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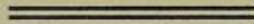
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DORSET COUNTY COUNCIL



ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
. FOR THE YEAR 1947.



DORSET COUNTY COUNCIL

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1947.

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FOREWORD

With the passing of the National Health Service Act in 1946, instructions were received from the Ministry of Health during the following Spring indicating that local health authorities should submit their proposals by certain specified dates, for schemes under Part III (Sections 22 to 29) and Part V (Section 51) of the Act.

The preparation of these proposals proved no small task as, although they were to be wide in scope, references to specific details in regard to personnel, etc., were necessary, and it was essential to ensure that the proposals were both adequate and economically reasonable. All the schemes were submitted to the Ministry of Health before the end of the year and following approval by the Ministry, they were printed and distributed.

Dr. J. W. P. Thompson left at the end of 1947 to take up an appointment on the editorial staff of the British Medical Journal. It was under his very able administration that the proposals referred to above were prepared, and it is a tribute to his foresight in the planning of the future services that the subsequent practical implementation of the schemes was effected smoothly and without any great difficulty.

An outstanding feature of 1947 was the epidemic of poliomyelitis and polioencephalitis which was widespread throughout the country and reached proportions far exceeding those of any previous outbreak. Although the number of cases in Dorset was at least equal to that in many other areas of comparable size, we were fortunate in not having a larger proportion of deaths as a result of the disease. Dr. J. L. Gilloran, my deputy, has prepared a very able survey of this epidemic, with particular reference to Dorset, and this appears as a special article towards the end of this report.

Reviewing the remainder of the vital statistics for the year one or two items call for special comment. It is both interesting and satisfactory to note that the infant mortality rate has fallen appreciably and is considerably lower than the rate for England and Wales; the figures being 27 and 41 respectively.

The birth rate continues to rise, but, whereas the county rate for some years previous to 1946 was somewhat higher than that for England and Wales, the county and national figures have been approximately the same during the past two years.

Notifications in respect of diphtheria reached a new low level of 11, being a record for Dorset, and there were no deaths. This satisfactory result is due to the sustained efforts of general practitioners and members of my staff to make the diphtheria immunisation scheme a success.

I should also like to draw attention to the rivers pollution survey, completed during the year, which was very ably undertaken by the county sanitary officers, and which should prove helpful to the district authorities through whose areas the rivers flow, in dealing with the sources of pollution.

Thanks are due to all the medical, sanitary and clerical staff for their zealous and enthusiastic support during a year of crowded effort, and in particular to Dr. Leonora S. Evans, assistant county medical officer for maternity and child welfare, and to Mr. H. L. Hutchings, chief clerk, for their assistance in the compilation of this report.

A. A. LISNEY,
County Medical Officer.

COUNTY HALL,
DORCHESTER.
JANUARY, 1949.

PUBLIC HEALTH OFFICERS OF THE AUTHORITY.

County Medical Officer of Health.

THOMPSON, JOHN W. P. M.A., M.B., D.P.H.

Deputy County Medical Officer.

LISNEY, ARTHUR A. M.A., M.D., D.P.H.

County Pathologists.

COOPER, THOMAS VALENTINE M.B., B.S.

ARCHIBALD, SIR ROBERT GEORGE, C.M.G., D.S.O. .. M.D.

(resigned 6/9/47).

Deputy County Pathologist.

PARTINGTON, CYRIL NEVILLE	M.B., D.C.P.
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Clinical Tuberculosis Officer.

CRAWLEY, FRANCIS EXTON	M.D., M.R.C.P.
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Assistant Clinical Tuberculosis Officer.

HAYES, JOHN BERTRAND	M.R.C.S., L.R.C.P.
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Public Health Officers of the Authority—continued.*Assistant County Medical Officers.*

EVANS, LEONORA	..	..	..	..	M.R.C.S., L.R.C.P., D.P.H.
BLAKER, PERCY S.	..	..	..	..	M.R.C.S., M.R.C.P., D.P.H.
SCOTT, GILBERT BODLEY, D.S.O.	..	..	..	..	M.R.C.S., L.R.C.P.
O'KEEFFE, EDWARD J. (also M.O.H., Wareham Borough, Swanage Urban and Wareham Rural Districts)	..	..	..	..	M.R.C.S., L.R.C.P., D.P.H.
PAISLEY, JOHN CARSON (also M.O.H., Portland Urban District). (resigned 30/11/47)	..	..	..	..	M.B., B.Ch., D.P.H.
ARMIT, ADAM (also M.O.H., West Dorset Districts)	..	..	..	..	M.B., Ch.B., D.P.H.

Chest Consultant.

CLARK, ARNOLD	M.D., M.R.C.P.
---------------	----	----	----	----	----------------

Orthopaedic Surgeon.

FORRESTER-BROWN, MAUD FRANCES	M.S., M.D.
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Medical Superintendent, Portway Hospital.

DEAR, JAMES DUNCAN	M.B., Ch.B., D.P.H.
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County Nursing Superintendent.

RANKLIN, MISS IRENE FLORENCE	S.R.N., S.C.M., H.V. CERT.
------------------------------	----	----	----	----	----------------------------

Assistant Nursing Superintendents.

DAY, MISS ALLEYNE	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
(Resigned 18/6/47).					
HEATHER, MISS GWENDOLINE	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
PAYNE, MISS OLIVE EVELYN	..	..	..	..	S.R.N., S.C.M., H.V. CERT.

Orthopaedic Sister.

MORRIS, MISS JOYCE MARGARET	C.S.P.
-----------------------------	----	----	----	----	--------

Clinic Sister and Tuberculosis Visitor.

BURNETT, MISS FLORENCE MARION	S.R.N., S.C.M.
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Assistant Clinic Sister and Radiographer.

PENN, MRS. JESSIE	S.R.N.
-------------------	----	----	----	----	--------

Health Visitors.

READ, MISS L. M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
KEOHANE, MISS M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
TRUSCOTT, MISS M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
EDWARDS, MISS A. (retired 31/5/47)	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
JORGENSEN, MISS P. K.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
HODGE, MISS O'BRYEN	..	..	..	..	S.C.M., H.V. CERT.
WHEELER, MISS C. R.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
CLACK, MISS K. D.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
MACK, MISS O.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
CRISP, MISS I. M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
CORDINGLEY, MISS V.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
HENNESSEY, MISS M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.
HARWIN-RICKETTS, MRS. M. V.	..	..	..	..	S.R.N., S.C.M.
KENNEDY, MISS G. E. M.	..	..	..	..	S.R.N., S.C.M., H.V. CERT.

Matrons of County Sanatoria.

HOE, MISS D. B. J. (Dorset County Home).

CALLION, MISS M. (Beckford Orthopaedic Hospital) .. S.R.N.

Matron, Portwey Hospital.

BROWN, MISS E. S.R.N.

County Sanitary Officer.

LLOYD, MR. E. H. L.R.I.B.A., M.R.SAN.I., M.S.I.A.

Assistant County Sanitary Officer.

PARRY, MR. A. H. M.R.SAN.I., M.S.I.A.

Clerical Staff.

HUTCHINGS, MR. H. L. Chief Clerk.

VITAL STATISTICS AND GENERAL HEALTH OF THE COUNTY (*Tables I and II*).

As has been the practice in recent years, all statistical information is grouped into tables at the end of this report, which also include the corresponding figures for the previous 5 years. This renders it easy to compare the increase or decrease under any particular heading, and to determine over a period any other trend which may be occurring.

The birth rate continues to rise and is very close to the rate for England and Wales as a whole. There is no appreciable change in the death rate, which also approximates to the National figure.

It is very satisfactory to note that the infant mortality rate has fallen considerably as compared with that for 1946, and the figure for Dorset is very considerably less than the rate for the Country as a whole. Maternal deaths also show a decrease, but the figures are not quite as low as they were in 1945 when they were the lowest on record.

INFECTIOUS DISEASES (*Tables III and VIII*).

The year 1947 will be remembered as that in which the incidence of poliomyelitis and polioencephalitis throughout the country reached proportions considerably greater than that recorded in any previous year. In Dorset, altogether 70 civilian cases were notified and these, for the most part, occurred in the eastern half of the County. A review of this outbreak, with particular reference to Dorset, has been compiled as a special article by Dr. J. L. Gilloran, and appears later in this report.

Only 11 cases of diphtheria were notified during the year, and there were no deaths, which is a record for the County and indicates that the diphtheria immunisation scheme continues to prove a notable success. Details of the number of children under 15 years, immunised in the various districts of the County, are set out in Table VIII.

The incidence of measles rose considerably in 1947, which was not unexpected as it is a characteristic of this disease to increase in epidemic proportions every other year.

MATERNITY AND CHILD WELFARE (*Table IV*).

The figures refer to the county area, excluding the Boroughs of Poole and Weymouth, which are independent welfare authorities.

Births.

Illegitimate births.

A reference to statistical table IV shows that the number of illegitimate births in the county area, which rose steeply during the war years, has now passed the peak and the fall recorded in 1946 has been followed by a further substantial decrease in 1947.

The mortality rate per thousand illegitimate live births is also considerably lower for 1947 than for 1946, being 42.9 and 46.4 respectively.

The following table shows the incidence of illegitimate births in the decennium 1938-1947:—

<i>Year</i>	<i>No. of illegitimate births.</i>	<i>Percentage of registered births, including still-births.</i>	<i>Mortality rate per thousand illegitimate live births.</i>
1938	103	4.9	38.8
1939	88	4.1	102.3
1940	101	4.4	79.2
1941	144	6.2	76.4
1942	178	6.7	39.3
1943	169	6.8	76.9
1944	250	9.8	40.0
1945	359	14.0	39.0
1946	237	8.4	46.4
1947	163	5.3	42.9

Stillbirths.

Altogether, 67 stillbirths, including 9 transfers from other areas, were recorded during the year, giving a stillbirth rate of 21.8, compared with 25.3 in 1946.

An analysis of the 58 cases notified in the county area shows the following causes of stillbirth:—

Toxaemia of pregnancy	10	Ruptured uterus	1
Malpresentation	3	Placenta praevia	1
Pelvic contraction or disproportion ..	3	Placental infarct (1), small placenta (1)	2
Hydrocephalus and anencephalus ..	9	Macerated foetus	2
Malformation of foetus	1	Prematurity	3
Ante partum haemorrhage	5	Cause unknown	9
Hydramnios (twin pregnancies) ..	3		
Pressure on cord, prolapsed cord, knots		Total	58
in cord or haemorrhage from cord ...	6		

Premature Infants.

The total number of infants who were notified in the county area as being born prematurely in 1947 was 97, compared with 154 in 1946, representing a percentage of 3.12 compared with 5.4 in 1946 of all registered live and still births.

The subsequent history of the infants is given below:—

A. Number of premature infants born at home	53
Number of premature infants born at home and nursed entirely at home ..	35
(i) who died during the first 24 hours	6
(ii) who died during the first month	16
(iii) who survived at the end of one month	37
B. Number of premature infants born in hospital or nursing home	44
(i) who died during the first 24 hours	4
(ii) who died during the first month	8
(iii) who survived at the end of one month	36

Thus of 97 premature infants notified in 1947, 24, or 24.7% died during the first month of life.

This percentage figure is higher than that recorded in 1946 and once more emphasizes the necessity in the County for a hospital, specially equipped and staffed, to which these premature infants could be admitted and given the specialised care they need.

Neonatal deaths. (Deaths occurring during the first month of life).

An abstract from the files of the Registrar of Births and Deaths, shows that 82 neonatal deaths were recorded in the County, including the Boroughs of Poole and Weymouth, in 1947.

The total number of deaths of children under one year in 1947 was 148, therefore, neonatal deaths were responsible for 55.4% of deaths of children under one year of age.

The causes of these neonatal deaths are classified below:—

Prematurity	43 deaths, representing 52.44% of total neonatal deaths.
Birth injury	13 „ „ 15.85% „ „ „
Malformations	6 „ „ 7.32% „ „ „
Diseases of early infancy	12 „ „ 14.63% „ „ „
Respiratory diseases	6 „ „ 7.32% „ „ „
Accidents	2 „ „ 2.44% „ „ „

Maternal Deaths.

A total of 6 maternal deaths was recorded in the Registrar General's Returns, including the death of one patient, normally resident in the county area, which occurred outside the area.

Particulars of the 5 deaths which occurred within the county area are given below:—

	<i>Place of death.</i>		<i>Area.</i>		<i>Cause of death.</i>
I	Hospital	..	Urban	..	Heart failure.
II	Hospital	..	Urban	..	Ruptured vagina with obstetric shock.
III	Hospital	..	Rural	..	Post partum eclampsia.
IV	Home	..	Rural	..	Post partum eclampsia.
V	Hospital	..	Rural	..	Eclampsia.

Administration of the Midwives Acts.

The Dorset County Nursing Association is responsible for the midwifery service in the county area and the County Nursing Superintendent is also the Non-Medical Supervisor of Midwives.

During the year, 325 visits of inspection were made by the County Nursing Superintendent and her two assistants, to all midwives practising in the county area, and reports completed on the conditions of their clothing, instruments and appliances.

In no case was it necessary to take disciplinary action for any breach of the rules of the Central Midwives Board.

The number of certified midwives on the county register at the end of 1947 was 110 compared with 102 at the end of 1946, and an analysis of the cases attended during the year is given in the following table:—

	<i>Domiciliary cases.</i>	<i>Cases in Institutions.</i>	<i>Total.</i>
(1) Employed by the Dorset County Nursing Association:			
(a) as midwives	828	7	835
(b) as maternity nurses	604	14	618
(2) In private practice:			
(a) as midwives	10	—	10
(b) as maternity nurses	91	—	91
(3) Nursing Homes:			
(a) as midwives	2	16	18
(b) as maternity nurses	6	146	152
Number of midwives in private practice as:			
(a) Domiciliary midwives 21			
(b) Midwives in Institutions 5			
Totals: as midwives	840	23	863
as maternity nurses	701	160	861
The number of Maternity cases attended in hospitals by midwives as:—			
(a) Midwives	—	—	393
(b) Maternity nurses	—	—	378
Total number of Maternity cases attended by midwives as:—			
(a) Midwives	—	—	1,256
(b) as Maternity nurses	—	—	1,239

The number of cases notified by midwives for which medical aid was summoned during the year, under Section 14 (1) of the Midwives Act of 1918, was:—

(1) for domiciliary cases	382
(2) for cases in Institutions	6
Total	388

The following table shows the causes for which medical aid was summoned:—

<i>Pregnancy.</i>	<i>No. of cases.</i>	<i>Labour.</i>	<i>No. of cases.</i>	<i>Puerperium.</i>	<i>No. of cases.</i>	<i>Condition of child.</i>	<i>No. of cases.</i>
Pyelitis ..	1	Malpresentation ..	7	Pyrexia ..	10	Abnormality ..	10
Frequency of micturition ..	1	Early rupture of membranes ..	2	Phlebitis ..	6	Discharge from eyes ..	18
Raised blood pressure ..	3	Adherent placenta ..	4	Sub-involution ..	1	Prematurity ..	9
Glycosuria ..	1	Prolonged labour	70	Retracted nipples	1	Feebleness ..	8
Albuminuria ..	12	Vomiting in 1st stage ..	1	Abdominal pain ..	1	Stillbirth	3
Threatened miscarriage ..	13	Pyrexia ..	1	Chill ..	1	Early death of child ..	2
Ante-partum haemorrhage ..	14	In complete murmurs ..	1	Purulent vaginal discharge ..	1	Cyanosis ..	5
Eclampsia ..	1	Uterine inertia ..	3			Convulsions ..	1
Malpresentation, including 2 breech	4	Retained placenta ..	4	—	—	Jaundice ..	2
Pyrexia ..	2	Post-partum haemorrhage	11	—	—	Melaena ..	2
Haemorrhage in early pregnancy	5	Post-partum shock ..	1	—	—	Suspected pemphigus ..	1
Rupture of membranes at 7th month ..	2	Eclampsia ..	1	—	—	—	—
Varicose veins ..	2	Other causes, including pro-					
Medical causes unconnected with pregnancy	14	lapse of cord, post maturity and medical reasons ..	9	—	—	—	—
Miscarriage ..	13	Ruptured perinium	103	—	—	—	—
	88		218		21		61

Other notifications received from midwives during the year were:—

Death forms	7
Stillbirths	8
Laying out dead	20
Liability to be a source of infection ..	35
Of disinfection	44
Total ..	114

There were no notifications of the commencement of artificial feeding.

Administration of Analgesics.

- (a) Number of midwives in practice in the county area qualified to administer analgesics in accordance with the requirements of the Central Midwives Board:—

(1) domiciliary ..	44								
(2) in institutions ..	3								
	—	total	..	..	..	..	..	..	47

- (b) Number of sets of apparatus for the administration of analgesics in use by domiciliary midwives 46

- (c) Number of cases in which analgesics were administered by midwives in domiciliary practice during the year 420

In view of the difficulty experienced by expectant mothers in obtaining dressings, etc., arrangements were made to supply sterilised maternity outfits, through domiciliary midwives, at cost price. 102 such outfits were provided during the year.

Ante-natal and Post-natal care.

During the year under review, no change has been made in the county scheme for ante-natal care, which includes advice at ante-natal clinics or under the general practitioner scheme for uninsured women, who, owing to difficulties of transport or other causes, are unable to attend the county clinics.

The total number of women who received this care is shown in the following table:—

1947	<i>Ante-natal.</i>	<i>Post-natal.</i>
Total number of women who attended at clinics	1,041	206
Total number of women examined under the general practitioner scheme ..	229	3
Totals ..	1,270	209

The figure of 1,270 represents 50.3% of the total notified births, live and still, which occurred in the county area in 1947 and is the highest percentage of ante-natal attendances yet recorded in any year since the scheme has been in force. It compares well with the figure of 700 attendances representing 36% of notified births, live and still, recorded in 1937.

The growth of the service is more strikingly demonstrated when the figures for 1947 are compared with those of 1927, when the only ante-natal clinic in the county area was opened, once monthly, at Dorchester and an attendance of 2 or 3 expectant mothers at each session was considered highly encouraging. In 1947 ten ante-natal clinics were functioning in the area and 331 sessions were held during the year.

The number of post-natal patients attending clinics in 1947 was far from satisfactory, but should improve when separate post-natal clinics are established in suitable areas.

With this object in view, the first two such clinics to be established in the county area were opened at Dorchester and Blandford in October, 1947. At present one session monthly is held at each clinic. The following table is a summary of attendances at County Council ante-natal and post-natal clinics during the year:—

Name of Clinic.	Average attendance per session.	New Cases.		Total Attendances.		Grand Total.	No. of openings.
		Ante-Natal.	Post-Natal.	Ante-Natal.	Post-Natal.		
Beaminster ..	1.6	16	1	17	1	18	11
Blandford ..	12.0	89	27	235	29	264	22
Bridport ..	6.5	52	16	118	25	143	22
Dorchester ..	11.4	343	115	1,021	146	1,167	102
Portland ..	11.6	141	22	496	42	538	46
Shaftesbury ..	30.3	123	—	697	—	697	23
Sherborne ..	6.2	69	7	210	7	217	35
Swanage ..	5.7	45	—	139	—	139	24
Wareham ..	8.3	54	7	178	22	200	24
Wimborne ..	14.9	109	11	316	12	328	22
Totals ..		1,041	206	3,427	284	3,711	331

Dental Treatment for Expectant and Nursing Mothers.

A valuable addition to the facilities provided for dental treatment for expectant and nursing mothers has been the opening, during 1947, of a monthly treatment centre at the county clinic, Dorchester, attended by the senior dental officer.

