extra-Metropolitan Area)	...	377
Number served by affiliated District Nurse Associations	...	248
Number still to be provided for	...	129

It will be seen, therefore, that about two-thirds of the parishes are served by District Nurses, and every effort is being made to provide for the remaining one-third. District Nursing Associations are urgently needed in the Ongar, Maldon, Rochford and Orsett Rural Districts. To alleviate the shortage of midwives in the last three named districts the County Council are making a grant of £20 per annum to subsidise certified midwives practising at Hadleigh, Tilbury, Stanford-le-Hope, Grays, Wakering, Bradwell-on-Sea, Pitsea and Eastwood.

(b) *District Nursing Associations.* The following table shows the number of District Nursing Associations in the Administrative County which were affiliated to the County Nursing Association at the end of the year:—

No. of affiliated D.N. Assoc.	No. undertaking Midwifery and District Nursing.	No. performing District Nursing duties only
118	104	14

A summary of the work undertaken by the 124 District Nurses belonging to affiliated Associations during the year 1921 is given below:—

Midwifery Visits	...	21,961
Maternity „	...	25,486
District General	...	123,027
„ Tuberculosis	...	3,081
Health Visiting	...	4,762
Home „	...	1,991
Total number of visits	...	180,308

Average number of visits per District Nurse ... 1,454.

Of the 118 affiliated Associations, 112 participate in the County Council Combined Nursing Scheme. On 1st July, 1921, the Maternity and Child Welfare Scheme was put into operation in the 25 districts for which the County Council is the authority for Maternity and Child Welfare. In this area 63 District Nurses and Midwives were employed by affiliated Associations, and they were asked to far assist the whole-time Health Visitors by carrying out post-natal visiting in parishes covered by the Association. This branch of the Combined Nursing Scheme is now working smoothly and satisfactorily.

