THE COUNTY ADMINISTRATION OF DERBYSHIRE,*

BY

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THE chief point of the administration of Derbyshire is that the Council have tried to keep as much work in their own hands as possible. They have been averse to joining any Rivers Board, and they have ceased to contract for their bacteriological work being done for them by any outside authority. They have appointed a whole-time analyst, and have arranged with the District Councils for him to make chemical analyses of all water supplies at a fixed scale of payment. Similarly, with regard to the treatment of school children, soon after the passing of the Education (Administrative Provisions) Act, they appointed a whole-time ophthalmic surgeon, and undertook the treatment of all eye diseases. Lately they have extended the work, and have provided clinics for ear and throat diseases, and X-ray clinics for the treatment of ringworm. Again, the Tuberculosis Committee have lost no time in providing a sanatorium and up-to-date dispensaries. All these activities dovetail in with each other—tuberculosis dispensaries and school clinics being provided on the same site, but in such a way that the school children and the tuberculosis patients never even go along the same passage.

I think I can claim for the Derbyshire Authority that it is in the front of all County Councils as regards the work of treatment of school children and the administration of sanatorium benefit under the National Insurance Act, while in our general health administration we run level with the first Councils in the country.

Before substantiating these claims in detail I should like to lay before you particulars of our health visiting service, and I can do this in a few words by quoting the following paragraph from a communication which is being forwarded to the Local Government Board, relative to our service of 36 whole-time Health Visitors.

DERBYSHIRE HEALTH VISITING SERVICE.

"When our Tuberculosis scheme was adopted, in addition to the nurses who were appointed to administer certain dispensaries, it was found that we should have to appoint seven additional

nurses or health visitors, to visit the homes of consumptives, to teach them to take their temperatures, and to carry out the advice of the tuberculosis officers and medical practitioners treating them. To save travelling expenses, it was thought it would be an advantage, instead of these health visitors carrying out tuberculosis duties alone, to combine with the other committees of the County Council and make each health visitor responsible for the whole of the work within her area. The figure £940 has been arrived at by taking the actual time the nurses devote to their duties under the National Insurance Act, and is equivalent to the salaries and travelling expenses of seven whole-time health visitors.

The whole-time Health Visiting Service costs in round numbers £4,000 per annum, and the various Committees contribute towards this service in the following proportion:—

	£	s.	d.
Education Committee	1,376	15	0
Public Health Committee, for Notification of Births Act work, in part of the County	700	0	0
District Councils, for work under the Notification of Births Act, in areas for which the District Councils have adopted the Act	516	4	9
Tuberculosis Committee, for work done under the National Insurance Act	940	0	0
Midwifery Committee	320	0	0
Mental Deficiency Act Committee	130	0	0
	£3,982	19	9

	£	s.	d.
Cost of whole-time Joint Health Visiting Service	3,982	19	9
Tuberculosis Dispensary Nurses (whole-time)	270	17	0
District Nurses acting as School Nurses, paid at rate of £15 per 1,000 children enrolled	143	17	0
District Nurses doing follow-up work (school children), paid at rate of £7 10s. per 1,000 children enrolled	82	4	8
District Nurses acting as Tuberculosis Health Visitors	17	7	0
Total cost	£4,496	8	5

Feb., 1916.

To take our sanitary work in order, I will start with the Public Health Department.

ON THE QUESTION OF SEWERAGE DISPOSAL, Derbyshire was the cradle of the revolving sewage distributor, and we were among the first to find out that percolating filters were more efficient than contact beds.

From 1901 until 1911, quarterly returns were made giving the albuminoid ammonia, the

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incubator test and the nitrogen as nitrates in various effluents, which in the aggregate amounted to some thousands. Since the last report of the Royal Commission on Sewage Disposal, I have contented myself with giving the oxygen absorbed at 80° F. in 4 hours, and the nitrogen as nitrates.

We have in the county many manufacturing processes which produce noxious trade wastes. There are paper-making, including wood pulp works, coal washing, coke ovens, with their coal-tar derivative, and sulphate of ammonia plants, wool washing, bleaching, dyeing, lead crushing, white-lead making, cheesemaking, and condensed milk factories, and the sewage disposal works of Burton-on-Trent. All these manufacturing processes are watched and samples of the effluents turned into our streams are periodically taken by a whole-time inspector. In this work I am associated with my colleague, Mr. John White, F.I.C., our County Analyst. An enormous amount of work has been done, several millions have been spent since we put our hands to the plough, and our rivers have on the whole become satisfactory. With that we must be content until the war is over.