By this means, patients from long distances attending Dorchester ante-natal clinic can be referred for dental treatment without delay, as arrangements have been made for the dental and ante-natal clinics to be run concurrently, thus saving a journey for the patient.

The great majority of patients requiring dental treatment were referred to the dentists of their own choice, as formerly, but it is hoped that the additional service may lead to a greater number of women taking advantage of the scheme than has been possible in the past.

The number of women who completed treatment under the scheme in 1947 was 48, representing less than one-third of those who were recommended at the ante-natal clinics for treatment.

This result is disappointing, as intensive educational work is carried out at all the county maternity and child welfare centres, to impress those attending with the importance of regular dental care and its bearing on the health and well-being of the mother and her child.

Maternity Beds.

The number of women resident in the county area admitted to hospitals and maternity homes under the Council's maternity and child welfare scheme, is shown in the following table:—

Hospital.	1946	1947
Dorset County Hospital	167	214
Weymouth and District Hospital	50	86
Cornelia and East Dorset Hospital, Poole	92	120
Yeatman Hospital, Sherborne	10	13
Westminster Memorial Hospital, Shaftesbury	30	34
Salisbury General Infirmary	—	9
Royal Victoria and West Hants Hospital, Boscombe	—	8
St. Faith's Maternity Home, Bearsted	—	1
Taunton Somerset Hospital, Taunton	—	1
Other Hospitals	15	—
Totals ..	364	486

The figure for 1947 is higher than any previously recorded, and is due partly to housing difficulties and lack of help in the home, and partly to the fact that a considerable number of young primigravida show a marked preference for hospital care for their confinements.

The tendency towards institutional confinement is growing rapidly and it would appear that a large increase in the number of maternity beds available in hospitals and maternity homes will be required in the near future if the service provided is to be reasonably acceptable to the public.

The pressure on existing maternity accommodation has been even more severe in 1947 than in 1946 as no increase has been made in the number of available beds, although negotiations between the Ministry of Health and the County Council have continued throughout the year with the object of adapting suitable premises for use as maternity units in those parts of the county, especially Bridport and Swanage, where they are so badly needed.

Unfortunately too, the maternity unit at Portway Hospital, which it was confidently expected would be opened in the early part of the year, is still not completed due to difficulty of obtaining necessary equipment.

High tribute is due to the boards of management and staffs of the voluntary hospitals in the county for their ready co-operation in meeting the difficulties involved in the increased demand for maternity accommodation.

Although understaffed, often lacking space and much needed equipment, no hospital has refused to admit any maternity case and no patient has had any but the best possible care. Only those experienced in hospital administration and the needs of patients admitted as maternity cases are able to realize the devoted work and the anxiety of those concerned with the care of these patients.

Obstetric Consultants.

No change has been made in this service during the year. Five applications for the opinion of a consultant were received from doctors and duly authorised.

Care of the Unmarried Mother.

Close co-operation exists between the moral welfare workers of the Salisbury Diocesan Association and the staffs of ante-natal clinics in the county; every effort being made to help unmarried expectant mothers from early pregnancy, and to arrange for them to be admitted to appropriate maternity homes and hospitals for confinement.

The agreement made with the Salisbury Diocesan Association for Moral Welfare, by which the County Council accepts financial responsibility for the admission of unmarried expectant mothers to St. Monica's Maternity Home, Parkstone, continues to be highly satisfactory. There were five cases admitted to the Home during the year.

Unfortunately a number of young unmarried expectant mothers refuse to take advantage of the valuable facilities offered at St. Monica's Home, as they object to conforming to the rules, which include admission about one month before the expected date of confinement and a stay of two to three months afterwards, for rehabilitation and training in mothercraft and housewifery.

St. Gabriel's Home, Weymouth, provides accommodation and care of a particularly valuable kind, for a small number of unmarried girls during pregnancy and after confinement. The happy, kindly atmosphere at the Home is much appreciated by the girls and the training they receive goes far towards re-establishing them on sound lines.

The unmarried mother and her child are closely followed up by the health visitor responsible for the area in which they reside, who as well as giving advice on health matters, helps the mother to overcome the various difficulties peculiar to her state.

Child Welfare Centres.

The attendances at the child welfare centres during 1947 show a substantial increase compared with 1946, and the scope of the work in the various aspects of social medicine has been expanded.

A new centre was opened at Sturminster Newton during the year and already has had good attendances. A centre in this area has been much needed for some years, but was only made possible by the appointment of an additional health visitor to the county staff towards the end of 1946.

The following table gives a summary of attendances at child welfare centres during 1947:—

Name of Centre.	Average attendance per session.	New Cases.		Attendances.		Total Attendances.	No. of openings.	No. of diphtheria immunisations completed.
		Under 1 year.	Over 1 year.	Under 1 year.	Over 1 year.			
Beaminster ..	16.8	27	7	234	154	388	23	22
Bere Regis ..	21.0	19	11	76	177	253	12	34
Blackdown ..	10.3	8	3	39	75	114	11	—
Blandford ..	54.1	78	24	655	645	1,300	24	90
Bridport ..	43.6	111	14	1,852	331	2,183	50	134
Dorchester ..	52.1	250	68	1,845	868	2,713	52	228
Ferndown ..	28.5	56	5	512	173	685	24	46
Gillingham ..	7.4	28	18	271	78	349	47	1
Handley ..	14.0	13	6	89	79	168	12	22
Lyme Regis ..	14.3	38	2	388	299	687	48	38
Milton Abbas ..	8.8	16	5	113	90	203	23	31
Portland								
Tophill ..	42.1	96	18	1,371	738	2,109	50	49
Portland								
Underhill ..	29.5	69	3	1,197	337	1,534	52	27
Shaftesbury ..	17.9	66	17	337	76	413	23	74
Sherborne ..	19.4	205	95	1,364	546	1,910	52	105
Sturminster								
Newton ..	9.1	11	17	26	38	64	7	—
Swanage ..	45.4	144	47	1,574	699	2,273	50	71
Verwood ..	24.8	29	—	385	187	572	23	—
Wareham ..	48.4	98	25	1,574	898	2,472	51	58
Wimborne ..	50.0	92	17	1,784	817	2,601	52	128
Wool ..	41.7	28	30	171	330	501	12	36
Totals ..		1,482	432	15,857	7,635	23,492	698	1,194

Services available for children attending child welfare centres include dental treatment, orthopaedic treatment, attendance at sight-testing centres, hospital treatment for ear, nose and throat conditions, immunisation against diphtheria and the provision of welfare foods at cost price.

The importance of conservative dental treatment for young children is gradually becoming more generally recognised by the public, and the number of pre-schoolchildren receiving such treatment at the county dental clinics has shown an upward trend during the year.

Parents are also becoming more alive to the value of diphtheria immunisation and the majority of children attending welfare centres are immunised towards the end of their first year. The number of children attending the centres for reinforcing doses of diphtheria prophylactic has also increased during the year and is a token of the parents' growing confidence in the efficacy of the service.

Increasing attention has been given during the year to the wider aspects of health education and efforts have been made to raise the standards of mothers attending the centres so that they shall strive to attain the best in all available amenities, fully appreciate the importance of good housing and equipment, the value of beautiful surroundings, well cultivated gardens and the tranquility which results from a clean, well ordered home and harmonious family relations.

Undoubtedly one of the crying needs of the moment is the education of parents in the better understanding of the mind of the child from its earliest years, and the importance of security and a stable family life in its development.

It is to be hoped that with the advent of the National Health Service, which comes into force on July 5th, 1948, maternity and child welfare schemes will be so arranged that more time will be given to this aspect of social medicine.

Health Visiting.

Thirteen health visitors were employed by the County Council at the end of 1947.

In addition, the County Nursing Superintendent and her two assistants, employed by the County Nursing Association, act in a supervisory capacity, the County Nursing Superintendent being also the supervisor of health visitors.

In this county the duties of health visitors, in addition to regular visits to children under 5 years of age, include attendance at child welfare centres and ante-natal clinics, school nursing, child life protection visiting, tuberculosis visiting, visits to pregnant women, visits and reports in connection with unsuitable home conditions for confinements and innumerable other inspections and reports bearing on the health of the community.

The following is a summary of the visits paid to expectant mothers and children under 5 years:—

(1) to expectant mothers:			
First visits	.. 324	Total visits	.. 392
(2) to children under one year of age:			
First visits	.. 3,129	Total visits	.. 17,148
(3) to children between the ages of 1 to 5 years:		Total visits	.. 18,849

The staff, as at present constituted, is totally inadequate for meeting the ever increasing demands arising from the growing scope of the work and it is proposed to extend the establishment to 17 health visitors when the National Health Service Act comes into force in July, 1948.

Refresher Courses.

Permission was granted to three health visitors to attend refresher courses during the year and the County Council accepted responsibility for the expenses incurred in each case.

These courses are well worth the money and time expended, as they lead to increased efficiency and help the health visitors to keep abreast of modern thought and practice.

Child Life Protection.

There has been no change in the administration of this service during 1947.

Nursing Homes.

At the end of the year there were 13 registered homes in the county area. All are inspected regularly by the county staff and reports submitted to the County Medical Officer. A total of 33 inspections were made.

Treatment of Children.

No change has been made in this service during the year.

Adoption of Children.

There are no fresh developments to report under this section.

THE COUNTY LABORATORY (*Table VII*).

Increasing use continues to be made, by both hospitals and general medical practitioners, of the facilities provided at the County Laboratory, Dorchester.

The scope of this and the smaller laboratory at Poole is of the widest, covering both pathology and public health bacteriology.

The side-room laboratories which have been established at a number of hospitals in the county have proved a success, and both facilitate the laboratory work and expedite the reporting on material required urgently by the hospital staffs.

The blood bank contained at the County Laboratory on behalf of the Regional Blood Transfusion Service of the Ministry of Health is in constant use, and in order to facilitate the dispatch of blood to hospitals, the part use of a small van attached to the Supplies Department was instigated during the year.

TUBERCULOSIS (*Table VI*).

The increase in the number of new cases of pulmonary tuberculosis and cases for diagnosis referred to this department has placed an increasing strain on the clinic and domiciliary work carried out by the two county tuberculosis officers and the health visitors. Unfortunately, there has not been a corresponding increase in the number of beds available in sanatoria owing to the shortage of nursing staff, with the result that some infective cases remain in their homes longer than would normally be the case. It is to be hoped that the incidence of pulmonary tuberculosis will not be further increased as a result of this delay in obtaining early treatment.

The delay in admitting patients to the county sanatoria has also been aggravated by the fact that difficulties continue to be encountered, both at the Dorset County Home and Beckford Orthopaedic Hospital, in obtaining sufficient nursing staff, though the position in the former sanatorium has improved somewhat on the previous year.

In order to ensure that the staff of these two sanatoria obtain adequate annual leave, it has been necessary to continue the arrangements whereby as many patients as possible are sent home for a period of one month during the summer.

VENEREAL DISEASE (*Table V*).

The number of cases of venereal disease attending the clinics for the first time during the year shows a decrease in comparison with that of the previous year, and it is anticipated that the peak reached in 1946, brought about by the return of Service personnel to civilian life will not be repeated in subsequent years.

There were no prosecutions during the year under Defence Regulation 33B, which was repealed on 31st December, 1947. Every effort will continue to be made, however, to trace the suspected source of infection and to encourage patients to undergo treatment.

HEALTH EDUCATION.

The County Council continued to make a grant to the Central Council for Health Education, whose leaflets in connection with all aspects of health and hygiene were widely used during the year.

Lectures at a number of school canteens in the county were given by a medical officer attached to the Central Council, and were very much appreciated by the canteen supervisors and staff who attended.

HOSPITAL ACCOMMODATION.

The County Council administer only one hospital in the county, Portwey Hospital, Weymouth, at which a number of E.M.S. beds are reserved by the Ministry of Health.

Considerable difficulties were met during the year in regard to providing adequate nurses for staffing this hospital. Before the hospital can be recognised as a training school, thus enabling the employment of probationers or student nurses, additional accommodation must be provided, and progress in this direction has, unfortunately, been slow.

Plans for the provision of a maternity unit at this hospital were in an advanced state by the end of the year, and it was hoped that the unit would be ready to receive patients early in 1948.

MILK (Table VII).

The most satisfactory milk supply from the hygienic point of view is that from tuberculin-tested herds, and it is satisfactory to note that, whereas at the beginning of 1946 the number of such herds in Dorset was 388, this figure was increased to 518 at the end of 1947. There are approximately 3,000 milk producing farms in the county, of which 501 are accredited and 518 are tuberculin-tested. In addition, there are 17 heat treatment plants authorised by the Ministry of Food.

The sampling of designated milk was continued during the year. Failures are comparatively frequent, but a large proportion of such failures occur on the relatively few farms where insufficient care is taken to maintain a sufficiently high standard of cleanliness. These farms are visited by the dairying instructresses employed by the Agricultural Executive Committee and, if after advice has been given there is no improvement, the Milk Sub-Committee has power to revoke the licence. Six tuberculin-tested and 3 accredited licences were revoked during 1947.

The results of sampling both accredited and tuberculin-tested herds were as follows:—

<i>Total number of samples obtained.</i>	<i>Total number of samples failing to comply with the required standard.</i>	<i>Percentage of failures.</i>
3,267	673	20.6

It is noted with satisfaction that, as compared with 1946, the percentage of samples failing to comply with the required standard shows a decrease.

During the year sampling of heat-treated milk was continued under Defence Regulation 55G with the following results:—

	<i>Phosphates Test.</i>	<i>Methylene Blue.</i>
Number of samples passed	357	360
Number of samples failed	12	9

HOUSING (Tables VII and IX).

There is no doubt that the present unsatisfactory housing position is the cause of much unhappiness in the many families who are obliged to live in overcrowded and unhygienic conditions, or with relatives.

Progress in the provision of new houses in the county, which is the responsibility of district councils, has unfortunately not been as speedy as would be desired. This is no fault of the district councils as they are limited by quota in regard to the number of houses that each may build. At the present rate of progress it will be some years before this unsatisfactory position is alleviated.

WATER SUPPLY AND SEWERAGE.

The County Council, advised by a firm of consultant engineers, gave consideration to a number of water supply and sewerage schemes submitted during the year by county district councils. The following sewerage schemes were approved by the Ministry of Health under the Rural Water Supplies and Sewerage Act of 1944:—

1. The Parish of Sturminster Newton.
2. The Parish of Okeford Fitzpaine.
3. The Parish of Hazelbury Bryan.
4. The Parish of Stalbridge.

HOSPITAL CAR SERVICE.

The service provided by the combined organisation of the St. John Ambulance Brigade, British Red Cross Society, and Women's Voluntary Service, continues to prove invaluable and fills a very necessary need in the transport of patients by car to clinics and hospitals, thus augmenting the ambulance services in the county and relieving them of much additional work where the use of an ambulance would be both unnecessary and expensive.

Authorities for journeys issued by the County Medical Officer during the year numbered 864.

THE CIVIL NURSING RESERVE.

As has already been mentioned members of the Civil Nursing Reserve, who in many cases had been directed to join the organisation by the Ministry of Labour, were permitted to resign in 1946. The Reserve, however, was kept in being, and certain changes were made by the Ministry of Health in an attempt to increase its usefulness in peace-time conditions. Persons were encouraged to join who were prepared to act as nurses during any period of epidemic emergency, and for the first time the principle of paying for part-time service was established. The number of effective members, however, was very small. At the end of 1947 the membership was as follows:—

	<i>Ordinary Members.</i>	<i>Emergency Members.</i>
Trained Nurses ..	8	1
Assistant Nurses ..	7	—
Nursing Auxiliaries ..	15	1

RIVERS POLLUTION.

The Health Committee approved the proposal that a comprehensive survey of rivers pollution in Dorset should be carried out, and with the willing assistance of the sanitary inspectors in the county, which is much appreciated, the report set out below was compiled.

The rivers and streams which flow through the countryside should be regarded as one of the important amenities of pleasant and healthy rural life. That serious pollution has been taking place for many years past has long been a matter of concern to public authorities and private individuals. It is of special interest that at the present time a River Boards Bill is being considered by Parliament. As the 'Times' remarks: 'the Bill is intended to simplify the administrative machinery for the care of English and Welsh rivers, by substituting a small number of comparatively powerful and adequately financed river boards for some 1,600 authorities, sometimes powerless and often quite ineffective.'

Powers do exist to prevent pollution of streams under the Rivers Pollution Prevention Act of 1876, but it is seldom that successful action is taken. Proceedings may only be taken by a Sanitary Authority with the consent of the Ministry of Health. It is to be hoped that the proposed River Boards will be in a better position than existing authorities to take drastic steps, wherever necessary, in order to clean up polluted rivers.

There can be found in the text of the report many references to pollution by individual householders and by the owners of industrial premises; even public authorities are not always above suspicion. Great improvement cannot be expected until the public conscience is more sensitive than it is today. In the recent House of Lords debate on the River Boards Bill a speaker quoted the following passage from Herodotus on the exemplary habits of the Ancient Persians: 'Because of their special reverence for rivers they neither urinate nor spit into a river, nor wash their hands in it, nor do they allow anyone else to do so.'

On the technical side of the report it must be admitted that the tests to which the samples have been submitted, mainly the Biological Oxygen Demand (B.O.D.), cannot be fully relied on to give an accurate picture of the state of a river. In any case one test at a particular place during the river's course should only be used for purposes of comparison with tests taken at a later date at the same place. There are many factors, particularly temperature of the water and rate of flow, which cause great variations in the result. On the other hand, the remarks about what the surveyor actually saw (and smelled) at a particular place can easily be compared with what is seen by other investigators at a later date. The report, therefore, should be of great use to those who carry out similar surveys in the years to come.

Those who wish for further information about the whole question of Rivers Pollution are referred to a recent publication of the Department of Scientific and Industrial Research, entitled 'Water Pollution Research, 1939-1945.' The results of the Dorset survey were submitted to the Director of the Water Pollution Research Laboratories of the above Government Department, and much useful information was obtained. In particular, the Director considered that some of the high B.O.D. readings, described as 'unaccountable' in the report were probably due to decayed vegetable matter. He gave it as his opinion that a study of the results of sampling shows that the rivers surveyed cannot be considered as clean.

While the instances of gross pollution are to be deplored the survey would appear to show that with the expenditure of only comparatively little trouble, energy and money, the rivers and streams of Dorset could be made and kept clean, and remain an important and beautiful asset to the County.

The Rivers were surveyed in the following order:—

- No. 1. *River Brit.*
- No. 2. *River Frome and Tributaries Sydling Water and River Cerne.*
- No. 3. *River Piddle and Tributary Milborne Stream.*
- No. 4. *River Wriggle.*
- No. 5. *River Stour and Tributaries River Lydden and River Allen.*
- No. 6. *River Yeo.*

Explanation of the Biological Oxygen Demand.

The Biological Oxygen Demand is a measure of the capacity of water to lose oxygen by absorption. It is universally used to assess the cleanliness of the water in a river and it has been suggested that any river with a demand exceeding 0.5 parts per 100,000 is not clean.

The Royal Commission on Sewage Disposal considered that in a very clean river the Biological Oxygen Demand should not exceed 0.1 parts per 100,000. The following figures were suggested as a standard for the purposes of judging the cleanliness of a river:—

<i>Biological Oxygen Demand</i>						<i>Remarks.</i>
<i>in parts per 100,000.</i>						
(a)	..	..	0.1	..	..	Very clean.
(b)	..	..	0.2	..	..	Clean.
(c)	..	..	0.5	..	..	Doubtful.
(d)	..	..	1.0 and over	..	..	Bad.

