

Texts and Documents

tracted while on active service in Mesopotamia prematurely ended Sir Victor Horsley's brilliant and tempestuous career.

ACKNOWLEDGEMENT

These letters are reproduced by kind permission of Sir Victor Horsley's daughter, Mrs. Pamela Robinson.

REFERENCES

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2. WILKINS, R. H., *Neurosurgical Classics—XIV*, *J. Neurosurg.*, 20, 1009–1022.

DR. JOHN BAYLY'S METEOROLOGICAL RECORDS AND COMMENTS WITH NOTES ON SOME LATER RECORDS OF SANITATION IN THE CHICHESTER AREA

by

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In an article 'Dr. John Bayly of Chichester' which appeared in the Chichester Papers¹ and dealt with his only known case-book, reference was made to his two manuscripts in the Royal Meteorological Society. These we have been allowed to see by courtesy of Mr. R. S. Read, the Society's assistant librarian. The first is headed 'Of the State of the Air and Epidemic Diseases in the City of Chichester and the Adjacent Country', to which the second adds: 'Also an account of the Air and Epidemic Diseases at Chelmsford, Essex', and so explains the wrong idea about their authorship that was held until 1929.²

English physicians of the seventeenth century believed that epidemic diseases were due to aerial emanations that were influenced by weather variations. Interest in weather records followed when Sydenham added to this belief Robert Boyle's Corpuscular theory and his own knowledge of the *Airs, Waters, Places* of Hippocrates to produce his concept of the epidemic constitution. In 1666 his pupil John Locke, encouraged by Robert Boyle's *History of Cold* and *Observations and Directions about a Barometer*, began weather studies with instruments invented by Wren and improved by Hooke, who had been making notes that led to his *Method of Making a History of the Weather*.

Much more general interest followed the publication of Boyle's *A General History of the Air* in 1692. In 1727 Dr. Wintringham correlated weather records with epidemics in his practice in York in the *Commentarium Nosologicum*. By 1726 William Hillary had begun the observations, later published under the title of *Principal Variations of the weather and the Concomitant Epidemic Diseases as they appeared at Rippon and the Circumjacent parts of Yorkshire* as an addition to the 1740 edition of his *Rational and Mechanical Essay on the Smallpox*. His *Observations on the changes of the Air and the Concomitant Epidemical Diseases in the Island of Barbadoes* followed in 1759.³ Meantime Dr. John Huxham, whom Bayly quotes several times in support of his conclusions, had published in 1731 and 1752 his two volumes entitled *Observationes de aere et morbis epidemicis*. These were followed in 1767 by Dr. Thomas Short's *A Meteorological Discourse*; he had

already published *The General Chronological History of the Air* in 1749. By Bayly's day many general practitioners like Dr. Buxton of Chelmsford were keeping weather records.

John Bayly practised in his native city of Chichester and in the area between Havant, Lodsworth and Pulborough from shortly after his graduation at Edinburgh University in 1757 until 1815. His first manuscript deals with the period from October 1769 to September 1770; the second with the period from October 1770 to May 1772. Neither is complete. In the first the weather records for January 1770 cover only the first three days and the last day of the month because he was 'absent from home', while of April 1770, he writes only: 'Being ill of a fever most part of the month of April I could not keep the Register myself—it will therefore be found not so exact'.

Both manuscripts are written in the same beautiful small script used in his case-book, easily readable even when it is minute in the marginal notes. In each book the right-hand page, under the appropriate month, gives in neatly ruled columns the day of the month, the times of observations, readings of the barometer and hygrometer, the direction and force of the wind and the times and amounts of rainfall. On the left-hand page are notes on the illnesses he found that month in his practice, their apparent connection with the weather conditions, and now and again his explanation of how these are accounted for in accordance with Dr. Cullen's theory of 'Solidism', which he (Bayly) had learnt during his studies at Edinburgh University.

In his notes for January, March, May and July 1770, he gives news he had received from Dr. Buxton about illnesses prevalent at Chelmsford; for example under March he writes: 'The Country about Chelmsford was not very sickly, nor did he know of any epidemics', an experience quite different from his own, for in that month 'the putrid sore throat grew more epidemic'.

Before dealing with the first recorded month, October 1769, Bayly writes:

It may be proper by way of introduction to premise a few general observations relating to the weather and epidemics for some Time previous to this period. . . . In the Autumn remitting Fevers, which had Exacerbations and Remissions every other Day, annually reigned so that they seemed to be the endemic Diseases of this Country.