AS REGARDS WATER SUPPLIES, the County Council as the mouthpiece of the District Councils, secured a Statutory right to the first drink to the extent of five million gallons a day from the Derwent Valley water scheme, a joint scheme carried out by Sheffield, Derby, Leicester, and Nottingham. Ilkeston and Heanor fathered a scheme I propounded to obtain a water supply from disused lead mines, from which drain 13 million gallons a day of water of remarkable purity.

On the question of water supply, we are in close touch with our District Councils, and my colleague, the County Analyst, analyses their waters for them, while I do any bacteriological examinations they may require.

Recently we had an extremely interesting case, in which four samples were submitted from a Rural District Council. *B. Coli* was absent from the water in a reservoir, but were found in one-tenth c.c. of the water delivered into the houses. After prolonged investigation by Dr. Morgan Rees, it was found that sewage was finding its way into the water main intermittently through a blow-hole in a bypass just below top water level in the reservoir. I mention this, as I happen to have the pipe here, and I thought it might interest you to see it.

HOUSING. Regarding the Housing question, on the instruction of my Committee, I have made detailed reports on about half-a-dozen Urban Districts. In one instance a formal complaint was made to the Local Government Board that the Local Authority had made default in not enforcing their powers under the Housing of the Working Classes Acts. A Local Government enquiry was held, and afterwards the inspector made an inspection of the district. The Board found our complaint well founded, but no housing scheme can be carried out owing to the war.

AS FAR AS OUR MIDWIFERY WORK IS CONCERNED, the only fresh departure we have made is with regard to ophthalmia neonatorum. We pay a fee of 1s. to any midwife who reports a case within 24 hours of the symptoms arising. A Health Visitor swoops down on the case, cleanses the eyes, and introduces Argylol drops, if a medical man has not been called in. She leaves the Argylol and a dropper, boracic lotion, and a douche, at the house, and visits the practitioner called in for his authority to continue the treatment. If there is danger of the child becoming blind in one or both eyes, the child and mother are removed to one of the School Clinics, the child's eyes cleansed every two hours, and Argylol drops introduced.

As far as the treatment of school children is concerned, our Education Committee pay £1,520 per annum for their school nursing service, of which £1,376 is for the services of their whole-time staff. The nurses undertake the treatment of such conditions as impetigo, scabies, and minor ailments, and, of course, they do an enormous amount of work in the way of "peaceful persuasion" for verminous conditions. When these fail we exclude from school and prosecute for non-attendance.

SCHOOL CLINICS. We have three main school clinics, one at Derby, on the top floor of the County Offices, the children being admitted by a separate staircase. Here we have eye, ear, and throat (with an operating room and a recovery room with six beds), and an X-Ray clinic for ringworm, lupus, and tuberculous glands. At Chesterfield we have a similar clinic built over the Tuberculosis Dispensary, and at Chinley we have an eye and ear and throat clinic, but no X-Ray installation.

To arrange treatment clinics in a county is much more difficult than in County Boroughs or Urban Districts. The children have to come ten or even twenty miles by train, and

if operations are performed, the work must be done in time for the children to be sufficiently recovered to return to their homes the same day. We cannot afford to have a recovery room kept for this purpose only, and a certain amount of ingenuity has to be shown in making the arrangement to provide half-a-dozen beds which can be subsequently taken down and stored in a minimum of space. If any of you are contemplating providing clinics, I should strongly advise you to inspect the arrangements we have made at Chesterfield to get over these difficulties. In Derby here we have not been compelled to exercise the same amount of care, as we have in our new office, rooms which for the time being are not required for other purposes, but which, after the war, I hope, will be used as dental clinics.

I should like to call your attention to the plan of the Chesterfield Clinic. It consists of a nurses' room (which on operating days is used as a parents' waiting-room), a clerk's office, an operating-room, a doctor's room, 20 feet square, which on different days serves as an X-Ray clinic, an ophthalmic consulting room, with a dark-room attached, a consulting room for the ear and throat surgeon, and the doctor at his inspection clinics. On operation days it is used as a recovery room. There is also a small room which is used as a sterilising room, and a room for cleansing purposes. There is a wide passage which is used as a waiting-room for the children. Along one side there is a box seat through which there is a hot-water pipe, and in which the bedding is stored when not required. The dark-room is fitted up both for laryngoscopic and ophthalmic purposes.

In addition to the three main clinics I have mentioned, we have 18 eye centres, that is to say, schools fitted up with dark-rooms for the examination of the eye, to which the children from the surrounding schools are brought when the doctor examining them recommends.

Last year we treated 1,695 eye cases, and provided 757 pairs of spectacles for a uniform charge of 2s. 6d. (now 3s. 6d.). The charge, however, is remitted wholly or in part where the local managers report that the parents cannot afford to provide the money. At our ear and throat clinics we have operated on 371 cases of tonsils and adenoids. For the tonsil and adenoid operation we charge a fee of 2s. 6d. This also can be remitted as in

eye cases, where necessary. At our X-Ray clinics we have treated each year 192 cases of ringworm, 10 cases of lupus, and 9 cases of alopecia.