In addition, it might be interesting to note that the Royal Commission on Sewage Disposal suggested a standard of 2.0 parts per 100,000 for *sewage effluents*.

In the absence of known sources of pollution, the Biological Oxygen Demand of a river water may be influenced by the following factors:—

- (a) type of soil over which the river flows;
- (b) rate of flow;
- (c) slope of the land and degree of manuring;
- (d) temperature.

Pollution by ordinary domestic sewage is, generally speaking, more amenable to the process of self-purification in a river compared with some trade effluents, particularly milk waste. Crude domestic sewage can have a very serious effect upon the condition of a river in the vicinity of the discharge but self-purification will normally take place provided the amount of dilution is sufficiently high and such pollution does not occur at more or less regular intervals along the course of the river.

The presence of fish life is not always an indication that the river is clean. Some species can live in water with a Biological Oxygen Demand as high as 1.5 parts per 100,000.

Survey of the River Brit.

The original survey of the River Brit was carried out in October, 1946, when an investigation was made following a report of alleged pollution of the river at Beaminster. On that occasion four samples of river water were obtained, as follows:—

- (1) above Beaminster;
- (2) below Beaminster;
- (3) effluent from Gasworks; and
- (4) below effluent from Gasworks.

The results of the analyses showed that the condition of the river at that time was reasonably satisfactory. On the 31st July, 1947, a series of five samples of river water were obtained from the Brit at the following points:—

- (1) 150 yards above Beaminster;
- (2) 30 yards below effluent discharge from Gasworks;
- (3) Oxbridge—below factory;
- (4) Pymore—below factory;
- (5) Bridport—below Gasworks.

At the time these samples were taken the flow of water in the river was much reduced following a dry spell. Visually, the river was not clean and no fish were observed. The sample results show that the condition of the river is not satisfactory, and that despite the fact that the main source of pollution is at Beaminster, the Biological Oxygen Demand figure remains fairly high throughout and only a slight reduction is obtained at Pymore, some four miles downstream from Beaminster.

The River Brit, by comparison with the major rivers of the County, is little more than a large brook for the greater part of its length. It rises in the White Sheet Hill area near Shatcombe Farm to the north-east of Beaminster, and flows practically due south until it enters the sea at West Bay, approximately 9 or 10 miles from source to mouth.

It receives the waters from several small, and as far as can be ascertained, unnamed streams, but the two main tributaries are the River Simene and the River Asker, both of which join the River Brit between Bridport and West Bay.

The only townships through which the river flows are Beaminster and Bridport, the former being about $1\frac{1}{2}$ miles from the source. Pollution is known to be taking place at Beaminster and Netherbury, and it is believed that some pollution takes place at Oxbridge, Pymore and Allington, from factories, though this fact could not be established without making direct enquiry.

It was thought that factories in Bridport might discharge trade effluents into the river but it is learnt from the Borough Surveyor of Bridport that, as far as he is aware, trade wastes from factories in the Borough are passed to the sewer. This is supported by the figures for sample No. 5, which was taken below the Bridport Gasworks. The Biological Oxygen Demand figure of 0.7 parts per 100,000 is the same as for sample No. 1, taken above Beaminster and shows an improvement on those taken between Bridport and Beaminster. It would seem, therefore, that what pollution takes place at Bridport cannot be very serious, otherwise one would expect the Biological Oxygen Demand to be higher than for sample No. 4 and not less. On the other hand, dilution by the tributaries, the Rivers Asker and Simene, might account for the reduced Biological Oxygen Demand figure for sample No. 5, as the sample was taken at a point below their confluence with the River Brit.

For approximately the first $1\frac{1}{2}$ miles the river runs through open country, and judging from the appearance of the water, and the fact that there is plenty of weed growth, it would seem that the condition of the stream is satisfactory.

However, as soon as it enters Beaminster, and for the length of its course through the town, it receives polluting wastes, including sewage and trade waste from a milk factory and gas works. Although actual sewer discharge pipes were not seen, information was supplied by the Sanitary Inspector to the Beaminster Rural District Council that the river does, in fact, receive crude sewage from Beaminster. Near the milk factory the main stream receives the water from a small brook which appeared to be grossly polluted by domestic waste water.

Whilst the discharge of crude sewage from the town of Beaminster into such a small river as the Brit is most undesirable, the effect may not prove so disastrous to the water as the discharge of untreated trade waste from the milk factory and gasworks. It may be appropriate at this stage to state that immediately below Beaminster, the appearance of the river had greatly deteriorated, and a distinct and unpleasant odour was perceptible.

At Netherbury, about $1\frac{1}{2}$ miles downstream, the river appeared to have recovered to some extent from the effect of the pollution at Beaminster, the water being quite clean and some weed growth present. There was, however, no sign of fish life. Waste water and water closets discharge direct to the river from cottages nearby, and a roadside drain also discharges at the same point.

Further downstream, at Oxbridge, there is another factory, and here again, without a complete investigation, it can only be assumed that waste water used in the course of the trade is passed back to the river. If this is so, then it does not appear to affect the water materially, as it was quite clear with a fair amount of weed growth. There was still no sign of fish life.

At Pymore the river water is utilised by a flax mill, both for motive power and other purposes. It receives trade waste from the mill and also the waste from water closets, as was evidenced by the position of discharge pipes. Below Pymore, the water visually deteriorated.

The river passes through the west part of the town of Bridport, and from the appearance of the river at the town bridge, it would seem fairly certain that the water has further deteriorated. The Brit was traced from the town bridge to within $\frac{1}{4}$ mile of West Bay, and it was observed that there were discharge pipes from quite a number of factories along the banks. Below the gasworks the water was practically opaque and the surface was streaked with a film of oil.

Upon enquiry being made it was learnt that fishing had practically ceased below Bridport, although at one time quite a number of trout could be taken from the river between the town and West Bay.

Whilst it is understood that some form of treatment in settling tanks is carried out at the gasworks at Beaminster, the milk factory discharges the waste water direct to the river, and, owing to lack of space, it would be almost impossible to lay down a treatment plant.

Finally, apart from the appearance of the water below Beaminster, there was a marked lack of weed growth and no fish of any description were observed at the various points surveyed from below Beaminster to Bridport. This, of course, cannot be taken as conclusive evidence that the river is seriously polluted.

Conclusions.

The results of the five samples of water taken from the River Brit would indicate that the river is not in a satisfactory condition. There can be no doubt that serious pollution does take place at Beaminster and this would have a more pronounced effect when the flow of the river is reduced as was the case at the time the survey was made. Allowing for this it is considered that the River Brit is not clean and apart from the results of the samples, the appearance of the water tends to bear out this observation.

Summary of Sample Results in connection with the Survey of the River Brit.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.7	2.0
2.	1.3	2.6
3.	0.9	1.0
4.	0.8	1.2
5.	0.7	1.4

Survey of the River Frome.

The length of the River Frome is approximately 37 miles.

Source.

The river rises as a spring at Evershot and flows south-east for about 2 miles, then due south through open country to the hamlet of Chantmarle and thence to Sandhills.

Sample No. 1. The first sample was taken from the river near the road bridge at Chantmarle. The water was clear and the flow swift. There was no obvious pollution taking place and consequently it would have been expected that the analysis would have proved the water to be clean. However, the Biological Oxygen Demand is high and cannot readily be accounted for.

Sandhills.

The river is here joined by a tributary (un-named) which rises near Benville. The water was clear, abundant weed growth and the presence of fish life was noted. The Frome curves and runs slightly to the west of Sandhills. No obvious pollution is taking place here but quite possibly a few farms may drain to the river between this point and Evershot. If this is so, the water is not visually affected by such drainage.

Cattistock.

Approximately $\frac{3}{4}$ of a mile to the south-east of Sandhills lies the village of Cattistock. The river does not flow through the village but keeps to the west of it and at a distance of about $\frac{1}{4}$ of a mile. Part of the river was surveyed from the left bank but a complete survey was not possible without trespassing onto the Great Western Railway main line. The water was clear and again weed growth was abundant. It is doubtful if any polluting waste is reaching it from Cattistock. A prisoner of war camp was suspected of draining waste water to the river but this could not be traced although an investigation was made.

Sample No. 2. Sample No. 2 was obtained from the river at the bridge at Chilfrome which is about $\frac{1}{4}$ of a mile downstream from Cattistock and $\frac{3}{4}$ of a mile from Maiden Newton. Compared with Sample No. 1 there is a reduction in the Biological Oxygen Demand and the condition of the river at this point is reasonably satisfactory.

Maiden Newton.

A mile or so downstream the river passes through the centre of Maiden Newton and is here joined by a second tributary, the River Hooke, which rises at Hooke Springs. Just to the north-west of Maiden Newton, the Frome divides; the main stream running through the village close to the Church, and the secondary stream bearing away to the west and eventually passing through the village close to the main stream which is re-joined to the south side of the Crewkerne road.

Immediately above its confluence with the River Frome, the Hooke receives discharges from waste pipes of six properties and a public house situated on the Crewkerne road.

The Frome does not appear to receive much in the way of polluting waste from the village, although it is more than likely that highway drains discharge to the river and they may take the waste water from several properties. At any rate, discharge pipes were not observed along the banks but there was a 12 in. pipe discharging what appeared to be sewage into the river near the bridge on the Crewkerne road. Nevertheless, it is understood that inhabitants of the village have in the past emptied, and probably still empty, the contents of night soil buckets and domestic waste into the river. This was confirmed by the Sanitary Inspector to the Dorchester Rural District Council.

The river maintained a clear and sparkling appearance and from local information it was learned that the waters were well stocked with fish.

The United Dairies Milk Factory does not discharge polluted water to the river. This is pumped to a 14-acre plot above the village and is there irrigated. Only cooling water is discharged to the highway drain which, in turn, empties into the river.

Sample No. 3. Approximately 100 yards downstream from Maiden Newton, the third sample was taken. The figure for the Biological Oxygen Demand is the same as for Sample No. 2, which suggests that what pollution takes place at Maiden Newton does not have an adverse effect upon the river. Probably the dilution by the River Hooke neutralises the effect of pollution at Maiden Newton.

Between Maiden Newton and Dorchester the river flows through open country, although it passes close to the villages of Frampton, Bradford Peverell, Grimstone and Stratton.

Sample No. 4. At Muckleford Bridge the fourth sample was taken. There is a very slight increase in the Biological Oxygen Demand which is difficult to account for at this point.

Near Grimstone it is joined by another tributary, the Sydling Water. It is divided into several smaller courses by means of hatches and enters Dorchester as two streams, one skirting the town completely on the north side and the other passing through Poundbury Mill and in a south-easterly direction through the town. The north stream receives the waters of the Cerne River near Wolfeton House. From information obtained from the Sanitary Inspector to the Dorchester Rural District Council, it is learned that the Cerne River receives polluting wastes at Upcerne, Cerne Abbas and Charminster.

Sample No. 5. Immediately downstream from the confluence of the River Cerne with the River Frome, Sample No. 5 was taken. The Biological Oxygen Demand at 4 parts per 100,000 is reasonably satisfactory, and would suggest that the waters of the River Cerne do not adversely affect the condition of the Frome.

Sample No. 6. Sample No. 6 was obtained near the bridge on the Lower Burton road, Dorchester, and was taken from that branch of the River Frome which actually flows through Dorchester. The results of the analysis show that the river is in a clean condition at this point.

Dorchester.

The course of the river was traced through Dorchester to Louds Mill. There was no evidence of pollution on the north side of the town but after the stream passes under High East Street its course lies between Holloway Road and Mill Street, and the properties backing onto the watercourse evidently discharge some waste water thereto, but more evident was the amount of rubbish that had been thrown into the water and also the matted weed growth which partially blocked the main channel in places. Between High East Street and Wareham Road is the worst stretch of the river so far surveyed, at any rate from the point of possible pollution. Even so, the water maintained its clarity throughout this stretch of the course.

Sample No. 7. The seventh sample was taken at Fordington from the same branch of the Frome as Sample No. 6. There is an appreciable rise in the Biological Oxygen Demand reading, and this is probably due to pollution which, it is believed, takes place in Dorchester.

The river passes to the north of Fordington and is joined again by the secondary stream which was formed near Stratton. East of Fordington is Louds Mill, site of the Dorchester Borough Sewage Works, the effluent from which is passed to the river.

Sample No. 8. Approximately 100 yards below the effluent discharge pipe from the Dorchester Sewage Works, Sample No. 8 was obtained. The Biological Oxygen Demand figure of .7 parts per 100,000 is fairly high and might be due to the effect of the effluent from the Sewage Works.

Between Dorchester and Wool the river is divided by means of hatches into several courses and it is very difficult to pick up the main stream. For practically the whole distance it runs through open country, except for one or two isolated hamlets and villages. Check examinations of the river were made at these points as follows :—

<i>Bockhampton.</i>	Water very clear, abundant weed growth and presence of fish life. No trace of pollution.
<i>Lewell Mill.</i>	No trace of pollution.
<i>Moreton.</i>	No trace of pollution.
<i>Broomhill Bridge.</i>	The river is here joined by the tributary River Empool.

Sample No. 9. One mile below Broomhill Bridge the 9th sample was taken and the high figure of .9 parts per 100,000 for Biological Oxygen Demand is surprising and cannot be readily accounted for. It is not considered that the River Empool is seriously polluted and therefore it is doubtful that the waters of this river can be responsible for such a high reading, especially as the sample was taken about $\frac{1}{2}$ mile downstream from its confluence with the River Empool.

Wool.

The river passes about a quarter of a mile to the north of Wool. An examination of the south bank did not reveal any discharge pipes and it is not presumed that the river is affected by any polluting waste from Wool. However, a very small stream which passes through the village of Wool, and which is believed to be much polluted, does join up with the river below Wool, but owing to the difference in volume of flow it is doubtful whether it materially affects the condition of the main stream.

About 2 miles to the north-west of Wool is the military camp of Bovington. The effluent from the sewage works of this camp discharges into one of the branch courses of the River Frome.

Sample No. 10. Sample No. 10 was taken at Wool Bridge. There is a considerable reduction in the Biological Oxygen Demand compared with Sample No. 9 and the river at this point is in a satisfactory condition.

Between Wool and Wareham the river flows through open country.

Sample No. 11. The 11th sample was taken at Holme Bridge. It will be noticed that there is a big difference in the readings for the Biological Oxygen Demand between Sample No. 10 and Sample No. 11, viz., .3 and .9 parts per 100,000 respectively.

The reason for this steep rise in the Biological Oxygen Demand is difficult to understand since the river flows through open country between Wool and Wareham and as far as could be ascertained no known pollution takes place between Wool and Holme Bridge. Furthermore, the river was shallow and flowing fairly swiftly and consequently it might be expected to be fairly well oxygenated. It had a clean appearance.

Wareham.

The river was traced through the Borough and surveyed as far as Redcliffe Farm on the south bank. For the most part the river keeps well to the south of the Town, except for a stretch of about $\frac{1}{2}$ a mile along the southern boundary of the Borough. With the exception of a storm water discharge pipe near the Quay, no pipes were seen to discharge to the river. The town is sewered and it is doubtful that any serious pollution takes place. Between the Town Bridge and Redcliffe Farm about six house boats are moored to the south bank (these are in the Wareham Rural District). From the point of pollution it is not considered that they constitute a problem. From Wareham to Poole Harbour by river is a distance of about 4 miles through open country and the river is believed to be affected by tides as far as Holme Bridge.

Sample No. 12. The last sample was taken at Wareham at a point approximately 200 yards downstream from the Town Bridge. The results of the analysis show that the river is not influenced by any pollution from Wareham and that an improvement in the Biological Oxygen Demand is obtained compared with the result of the sample taken at Holme Bridge.

Sydling Water and River Cerne (*Tributaries of the River Frome*).

Sydling Water.

Rises at Up-Sydling and flows through Sydling St. Nicholas. At several points surveyed along the course the water was clear and there was abundant weed growth. The stream is apparently not seriously polluted and flows for the most part through open country.

Cerne River.

Rises at Minterne Magna. Flows through grounds of Minterne House and continues through open country to Cerne Abbas which is $2\frac{1}{2}$ to 3 miles from the source.

Just above Cerne Abbas it receives the waters of a small tributary which rises at Upper Cerne.

Cerne Abbas.

The stream is divided by means of hatches. The main stream which runs through the centre of the village did not appear to be affected by any polluting wastes and maintained a clear appearance with abundant weed growth. The small branch stream is diverted to flow alongside the main Sherborne road, and it was obvious that this stream receives quite an amount of domestic waste water, etc., from adjoining properties, including the school. From information obtained from the Sanitary Inspector to the Dorchester Rural District Council it is learned that the River Cerne is polluted at Cerne Abbas.

Between Cerne Abbas and Charminster the river receives the drainage from a few farms through which it flows. There was no evidence of pollution at Godmanstone.

At Charminster, the river flows through private grounds and it was difficult to find whether there were many discharge pipes along the banks. However, the Sanitary Inspector to the Dorchester Rural District Council gave the information that the river is further polluted at Charminster.

The River Cerne joins the Frome near Wolfeton House. It is not considered that this tributary causes any deterioration in the condition of the Frome.

The River Hooke and the stream from Benville were not surveyed as it was not considered that they would be in any way polluted and consequently would not adversely affect the Frome. This also applies to the River Empool.

Conclusion.

The results of the analysis of the 12 samples of river water tend to show that the River Frome is not in a reasonably clean condition over its entire length. The Biological Oxygen Demand figures for Samples Nos. 1, 9 and 11 are unaccountably high, but in the main, the Biological Oxygen Demand for the remainder of the samples is not excessive.

Despite the fact that there had been a prolonged dry spell there was quite a fair flow of water in the river and, except for a small stretch of the watercourse at Dorchester, the water appeared clean and fish were observed at most points included in the survey.

Summary of Sample Results in connection with the Survey of the River Frome.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.6	0.4
2.	0.4	0.5
3.	0.4	0.4
4.	0.5	0.8
5.	0.4	0.8
6.	0.2	0.4
7.	0.5	0.4
8.	0.7	0.4
9.	0.9	0.5
10.	0.3	0.5
11.	0.9	0.5
12.	0.6	3.8

Survey of the River Piddle.

Length of River from source to mouth is approximately 24 miles.

Source.

The river rises from springs at Alton Pancras and runs due south through the village and alongside the main road.

Alton Pancras.

At this very early point in its course, the Piddle is a very small brook. It flows in front of a number of cottages and close to a few farms and, although no discharge pipes were observed, it is more than likely that waste water from the cottages and drainage from farm yards finds its way into the stream, together with some household waste as witnessed by the number of egg-shells and tins in the bed of the watercourse. Nevertheless, the water remains very clear until it reaches a point almost opposite the Vicarage. Here it was very dirty, due to drainage from a pond which was stirred up by cattle. At this point it also receives water from another stream which originates from a spring in the hills a short distance away and due west of this point. This stream was also very muddy.

The Piddle leaves Alton Pancras and continues due south for about a mile through open country to the village of Piddletrenthide.

Sample No. 1. Above Piddletrenthide the first sample was taken and as will be seen a Biological Oxygen Demand figure of .6 parts per 100,000 was given. This reading is rather high considering that the sample was obtained about 2 miles from the source and may be due to pollution at Alton Pancras. The suspended solid figure of 1.8 parts per 100,000 is not excessive.

Piddletrenthide.