In a marginal note is the comment: 'My father had observed these autumnal Fevers for about 50 years past'. He goes on:

but a remarkable change happened in the Constitution of the Air for the past two autumns in neither of which had this happened. Was this owing to any change in the Manifest Qualities of the Air? or rather to some secret Property? . . . I would suppose that the intense summer Heat by increasing the acrimony of the Bile was the cause of these fevers and if so then the defect of this heat will account for their not appearing. . . . I am inclined to think these Fevers . . . must have proceeded from some more permanent cause. It does not appear from Sydenham, Huxham and others . . . that any one set reigned for such a long course of years. It should be observed that this Disease attacked only those who were much exposed to Heat in the Business of Husbandry. . . . It appears from the Register that there were very great changes with Respect to the Weight and Heat of the air as well as to its attractive Powers of water. The several Meteors also should be attended to as being very remarkable. . . . Coughs became very frequent and the Cold in some places introduced Pleurisies and Peri-pneumonias—but the Succeeding Heat seemed to have nearly put a Stop to these Diseases, at least it checked their Progress.

Under November there were many more Catarrhs, and he asks: 'Did not the Disease arise from the great Humidity and the Coldness of the Air?', and in August he

makes a further comment about the effects of heat: 'The excessive Heat occasioned great Disorders of the Head and relaxation of the Solids. Pain in the Head, dazzling in the eyes, imperfect vision, Tremors, Debility, Faintness and other signs of the nervous System being much injured.' This looks like sunstroke. In March, 1770, he writes: 'It is evident that there was a remarkably long continued course of Misty Weather and an unusual Degree of Warmth—but Humidity and Warmth will produce such Diseases as prevailed at this Time. . . . So that here is one amongst many Proofs that the causes of Diseases may be rationally deduced from the manifest Qualities of the Air'.

A note under the month of May, 1770 is of interest: 'This month a patient, ill in April, being apparently in a deep consumption, by the use of asses' milk and fresh air and exercise in a chaise had nearly recovered his Health and Flesh by the end of the month'. This method of treatment might be a direct quotation from John Wesley's *Primitive Physic* of 1747; it combines the Salernitan belief in the value of asses' milk that goes back to Hippocrates with Sydenham's teaching of the value of exercise in the open air.

'Ulcerous sore throat' is a common condition in Bayly's notes. In October, 1769, there were many of his patients in whom 'the putrid symptoms were very strong. . . . At Petersfield it was also very fatal, but others had the Disease exactly in the Manner described by Dr. Fothergill'.⁴ It continued into November and December, increased in January, 1770, 'was more frequent than ever' in February, was less frequent in March though some cases were fatal, and increased and proved fatal to several children in April. It continued into May, was less frequent in June; it is not mentioned in July. In August, however, 'The ulcerous Sore Throat . . . broke out again when some children and one adult died. In September a child of 2 or 3 years of age died of it'. It is not mentioned again until May, 1771. He 'heard of a few' in June. Thereafter there is no mention of it in his own practice.

His findings by examination are as follows. In December, 1769, he found many of 'the anginae . . . were attended with an Efflorescence on the skin.' In February 1770 he noted 'some . . . were attended with bad ulcers, black tongue, weak very quick pulse, vomiting and Purging—Delirium—Skin all over of a dusky red. Swelled Face and Neck—these were fatal . . . and that in one Patient in 4 Days. All the anginae were attended with Ulcers—but in most the Tonsils were prodigiously swelled and inflamed'. In March they were 'attended with a Discharge from the Ears', a complication which he noted again in April 1770, when in one patient 'one or more or several Parts of the Bones of the Ear came away'.

From these comments he makes no specific diagnosis beyond 'the ulcerous sore throat' so that it is of interest to consider the comments of other physicians who were concerned about the condition at this time. Bayly mentions Dr. Fothergill, whose *Account of the Sore Throat attended with Ulcers* was published in 1748. Dr. John Wall of Worcester's dissertation 'On the Cure of the Putrid Sore Throat', written for the *Gentleman's Magazine*, December, 1751, refers to Fothergill's work and says the disease first appeared in this country at the beginning of 1748, but then went under the name of scarlet fever. From his experience, 'It now definitely appeared that the Distemper was infectious, and by further observation it was found that the principal seat of it was in the Parts about the Fauces, the scarlet efflorescence on the skin being rather an accidental symptom than essential to the Disease'.

Huxham's *A Dissertation on Malignant Ulcerous Sore Throat* appeared six years later. He failed to distinguish between scarlet fever and diphtheria, although he gave a very

good description of the latter and observed the paralysis of the soft palate which is so often a complication.

The first writer to single out the entity of scarlet fever was the elder Mark Antoine von Plenciz, a Viennese doctor, in 1762. Four years later came William Withering's thesis for his M.D. of Edinburgh University, *De angina gangrenosa*. He also had failed to make a differentiation between the two conditions. Dr. Thomas Short's remarks in his *Meteorological Discourse* of 1767 made no contribution to the discussions.