City and County	Population		Registrar-General's figures.		Deaths at various ages.										Annual rates per 1,000 of estimated population.			
	Estimated 1921 for (Previous figures)	Birth-rate	Deaths at all ages.	Deaths under 1 year.	(Figures supplied by Medical Officers of Health.)										Total Deaths.	Birth-rate.	Zygote Death-rate.	Infantile Mortality.
					Under 1 year.	1 and under 2.	2 and under 3.	3 and under 4.	4 and under 5.	5 and under 6.	6 and under 7.	7 and under 8.	8 and under 9.	9 and under 10.				
35,543	36,250	36,250	928	394	74	10	10	10	10	10	10	10	10	10	267	10.8	0.9	1.6
6,880	7,020	7,020	182	74	6	6	6	6	6	6	6	6	6	6	216	10.5	0.6	0.8
6,870	6,910	6,910	127	85	10	10	10	10	10	10	10	10	10	10	185	12.3	0.4	1.0
4,405	4,448	4,448	86	60	6	6	6	6	6	6	6	6	6	6	193	13.4	0.2	1.1
8,007	8,032	8,032	166	49	7	7	7	7	7	7	7	7	7	7	214	9.9	1.2	0.6
3,433	3,466	3,466	58	42	2	2	2	2	2	2	2	2	2	2	170	12.3	1.4	0.5
20,701	20,800	20,800	402	205	18	18	18	18	18	18	18	18	18	18	402	19.3	0.8	0.9
9,481	9,430	9,430	156	108	13	13	13	13	13	13	13	13	13	13	165	11.4	0.3	0.8
17,049	17,053	17,053	172	99	3	3	3	3	3	3	3	3	3	3	146	8.4	0.2	1.1
43,337	43,630	43,630	994	459	59	59	59	59	59	59	59	59	59	59	997	22.7	0.3	1.1
4,197	4,161	4,161	70	56	3	3	3	3	3	3	3	3	3	3	103	17.0	10.5	0.3
3,037	2,003	2,003	35	16	1	1	1	1	1	1	1	1	1	1	36	16.8	13.4	0.4
17,364	17,600	17,600	415	172	21	21	21	21	21	21	21	21	21	21	415	23.5	9.7	0.6
13,638	12,429	11,867	304	123	22	22	22	22	22	22	22	22	22	22	304	22.1	10.8	0.6
85,121	85,648	85,648	1,021	751	76	76	76	76	76	76	76	76	76	76	1,021	11.9	0.6	0.3
128,432	130,100	130,100	2,079	1,224	182	182	182	182	182	182	182	182	182	182	2,079	15.6	0.3	1.6
5,749	5,680	5,680	101	62	3	3	3	3	3	3	3	3	3	3	101	17.7	0.7	0.3
6,839	6,400	6,400	118	77	5	5	5	5	5	5	5	5	5	5	118	17.7	0.7	0.3
12,448	12,460	12,460	372	215	30	30	30	30	30	30	30	30	30	30	372	30.0	0.6	0.3
5,576	5,570	5,570	93	69	5	5	5	5	5	5	5	5	5	5	93	16.7	0.3	1.8
6,414	6,240	6,240	149	46	7	7	7	7	7	7	7	7	7	7	149	23.8	0.4	0.6
9,582	9,749	9,749	221	82	13	13	13	13	13	13	13	13	13	13	221	22.6	0.8	1.8
6,847	6,870	6,870	135	77	5	5	5	5	5	5	5	5	5	5	135	19.6	11.2	1.1
127,441	129,660	129,660	2,814	1,243	173	173	173	173	173	173	173	173	173	173	2,814	21.6	0.4	0.9
3,666	2,451	2,451	41	18	3	3	3	3	3	3	3	3	3	3	41	16.7	7.3	0.8
13,397	13,310	13,310	205	162	8	8	8	8	8	8	8	8	8	8	205	15.4	0.2	0.4
3,719	3,700	3,700	79	48	7	7	7	7	7	7	7	7	7	7	79	21.3	12.9	0.5
2,320	2,356	2,356	49	38	4	4	4	4	4	4	4	4	4	4	49	20.7	16.1	0.4
21,345	21,170	21,170	364	206	23	23	23	23	23	23	23	23	23	23	364	17.1	9.7	0.6
54,372	64,320	68,512	12,950	6,385	737	737	737	737	737	737	737	737	737	737	12,950	20.2	9.9	0.4
4,210	4,187	4,187	78	49	5	5	5	5	5	5	5	5	5	5	78	18.6	11.7	0.5
24,137	24,900	24,900	442	247	32	32	32	32	32	32	32	32	32	32	442	18.4	10.3	0.2
18,777	18,770	18,770	349	232	18	18	18	18	18	18	18	18	18	18	349	18.6	12.2	0.4
2,376	2,388	2,388	41	30	—	—	—	—	—	—	—	—	—	—	41	17.1	12.3	0.8
24,618	24,349	24,349	461	242	30	30	30	30	30	30	30	30	30	30	461	18.9	9.9	0.2
13,356	13,229	13,229	276	165	17	17	17	17	17	17	17	17	17	17	276	18.1	12.8	0.4
14,025	14,408	14,408	297	149	14	14	14	14	14	14	14	14	14	14	297	20.6	10.3	0.1
9,729	9,726	9,726	186	114	6	6	6	6	6	6	6	6	6	6	186	19.0	11.6	0.1
13,475	13,220	13,220	338	258	23	23	23	23	23	23	23	23	23	23	338	25.5	10.8	0.2
16,470	16,360	16,360	323	176	19	19	19	19	19	19	19	19	19	19	323	19.8	10.8	0.4
10,053	9,970	9,970	207	119	9	9	9	9	9	9	9	9	9	9	207	21.1	11.9	0.6
24,694	24,630	24,630	509	223	32	32	32	32	32	32	32	32	32	32	509	21.3	9.7	0.5
27,864	27,320	27,320	414	246	22	22	22	22	22	22	22	22	22	22	414	18.5	11.0	0.5
20,474	20,460	20,460	615	266	31	31	31	31	31	31	31	31	31	31	615	24.0	11.0	0.8
10,091	10,000	10,000	207	132	7	7	7	7	7	7	7	7	7	7	207	20.7	13.2	0.4
6,829	6,770	6,770	138	96	12	12	12	12	12	12	12	12	12	12	138	20.3	14.1	0.4
21,720	21,500	21,500	444	216	23	23	23	23	23	23	23	23	23	23	444	20.7	10.0	0.4
27,729	27,185	27,185	526	294	22	22	22	22	22	22	22	22	22	22	526	19.5	10.8	0.3
64,372	64,320	62,012	12,950	6,385	737	737	737	737	737	737	737	737	737	737	12,950	20.2	9.9	0.4
27,729	27,185	27,185	526	294	22	22	22	22	22	22	22	22	22	22	526	19.5	10.8	0.3
918,111	912,666	910,137	18,208	10,089	737	737	737	737	737	737	737	737	737	737	18,208	20.0	10.2	0.4

TABLE 3.
NOTIFICATIONS OF INFECTIOUS DISEASE AND ATTACK-RATES, 1921.
(Figures obtained from the Weekly Notification Returns.)