The stream becomes badly affected, visually, for the length of its course through the village. From the point at which it enters the village to the point at which it leaves it is subjected to gross misuse. It flows to the west side of the main road and immediately to the rear of a row of cottages. The stream was examined at several points and its appearance was not good. The water had lost the original clarity and sparkling appearance; weed growth was almost negligible and the bed of the stream was covered with blackish sediment. It did not appear to be supporting any fish life.

It was observed that car washing is done in the stream and slop water is thrown into it together with various other types of waste water.

Sample No. 2. The second sample was taken below Piddletrenthide and the results are very surprising, especially when compared with the readings for sample No. 1. One would have expected an increase in the Biological Oxygen Demand figure instead of which the reading is the same as for the first sample, viz., .6. The reduction in the suspended matter is also difficult to account for and it can only be assumed that at the particular time at which the sample was taken pollution was not taking place.

After leaving Piddletrenthide and before it has an opportunity to recover from the pollution which occurs there, it flows through the village of Piddlehinton which is approximately $\frac{1}{4}$ mile downstream.

Piddlehinton.

Misuse of the stream was not so obvious here although it is more than likely that waste water and some refuse is thrown into the river from nearby properties.

From Piddlehinton the river flows through open country. It receives the effluent from a sewage works connected with a military camp just outside the village and just below this point it changes its course and flows in an easterly direction to Puddletown.

Sample No. 3. Sample No. 3 was taken just below the effluent discharge pipe from the sewage works attached to the military camp at Piddlehinton.

Here again, the Biological Oxygen Demand figure is high as also is the reading of 3.2 parts per 100,000 for suspended matter. Pollution at Piddlehinton together with the effluent from the sewage works might have a bearing on these comparatively high readings.

At Waterson, between Piddlehinton and Puddletown, the water in the stream appeared to be much improved. Weed growth was present, although the presence of fish was not observed. Near Druce Farm, the Piddle is joined by another stream which rises about $2\frac{1}{2}$ miles to the north. This stream was clean and there was abundant fish life.

Puddletown.

The river keeps mainly to the north side of the village. No obvious pollution appeared to be taking place although it is quite possible that the contents of some pail closets, etc., are dumped into the river. Even so, the water was quite clean and was well stocked with fish.

After leaving Puddletown the river passes to the south side of the main road and now flows in a south-easterly direction. At Burleston it is joined by the waters from Devils Brook which rises at Higher Ansty.

The Piddle flows through open country to Tolpuddle, thence through Affpuddle, Briantspuddle and Turnerspuddle.

Sample No. 4. At Tolpuddle sample No. 4 was obtained. The figure for suspended matter is reasonable and is less than a fifth of the figure for sample No. 3. The Biological Oxygen Demand at .8 parts per 100,000 is still fairly high considering that the river has not been subjected to any serious pollution between Tolpuddle and Puddletown. The Devils Brook which joins the Piddle about $1\frac{1}{2}$ miles upstream from Tolpuddle, may adversely affect the river but, at the time the survey was made, this was not considered to be likely.

Examination of the river at Tolpuddle, Affpuddle, Briantspuddle and Turnerspuddle did not reveal any serious pollution but, here again, it is possible that some villagers may make use of the river as a convenient means of disposing of the contents of pail closets and domestic waste water. If this is the case the volume of water flowing in the river should be more than sufficient to prevent any harmful results arising out of this practice, if it occurs, always providing, of course, that chemicals—such as disinfectants—are not included. At any rate, at the time of the survey, the water was clear and well stocked with fish.

From Turnerspuddle to Wareham, a distance of approximately 7 miles by river, the Piddle flows through open country and, apart from the drainage from farms and isolated houses near the river, there is nothing to cause pollution of the water. Between Chamberlaynes Farm and Hyde Bridge the Milbourne Stream joins the Piddle. The waters of the stream were clear and fish life was observed. A check examination of the River Piddle at Hyde Bridge showed the water to be clear and several fish were noticed.

Sample No. 5. Sample No. 5 was obtained here and it will be noted that the Biological Oxygen Demand figure is the same as for sample No. 4, and that the suspended matter reading has increased. No apparent explanation can be given for this but it might be due to decayed vegetable matter in the water.

From Hyde Bridge the river flows in a south-easterly direction past Trigon and Carey to Wareham.

Sample No. 6. Sample No. 6 was taken at Carey and the river here is used as a bathing point for the Dorset County Council summer camp. There is little change in the Biological Oxygen Demand reading but, at any rate, the suspended matter figure has been reduced compared with the fifth sample.

Wareham.

The river enters the Borough along the western boundary and flows through the Northport district of the town. A survey was made from below Shatters Hill to a point downstream of the North Street bridge. No discharge pipes were observed along the banks and it did not appear that the river was receiving any polluting waste. The water maintained a clear appearance and it was learned from the Surveyor of the Borough Council that the river was not adversely affected for the length of its course through the town.

Sample No. 7. The last sample (No. 7) was obtained at Wareham, downstream from the Town Bridge. Although it was believed that very little pollution of the river takes place at Wareham, the Biological Oxygen Demand reading of 1.2 is high and points to some deleterious effect. A search along the river bank failed to reveal any discharge pipes and it is difficult to appreciate why the figure should be so high unless the fact that the river is tidal here has an adverse effect.

The effluent from the sewage works enters a small brook east of the railway station, and this brook joins up with the Piddle below the point at which sample No. 7 was taken.

After leaving Wareham, the River Piddle flows over flat open country to Poole Harbour. It is not certain for what distance the river is subject to tidal influence, although it is understood that tides are effective up to the mill just below the railway bridge.

From the foregoing survey it is obvious that the river is subject to pollution at a very early stage in its course, namely, at the villages of Piddlehinton, Piddletrenthide and possibly Alton Pancras.

Thereafter, it is not considered to be seriously polluted and has the appearance of being a reasonably clean river and well able to support fish life.

The comparatively high Biological Oxygen Demand figures for Samples Nos. 4, 5 and 6 might be accounted for by high temperature, low flow and decayed weed growth.

Milbourne Stream (*Tributary of the River Piddle*).

The stream rises from the lake at Milton Abbas and flows due south to Milborne St. Andrew and Milborne Stileham.

At the time the survey was made there was very little flow of water and about half-way between Milton Abbas and Milborne the stream had dried up.

According to information received from the Sanitary Inspector to the Blandford Rural District Council, domestic waste water discharges to the stream from properties in Milborne St. Andrew and Milborne Stileham. Examination of the stream bed at these points would certainly bear this out as there was a lot of debris to be seen.

There was no water in the watercourse until a point is reached at Bere Regis where it is joined by a small stream which rises from springs near Roke Farm. This stream had quite a good flow of water and appeared clean. It continues through Sitterton and Bere Regis to join the Piddle near Hyde Bridge.

Conclusion.

Pollution of this river occurs at a very early stage in its course. Considering that it is only a small stream at Alton Pancras, Piddletrenthide and Piddlehinton it is not surprising that the analysis of the first three samples showed a comparatively high Biological Oxygen Demand.

As has previously been mentioned, at the time of the survey and when the samples were obtained, there was a very reduced flow of water in the river and it is considered that such pollution as apparently takes place at these villages is bound to affect the condition of the water. Even when there is a normal flow, the effects would, in all probability, still result in an unclean stream.

The high Biological Oxygen Demand figures for the remaining samples are not easily accounted for as it was not established that the river is subjected to any serious pollution downstream from Piddlehinton. It is suggested that the low flow, high atmospheric temperature and decaying weed growth in the river might have a bearing on this point.

Allowing for these conditions the supposition is that the River Piddle is in a reasonably clean condition over the greater length of its course.

Summary of Sample Results in connection with the Survey of the River Piddle.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.6	1.8
2.	0.6	0.8
3.	1.1	3.2
4.	0.8	0.6
5.	0.8	1.0
6.	0.7	0.4
7.	1.2	0.6

Survey of the River Wriggle.

The River Wriggle rises from springs in the hills just south of Hilfield. At the time that the survey was made it was a very small spring with little flow. From its source to the point where it flows into the River Yeo it is approximately 8 miles in length.

The river flows in a north-westerly direction and some $1\frac{1}{2}$ miles from the source it receives the water from a small un-named tributary which rises at Batcombe Hill. A mile further downstream another tributary, which also rises in the Batcombe Hill region, joins the Wriggle.

Chetnole.

Sample No. 1. This is the first village through which the river passes and is situated about $3\frac{1}{2}$ miles by river from the source. It was just above this village that the first sample was taken. The result of the analysis is rather surprising for, as far as it was possible to ascertain, no serious pollution takes place between this point and the source. Both readings are high, particularly the Biological Oxygen Demand figure of 1.2, which is exceptional in the absence of any known pollution.

It was noticed that the watercourse was partly covered with overgrowth and consequently the rate of flow was very much restricted in places. The bed of the stream was covered with a greyish coloured deposit and there was very little weed growth. It is more than likely that waste water together with overflows from cesspools and septic tanks of several properties in the village discharge to the stream. This has been confirmed by the Sanitary Inspector to the Sherborne Rural District Council. Nevertheless, numerous small fish of the minnow species were observed.

Sample No. 2. The second sample was taken below the village and it will be noted that there is some reduction in both Biological Oxygen Demand and suspended solids figures—1.0 and 0.9—as compared with the first sample taken above the village. The Biological Oxygen Demand reading is still excessive but it points to the fact that actual pollution from Chetnole cannot be as heavy as was believed and that the stream has made a slight recovery.

Yetminster.

After leaving Chetnole the river flows for $1\frac{3}{4}$ miles through open country to Yetminster. It receives the waters of two further tributaries, one on the right bank which rises near, and flows through, Leigh and the other on the left bank, which rises near Stockwood. It was noticed that where the Stockwood tributary passes under the Chetnole-Yetminster road there is some form of discharge pipe which is controlled by a penstock valve. It is not clear what type of discharge takes place at this point.

Although no actual evidence was observed in the nature of discharge pipes, it is learned from the Sanitary Inspector to the Sherborne Rural District Council that the river does receive polluting wastes from various properties in Yetminster. An overgrown ditch near the railway station was found to be conveying foul water to the river, and about 130 yards further downstream a second ditch was observed to be conveying foul water to the Wriggle.

A further point of pollution and the one that is generally suspected of adversely affecting the river is the discharge from a milk factory near the railway station. The factory is used as a receiving station for loading milk into rail waggons and also for cleansing churns. Occasionally rail tankers are cleansed there.

Sample No. 3. Ten yards above this point, and above a small weir, sample No. 3 was obtained. The results of the analysis bear out the observations made in a subsequent paragraph. Pollution from the ditch mentioned above together with other probable pollution from Yetminster must be considered as being the most likely cause for the poor condition of the river. The tributary which flows through Leigh and which is reported by the Sanitary Inspector to the Sherborne Rural District Council as receiving pollution from that village, may also be suspected as being a contributory factor in the deterioration. The Biological Oxygen Demand figure of 2.4 parts per 100,000 is greater than the standard suggested for *sewage effluents* in the 8th Report of the Royal Commission on Sewage Disposal, namely, 2 parts per 100,000.

The effluent discharge pipe from the milk factory is downstream from the railway station. It is a pipe of 6 in. diameter and at the time that the survey was made it was running one-third full and causing a slight discolouration of the water in the river.

Sample No. 4. Sample No. 4 was taken at a point approximately 30 yards below this discharge pipe. It will be noticed that the Biological Oxygen Demand figure of 1.9 parts per 100,000 is somewhat less than for sample No. 3, which shows that some recovery has been made despite the discharge from the milk factory. The suspended solids reading remains the same. Nevertheless, the readings are excessive and the condition of the river remains far from satisfactory.

When this survey was made the flow of water in the river was much reduced due to lack of rain. Below the railway station and just above a small weir it was noticed that the surface of the water was covered with a dirty scum and it was obvious that quite an amount of debris had been thrown into the river. The appearance of the water at this point was not good.

At the crossing gate near the mill just above Yetminster, a woman complained of the smell which came off the water and also commented on the state of the river in general. The question of smell could not be verified but her latter observation was one of fact.

From Yetminster the Wriggle flows close to the railway line to a point just south of Beer Hackett. It is here joined by another tributary which rises near Crockers Knap and flows through Leigh. At Beer Hackett the river changes course and flows due west for about a mile when it turns and flows due north to join the River Yeo just below Bradford Abbas.

Sample No. 5. Approximately half a mile from the confluence of the Wriggle with the Yeo the fifth and last sample was taken. Recovery of the river at this point might have been expected but the figure of 1.2 parts per 100,000 for Biological Oxygen Demand is still high.

Conclusion.

The Wriggle is a very small river and might more appropriately be described as a brook. The survey was made during the summer after an extended dry period and consequently the volume of water was much reduced. On the other hand it was felt that any pollution which might adversely affect the condition of the river would be far more evident under such conditions than when the river is subject to the influence of prolonged rainfall.

The river flows for the most part through open country with the exceptions of Chetnole and Yetminster. One would, therefore, expect it to be a reasonably clean river. Unfortunately, this was not found to be the case and apart from the unsatisfactory condition of the water as shown by the sample results, the watercourse is very much overgrown. It is understood that the stream is under the control of the Avon, Brue and Parret Fishery Board and is considered to be a good stream for fishing—at least over certain stretches—although the presence of fish of any size was not observed.

At various times the Fishery Board have made complaint to the Sherborne Rural District Council and also to the County Council concerning mortality amongst fish in the river and presumed, rightly or wrongly, to be due to the effluent discharge from the milk factory at Yetminster. The results of the samples obtained tend to confuse such an issue and it is not considered politic in this report to state the effect that this effluent has on the river. Obviously, it is bound to cause a deterioration but the extent to which such deterioration takes place and over what period can only be proved by extended examination and sampling both of the river and the effluent. Such a procedure was not included in the terms of reference for this report.

Summary of Sample Results in connection with the Survey of the River Wriggle.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	1.2	2.0
2.	0.9	1.0
3.	2.4	1.2
4.	1.9	1.2
5.	1.2	1.6

Survey of the River Stour.

The Stour is easily the major river in the County and, at the same time, probably forms the most complex river system.

It rises at Stourton, in Wiltshire, approximately 2 miles north of the Dorset-Wilts boundary and flows to the sea at Christchurch, Hants. It has a total length of near to 80 miles, of which 68 miles are in Dorset, 2 miles in Wiltshire and approximately 10 miles in Hampshire.

The river, with its tributaries, drains the Blackmore Vale. It flows due south to Fifehead Magdalen and then turns to flow mainly south-east, although over certain stretches it changes direction many times.

At the time the survey was made there had been a fairly long spell of dry and warm weather and consequently the volume of water in the river was much reduced. Furthermore, it was noted that the river was choked with reeds and other weed growth, which impeded the flow.

The Stour was traced from Bourton, which is situated approximately 2 miles from the source. Check examinations of the river were made at various points along its course and these are referred to accordingly. Much time was spent at the known, or alleged, points of pollution in order to establish the type and source of pollution and to try to arrive at a conclusion as to the possible effect it might have upon the condition of the river. In this connection much valuable assistance and information was obtained from the Sanitary Inspectors of the Authorities through whose areas the river flows.

Working along the course of the river and commencing at Bourton, the check points are reported on as follows:—

Bourton.

Close to the County boundary the Stour flows into a small lake just above a milk factory. The outlet from the lake passes beneath the factory and reappears as a small brook.

Sample No. 1. The first sample was taken from the overflow weir from the lake just before the stream passes under the milk factory. The result of the analysis shows that the water was clean and free from serious pollution. Such a result was expected as no known pollution enters the lake.

The milk factory has its own disposal plant for dealing with trade waste and the effluent passes to the Stour. The river was only a small brook at this stage but there was a good flow despite the prolonged dry spell. The bed of the stream appeared to be covered with a greyish deposit and there were streaks of oil on the surface. It was noticed that there were several discharge pipes along the bank, most of which were connected to roadside drains, although some were obviously taking domestic waste water direct to the river from nearby properties in the village.

Sample No. 2. At a point 30 yards below the effluent discharge from the milk factory treatment plant, the second sample was obtained. Compared with Sample No. 1 there is a marked increase in the Biological Oxygen Demand and the figure of .7 parts per 100,000 must be considered unsatisfactory. The cause of this comparatively high reading might be due to an unsatisfactory effluent from the treatment plant dealing with the waste water from the milk factory. In the absence of the analytical result of a sample of the actual effluent, the suggested reason for the deterioration in the condition of the water can only be put forward as a logical assumption.

The river continues to flow south from Bourton and passes through Milton to Gillingham.

Silton Bridge.

Water appeared clean and fish life was observed.

Milton on Stour.

The river appeared to be clean. It is here that it is joined by its first tributary, a small, un-named, stream which rises west of Bourton. There was very little flow in this tributary at the time of the survey. It probably takes the drainage from farms and also some domestic waste water but it is not considered that it adversely affects the Stour.

Wyke Bridge.

The Stour flows through the Wyke Marsh district of Gillingham and continues through the western part of the town until it passes under the Gillingham-Wincanton road when it flows east through the town and is joined by the first major tributary, the Shreen Water.

At Wyke Bridge, the water appeared clean and fish life was noticed. It is understood, however, that several properties in Wyke are drained to cesspools and these overflow to a ditch which connects with the Stour. A pipe near the bridge was discharging a small quantity of foul water to the river.

Sample No. 3. Sample No. 3 was taken at Wyke Bridge. The result of the analysis shows that the river was in a satisfactory condition at this point.

Gillingham.

The river does not appear to deteriorate to any great extent for the first part of its course through Gillingham. Examination of the water at the bridge near the cemetery showed it to be clean in appearance. From this bridge, however, continuing down stream, the river receives polluting wastes. Both above and below Chantry Bridge crude sewage discharges to the river. Efforts to trace the effluent from the gasworks were not successful, but it is quite possible that it discharges direct to the river. Even if it is taken to the town sewerage system, it would still have the same effect, inasmuch that Gillingham has no sewage disposal works and all sewage is discharged to the Stour, or its tributaries, the Shreen Water and River Lodden.

Despite the discharge of crude sewage, small fish of the minnow species were observed near Chantry Bridge.

Sample No. 4. The fourth sample was obtained immediately downstream from the mouth of a sewer which discharges at Chantry Bridge. Bearing in mind this point, a fairly high Biological Oxygen Demand might reasonably have been expected. Consequently it is very paradoxical that the result of the analysis gives a reading of .4 parts per 100,000 for this sample. The fact that the sewer was not discharging at the time the sample was taken probably accounts for this satisfactory analytical result.

At the rear of the Regal Cinema, the Stour is joined by the Shreen Water, the first major tributary. This river rises near Mere, in Wiltshire, and flows due south to Gillingham where it joins the Stour. A check examination of this river at Colesbrook, north of Gillingham, showed the water to be reasonably clean and fish were observed. Some pollution may, however, take place at Mere. At Gillingham it passes through the town from north to south, and near a mill in the centre of the town it was noticed that crude sewage was being discharged from a sewer and again from two other sewers near the town bridge. The Shreen Water here is a larger stream than the Stour and carries a good volume of water so that it would affect considerably the condition of the Stour.

Sample No. 5. Twenty yards below the confluence of the Shreen Water with the River Stour, sample No. 5 was taken. The result of the analysis shows a deterioration in the condition of the Stour. This is to be expected as the Shreen Water is badly polluted and is bound to affect the condition of the Stour at this point.