It would take me too long to describe the whole of our arrangements for following up, but briefly they consist of entering into a log-book the names of all children found with defects. The school doctor re-examines all children whose names are in the medical log-book, and keeps the names before him until their ailments are remedied or the children have left school. To bring pressure to bear upon the parents to get conditions remedied, our Health Visitors call, the schoolmaster writes, the parents are brought before the managers, and, in theory, in the end if nothing is done, and the case is a serious one, the parents are taken before the magistrates. I find, however, that at the last moment in most instances the parents give way.

WITH REGARD TO OUR BACTERIOLOGICAL WORK, we used to contract with the University of Birmingham, paying them so much a case, the actual amount depending upon the nature of the examination made. When I say that the examinations made in the last year for which I have the figures approached 10,000, and if you take these at an average of 5s. per case, the cost of running the laboratory would have been £2,500, you will see at once that we were fully justified in starting to do the bacteriological work ourselves. Fortunately, we had in my assistant, the late Dr. Thomson, an enthusiastic bacteriologist, and we were able to obtain a technical assistant to him who had worked under distinguished bacteriologists, and was strongly recommended to us by Prof. Sims Woodhead. The result is that the salaries paid in our bacteriological department are only a few hundreds a year, and the cost of running the whole place does not amount to more than £407 (1915). I have a licence from the Home Office for inoculation experiments, and the magnitude of the work will be seen from the following figures for the work done during 1914:—

Diphtheria specimens examined ..	6,233
Widal reaction for Enteric	160
Sputum for Tubercle Bacilli ..	1,612
Ringworm specimens	1,303
Inoculations made for Tubercle in milk	253
Water Bacteriological examinations	22
Miscellaneous specimens	659

Since the outbreak of the war my laboratory has been scheduled as the Fifth Laboratory,

and I have been made the Officer in Command. The work done has not been extensive, but it has been a tie, as one is constantly on duty : instructions always come by telegraph, and the duties consists in visiting camps and billets to take spinal punctures or West's swabs from contacts, and carrying out the necessary bacteriological investigations. Altogether 292 specimens have been examined in my Laboratory for the War Office. The Laboratory comprises a preparation room, in which culture media are made, and in which no other work is performed. The Laboratory proper for the routine examinations is a large room 27 feet by 18 feet, with a north light, provided with everything which I thought might be required ; an incubator room, which is electrically heated ; a cool incubator room, which is also used as a centrifuge room, and a post-mortem room and cleaning-up room. The Laboratory is on the top floor of the County buildings, and in the cleaning-up room a destructor has been provided so that no refuse from the Bacteriological Laboratory is removed by the scavenger except ashes from the destructor. The cleaning-up room has an asphalt floor, and is lined with white glazed brick, so that the whole room can be sprayed down with disinfectant. Two animal houses have been built, which are cut off from the rest of the building by open verandahs, so that the smell of the animals does not enter the building. In one animal-house the store animals are kept, guinea pigs, rabbits, and mice, while in the other animal-house the animals inoculated are kept each in a separate cage. The Laboratories were built to my own design ; except that I should like more light in the animal-houses, I think no alteration is suggested by the experience we have had in working the Laboratory.

UNDER THE NATIONAL INSURANCE ACT we have erected four specially-designed dispensaries, the largest of which is at Chesterfield. The building consists of a waiting-room, 20 feet by 30 feet, heated with an open fire and hot-water pipes, with through ventilation, by means of hopper ventilators on each side, a consulting room, 20 feet square, and two dressing-rooms, one for men and the other for women ; lavatories for men and women, and separate accommodation for the doctor. The consulting room is fitted with a dark room for laryngoscopic examinations. The dispensary is on the ground floor, while the first floor forms the Chesterfield School

Clinic. The total cost of the building was £1,833 11s. 10d., and is divided between the two Committees in the following proportion :—

Tuberculosis Committee Dispensary.. £1,166
Education Committee School Clinic.. £667

Smaller dispensaries, but carrying out the same idea, have been provided at Ilkeston, Derby, and Chinley, while rooms have been rented at Glossop, Matlock, and Long Eaton. We have also entered into a contract with the Corporation of Burton-on-Trent for the use of their Dispensary for the patients in the south of the Trent within easy reach of Burton. Before the war each dispensary was open for four sessions a week, while that at Chesterfield was open eight sessions a week. At the present time we are short of staff, and have to reduce the dispensary service.