Sanitary Districts.	Estimated Deaths (1921)	Small-pox.		Scarlet Fever.		Diphtheria.		Enteric Fever.		Puerperal Fever.		Erysipelas.		Pneumonia.		Eczema Lethargia.	
		No.	per 1000	No.	per 1000	No.	per 1000	No.	per 1000	No.	per 1000	No.	per 1000	No.	per 1000	No.	per 1000
URBAN.																	
Barking	36,216	151	4.1	122	3.3	8	0.2	...	...	...	...	48	1.6	33	2.5	...	...
Barnet	10,225	16	2.2	1	0.1	1	0.1	...	...	...	...	5	0.7	3	0.4	...	...
Barnet & Hendon	6,910	17	2.4	21	4.9	...	...	...	...	...	...	1	0.1	...	...	...	...
Barnet & Hendon	4,448	11	2.4	11	2.4	...	...	...	...	...	...	2	0.4	2	0.4	...	...
Barnet & Hendon	4,532	19	2.6	23	4.6	4	0.9	...	...	...	...	1	0.2	5	1.0	...	...
Barnet & Hendon	2,405	22	4.4	14	4.1	1	0.2	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	20,401	35	1.7	39	1.8	2	0.3	...	...	...	...	1	0.04	2	0.1	...	...
Barnet & Hendon	9,430	37	3.9	16	1.7	...	...	...	...	...	...	3	0.3	4	0.4	...	...
Barnet & Hendon	11,149	28	3.2	27	2.2	...	...	...	...	...	...	2	0.1	3	0.2	...	...
Barnet & Hendon	4,212	166	3.6	12	1.1	2	0.4	...	...	...	...	34	0.5	25	0.7	2	0.04
Barnet & Hendon	4,161	2	0.4	11	2.6	...	...	...	...	...	...	4	0.9	12	4.5	...	...
Barnet & Hendon	2,003	15	6.4	...	...	...	...	...	...	...	...	2	0.1	...	...	...	...
Barnet & Hendon	17,480	69	2.9	38	2.2	...	...	...	...	...	...	2	0.1	...	...	...	...
Barnet & Hendon	5,578	11	1.8	1	0.1	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	11,367	23	1.6	40	4.3	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	85,200	427	5.5	150	2.2	16	0.1	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	130,100	1,325	10.2	336	2.5	7	0.05	...	...	...	...	54	0.4	68	0.5	8	0.05
Barnet & Hendon	4,080	23	4.0	4	0.7	1	0.01	...	...	...	...	1	0.01	...	...	...	...
Barnet & Hendon	4,640	3	0.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	14,490	80	4.1	63	4.5	2	0.01	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	5,470	3	0.5	16	1.7	...	...	...	...	...	...	10	1.6	22	3.8	...	...
Barnet & Hendon	6,240	42	6.7	7	1.1	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	9,740	22	5.3	6	0.6	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	6,470	30	4.3	27	3.9	4	0.03	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	12,400	1,005	7.7	384	2.9	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	2,444	5	2.0	1	0.4	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	14,710	21	4.6	27	2.4	...	...	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	3,760	8	2.1	6	1.6	2	0.5	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	2,435	4	1.6	4	1.6	2	0.8	...	...	...	...	...	...	...	...	...	...
Barnet & Hendon	21,112	26	1.7	36	1.7	...	...	...	...	...	...	...	...	...	...	...	...
URBAN TOTALS.	639,512	...	...	3,790	5.9	1,593	2.5	35	0.08	31	0.04	287	0.4	379	0.6	23	0.03
RURAL.																	
Bell Busby	4,187	11	2.6	1	0.2	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	2,300	45	1.9	56	2.5	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	18,170	46	2.6	14	0.8	4	0.1	...	...	...	...	...	...	...	...	...	...
Bell Busby	2,388	3	2.9	1	0.4	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	14,530	35	1.4	17	0.7	1	0.04	...	...	...	...	...	...	...	...	...	...
Bell Busby	15,420	21	4.6	22	1.4	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	18,400	21	2.6	24	1.4	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	2,740	10	1.8	10	1.8	1	0.1	...	...	...	...	...	...	...	...	...	...
Bell Busby	19,220	66	3.4	26	1.3	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	16,260	44	2.1	29	1.3	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	9,910	50	5.0	9	0.9	1	0.01	...	...	...	...	...	...	...	...	...	...
Bell Busby	22,820	81	3.5	160	4.2	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	27,320	50	3.5	19	0.5	1	0.04	...	...	...	...	...	...	...	...	...	...
Bell Busby	29,450	34	3.2	69	2.5	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	19,000	16	1.6	4	0.4	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	4,570	40	8.8	6	0.7	...	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	21,500	49	2.2	75	3.4	4	0.1	...	...	...	...	...	...	...	...	...	...
RURAL TOTALS.	271,793	...	...	788	2.8	460	1.7	55	0.2	4	0.01	27	0.2	68	0.2	3	0.00
URBAN TOTALS.	639,512	...	...	3,790	5.9	1,593	2.5	35	0.08	31	0.04	287	0.4	379	0.6	23	0.03
ADMINISTRATIVE COUNTY TOTALS.	910,707	...	...	4,578	5.0	2,053	2.2	90	0.09	35	0.03	314	0.3	447	0.5	26	0.03