Below the confluence with the Shreen Water, the Stour passes over open ground to the west of some factories in Station Road, Gillingham. A survey of the river from the confluence to the railway bridge shows the river to be receiving considerable trade waste from a saw mill, laundry, and bacon factory, and as a result the river was in a very bad condition.

Sample No. 6. The sixth sample was taken at the railway bridge, which is approximately 150 yards downstream from the discharge pipes of the factories mentioned above. The sample gave a reading of .6 parts per 100,000 for Biological Oxygen Demand and this is far less than would have been expected. At the time the sample was taken the pipes from the bacon factory and laundry were discharging a good volume of waste water. In the case of the laundry the discharge was a dirty brown, hot liquid, whilst the discharge from the bacon factory

contained quite an amount of blood. There can be no doubt that the river appeared to be filthy in the immediate vicinity of this pollution. Admittedly, there was very little flow, in fact the water in the river was practically stagnant, and it might be that the effect of this pollution would take some time to reach the point at which the sample was taken. It is considered that the Biological Oxygen Demand figure would have been considerably higher had the sample been obtained at a point close to these polluting discharges, but it would not have been a fair representation of the state of the river if this procedure had been adopted.

The River Lodden, which is the second tributary of the Stour, rises near West Knoyle, in Wiltshire, and flows south-south-west to join the Stour between Madjeston Bridge and Eccliffe Mill. The Lodden has many small tributaries, one of which rises near Shaftesbury and flows due west through Motcombe to join the Lodden near Ham Common, Gillingham. This stream is reported to receive polluting wastes from a milk factory and from properties in Motcombe.

The Lodden was examined at Gillingham and it was found that practically crude sewage was being discharged to it from rough settling tanks below the bridge on the Shaftesbury-Gillingham Road. The river was in a filthy condition with very little flow and practically overgrown with weed. A further examination at Madjeston Bridge did not reveal much improvement and this tributary must have an adverse effect on the condition of the Stour.

Sample No. 7. The result of the analysis of Sample No. 7 taken at a point 20 yards below the confluence with the Stour, contradicts the foregoing statement. The Biological Oxygen Demand figure of .2 parts per 100,000 shows that the river at the time of sampling was in a clean condition. Nevertheless, it must be remembered that there was practically no flow in the River Lodden, so that at that particular time it would not be likely to have any effect upon the condition of the Stour. There can be no question that the Lodden is seriously polluted at Gillingham because samples taken by an outside authority have proved this to be the case, and in times when there is a normal flow of water it is bound to affect the waters of the Stour.

Eccliffe Mill.

At this point the Stour appeared to be reasonably clean, but there was absence of weed-growth and no fish were observed.

High Bridge, Shaftesbury—Sherborne Road.

It was noted here that the watercourse was very much choked with rushes and other weed-growth. Very many fish of various sizes were observed which would point to the fact that any serious pollution that might have occurred up stream had cleared.

Trill Bridge, Fifehead Magdalen.

The river appeared to be satisfactory. Abundant fish life and weed-growth were noted.

Strangways Bridge and Lower Farm.

Just above Lower Farm the river is hatched to form a double watercourse. These separate courses continue for about $\frac{1}{2}$ mile before joining up again. The river appeared to be satisfactory, and judging from the amount of fish life present, it cannot be very badly polluted here.

Cale Bridge.

Immediately south of Cale Bridge the Stour is joined by a tributary, the River Cale. This tributary rises north of Wincancon and flows through the town where it is understood to take the sewage and effluent from the leather trades there. This river has been sampled by an outside authority and found to be polluted so that it must have some effect upon the Stour. At the time of the survey there was very little flow in the Cale and the surface of the water was covered with water lily leaves and duckweed. Nevertheless, several shoals of small fish were seen.

Sample No. 8. Sample No. 8 was taken from the Stour at a point upstream from the confluence with the River Cale. The Biological Oxygen Demand of .6 parts per 100,000 is higher than might have been expected in the absence of an immediate source of pollution. The course of the Stour is very much overgrown with weeds, and it might be that some of this weed growth has decayed, in which case it could be responsible for an increase in the Biological Oxygen Demand.

North of the bridge, the Cale is joined by Bow Brook, which is almost wholly in Somerset.

To the east of Gibbs Marsh Farm at Henstridge, a small and un-named brook joins up with the Stour. One branch of this brook flows near Stalbridge and takes the effluent from the sewage works and also trade effluent from a saw mill and gasworks. The water appeared opaque and there was a definite smell of wood tar on the stones. This brook must cause some deterioration in the condition of the Stour.

Sample No. 9. The ninth sample was obtained below the confluence of this brook with the Stour. The result of the analysis shows a slight increase in the Biological Oxygen Demand compared with the last sample. Had there been a normal flow in the Cale and the brook, the sample might have given a much higher figure.

Kings Mill Bridge.

Immediately down stream from this bridge, the Stour receives the waters of the River Lydden. The Stour broadens appreciably at this point and although the water did not appear very clean, several good-sized fish were observed. The Lydden is one of the major tributaries and drains a large part of the Sturminster Rural District Council area. It is not considered to be polluted, at any rate seriously, and consequently should not have an adverse effect upon the Stour.

Sample No. 10. Above the confluence with the Lydden, Sample No. 10 was obtained, and the result of the analysis shows that the river was in a clean condition at that point.

Sample No. 11. Sample No. 11 was taken approximately 30 yards below the confluence, and although there is a slight increase in the Biological Oxygen Demand, the result may be considered as being reasonably satisfactory. Here again, owing to restricted flow, the influence of the Lydden on the waters of the Stour might almost be discounted.

Mill, Hinton St. Mary.

The river appeared clean and very many fish were seen. Between Hinton St. Mary and Sturminster Newton the River Divelish joins the Stour. It is believed that this tributary is polluted with domestic waste water from various properties and that samples taken a few years ago by an outside authority proved this to be the case.

Sample No. 12. At the Recreation Ground, Sturminster Newton, the twelfth sample was taken. This is below the confluence with the River Divelish and although this tributary has been reported to be polluted, it is difficult to realise that it can influence the Stour to the extent of producing such a high Biological Oxygen Demand as 1.2 parts per 100,000. This is the highest reading obtained for the samples taken so far and proves that the condition of the river was very unsatisfactory at this point.

Sturminster Newton.

The river was surveyed from the Recreation Ground to the Mill at Sturminster Newton Bridge, and from the bridge towards Fiddleford Mill. Near the bridge it is learnt that a sewer discharges to the river but the actual pipe could not be seen owing to the amount of overgrowth along the bank. Further downstream, another discharge pipe empties into the river. This takes the effluent from the milk factory belonging to the Milk Marketing Board.

Sample No. 13. Approximately 30 yards below the point of discharge, the thirteenth sample was taken. Although the Biological Oxygen Demand figure of .9 parts per 100,000 shows a reduction compared with the figure for Sample No. 12, the reading is still high and the river remains in an unsatisfactory condition.

Another sewer discharge pipe is believed to connect with the river below this point. Despite the fact that sewage from Sturminster Newton is discharging direct to the river, it does not appear to affect fish life as this was as evident below Sturminster Newton as above the town.

Near Rolls Mill Bridge a small brook from Broad Oak joins the Stour. This brook was obviously polluted.

Between Sturminster Newton and Manston, the Stour receives the waters of the Chivrick's Brook, and at Manston the Manston Brook flows into the Stour. Both of these brooks appeared clean and fish were observed, though it is understood that the Manston Brook takes the effluent from the Shaftesbury Sewage Works and also some domestic waste from village properties. Likewise, the Chivrick's Brook takes some waste water from villages.

Sample No. 14. Sample No. 14 was obtained 10 yards below the confluence with the Manston Brook. The Biological Oxygen Demand of 1.7 parts per 100,000 is exceedingly high, being only slightly less than the suggested standard for sewage effluents as recommended in the 8th Report on Sewage Disposal by the Royal Commission on Sewage Disposal. It does not seem possible that the Manston Brook can be responsible for this high figure because there must be a high ratio of dilution which, even allowing for the tributary to be grossly polluted, and apparently it is not, would hardly be responsible for such a high Biological Oxygen Demand.

Hammoon.

The water course was overgrown with rushes and weeds, but where visible, the water was clean and there was abundant fish life.

Haywards Bridge.

At this point another small tributary, the Cookwell Brook, flows into the Stour. This brook runs through Okeford Fitzpaine and it is reported by the Sanitary Inspector to the Sturminster Rural District Council that it is polluted with waste water and the effluent from a milk factory. It seemed also that it was taking the effluent from another milk factory at Shillingstone. The brook certainly looked polluted and there was a film of scum over the water in places.

Sample No. 15. Five yards *above* the point where the Cookwell Brook joins the Stour, the fifteenth sample was taken. The result of the analysis shows the river still to be unsatisfactory.

Sample No. 16. The result of the analysis of sample No. 16, taken 10 yards *below* the confluence of the Cookwell Brook with the Stour, is something of an enigma. Here is a result showing an appreciable decrease for the Biological Oxygen Demand—7 parts per 100,000, compared with 1.0 parts per 100,000 for sample No. 15—over a stretch of 15 yards, despite the influence of a small brook which appears, and is reported to be, polluted. No explanation can be offered for this.

Durweston Mill.

Some works have been carried out to the banks just above the hatches and also downstream towards Blandford. A little way upstream from the Mill, a small tributary joins the Stour. This is the River Iwerne and it is reported that it takes the drainage from a slaughterhouse at Iwerne Minster.

Blandford.

The Stour flows along the southern boundary of the Borough of Blandford but, in actual fact, only a very small stretch of the left bank of the river is within the boundary of the Borough. However, the condition of the Stour can be greatly influenced by drainage from Blandford, as indicated below:—

The effluent from the Blandford Sewage Works discharges to the river and at the time the survey was made it did not appear to be a satisfactory effluent.

Downstream from Blandford Bridge is a brewery which discharges trade effluent to the Stour.

It was learnt from the Borough Surveyor that all road drainage from the town discharges to a small brook which connects with the Stour below the swimming bath.

The Blandford open-air swimming bath is situated alongside the river and, in fact, the water for the bath is obtained from the river. The water is chlorinated by hand dosage and approximately once per month the bath is emptied and cleaned. The outlet pipe from the bath discharges to the river.

Sample No. 17. Approximately 50 yards above the Blandford Bridge, the seventeenth sample was taken. There was practically no flow at this point, which is upstream from a weir, and in addition there was a heavy weed growth in the river. In the absence of any known source of pollution at, or upstream of, this point, it is assumed that the high Biological Oxygen Demand figure of .9 parts per 100,000 is due in no small part to the decayed vegetable matter in the water.

Sample No. 18. The Biological Oxygen Demand figure of 1.1 parts per 100,000 for Sample No. 18, taken immediately downstream from Blandford, is not surprising. As has already been noted, the effluent from the Blandford Sewage Works did not appear to be satisfactory, and also trade wastes from a brewery are passed to the Stour. In view of the low flow of water in the river at the time the samples were taken, it is reasonable to suppose that these pollutions would increase the Biological Oxygen Demand of the river water.

Keynston Dairy House.

This is a point about $2\frac{1}{2}$ miles below Blandford. The river appeared satisfactory and numerous fish were observed.

Keynston Mill.

Just above the Mill the river divides and forms two streams. These streams join again at Spettisbury, near Crawford Bridge. Examination of both water courses showed the water to be clean and there was abundant fish life. Below Keynston Mill the Stour is joined by the River Tarrant which rises above Tarrant Launceston. It is believed that this stream is reasonably free from pollution and an examination of the water, near the confluence with the Stour, showed it to be very clear and many fish were noted.

Crawford Bridge, Spettisbury.

The water appeared satisfactory and many fish were seen.

Sample No. 19. Sample No. 19 was taken at Crawford Bridge and although the result shows a drop in the Biological Oxygen Demand of 0.3 parts per 100,000 compared with Sample No. 18, the reading of 0.8 parts per 100,000 is still high and not easily accounted for.

Shapwick.

Here again, the water appeared to be satisfactory although the watercourse was partly overgrown with rushes and other weeds. Between Shapwick and Sturminster Marshall the tributary, Milborne Stream, joins the Stour. At the time of the survey there was no water in the watercourse and it is understood to be a seasonal stream.

White Mill Bridge, Sturminster Marshall.

At White Mill Bridge the river appeared to be satisfactory. A large milk factory at Bailey Gate has its own disposal plant for dealing with milk waste, etc., and the effluent from this plant discharges to a nearby roadside ditch. This ditch eventually connects with the Stour. At the time that the survey was made a fair amount of effluent was flowing in the ditch. It appeared to be a satisfactory effluent although there was no dilution taking place.

Sample No. 20. The twentieth sample was taken at White Mill, immediately upstream from the bridge and also upstream from the point where the effluent from the milk factory joins the river. The Biological Oxygen Demand figure is the same as for the previous sample, viz., .8 parts per 100,000.

Sample No. 21. Near the mill at Corfe Mullen, the twenty-first sample was taken. There is an increase in the Biological Oxygen Demand compared with Samples Nos. 19 and 20, and the figure of 1.0 parts per 100,000 is high. No known source of pollution enters the river between White Mill and Corfe Mullen, apart from the effluent from the disposal plant at Bailey Gate Milk Factory. It is doubtful whether this effluent could be responsible for the increase.

St. Julian's Bridge, Wimborne.

The river appeared reasonably clean and there was still evidence of fish life, though not on the same scale as higher up the river. The volume of water was well down due to the prolonged dry period.

Sample No. 22. The Biological Oxygen Demand for the twenty-second sample, taken near St. Julian's Bridge, shows a marked decrease at .3 parts per 100,000, and the river water might be considered to be satisfactory at this point.

Canford Bridge, Wimborne.

At this point the Stour is joined by the River Allen. This tributary, which rises near Monkton-up-Wimborne, flows through Wimborne from north to south. It is understood that there is no sewage disposal plant dealing with the sewage from Wimborne and that surface water sewers discharge direct to the river. These surface water sewers probably take the drainage from water closets, sink wastes, business premises, etc., so that the river is subject to a fair amount of pollution. Consequently, it is bound to have some effect on the condition of the Stour. Contrary to expectations, the waters of the Allen appeared clean in Wimborne, although there was a fair amount of debris in the bed of the river.

Sample No. 23. Sample No. 23 was taken at Canford Bridge at a point approximately 20 yards from where the River Allen joins the Stour. Compared with Sample No. 22, the figure for Biological Oxygen Demand is increased 100%. This might be due to the influence of the Allen, as it is known that this river, which flows through Wimborne, is polluted.

Canford Park to Little Canford.

The river was surveyed through Canford Park to Little Canford Bridge. The water was very low and the flow over the weir was practically negligible. No further source of pollution was noted. Opposite Canford School the river is used for swimming and boating, though judging from the amount of weed in the river, either of these recreations would prove hazardous under present conditions.

At Little Canford Bridge several fair-sized fish were observed.

Sample No. 24. The last sample, No. 24, was obtained at Little Canford Bridge, and the reading of .5 parts per 100,000 although a little on the high side, compares very favourably with the results of the other samples.

Longham Bridge.

This is the last point at which the river was examined, as from here on it forms a boundary between the County of Dorset and Bournemouth County Borough.

At Longham Bridge, a pumping station belonging to the Bournemouth Gas and Water Company is situated and water is taken from the river. The water appeared to be fairly clean and fish life was observed.

Conclusion.

To arrive at a definite conclusion as to the condition of the River Stour is no easy matter when one considers the varying Biological Oxygen Demand figures for the samples obtained. As in the case of the other rivers in the County which have been surveyed, due consideration should be given to the fact that the flow of water was below normal.

The Stour is a comparatively long river and although, generally speaking, it might be described as flowing mainly through agricultural land, there are a few points where it is subjected to the influence of small townships and some trade premises. In addition, certain of its tributaries are reported to be polluted. As a result there are localised points where the river is not in a satisfactory condition.

Despite the enigmatical results of some of the samples there is no doubt whatsoever that the Stour is seriously polluted at Gillingham. Varying degrees of pollution occur throughout the length of its course, some of them being of little or no consequence. The net result of the survey and samples indicates that the river is not, in the main, in a very satisfactory condition.

Summary of Sample Results in connection with the Survey of the River Stour.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.2	0.3
2.	0.7	0.4
3.	0.3	0.6
4.	0.4	0.7
5.	0.7	2.0
6.	0.6	0.3
7.	0.2	0.6
8.	0.6	1.1
9.	0.7	0.5
10.	0.2	0.9
11.	0.4	1.4
12.	1.2	0.2
13.	0.9	0.2
14.	1.7	0.3
15.	1.0	0.2
16.	0.7	0.4
17.	0.9	0.4
18.	1.1	0.2
19.	0.8	0.2
20.	0.8	0.3
21.	1.0	0.2
22.	0.3	0.4
23.	0.6	0.2
24.	0.5	0.2

River Lydden (Tributary of the River Stour).

The River Lydden is a major tributary of the River Stour. It rises near Buckland Newton and flows into the Stour at Kings Mill Bridge approximately a distance of nine miles 'as the crow flies'. It is joined by numerous small tributaries, un-named as far as could be ascertained. These small tributaries were not covered in the survey as attention was directed to the main stream.

Although the Lydden, and its tributaries, drains a fairly extensive area, it has been considered not to be seriously polluted. On the other hand, a fair number of farms and some villages probably drain to the river and this might influence the condition of the water.

The survey was commenced at Buckland Newton, and followed through at intermediate points along its course to the point where it flows into the Stour at Kings Mill. At the time the survey was made in October, there had been little rainfall for a long period and consequently the flow in the river was much reduced. In fact, at places the water was practically stagnant.

Buckland Newton.

The river is only a very small stream here. It flows through the village in a north-easterly direction and although no actual evidence was found, it is quite possible that some polluting waste water from the village finds its way to the stream. At any rate, the water appeared to be reasonably clean.

Canning's Court.

South of this point the Lydden is joined by a tributary which divides towards the head waters—one branch rising at Folly and the other at Alton Cap.

The river appeared clean and there was no sign of pollution.

Mill, Kingstag.

At Kingstag the river was practically stagnant and the watercourse was choked with reeds and other weed growth. No actual pollution could be traced although a thin film of oil was seen on the surface of the water. A few small fish were observed but there was no trace of the larger species of coarse fish.

Berry Farm, Lydlinch.

Here the water course mainly consisted of a series of pools with a very limited flow of water between them. The water appeared to be reasonably clean and several large fish and shoals of smaller fish were observed. In places there was a film of oil on the surface of the water which might have come from tractors driven across the fording. There was no objectionable smell to the water.

Cox's Water, Lydlinch.

Matted weed growth across the river impeded what little flow there was. No fish were observed in the pools and there was a lot of scum on the surface which was probably due to decayed vegetable matter. The water appeared to be dirty but there were no signs of obvious pollution.

Twofords Bridge.

Again it was noticed that the watercourse was choked with weeds and no flow was visible. The appearance of the water varied; some pools being quite clear whilst others were a dirty brown colour with a certain amount of scum on the surface. No pollution was detected, and several good-sized fish were seen in the larger pools. A small brook joins the Lydden at Twofords Bridge but at the time of the survey it was almost dry.

Sample No. 1. The first sample of river water was obtained at a point approximately 200 yards downstream from Twofords Bridge. The result of the analysis indicates that the river is, comparatively, in a satisfactory condition.

Half a mile downstream from this point the Lydden receives the waters of the Caundle Brook which is the largest of the tributaries and which is reported to receive polluting wastes from the villages of Holwell and Bishops Caundle, so it is possible for this tributary to influence the condition of the Lydden.