In addition, we have provided two sanatoria—one of 100 beds for early cases, which, I believe, is not only the cheapest sanatorium which has yet been erected, but quite one of the easiest to work, and on the best lines for dealing with working-class patients. We have provided the Institution within 1½ miles of Chesterfield. The patients who come there are gradually hardened so that they may live entirely in the open air. When the patients come in they are taken into rooms which are adequately ventilated and slightly warmed. They are then taken into rooms without any heat, next to an open-air verandah, and finally into a shelter. Before they leave the Institution, we hope to arrange for shelters to be provided for them at their homes, so that they can continue the treatment when they return to work. The shelters that we now use are made by the Portable Building Co. of Burton-on-Trent, and I can thoroughly recommend them. The total number we have in use is 219. Details relating to the shelters are given on the typewritten report lying on the table.

The expenditure in regard to shelters has, up to date, been as follows :—

	£	s.	d.
Cost of shelters	1,450	5	0
Repairs, carting, erection ..	183	1	2
Beds and bedding	575	17	5
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	£2,209	3	7

In addition to the main Sanatorium, we have built a pavilion for 14 advanced cases on the site of the Chesterfield Joint Isolation

Hospital. We are making no more provision for advanced cases, but after the war no doubt many of the temporary military hospitals will be available for this purpose.

NOTIFICATION OF BIRTHS ACT. This Act has been adopted by authorities in this county with a population of 322,320 out of a total population of 580,000, for the rest of the county, the County Council has adopted the Act, but excepting in the three boroughs, the whole-time Health Visitors of the County, who are also inspectors of midwives, do the home visiting. The only fresh departure we have made in Derbyshire is that each Health Visitor has been allowed by the Education Committee to start a School for Mothers. In some districts these are held once a week, in others once a fortnight. These are run under the Board of Education, and the work is essentially educational and not clinical. Four different leaflets have been drawn up, one for expectant mothers, one for mothers feeding their children naturally, one for bottle-fed children, and one for older children. The Health Visitor in charge of the School draws up her own syllabus for instruction. The course of instruction varies with the special knowledge and impetus of the Health Visitor, but all give special instruction to the mothers on bottle feeding, prevention of diarrhoea, and rational clothing. This is a side of the question of which we in Derbyshire are undoubtedly pioneers. This is largely due to the fact that a few years ago the Education Committee appointed an Organiser of Domestic Subjects, who has written most fascinating text-books on Home Management and Infant Clothing. It is too early yet to pass an opinion on the value of the instruction given, but the Health Visitors have all taken up this work with such enthusiasm, that I have little doubt of the result.

CIGAR CUTTERS AND TRANSMISSION OF DISEASE.—Bacteriological studies made at the Research Laboratory of the City of New York show that diphtheria bacilli could be recovered from a cigar cutter which had been used to cut the end off a cigar previously held in the mouth of a person ill with diphtheria.

MATERNITY AND VENEREAL CASES.—Provision has been made by the State of Oregon, U.S.A., for the allocation of \$10,000 annually for the support of wayward girls between the ages of 12 and 18 years, and maternity and venereal cases under the age of 21 years, now being cared for by charitable or corrective institutions in the State.

THE CARE AND CONTROL OF THE TUBERCULOUS PATIENT,

BY

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IN the present paper it is proposed to discuss briefly and with a view to practical application the care and control of the tuberculous patient as an individual. The aim of such care and control which are supplementary to actual treatment of the disease and which must form part of any comprehensive scheme for the prevention and treatment of tuberculosis is threefold: (a) To prevent the spread of infection; (b) to prevent recrudescence or re-infection in arrested and cured cases; and (c) to facilitate recovery by controlling auto-inoculation and increasing resistance.

Pulmonary tuberculosis, which is the type of the disease with which we are chiefly concerned, is now a notifiable disease, and there is some tendency, at least with regard to preventive measures, to view tuberculosis of the lungs from the same standpoint as the acute infectious diseases. In several important particulars, however, pulmonary tuberculosis differs from other notifiable diseases. It presents a much greater variation in type: on the one extreme we have a disease which produces little or no general disturbance; on the other we have an acute illness simulating an acute fever, which may be rapidly fatal. Further, in many cases of pulmonary tuberculosis, there is no risk of infection. Tuberculous deposits in the sub-pleural, peri-bronchial, and peri-vascular pulmonary tissue are frequently closed, and may undergo complete fibrous transformation, without having communicated with the air passages, so that tubercle bacilli have never been shed. Moreover, by a careful and frequent examination of the sputum we are in a position to say whether a given case may be the means of transmitting infection or not, while, except in acute and advanced cases, the patient himself by the carrying out of a few simple precautionary measures can control the infectivity of the disease from which he suffers. Lastly, the tuberculous patient is very frequently an ambulant case: he may be a carrier of the tubercle bacilli for years, and yet continue at work; an open pulmonary lesion is compatible with consciousness on the part of the individual of little loss of general health and working capacity.