

American Journal of Public Health and THE NATION'S HEALTH

Official Monthly Publication of the American Public Health Association

Volume 28

May, 1938

Number 5

MAZYCK P. RAVENEL, M.D., *Editor*

AUGUSTA JAY, *Editorial Associate*

REGINALD M. ATWATER, M.D., *Managing Editor*

Editorial Board

THE MANAGING EDITOR, *Chairman*

PROF. IRA V. HISCOCK

KENNETH F. MAXCY, M.D.

ARTHUR P. MILLER, C.E.

HARRY S. MUSTARD, M.D.

THE CROYDON EPIDEMIC OF TYPHOID FEVER

CROYDON is a suburb of London with a population of 250,000 persons. On October 27, 1937, occurred what was regarded as the first case of an outbreak of typhoid fever in which there were some 297 primary cases and upward of 25 secondary cases, with 43 deaths. There was a local agitation and a widespread press campaign almost unprecedented in the history of epidemics. An inquiry has been going on for several months, and the report is just now available. The seriousness of the outbreak and the concern with which it was regarded officially may be estimated by the fact that Mr. H. L. Murphy, K.C., was appointed by the Minister of Health to preside, with Mr. H. J. F. Gourley and Sir Humphry Rolleston as assessors, while no less than seven lawyers representing the Croydon Division of the British Medical Association and the Medical and Panel Committee, Sanitary Inspectors, Water Officials, Borough Engineer, Medical Officer of Health, Residents' Commission, and Croydon Corporation, were allowed to cross-question and give summarizing speeches. The Medical Officer of Health was legally represented by one of the bodies which exist for the defence of medical practitioners.

It is regrettable that positive proof of the origin of the epidemic has not been given, but the conclusion is that it was caused by the pollution of a chalk well at Addington, water from which was furnished to between 36,000 and 40,000 inhabitants of the Borough. From the end of September and during October, 1937, work was being done on this well, which is 250 feet deep and 10 feet in diameter. From the beginning of the work until October 15, the water was pumped to waste, but from October 16 to November 3, it was pumped into the supply. From September 28 to October 26, a man later found to be a typhoid carrier was employed, and the pollution of the water is charged to him. Curiously enough, during the time when it was most needed, chlorination was not done, and Mr. Murphy sums up by saying, "The infection was due to an unfortunate and rare coincidence of three factors—(a) constructive changes taking place in the well; (b) one of the workmen being a typhoid carrier, and (c) the process of chlorination being in abeyance."

The general situation in regard to the water supply at Croydon strikes us as being somewhat unusual. Mr. Murphy says, ". . . the organization of the administration of the Borough was such as to lead to 'both misunderstanding and lack of communication between the responsible officers of the corporation in connection with the work.'" It appears from the testimony that the Borough Engineer is directly responsible for the water supply but that his duties include highways, lighting, drainage, housing, and many other matters, so that the care of the water is deputed to an assistant, and in regard to the Croydon outbreak, there apparently was a misunderstanding between the Borough Engineer and this assistant, who was directly responsible for the water works and the sanitary arrangements for the men who were working in the well. Neither the health officer nor the Borough Engineer was informed of the work going on nor of the stoppage of the chlorination. The medical officer is there to advise when wanted; the engineer to look after the water; but the medical officer is not even asked to attend the water committee meetings, does not receive copies of the agenda of the water committee, but gets the printed minutes later.

It was brought out further that there was nothing in the regulations or conditions of appointment of the Health Officer which imposed on him any particular duties or responsibilities to the water supply. Mr. Murphy states, ". . . the main task of the Medical Officer of Health throughout the epidemic was the provision of accommodation for the sufferers and the treatment necessary to keep down the death-roll as far as possible."

A striking feature of the evidence submitted was a set of documents, the first one December 10, 1927, and running on to November 9, 1936, showing that the Addington well was frequently subject to pollution, sometimes in the absence of *B. coli*, but sometimes with it. The collecting area of this well also seems to have been under suspicion.