Bagber Bridge.

It was noticed that there was more water in the river and slightly more flow than at the other points already mentioned. This was probably due to the influence of the Caundle Brook which, as already described, flows into the Lydden between Twofords Bridge and Bagber Bridge. The watercourse was partially choked with weeds but the water did not appear to be polluted and several fish were observed.

Approximately one mile downstream from Bagber Bridge the Lydden flows to the River Stour at Kings Mill.

Sample No. 2. This sample was obtained some 30 yards upstream from the confluence with the River Stour. The Biological Oxygen Demand figure of 0.45 parts per 100,000 is practically the same as for Sample No. 1, and there is a reduction in the figure for Total Suspended Matter.

Conclusion.

Without carrying out a complete survey of all the tributaries—and there are very many—it cannot be definitely stated that the River Lydden is not polluted. Judging from the appearance of the water at the points indicated in the survey and the presence of fish life it might be reasonable to assume that the water is comparatively clean. Furthermore, no known source of serious pollution was noted and it is generally believed that this tributary is in a reasonably satisfactory condition and would, therefore, not be likely to have an adverse effect upon the condition of the Stour.

Summary of Sample Results in connection with the Survey of the River Lydden.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.4	0.8
2.	0.45	0.3

River Allen (Tributary of the River Stour).

From source to confluence with the Stour the River Allen is between 11 and 12 miles in length.

It rises from springs at Monkton-up-Wimborne and, for the greater part of its length, flows in a southerly direction through agricultural land to Wimborne, where it joins the River Stour.

The survey was commenced at Wimborne St. Giles and continued at intermediate points to its confluence with the River Stour.

Wimborne St. Giles.

There was a reasonable flow of water in the river and the water appeared clean. Over a considerable stretch of its course through the village, the river flows through private grounds and, consequently, it was difficult to form an accurate opinion as to whether the river receives any polluting wastes from the village. Between the source and Wimborne St. Giles the Allen may receive the drainage of a few farms but, if this is so, such drainage does not appear to affect adversely the condition of the water.

Brockington Farm.

There was no evidence of pollution and the water appeared clean. Shoals of small fish were observed.

Mill, near Horton Inn.

A mile upstream from the mill the first tributary joins the Allen. This is a small, un-named stream which rises at Gussage St. Andrew and flows through the villages of Gussage St. Michael and Gussage All Saints. At the time of the survey the stream was practically dry and would, therefore, not affect the main river. On the other hand, when it is flowing it probably has some influence on the Allen as it possibly receives some pollution from the villages through which it flows.

At this point the river water still appeared to be clean, although there was a fair amount of suspended matter and some weed growth. Several large fish were noticed.

Newtown, Witchampton.

There is a paper mill here which uses the river both as a source of water and presumably as a means of disposing of trade waste. Below the mill the water had a milky-white colour which was much more pronounced and appeared to be polluted. It was impossible to see the bed of the river although there was no great depth to the water at this point. Immediately upstream from the mill and above the weir at the mill the water had a white, cloudy appearance. This could only be accounted for by the fact that dredging had apparently taken place at a recent date and consequently the resulting suspended matter had not then settled.

Upstream from the paper mill another small and un-named tributary joins the Allen, but it is not likely to have any great influence on the condition of the main river.

Sample No. 1. Sample No. 1 was taken at a point approximately 30 yards upstream from the paper mills, and despite the rather unsatisfactory appearance of the water the result of the analysis gives the reasonable figure of 0.4 parts per 100,000 for Biological Oxygen Demand which suggests that the river is in a satisfactory condition at this point.

Sample No. 2. Sample No. 2 was taken from the Allen 100 yards downstream from the paper mills. The figure of 0.8 parts per 100,000 for Biological Oxygen Demand is fairly high and would indicate that some pollution of the water has taken place. The suspended solids at 10.6 parts per 100,000 is excessive and includes such a high proportion as 9.4 parts per 100,000 for fixed mineral matter (mainly chalk).

Witchampton Bridge.

The water was still very cloudy at this point which is approximately $\frac{1}{4}$ mile downstream from the Newtown Paper Mills. Further pollution by domestic waste water may occur from some properties in the village but no actual evidence of this could be found.

High Hall Bridge.

Upstream from the bridge the watercourse was practically choked with weeds but immediately downstream from the bridge the river was singularly free from such obstruction. The water appeared to have recovered from the effects of pollution at Witchampton and it was reasonably clear. No fish life was observed.

Walford Bridge, Wimborne.

Above and below this bridge dredging and cleaning operations had taken place. All weed growth had been removed and the north bank strengthened. At the time of the survey the river was shallow and no fish were observed. Discharge pipes along a stretch of the south bank indicated that waste water from nearby properties is passed to the river.

Sample No. 3. The third sample was obtained at Walford Bridge, Wimborne, and the result of the analysis shows that the river has recovered to some extent between this point and Witchampton. The Biological Oxygen Demand reading of 0.5 parts per 100,000 is comparatively high in the absence of a known source of pollution in the immediate vicinity. It will be observed that there is a big drop in the figure for suspended solids, 0.6 parts per 100,000 compared with Sample No. 2.

Wimborne Town.

The Allen flows through an old disused mill in Mill Street, Wimborne, and at a short distance away flows a secondary stream which eventually joins up with the Allen near Canford Bridge.

The Allen was first surveyed and it was noted that two rectangular brick sewers were discharging foul water to the stream, one near the mill and the other about 100 yards downstream. In addition, there were other pipes which probably discharge polluting waste from individual properties backing on to the river.

The river runs in a culvert beneath East Street, and also beneath properties in East Street and it was, therefore, not possible to discover whether any further pollution takes place.

There was a strong and unpleasant smell coming off the water which appeared dirty and polluted.

The secondary stream was surveyed from a point near the mill to East Street Bridge. Near the bridge a public convenience discharges direct to the river and both above and below the bridge several discharge pipes were observed along both banks and what appeared to be a sewer pipe was observed near the bridge. This branch stream did not appear to be as badly affected as the main river and certainly did not give rise to any objectionable smell.

Sample No. 4. The last sample was taken from the River Allen at a point some 50 yards upstream from the confluence with the River Stour. From the observations given above concerning the pollution which takes place at Wimborne, it might have been expected that the result of the analysis of the sample would indicate a sharp rise in the figure for Biological Oxygen Demand. That the figures for both Biological Oxygen Demand and suspended solids are the same as for the previous sample is difficult to account for, although it is quite possible that some degree of self-purification has taken place between East Street, Wimborne, and the point where the sample was taken, as the river flows through private parkland for approximately half a mile. Had the sample been obtained near East Street where, as has already been described, pollution was obvious, the Biological Oxygen Demand would, in all probability have been appreciably higher.

Conclusion.

With the exception of the pollution which takes place from the Witchampton Paper Mills, the River Allen is not seriously polluted until it reaches Wimborne. It is most unfortunate that the river should be subjected to pollution by sewage from the town because it was obvious that it was in an unsatisfactory condition for the greater part of its course through the town. As far as can be ascertained there is no sewerage system (including a

sewage disposal plant) for Wimborne, and what sewers do exist discharge direct to the river. It is obvious, therefore, that the amount of pollution from a town of the size of Wimborne would be considerable and must have a very serious effect upon such a small river as the Allen, particularly during a dry spell when the volume of water in the river is low with a correspondingly small dilution taking place.

Bearing this in mind it is reasonable to presume that the River Allen would have an adverse effect upon the condition of the Stour as the confluence of the two rivers is not more than $\frac{1}{2}$ mile from the centre of Wimborne so that the River Allen has little chance of self-purification before it joins the major river.

Summary of Sample Results in connection with the Survey of the River Allen.

<i>Sample No.</i>	<i>Biological Oxygen Demand Parts per 100,000.</i>	<i>Total Suspended Matter Parts per 100,000.</i>
1.	0.4	1.4
2.	0.8	10.6
3.	0.5	0.6
4.	0.5	0.6

Survey of the River Yeo.

The River Yeo rises in Somerset at a point north of Milborne Port and flows through this village where, it is understood, it receives trade wastes from a leather works. From Milborne Port the river changes course and flows practically due west and enters Dorset at Goathill. Approximately $\frac{1}{2}$ a mile upstream from Goathill the Yeo is joined by a small stream which rises at Plumley Wood and flows through the village of Purse Caundle. This tributary takes the effluent from the Milborne Port sewage works.

Goathill.

The water appeared reasonably clean and there was a fair amount of weed growth. No fish were observed. Complaints have been made that there has been, at times, an offensive smell to the water, but this was not evident at the time the survey was made.

Sample No. 1. Sample No. 1 was taken from the river near the road bridge at Goathill, and the result of the analysis indicates that the condition of the water at this point was fair although the figure of 4.6 parts per 100,000 for suspended matter is higher than expected.

From Goathill the river flows through Sherborne Park to Sherborne and enters the town near the bridge at New Road.

Sherborne.

The Yeo practically forms the southern boundary of the Urban District and flows close to the main line of the Southern Railway. The river was examined from New Road bridge to Dancing Hill Bridge. At New Road bridge a small stream joins the River Yeo. This tributary rises near and flows through Poyntington and also through Osborne and it receives the effluent from a sewage rough settling tank at Poyntington.

The water of this tributary and also of the Yeo appeared quite clean although there was a fair amount of grey deposit on the bed of the river.

Between New Road bridge and Sherborne Station the river does not receive any polluting wastes, at any rate as far as could be ascertained. However, near the railway station the river flows close to some factory premises, including the Gas Works. Upstream from the Gas Works the water had a greenish colour and had lost its original clarity, but it is doubtful whether any pollution reaches the river from the factories. Furthermore, the river had not further deteriorated downstream of the Gas Works and attempts to trace any discharge pipes from these works were not successful. It may, therefore, be assumed that the Yeo does not receive any serious pollution from these premises. A small culverted brook joins the Yeo near the station and a little further downstream another culverted brook connects with the river. The water of both these brooks was quite clean.

No discharge pipes were observed along the banks of the Yeo between the railway station and the bridge at Dancing Hill.

The town of Sherborne is sewered and there is a sewage disposal works near Limekiln Farm the effluent from which is passed to the river. The effluent discharge pipe appeared to be of 12 in. diameter, and at the time of the survey it was running approximately one-third full. In the immediate vicinity of the effluent discharge the river water was very discoloured and was practically opaque. These conditions continued for some distance downstream and it was also observed that there was an appreciable amount of greyish-black deposit on the stones of the bed of the river. Judging on appearance alone the river seemed to be badly affected by this effluent.

Sample No. 2. The result of the analysis of Sample No. 2 bears out the foregoing remarks. This sample was obtained at a point approximately 40 yards downstream of the effluent discharge pipe and the Biological Oxygen Demand of 2.1 parts per 100,000 is very high. In fact, it exceeds the figure of 2.0 parts per 100,000 suggested by the Royal Commission on Sewage Disposal as a standard for sewage effluents. It is believed that such a high reading is due to the effluent from the sewage works and the river is certainly in an unsatisfactory condition at this point.

From the sewage works at Sherborne to Thornford, a distance of 2 miles, the Yeo flows through open country and, as far as could be ascertained, is not subjected to further pollution.

Thornford.

The river does not flow through this village but keeps to the north of it at a distance of between $\frac{1}{4}$ and $\frac{1}{2}$ a mile. An examination of the Yeo at this point showed that the water bed improved in clarity compared with its appearance downstream of the Sherborne sewage works. There was abundant weed growth near the banks but no fish were observed.

Bradford Bridge.

Near Bradford Abbas the Yeo is joined by the tributary, River Wriggle, which has already been reported upon.

At the point of the confluence the water appeared to be clean and there was a good flow in the main stream. The waters of the River Wriggle were practically stagnant. Visually, there was no deterioration in the condition of the Yeo downstream from the confluence.

It is not considered that any serious pollution reaches the river from Bradford Abbas.

Sample No. 3. Sample No. 3 was obtained from the Yeo at a point approximately 10 yards upstream of the confluence with the River Wriggle. The figure of 0.4 parts per 100,000 for Biological Oxygen Demand indicates that the river is in a reasonably satisfactory condition and has recovered from the effects of the sewage effluent at Sherborne.

Sample No. 4. The last sample was taken approximately 10 yards downstream of the confluence and the results of the analysis are almost identical with those for Sample No. 3. It would have been expected that the River Wriggle would have had an adverse affect upon the Yeo as it is known that this tributary is not in a satisfactory condition. No doubt, the fact that there was practically no flow to the water of this river, has a bearing upon the result of the analysis. At any rate, at the time the sample was taken, the water of the Yeo was in a reasonably satisfactory condition below its confluence with the River Wriggle.

Conclusion.

The survey of the River Yeo was concluded at Clifton Maybank as thereafter the river changes course to flow north along the county boundary.

Apart from the effluents from the Milborne Port and Sherborne sewage works no evidence of serious pollution could be traced. The analysis of the first sample indicates that the effluent from the Milborne Port sewage works does not result in a serious deterioration in the condition of the river. However, this cannot be said of the effluent from the Sherborne sewage works and there can be no doubt that the river is badly affected by this discharge. Under conditions of normal flow, it is possible, too, that the River Wriggle might result in some deterioration of the Yeo below the confluence.

Summary of Sample Results in connection with the Survey of the River Yeo.

Sample No.	Biological Oxygen Demand Parts per 100,000.	Total Suspended Matter Parts per 100,000.
1.	0.4	4.6
2.	2.1	2.3
3.	0.4	0.8
4.	0.4	1.4

The Rivers Pollution Survey will serve the following useful purposes:—

- (1) In the near future a large number of sewage disposal schemes will be carried out in the County and the effluent from the disposal works will eventually be discharged into the rivers. The survey gives a picture of the condition of the rivers before these effluents are received and it will be possible to note at a later date if there is any detrimental effect caused by the sewage effluents.
- (2) The information should also prove useful to the district councils through whose areas the rivers flow and as the chief sources of pollution are indicated in the report, steps could be taken by the local councils to stop this pollution.

The Epidemiology of Poliomyelitis with particular reference to the County of Dorset and the 1947 epidemic.

In the realm of infectious diseases the outstanding event of the year 1947 was the unusually high incidence of poliomyelitis throughout the whole of Great Britain. It was the first outbreak of the disease of any magnitude that this country has ever experienced.

Poliomyelitis was apparently known to the ancients, but there are no indications that epidemics occurred before the 19th century. Although, in England, small outbreaks were reported by Badham in 1834, and Heine in 1840 published his monograph describing the disease in Germany, it was not until about 1870 that Medin of Stockholm drew attention to the occurrence of the disease in epidemic form in Scandinavia in 1868. Further outbreaks occurred in Scandinavia in the 1880's, and a large outbreak about 1905 was followed a few years later by a severe epidemic in Sweden. About that time also, the United States became affected and in 1916 the most severe epidemic on record in that country occurred. Since then, a slow, but steadily increasing geographical extension of the disease has taken place in America. Although the annual figures have never surpassed those of 1916, the number of cases for the last five years is far in excess of anything previously recorded over such a period.

In Europe the incidence of poliomyelitis has increased since 1936. The highest incidence recorded for any country, 58 cases per 100,000 population, occurred in Norway in 1941. In 1943, Northern Holland and Friesland were primarily affected and in the following year the disease spread to the rest of the Netherlands. In 1944 Sweden and Switzerland experienced an incidence of 48 and 41 per 100,000 respectively. In addition to the epidemic in this country, the autumn of 1947 saw two other epidemics of unusual intensity in Europe—in Berlin and in Austria.

The disease first came into prominence in this country when an outbreak occurred in 1911, and in 1912 it was added to the list of notifiable diseases. During the outbreak of 1911 only 3 cases of poliomyelitis were reported in Dorset, but in 1914, 10 cases were notified, 2 at Wimborne and 8 in the Beaminster rural district. Dr. Kitson, the Medical Officer of Health of the Beaminster rural district at the time, reported as follows:—

'I received eight notifications of Acute Poliomyelitis during the months of August and September. The ages of the children ranged from 1½ to 16 years. There were six males out of the eight cases.

'The incubation period was believed to be eight days. The onset was sudden with high temperature lasting for several days followed by paralysis of certain groups of muscles, and in one case the paralysis affected all the muscles of the limbs and trunk, and the respiration was entirely diaphragmatic. There was no death. The weather before the outbreak had been very dry, the rainfall from August 16th to September 7th was .84, and no rain fell from September 19th until October 12th.

'The cases nearly all occurred in the town of Beaminster, in the least crowded and most sanitary part of the town on the main street.

'The method of transmission was probably aerial, and the disease did not appear to be communicable from person to person.

'The following points have been considered:—

1. Four of the parents were employed in the same shop.
2. All the cases except two either lived or were employed on the main street.
3. The thatch from an old building in this street was removed, causing a great deal of dust.

'On inspection, no accumulation of manure or sanitary defects were found near the premises.'

That outbreak was also investigated by the county medical staff and in his annual report for 1914 Dr. Robinson, the County Medical Officer wrote:—

'Including a number of mild cases, there appear to have been 16 persons attacked. The first case occurred on August 10th and the last on August 29th. The ages varied from 1½ to 16 years. The schools were closed at the time, so school influence was not a factor in the spread of the disease.

'Dr. McLaren, Assistant County Medical Officer, who made inquiries into the outbreak, considered that the spread of the disease was mainly due to carriers, having regard to (1) the irregular distribution of the cases; (2) the absence of secondary cases in the same family (3) the fact that several mild and "missed" cases occurred; and (4) that cases occurred in the families of a butcher, the butcher's brother and the butcher's assistant, who all worked in the same shop. Milk was considered, but it was proved to have played no part in the spread of the epidemic. As regards stable-flies as a possible source of origin, two of the houses first affected were within a hundred yards of a stable with considerable accumulations of manure. There was some possibility of the disease having been introduced from an adjoining county, but inquiry failed to establish this.

'The important points may be summarised as follows:—

1. The origin may have been due to infection carried by stable-flies, since the earliest cases occurred within a short distance of accumulations of manure, or the disease may have been introduced from an adjacent county.
2. Carriers played an important part in the spread of the disease, since the fathers of four of the cases were employed in the same shop.
3. The direct infectivity was small, in only one house did two cases occur.

'Results. There were no deaths, and in only two cases was the resulting paralysis severe. There was moderate paralysis in four instances; in two it was slight, and in the remainder no paralysis resulted.

'A further case occurred on October 3rd, in a child who had recently come from London. The connection of this case with the outbreak was doubtful.'

It is of considerable interest that the three important points detailed in that report might well sum up the extent of our knowledge regarding the spread of the disease after this year's epidemic. Dr. Kitson's remarks regarding the dryness of the summer in 1914, a fact also noted in 1947, have been confirmed by observers in other countries.

Since 1914, poliomyelitis has not been commented upon so far as Dorset is concerned. Nevertheless, with the exception of the year 1920, the disease has never been entirely absent from the county. The following table shows the number of cases notified each year since 1914:—

	<i>Dorset.</i>	<i>England and Wales.</i>		<i>Dorset.</i>	<i>England and Wales.</i>
1914	10	509	1931	1	394
1915	4	517	1932	9	750
1916	6	689	1933	4	797
1917	2	357	1934	4	672
1918	4	228	1935	4	700
1919	4	615	1936	1	583
1920	0	329	1937	6	864
1921	2	539	1938	10	1585
1922	2	386	1939	13	831
1923	6	644	1940	7	1079
1924	5	850	1941	12	959
1925	3	422	1942	3	674
1926	10	1297	1943	4	456
1927	5	896	1944	5	532
1928	5	551	1945	21	851
1929	5	623	1946	5	682
1930	2	591	1947	65	7800

Between 1912 and 1938, 115 cases were so scattered throughout the county that in only three places did notifications reach double figures, in Poole 24 cases, in Beaminster rural district 15 cases and in Wimborne rural district 12 cases. In view of the outbreak in the Wareham district in 1947, it is a point of interest that only 1 case was notified in that area between 1912 and 1938 (in 1927), whilst in 1945, 7 cases were notified in the Wareham rural district and 1 in the borough. Of the other cases in that year, 6 occurred in Poole, 3 in Weymouth and the rest were scattered singly throughout the county.