RURAL.																	
Bell Busby	26,500	4,210	4,187	4,187	78	49	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	49,384	24,157	24,900	23,920	442	247	32	29	3	2	3	2	2	3	4	...	...
Bell Busby	62,348	18,777	18,770	18,770	349	232	13	18	1	2	3	1	2	3	4	...	...
Bell Busby	11,874	2,376	2,388	2,388	41	39	...	...	...	...	...	...	...	...	...	...	...
Bell Busby	83,048	24,618	24,350	24,350	601	312	20	20	1	3	4	12	17	43	142	189	99
Bell Busby	73,503	15,356	15,220	15,220	276	195	17	17	14	3	1	5	3	12	40	114	155
Bell Busby	30,035	14,026	14,000	14,000	287	149	14	14	3	1	5	3	11	26	83	148	199
Bell Busby	38,712	9,732	9,700	9,700	186	114	6	6	...	...	...	...	...	...	...	...	...
Bell Busby	69,485	19,475	19,220	19,220	338	268	23	23	1	2	2	4	19	48	109	298	175
Bell Busby	82,342	16,470	16,260	16,260	323	176	19	19	1	4	6	13	32	86	176	198	108
Bell Busby	47,238	10,053	9,970	9,970	207	119	9	9	2	4	4	...	...	...	...	...	...
Bell Busby	55,886	22,854	22,320	22,320	414	246	22	22	1	8	6	11	25	54	119	246	185
Bell Busby	29,720	29,474	29,450	29,450	615	265	31	31	7	8	7	12	33	59	109	266	208
Bell Busby	59,975	16,091	16,000	16,000	207	132	7	...	...	...	...	...	...	...	...	...	...
Bell Busby	22,864	6,820	6,770	6,770	138	95	12	11	...	...	...	...	...	...	...	...	...
Bell Busby	73,131	21,729	21,500	21,500	454	216	25	25	5	3	6	1	22	43	109	216	201
Bell Busby	892,744	273,739	271,285	271,285	5305	2940	292	...	...	...	...	...	...	...	...	...	...
TOTAL.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL RURAL & URBAN DISTRICTS.	102,682	644,372	641,320	641,320	1293	685	707	...	...	...	...	...	...	...	...	...	...
TOTAL RURAL DISTRICTS.	862,744	273,739	271,285	271,285	5305	2940	292	...	...	...	...	...	...	...	...	...	...
TOTAL ADMINISTRATIVE COUNTY.	964,826	918,111	912,605	912,605	910,707	1828	9325	1089	...	...	...	...	...	...	...	...	...