One needs to ask at once what lessons this deplorable outbreak has for the water engineer and the health officer. The English are laying great stress on the value of coöperation between the health officer and the local medical practitioners which is recognized in this country also.

The one possible criticism of the Medical Officer of Health at Croydon is that there was a delay of possibly two days in strongly suspecting the water supply, probably because public water supplies are so carefully protected these days—and in this instance were believed by the Health Officer to have been protected as usual, he being in ignorance of the work and stoppage of chlorination—that he wished to exclude other possible sources before suspecting the water. Some English journals say that it may be necessary to ask the Minister of Health for a pronouncement on the subject as to where the duties of the Health Officer in relation to the water supply begin and where they end. It is held correctly that whether the actual samples are taken by members of his staff or not, his opinion as to the frequency of samples is of importance, and every laboratory report should pass through his hands.

It is plain that the health of workmen on such jobs should be looked into, and that proper arrangements be made for the disposal of urine and feces. The regular water works staff did not supply the labor, which was furnished by 18 volunteers from sewer workers. Mr. Murphy refused to accept statements that they were "carefully selected for physical fitness." A bucket was furnished for urine at the place of work and hauled up for emptying. A latrine for defecation

was dug near one of the adits, and the men instructed to use it. No much cruder system could have been devised. All this without the knowledge of the Medical Officer of Health!

Another point noted is that the credit of a health department may depend more on its quickness in the face of an epidemic than on the number and size of its institutions, or of the number of clients it caters to.

HUMAN TUBERCULOSIS OF BOVINE ORIGIN

IN the 36 years which have elapsed since the London Congress on Tuberculosis at which Koch denied the importance of bovine tuberculosis to the human race, and practically denied the transmission of the disease from cattle to man, observations have been going on in many parts of the world, and after much evidence as to the incidence of the disease in man and the types which it assumes, it is safe to say that the question has been settled as far as the fact of transmissibility goes. For years, even those who believed most in the danger of bovine tuberculosis to the human being were inclined to believe that it seldom or never caused pulmonary tuberculosis. However, from England alone there now have been reported an impressive number of such instances to which other countries have added their quota.^{1, 2}

We cite from a series of notes presented to the Permanent Committee of the "Office International d'Hygiene publique" at the October Session, 1936³: For England and Wales the incidence of human tuberculosis due to the bovine bacillus for all ages is as follows: cervical gland 50, lupus 48.1, scrofuloderma 35.6, bones and joints 19.5, genitourinary 17.4, meningitis 24.3, pulmonary 1.4. For Scotland alone the incidence is higher all along the line without regard to age, though the figures are not strictly comparable: pulmonary 4.59, meningitis 25.8, cervical 65.7, abdominal 80.7, genitourinary 27.7, bones and joints 28.7, gastric lavages (infants) 38.0, tracheobronchial glands 24.0, miscellaneous 9.3. Observations prove what has long been known, that most of the infection is due to drinking the milk of tuberculous cattle; consequently, the highest incidence of the bovine disease is in infants and children.

The Cattle Diseases Committee in England, in 1904, states that not less than 5 cows in every 1,000 were giving milk containing bovine tubercle bacilli. It was found that 13.14 per cent of farmers supplying milk to the City of Manchester were serving milk containing tubercle bacilli. A somewhat unexpected finding is that in Scotland the incidence is higher in rural than in urban areas, doubtless due to the fact that the milk of cities is better protected and that there is more pasteurization than for rural areas. In spite of these findings one will remember a short time ago an effort to improve the milk supply of Manchester failed.

Culture tests in the Low Countries yielded 13 bovine strains in 204 samples of sputum and the same worker found by gastric lavage that 188 infants gave the bovine strain 16 times. Milk samples in this same district showed infection with the tubercle bacillus in from 0.8 to 2.4 per cent, but for cattle slaughtered in the abattoirs, ranged from 34 to 35 per cent of tuberculosis. Tuberculin tests in dairy herds showed from 21 to 40.8 per cent of positive reactors. It is not surprising that all those interested in the production of pure milk and all public