In June, 1947, it was noticed that the incidence of the disease was considerably above the average in several widely separated parts of the country—in South London, in the Birmingham area, in the West Riding of Yorkshire, and in parts of Lancashire. In the week ended 7th June the notifications rose from 3 to 22; the figures for the following weeks were:—

14th June	..	31	5th July	..	79
21st June	..	44	12th July	..	110
28th June	..	56	19th July	..	177

In Dorset only 5 cases were notified up to the end of June; of these 3 occurred in January and 2 early in June. The epidemic in the county really commenced on the 26th June, when a boy aged 8 years at a school in the Wareham district developed the disease. Further cases occurred in boys at the same school, on the 27th,

29th June (2 cases) and on the 1st, 2nd, 3rd (3 cases) and 4th July, making a total of 10 cases, of whom 1 died. Of the notifications received up to the 12th July, this was the largest local outbreak in the country. Only 1 further case occurred in the Wareham district, on 5th July.

The appended table shows the distribution of poliomyelitis in Dorset in 1947:—

<i>District.</i>	<i>Quarter.</i>			
	<i>March.</i>	<i>June.</i>	<i>September.</i>	<i>December.</i>
Blandford Borough	—	—	2	2
Bridport Borough	—	—	1	—
Dorchester Borough	—	—	—	—
Lyme Regis Borough	—	—	1	—
Poole Borough	1	—	8	5
Portland Urban	—	—	2	—
Shaftesbury Borough	—	—	—	2
Sherborne Urban	—	1	1	1
Swanage Urban	1	—	2	—
Wareham Borough	—	—	—	—
Weymouth Borough	—	1	1	4
Wimborne Urban	—	—	3	—
Beaminster Rural	—	—	—	—
Blandford Rural	—	—	3	1
Bridport Rural	—	—	—	1
Dorchester Rural	—	—	—	—
Shaftesbury Rural	—	—	1	1
Sherborne Rural	—	—	—	—
Sturminster Rural	—	—	—	1
Wareham Rural	—	—	11	—
Wimborne Rural	1	—	3	3
Totals	3	2	39	21

The Poole, Wimborne, Wareham and Blandford areas had 43 of the total 65 cases which, even excepting the 14 cases in the Borough of Poole, gives these areas a figure of 29 cases out of 51 for the county. This is comparable with the 1945 outbreak when 15 cases of a total of 21 occurred in the Poole, Wareham and Wimborne areas. In 1932, 8 out of a total of 9 cases occurred in the Poole and Wimborne districts.

The first case in Blandford occurred on the 1st August, in a boy aged 3½, whose brother, aged 13, returned home on the 26th July from the school in the Wareham area where the initial outbreak occurred. Although 4 cases appeared in Blandford between the 21st and 28th August, no connection could be found between them.

The Poole cases appear to have arisen irregularly throughout the borough with no connection between them except for two cases in Parkstone, where a female child aged 4 years became ill on the 27th July and was treated at home where the mother developed the disease on the 6th August. Of the 14 cases notified in the borough, 10 cases occurred in the residential districts as compared with 4 cases in the older, more populous parts of the town.

The total notifications of poliomyelitis and polioencephalitis in England and Wales in 1947 was 7,800 with a civilian attack rate of 18 cases per 100,000 population. This is the same as the rate in the 1916 United States epidemic. The previous highest incidence in this country occurred in 1938 when the attack rate was 4 per 100,000 population.

It is now known that in Dorset 65 confirmed civilian cases occurred, giving an attack rate of 25 per 100,000 population. The county thus suffered more severely than the country as a whole. Dorset is, of course, predominantly rural, and in this connection, Dr. Gale of the Ministry of Health notes that in the previous years of highest prevalence, rural districts of the country had the highest rates. A comparative table of these rates in 1947 is of interest:—

<i>Rate per 100,000 in</i>	<i>England and Wales.</i>	<i>Dorset.</i>
Rural areas	21.6	27
Urban areas	17.4	23.2
County boroughs ..	15.6	—
Over whole area ..	18	25

The mortality attributed to the disease is shown in the following table:—

	<i>England and Wales.</i>	<i>Dorset.</i>
Total deaths	715	5
Death rate per million civilians	17	18.9
Case fatality rate ..	9%	7.7%

In England and Wales there were 4,251 (55%) cases among males, and 3,420 (45%) among females. The figures for Dorset were 42 (65%) males and 23 (35%) females. The higher percentage of male cases in Dorset is accounted for by the outbreak in a school in the Wareham area. If the 5-15 age group is excluded, the male and female cases are almost equal. The excess of females over males in the age group 15-24 is consistent with the observations of other investigators. Nevertheless, a preponderance of males is a constant feature of poliomyelitis epidemics which has not yet been explained.

The next table reveals the age distribution of notifications in England and Wales, and the age and sex distribution in Dorset:—

<i>Age.</i>	<i>England and Wales</i>		<i>Dorset.</i>		
	<i>Notifications.</i>	<i>Percentage.</i>	<i>Notifications.</i> M. F.		<i>Percentage.</i>
0—	303	4	1	1	2
1—	2,088	27.5	5	4	9
5—	1,610	21.2	10	2	12
10—	1,112	14.7	15	4	19
15—	1,218	16.1	4	8	12
25—	1,254	16.5	7	4	11
Totals	7,585	100	42	23	65

As in the rest of the country the brunt of the infection fell on the 5-15 age group in Dorset. In persons over 15 years twice as many cases occurred in the county as in the group 0-5, the figure for which equals that for persons aged 25 years and over. The pre-school age group thus escaped lightly in Dorset, and this may be contrasted with the high incidence in this group in urban districts of England and Wales. In Poole, in fact, 4 out of 14 cases were in the 0-5 age group, which is 28.6%.

A follow-up investigation of 60 cases at the end of the year produced the following information:—

<i>District.</i>	<i>Confirmed cases.</i>	<i>No paralysis.</i>	<i>Slight paralysis.</i>	<i>Permanent paralysis.</i>	<i>Died.</i>
Blandford Borough ..	4	—	—	4	—
Bridport Borough ..	1	—	1	—	—
Lyme Regis Borough	1	1	—	—	—
Poole Borough ..	13	6	1	4	2
Portland Urban ..	2	—	—	2	—
Shaftesbury Borough	2	—	1	1	—
Sherborne Urban ..	3	—	2	1	—
Swanage Urban ..	2	—	1	1	—
Weymouth Borough ..	5	1	1	3	—
Wimborne Urban ..	3	1	—	2	—
Blandford Rural ..	4	3	—	1	—
Bridport Rural ..	1	—	—	1	—
Shaftesbury Rural ..	2	2	—	—	—
Sturminster Rural ..	1	—	—	—	1
Wareham Rural ..	11	8	1	1	1
Wimborne Rural ..	5	3	1	—	1
Totals ..	60	25	9	21	5
Percentage ..	100	41.6	15	35	8.3

Discussion and Conclusions.

At this time when all other infectious diseases are being brought under control, poliomyelitis offers a challenge to preventive medicine. What, then, can we learn about it from the foregoing account and from the observations of others? In the first place it presents several puzzling features, not the least of which is its recent comparatively sudden change from being a sporadic disease to an ever increasing epidemic one. At the same time, its age incidence has altered. Whilst poliomyelitis remains a sporadic endemic disease the highest proportion of cases occur in children under 5 years. Once it becomes epidemic the higher age groups tend to be more affected.

Clinically the disease has also changed. So long as it remains sporadic and truly 'infantile' most cases are of the paralytic type. In this 1947 outbreak in Great Britain, however, and in recent epidemics elsewhere, increasing numbers of non-paralytic and abortive cases have been notified and the encephalitic types have been commoner.

There is one other strange feature about these two types of the disease. This is the fact that the epidemic type occurs particularly in countries where the standards of living and of sanitation are highest, whilst the disease has remained endemic in countries with poor living and sanitary conditions. It has been proved that the virus is excreted in the faeces of healthy carriers as well as of actual cases, and it has been suggested that infants, in countries with poor sanitation, may acquire an immunity to the disease by repeated exposure to doses of the virus, insufficient to produce clinical symptoms. Children living in good hygienic conditions would escape such exposure and remain susceptible to the infection in later life. A susceptible population of increasing age would thus be built up, forming the soil in which an epidemic could take root.

Wartime experiences of British and American troops stationed in places where poliomyelitis has remained endemic tend to support this view. Outbreaks occurred among such troops while the native population remained relatively free. Had new strains of the virus been introduced by the troops, or had the virus developed increased powers of invasion, one would have expected the natives to be affected in the same way as the soldiers. Amongst such troops, particularly in American soldiers in the Philippines and in the Middle East, the attack rates of the disease were as much as ten times the rates among troops stationed in the United States. It may be supposed then, that the virus was more prevalent in these countries and that low immunity in the troops resulted in the high poliomyelitis rate.

The belief that the virus of poliomyelitis was spread by respiratory droplets and, entering the body through the nose, travelled by the olfactory route to the central nervous system, has been discredited by the investigations of Sabin and Ward (1941). Their detailed examination of the tissues in 13 fatal human cases showed that the virus, although localised in the central nervous system, in the pharynx and in the small and large intestines, was not present in the nasal mucosa, the anterior perforate substance or the olfactory bulbs. In living patients the virus is found with greater frequency and for longer periods in the stools than in material from the oropharynx.

Recent clinical, epidemiological, laboratory and experimental work, points to the virus being ingested in infected food or drink. Poliomyelitis has long been recognised as a disease of the harvest season; a sudden increase in cases frequently coincides with a warm, dry summer and the earlier this warm weather occurs, the sooner does an epidemic commence. In this respect, poliomyelitis resembles the intestinal rather than the respiratory diseases. Several features of the 1947 outbreak resemble paratyphoid fever and the related salmonella types of food poisoning, which are usually food infections. These infections, most frequently affecting older children and young adults, generally occur sporadically nowadays, but are liable to produce explosive outbreaks in which a number of people are affected more or less simultaneously, all due to a common source, such as the ingestion of some infected article of diet. The occurrence of cases of poliomyelitis at the school in the Wareham area very closely resembled such an explosive outbreak.

Many observers have noted that a proportion of the early cases in an outbreak appear to have been in direct contact with one another, while later in the epidemic no such close association can be found. At first, then, a carrier or a person with a mild type of the disease may infect others around him by direct contact, perhaps by contamination of food, or possibly by virus expelled from the mouth in blowing or spitting; the virus has been detected in the throat of patients during the acute stage and in the incubation period. Later, as sewage becomes contaminated and flies may be involved, the disease becomes more widespread. The virus is present in large amounts in sewage during epidemics and there is no doubt that the 'filth' flies may carry it, although there is as yet no definite evidence that they play a major role in the spread of the disease.

It appears that when cases occur, the virus is widespread in the community. There is in fact a carrier epidemic with many symptomless infections, some cases of minor illness and a few actual cases. The infection seems to be spread usually, from person to person, by carriers, and by children with minor illnesses. Most of us have had poliomyelitis without knowing it. The majority of people become immunised without showing any symptoms, a few have symptoms of a general infection, fewer still suffer from symptoms of meningitis without any paralysis and fewest of all become paralysed. Unless a patient shows symptoms of meningitis with or without subsequent paralysis, his condition is unlikely to be diagnosed as poliomyelitis. Although 7,800 confirmed cases occurred in England and Wales, it would be impossible to attempt to estimate the number who were actually infected.

The existence of the virus in the throat and in the intestinal tract suggests that the mode of spread is by person to person contact through contaminated hands and fomites. Although case to case spread is exceptional, actual infection, particularly when minor illnesses are taken into account, is much commoner among contacts of known cases than among non-contacts.

An observation, which may have some bearing upon our views regarding the age incidence of the disease, is that severe exercise is often associated with the sudden onset of paralytic poliomyelitis. It is the most active people in the community, older children and young adults, who bear the brunt of such exercise-precipitated paralysis.

That rural areas show a higher attack rate in epidemics than urban districts, as noticed in this country by Gale, and in the United States by Paul, indicates greater facilities for spread in rural areas or a greater immunity of the inhabitants in urban areas. It seems probable that both these factors may operate. With regard to the spread of infection, the proof that the virus is present for long periods in the faeces of cases and healthy carriers and its recovery from flies and sewage, provide a reasonable explanation for greater spread in rural areas.

On the question of immunity, it seems reasonable to suppose that, the virus being ubiquitous, immunity by subclinical doses occurs more easily in crowded urban populations than in rural communities. In this connection it is noticeable that overcrowding was exceptional in houses in which cases of poliomyelitis occurred during the recent outbreak. Cases of the disease were also comparatively rare in the poorer class urban districts where it would appear that the virus has ample opportunities to create an immunity. In the borough of Poole, for example, the majority of cases arose in the better class residential districts.

A point worth noting is that in the populous urban centres, where the rising incidence was first noticed and where one would have expected the infection to be most widespread, a high proportion of cases occurred in children of pre-school age. This suggests that a higher level of immunity existed in the adult population of such areas than in other places. The high incidence of the disease in the districts bordering upon Poole borough indicates a more widespread infection in that area than elsewhere, with the population in the residential and surrounding rural areas having a lower immunity than the people in the more crowded parts of the borough. A high proportion of healthy carriers in that area would account for the large number of cases notified in 1932, 1945 and 1947 as compared with the rest of the county.

The weight of the evidence points to poliomyelitis being a widespread endemic infection reaching epidemic proportions in susceptible populations at times when conditions are suitable for the propagation of the virus. It seems likely that the disease has always existed, but that in countries where sanitary standards in respect of excreta disposal and fly prevalence are low, most of the population acquire an immunity to it in infancy by repeated exposure to subclinical doses of the infecting agent. As hygienic conditions in many countries have been so greatly improved in recent years, however, fewer opportunities now arise for infants to develop such immunity and susceptible populations are built up. It is in such communities that epidemics appear. The early epidemics, like the sporadic type of case, occurred primarily in the younger age groups, particularly in the children of 0-5 years, because their elders still possessed an immunity obtained in the bad old days. In the latest epidemics, as in this country in 1947, the 5-15 age group bears the brunt of the infection, more adult cases occur and abortive and non-paralytic cases are commoner, as the proportion of immunes in the population diminishes.

With improvements in environmental hygiene, the immunity induced by repeated exposure to infection is now dying out, except to some extent in overcrowded and insanitary areas, and one may speculate whether the highest incidence, on account of the exercise-precipitating factor, will in future occur in older children and young adults.

January, 1949.

J. L. GILLORAN,
Deputy County Medical Officer.

VITAL STATISTICS (Table I).

	1942	1943	1944	1945	1946	1947
Area :—622,843 Acres.						
Population :—						
Urban Districts	150,700	146,400	146,980	151,810	163,690	168,290
Rural Districts	98,600	96,140	93,540	91,180	94,400	96,100
Whole County	249,300	242,540	240,520	242,990	258,090	264,390
Rateable Value :—	£1,851,221	£1,858,229	£1,857,072	£1,871,483	£1,878,688	£1,905,871
Estimated Produce of a Penny Rate :—	£7,211	£7,202	£7,308	£7,388	£7,442	£7,587
Births :—						
Still Births	123	123	119	120	134	115
Live Births	4,292	4,072	4,589	4,383	4,911	5,381
TOTAL	4,415	4,195	4,708	4,503	5,045	5,496
Live Birth Rate (per 1,000 population)	17.2	16.7	19.0	18.0	19.0	20.3
Live Birth Rate (England and Wales)	15.8	16.5	17.6	16.1	19.1	20.5
Deaths :—						
Total Deaths (all ages)	3,303	3,205	3,200	3,180	3,270	3,418
Death Rate (per 1,000 population)	13.2	13.2	13.3	13.0	12.6	12.8
Death Rate (England and Wales)	11.6	12.1	11.6	11.4	11.5	12.0
Infant Mortality :—						
Deaths under 1 year of age	171	148	150	181	173	148
Infant Mortality Rate (per 1,000 live births)	53	36	32	41	35	27
Infant Mortality Rate (England and Wales)	49	49	46	46	43	41
Maternal Mortality :—						
Maternal Deaths	10	9	7	5	12	6
Maternal Mortality Rate (per 1,000 births)	2.2	2.1	1.4	1.1	2.3	1.9
Maternal Mortality Rate (England and Wales)	2.01	2.29	1.93	1.79	1.43	1.17

CAUSES OF DEATH AT ALL AGES. (Table II).

	1942	1943	1944	1945	1946	1947
1 Typhoid and Parat. Fevers ...	—	—	—	—	—	—
2 Cerebro-Spinal Fever ...	2	4	7	3	—	1
3 Scarlet Fever ...	1	—	—	—	—	—
4 Whooping Cough ...	2	6	4	1	5	1
5 Diphtheria ...	13	10	4	3	3	—
6 Tub. of Resp. System ...	102	76	80	91	85	91
7 Other forms of Tuberculosis ...	20	25	19	19	25	23
8 Syphilitic Disease ...	20	11	10	14	12	8
9 Influenza ...	28	104	32	6	25	19
10 Measles ...	1	3	2	1	—	1
11 Ac. Polio-myel. and Polio-enceph. ...	—	1	1	3	1	5
12 Ac. Inf. Enceph. ...	3	4	1	1	3	3
13 Cancer of buc. cav. and Oesoph. (M), Uterus (F) ...	52	52	48	57	52	43
14 Cancer of stomach and duodenum ...	89	74	73	78	87	104
15 Cancer of breast ...	57	65	67	44	64	59
16 Cancer of all other sites ...	279	310	300	298	266	289
17 Diabetes ...	43	38	27	27	29	37
18 Intra-cranial vascular lesions ...	368	379	360	387	406	411
19 Heart disease ...	875	878	950	976	1005	1,082
20 Other diseases of circ. system ...	85	69	89	75	125	120
21 Bronchitis ...	137	124	122	146	115	139
22 Pneumonia ...	120	102	110	105	122	133
23 Other respiratory diseases ...	35	41	44	39	46	38
24 Ulcer of stomach or duodenum ...	34	30	39	35	27	33
25 Diarrhoea under 2 years ...	11	9	12	30	4	6
26 Appendicitis ...	16	11	12	6	11	13
27 Other digve. diseases ...	105	81	76	61	75	97
28 Nephritis ...	110	89	102	98	104	103
29 Puer. and Post-abortion. sepsis ...	—	—	—	2	3	1
30 Other maternal causes ...	10	9	7	3	9	5
31 Premature birth ...	43	50	47	48	46	38
32 Con. Mal. Birth inj. infant. dis. ...	65	54	54	71	86	86
33 Suicide ...	23	20	25	21	31	33
34 Road Traffic accidents ...	32	32	42	21	30	37
35 Other violent causes ...	152	77	83	81	71	66
36 All other causes ...	370	367	351	329	297	293

NOTIFICATIONS OF INFECTIOUS DISEASE (Table III).

	1942	1943	1944	1945	1946	1947
Scarlet Fever ...	388	306	297	248	201	147
Whooping Cough ...	388	660	818	520	923	825
Diphtheria (including Membranous Croup) ...	86	80	43	17	20	11
Measles (excluding German Measles) ...	1,258	2,445	1,709	3056	899	3,232
Acute Pneumonia (Primary or Influenzal) ...	270	174	295	238	240	182
Cerebro-spinal Fever ...	44	21	24	19	18	26
Acute Poliomyelitis ...	3	2	4	19	5	64
Acute Polioencephalitis ...	—	2	1	2	—	6
Acute Encephalitis Lethargica ...	2	5	1	4	5	2
Dysentery ...	40	111	196	137	66	48
Ophthalmia Neonatorum ...	11	16	20	13	10	16
Puerperal Pyrexia ...	41	42	26	19	27	29
Smallpox ...	—	—	1	—	—	—
Paratyphoid Fever ...	1	3	3	1	—	—
Enteric or Typhoid Fever (excluding Paratyphoid) ...	4	1	—	2	1	—
Erysipelas ...	81	82	101	70	88	45
Chicken Pox ...	1	—	—	—	—	—
Malaria—Believed to be contracted in this Country ...	—	—	—	4	—	—
Malaria—Believed to be contracted abroad ...	1	1	68	2	6	1
Malaria—Induced in Institutions ...	—	—	—	—	—	—

MATERNITY AND CHILD WELFARE (Table IV).

	1942	1943	1944	1945	1946	1947
Births.						
No. Registered	2,639	2,466	2,631	2,549	2,805	3,072
Live Births	2,569	2,395	2,563	2,483	2,734	3,005
Still Births	70	71	68	66	71	67
Live Birth Rate (per 1,000 population)	17.0	16.3	17.8	17.4	18.4	19.9
Still Birth Rate (per 1,000 total births)	26.5	28.7	25.8	25.8	25.3	21.8
Legitimate	2,461	2,297	2,381	2,190	2,497	2,842
Illegitimate	178	169	250	359	237	163
Infant Mortality.						
Deaths under 1 year of age	84	88	78	85	102	89
Legitimate	77	75	68	71	91	82
Illegitimate	7	13	10	14	11	7
Infant Mortality Rate (per 1,000 live births)	32	36	30	34.2	37.3	29.6
Mortality Rate (per 1,000 Legitimate live births)				33.2	36.4	28.8
Mortality Rate (per 1,000 Illegitimate live births)				40.4	46.4	42.9
Maternal Mortality.						
Maternal Deaths	8	5	4	2	5	6
Maternal Mortality Rate (per 1,000 total births)	3.0	2.0	1.5	.7	1.7	1.9
Midwives.						
No. on Register at end of year ...	110	101	102	96	106	110
No. of visits of inspection during year by County Nursing Superintendent ...	363	353	341	344	342	325
No. of cases attended by Midwives :—						
As Midwives	1,198	1,208	1,122	1,040	1,133	1,256
As Maternity Nurses	1,045	907	1,202	995	1,162	1,239
No. of cases in which medical help was sought	429	406	376	355	370	388
Ante- and Post-Natal Care.						
No. of mothers attending Clinics ...	817	826	967	953	1,220	1,247
No. of such attendances	2,613	2,627	2,793	2,274	3,180	3,711
No. of uninsured women unable to attend Clinics and seen by General Medical Practitioners	251	217	261	223	228	232
No. of Obstetric Consultants called in ...	7	4	8	4	1	5
No. of Dental Treatments authorised ...	137	128	105	74	83	98
Maternity Beds.—Total No. of patients						
admitted	317	316	370	337	364	486
Dorset County Hospital	118	113	128	149	167	214
Weymouth and District Hospital ...	24	23	43	34	50	86
Cornelia and East Dorset Hospital ...	47	40	71	95	92	120
Yeatman Hospital	18	19	8	6	10	13
Westminster Memorial Hospital ...	42	49	50	24	30	34
Other Hospitals	21	34	19	17	15	19
Little Hanford Maternity Home ...	20	21	35	3	—	—
Public Assistance Institutions ...	27	17	16	9	—	—
Infant Welfare Centres.						
No. of infants under 1 year of age attending first time	1,116	1,092	1,408	1,116	1,113	1,482
No. of children 1-5 years of age attending first time	469	468	680	371	320	432
No. of attendances of infants under 1 year of age	11,434	12,628	14,804	13,309	11,950	15,857
No. of attendances of children 1-5 years of age	9,327	9,520	9,848	8,897	7,580	7,635
No. at end of year who were under 1 year of age	977	931	1,213	825	933	1,209

(contd. on next page)

MATERNITY AND CHILD WELFARE (Table IV)—cont.

	1942	1943	1944	1945	1946	1947
Infant Welfare Centres Cont.						
No. at end of year who were 1-5 years of age	2,001	2,040	2,294	2,112	1,947	1,979
No. of live births notified	2,303	2,142	2,301	2,043	2,297	2,461
Percentage that attended while under 1 year of age	48.4	50.9	61.2	54.6	48.5	60.2
Infant Visiting.						
First visits to infants under 1 year of age	2,488	2,301	2,466	2,301	2,207	3,129
Total number of visits to infants under 1 year of age	17,790	15,703	15,014	14,787	13,442	17,148
Total number of visits to children between ages of 1-5 years	23,801	22,053	19,325	17,891	17,282	18,849
Child Life Protection.						
No. of children on Register at beginning of year	66	99	81	77	73	74
No. of new children received during year	99	74	61	76	74	48
No. of removals from Register during year	66	92	65	80	73	61
No. of children on Register at end of year	99	81	77	73	74	61
No. of reports made by Child Protection Visitors during the year	277	381	325	297	286	233
No. of foster-parents on Register at end of year	50	43	43	46	40	36
Adoption of Children (Regulation) Act.						
No. of persons who gave notice under Section 7 (3) during the year				7	13	6
No. of children in respect of whom notice was given under Section 7 (3) during the year				11	21	7
Nursing Homes.						
No. on Register at end of year	13	13	14	12	12	16
No. of inspections during year	13	15	24	26	14	31
Treatment of Children.						
Dental Treatment :—						
No. of cases	79	92	62	15	25	59
Orthopaedic Clinics :—						
No. of cases	193	201	222	258	315	392
No. of attendances	734	564	780	907	1,319	1,304
Hospital Treatment :—						
No. of children admitted during year	47	52	52	54	28	23
Ophthalmia Neonatorum :—						
No. of cases notified	6	8	3	8	4	3
No. with vision impaired	—	—	—	—	—	—
No. with vision unimpaired	6	8	3	8	4	3

VENEREAL DISEASE (Table V).

	1942	1943	1944	1945	1946	1947
Total—Dorset Patients—All Clinics.						
No. of patients dealt with for the first time	60	83	63	65	117	86
Syphilis ...	2	—	—	—	—	—
Soft Chancre ...	64	91	78	108	175	91
Gonorrhoea ...	166	225	318	329	343	249
Non-Venereal ...						
Weymouth Clinic.						
No. of patients dealt with for the first time	14	18	11	18	25	17
Syphilis ...	2	—	—	—	—	—
Soft Chancre ...	12	18	11	18	33	21
Gonorrhoea ...	53	83	72	77	73	66
Non-Venereal ...	1,586	1,795	1,498	1,554	1,929	1,774
Attendances of all patients ...	—	—	—	—	—	—
Aggregate of in-patient days ...						
Dorchester Clinic.						
No. of patients dealt with for the first time	2	7	5	4	6	6
Syphilis ...	—	—	—	—	—	—
Soft Chancre ...	5	10	9	9	7	7
Gonorrhoea ...	19	17	23	34	26	18
Non-Venereal ...	366	337	340	412	546	406
Attendances of all patients ...	30	53	—	130	26	54
Aggregate of in-patient days ...						
Poole Clinic.						
No. of patients dealt with for the first time			10	11	46	43
Syphilis ...			—	—	—	—
Soft Chancre ...			9	28	61	31
Gonorrhoea ...			42	81	96	98
Non-Venereal ...			622	1,164	1,678	1,707
Attendances of all patients ...			16	66	458	406
Aggregate of in-patient days ...						
Bournemouth Clinic.						
No. of patients dealt with for the first time	40	54	33	28	32	17
Syphilis ...	—	—	—	—	—	—
Soft Chancre ...	40	59	41	44	62	27
Gonorrhoea ...	91	100	168	122	131	55
Non-Venereal ...	1,896	2,349	1,858	1,108	1,339	814
Attendances of all patients ...	143	14	62	84	55	20
Aggregate of in-patient days ...						
Yeovil Clinic.						
No. of patients dealt with for the first time	2	2	2	3	7	3
Syphilis ...	—	—	—	—	—	—
Soft Chancre ...	3	4	7	2	3	2
Gonorrhoea ...	1	9	7	5	5	7
Non-Venereal ...	135	279	264	127	172	170
Attendances of all patients ...	11	8	45	—	15	40
Aggregate of in-patient days ...						
Salisbury Clinic.						
No. of patients dealt with for the first time	2	2	2	1	1	—
Syphilis ...	—	—	—	—	—	—
Soft Chancre ...	4	—	1	7	9	3
Gonorrhoea ...	2	16	6	10	12	5
Non-Venereal ...	131	62	98	72	89	47
Attendances of all patients ...	14	—	—	—	72	3
Aggregate of in-patient days ...						
Defence Regulation 33B.						
Contacts notified once ...		29	42	62	20	27
Contacts notified on two or more occasions ...		4	1	20	4	3
Contacts traced and attended for treatment voluntarily ...		2	27	40	14	12
Contacts not traced or refused treatment ...		29	16	31	7	17
Contacts required by Notice to attend for treatment ...		2	—	11	3	1
Number of prosecutions ...		—	—	—	2	—

TUBERCULOSIS (Table VI).

	1942	1943	1944	1945	1946	1947
Deaths						
All forms	122	101	99	110	110	113
Death-rate per 1,000 population ...	0.48	0.41	0.41	0.45	0.42	0.42
Pulmonary	102	76	80	91	85	91
Death-rate per 1,000 population ...	0.40	0.31	0.33	0.37	0.32	0.34
Non-Pulmonary	20	25	19	19	25	23
Death-rate per 1,000 population ...	0.08	0.10	0.07	0.07	0.09	0.08
Notifications.						
All forms	264	250	278	209	216	281
Pulmonary	210	179	207	156	163	224
Non-pulmonary	54	71	71	53	53	57
Notification Register as at 31st December—						
All forms	960	1,012	1,094	1,117	1,178	1,257
Pulmonary Males	409	421	453	482	505	549
Females	282	294	323	330	340	387
Non-pulmonary Males	134	143	159	151	171	161
Females	135	154	159	154	162	160
Treatment.						
<i>Dispensary Register as at 31st December</i>						
All forms	712	796	903	946	950	989
Pulmonary Adult Males	325	368	407	444	442	466
Adult Females	222	238	278	285	289	298
Children	10	12	13	14	14	19
Non-pulmonary Adult Males	40	44	53	53	58	62
Adult Females	55	66	71	64	58	59
Children	60	68	81	86	89	85
<i>New Cases diagnosed as Tuberculous—</i>						
All forms	214	216	237	162	165	219
Pulmonary Adult Males	105	93	105	83	73	103
Adult Females	66	68	74	52	58	73
Children	5	3	6	2	3	9
Non-pulmonary Adult Males	7	8	13	7	9	10
Adult Females	14	21	13	5	2	8
Children	17	23	26	13	20	16
Attendance at Dispensaries	1,857	2363	2,656	3,621	3,826	4,385
X-Ray Films—						
Dorset County Home :						
In-patients	144	207	244	137	100	291
Out-patients	706	952	995	1,139	1,208	1,345
Dorchester Dispensary	666	834	941	844	1,172	1,135
Beckford Orthopaedic Hospital	148	217	255	206	197	133
Artificial Pneumothorax—						
Inductions—Dorset County Home	9	18	20	13	20	21
Refills —Dorset County Home	835	1,122	1,701	1,603	1,415	1,738
Refills —Dorchester Dispensary	396	557	749	812	908	1,050
Admissions to Sanatoria—						
Dorset County Home	58	67	63	45	51	50
Royal National Sanatorium	51	33	24	13	16	7
Weymouth Borough Sanatorium	21	22	17	15	19	21
Others	22	43	70	49	52	90
Admissions to Hospitals—						
Beckford Orthopaedic Hospital	36	43	31	27	24	31
Bath and Wessex Hospital	4	4	8	11	4	7
Children's Hospital, Swanage	10	9	10	9	12	3
Others	35	30	32	24	25	71
Average number of beds occupied—						
Sanatoria	56	65	70	63	67	64
Hospitals	35	31	42	39	37	32

MISCELLANEOUS SERVICES (Table VII).

	1942	1943	1944	1945	1946	1947
Orthopaedic Treatment.						
Surgeon's Clinics—No. of Cases ...	416	423	420	417	516	537
—No. of Attendances ...	806	787	817	1,016	838	982
Sister's Clinic —No. of Cases ...	676	598	731	652	1,102	778
—No. of Attendances ...	1,896	1,495	2,518	2,801	2,603	3,455
No. admitted to Hospital (other than for Tuberculosis) ...	30	22	25	26	35	25
Blind Persons.						
No. approved for admission to Register:						
Certified by County Medical Staff ...	57	31	32	43	39	23
Certified by Ophthalmic Surgeons ...	30	25	29	22	27	34
Registered elsewhere and moved to Dorset ...	7	—	4	20	4	8
TOTAL ...	94	56	65	85	70	65
No. removed from Register in year ended 31st March ...	55	50	45	64	54	80
Total No. remaining on Register at 31st March ...	501	529	546	548	572	575
Radium Treatment for Cancer.						
Surgeon's Clinics—No. of Attendances...	378	415	464	577	743	890
No. admitted to Hospital ...	55	54	53	66	97	85
County Laboratory.						
<i>Dorchester.</i>						
Total No. of specimens received ...	14,207	17,717	18,462	16,054	21,800	28,683
Total No. of Tests under Schedule A ...	33,395	38,039	38,109	29,508	37,191	33,168
Total No. of Tests under Schedule B ...	4,769	6,168	6,848	8,364	13,175	34,523
<i>Poole.</i>						
Total No. of specimens received ...	4,653	4,158	3,744	3,104	2,775	2,511
Total No. of Tests under Schedule A ...	9,999	8,907	7,162	4,615	5,762	5,809
Total No. of Tests under Schedule B ...	141	195	165	231	271	118
Milk Supplies.						
Licences in force at 31st December :—						
Accredited ...	585	548	528	519	500	502
Tuberculin Tested ...	181	241	330	388	450	519
Attested Herds ...	164	169	178	222	271	377
Pasteurisation ...	...	15	14	12	14	15
Samples examined for Tuberculosis ...	512	528	269	211	497	437
Percentage found to be positive ...	4.2	2.2	4.0	5.7	3.0	3.2
Rural Housing.						
No. of houses reconditioned ...	4	9	4	8	12	2

DIPHTHERIA IMMUNISATION (Table VIII).

Summary of Local Authorities' Annual Returns for the Year ended 31st December, 1947.

	Children under 5 Years Number Immunised (Estimate).						Children 5 to 14 Years Number Immunised (Estimate).				Total Number of Children under 15 years Immunised.		
	Estimated mid-year Population, 1947. Children 0—5 years.	Age at 31.12.47.					Estimated mid-year Population, 1947. Children 5—15 years.	Age at 31.12.47.		Total.			
		Under 1	1	2	3	4		5 to 9	10 to 14				
Blandford Borough	311	—	31	24	50	39	144	546	204	195	399	543	
Blandford R.D. ...	679	—	81	68	99	94	342	1194	485	462	947	1289	
Bridport Borough	467	34	59	100	98	67	358	734	389	330	719	1077	
Bridport R.D. ...	533	18	47	58	56	49	228	836	439	355	794	1022	
Beaminster R.D. ...	620	26	61	70	73	104	334	1080	575	465	1040	1374	
Lyme Regis Borough	180	9	23	22	49	37	140	390	205	169	374	514	
Dorchester Borough	861	8	103	75	40	62	288	1358	477	616	1093	1381	
Dorchester R.D. ...	1269	—	106	131	76	70	383	2002	645	965	1610	1993	
Shaftesbury Borough	253	1	35	29	30	20	115	459	187	200	387	502	
Shaftesbury R.D. ...	627	—	101	150	121	105	477	1141	564	507	1071	1548	
Sturminster R.D. ...	640	2	68	83	75	89	317	1040	345	500	845	1162	
Sherborne U.D. ...	457	—	33	1—	—	—	331	953	—	665	665	996	
Sherborne R.D. ...	373	—	—	27	6—	—	276	777	—	725	725	1001	
Wareham Borough	249	—	30	29	45	46	150	395	202	171	373	523	
Wareham R.D. ...	1354	3	146	201	236	247	833	2148	1035	1058	2093	2926	
Swanage U.D. ...	547	—	51	70	81	92	294	867	382	404	786	1080	
Wimborne U.D. ...	330	9	36	23	27	86	181	564	—	1914	1914	2095	
Wimborne R.D. ...	1550	5	171	164	201	225	766	2646	1006	913	1919	2685	
Portland U.D. ...	710	54	111	87	125	91	468	1070	464	350	814	1282	
Weymouth Borough	3060	41	537	554	670	636	2438	4490	2040	2191	4231	6669	
Poole Borough	6490	388	542	661	867	919	2377	10640	4568	4985	9553	12930	
TOTALS	21560	12240						35330	32352		44592		
Percentage of Children under 5 years immunised—57% (approx.)													Percentage of Children 5-14 years immunised—91% (approx.)
Percentage of total number of Children under 15 years immunised—78% (approx.)													

RURAL HOUSING SURVEY (Table IX).

1947.

	Beaminster	Blandford	Bridport	Dorchester	Shaftesbury	Sherborne	Sturminster	Wareham	Wimborne	Total.
Approx. No. of houses to be dealt with ...	2,186	2,100	2,590	4,250	2,506	1,608	2,464	4,000	4,000	25,704
	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.	Pre. Det.
HOUSING SURVEY.										
(1) Satisfactory in all respects ...	939 } 7	— 281	—	— 60	326 —	299 71	1115 52	— 263	—	4437 2772
(2) Minor defects ...	—	— 459	—	— 232	677 —	466 87	615 476	— 486	— 298	
(3) Requiring repair, alteration or improvement	782 186	—	—	— 275	796 7	443 86	—	— 68	—	
(4) Appropriate for reconstruction under Housing (R.W.) Acts ...	192 82	— } 775	—	— 281	354 —	47 13	—	— 101	— 162	2927 2340
(5) Unfit for habitation and beyond repair at reasonable expense ...	273 102	— 192	—	— 84	353 81	74 29	305 257	— 138	— 115	1005 998
(6) Others (Surveyed but not classified) ...	— —	— —	—	— —	— —	— —	116 —	— 56	— 73	116 129
	2186 377	— 1707	—	— 932	2506 88	1329 286	2464 1089	— 849	— 911	8485 6239
Building Programme.										
Plans submitted to Ministry	52	196	—	88	210	91	474	310	200	1621
Authorised to Tender ...	32	138	—	88	124	91	291	280	120	1164
Tenders approved ...	24	130	—	22	74	74	281	220	120	945
Under construction ...	22	31	—	12	16	66	142	102	45	436
Completed ...	2	75	—	10	22	8	125	118	73	433

Pre. | Preliminary. Det. | Detail