It appears that Bayly had not seen Dr. William Buchan's *Domestic Medicine* of 1769; he does not mention him. Buchan, however, in his chapter 'Of the quinsey, or Putrid, Ulcerous Sore Throat', writes: 'This is evidently a contagious distemper', a conclusion which agrees with Wall's but is never considered by Bayly, guided only by Huxham, by Fothergill and by Sydenham, who, though sound in his remarks on epidemics, omitted this condition and did not recognise it as contagious.

One remark in the manuscripts makes all the greater our regret that only one of the case-books has been discovered. In his comments on the family he attended at Petersfield in January, 1771, he says: 'I believe two of the children died. Their case with the Mothers I have described at large in one of my Books.' It is still further increased when we see how he cannot compel himself to remain the dispassionate observer of the effects of weather conditions on disease; every now and then his interest in clinical medicine will out. We gather other insights into his character; he never once criticizes the treatment given by an apothecary before he himself is called in. He delights us with little remarks like that under May, 1770: 'Chafers appeared in the evening May 14th. These little animals had not appeared for several years before'; and again under June, 1770, 'The snails and other vermin made considerable Havock in the Gardens'. We learn that he reads the *St. James's Chronicle*; he gives an extract from the issue of 22 February, 1770, about 'the most dreadful storm there had been since the year 1752 at Leghorn'.

We get a hint about his extensive classical library in a marginal note under July, 1771, which gives references to the *Aphorisms* of Hippocrates and to Rhazes, Celsus, Horace and Galen. We understand why John Bayly was the respected and beloved physician of Dr. Thomas Sanden's *Tribute* of 1816.

Although we know that Bayly's practice extended over a large area of West Sussex and East Hampshire we lack documentary evidence as to the conditions which gave rise to so many of the diseases that he treated. But we know from other sources something of the appalling state in which a large proportion of the inhabitants of town and country lived: we also know about the lack of pure water supplies, lack of proper sanitation, lack of personal cleanliness, lack of hygienic milk supplies, lack of controlled ventilation, because all these benefits are products of more recent times.

Bayly died on 11 November 1815. Thirty-three years later, William Mark Powell, M.R.C.S. wrote *An Account of the Sanitary Condition of the City of Chichester*,⁵ a booklet of fifty-seven pages, published in 'the belief that it will be welcome to those who have already paid attention to questions affecting the health, happiness, and morality of their fellow creatures', but chiefly 'to direct their minds earnestly to the great and beneficent cause of Sanitary Reform'.

Powell considered the air of Chichester to be salubrious because the city boasted of very many gardens 'acting as lungs or renovators to the atmosphere'. Like Bayly, he was concerned with weather conditions and believed that the existence and spread of disease were associated with the weather.

Dealing with the mean age at death, Powell showed that at Chichester gentry died

at an average age of 59, tradesmen at 36 and labourers at 34 years, rates much higher than for six big cities and higher than, for example, at Truro. Turning to causes of death, he showed that the diseases causing most deaths in towns were (per million of the population), scrofula and consumption 4,600, convulsions 2,000, typhus 1,250, scarlet fever 1,000 and smallpox 1,000. In Chichester for the year June, 1845 to June, 1846 (the first of three analyses extending to June, 1847), the total number of deaths was 175, of which phthisis claimed 31, old age 27, various diseases of digestive organs 23, pneumonia, bronchitis, etc. 8, convulsions 8, hydrocephalus 7, and typhus 7; the other 9 classified diseases each accounted for 6 or less persons, and all other (i.e. unclassified) causes 24.

Powell, like Bayly, found that the three months, April, May and June, were the least fatal to life, the third quarter more so, the fourth still more so, the most fatal being the quarter ending March 31, corresponding with the greatest severity of winter. He also analyses the causes of 517 deaths in the Westhampnett Union of parishes from June 1845 to June 1847 (note that this is a two-year period): the highest figures are phthisis 104, old age 89, convulsions 31, diseases of the digestive organs 36, pneumonia, pleurisy, etc. 24, scrofula 22, typhus 13. The pattern for the country almost exactly follows that for the town.

Powell thought that standards of living in Chichester were relatively high in his day even if the 'humbler residences' had open gutters in front of them into which all the refuse water and slops were discharged to find their way into cesspools. A single privy served half a dozen families living in one 'court'; uncovered ash-heaps and heaps of manure aggravated the conditions of the back-to-back construction of the buildings which had no good natural ventilation. The privy, the ash-pit or heap and the cesspool 'are to be found alike attached to all the houses in the town, from the best to the worst . . . I believe I am justified in asserting that there are, at a most moderate computation, 1,000 open privies at all times polluting the atmosphere by their noxious emanations'. To these must be added piggeries, slaughter-houses and stables from which liquid 'may be constantly seen running from numerous yards into the street gutters'. The bed of the river Lavant was the chief receptacle of the sewage of Chichester plus the refuse water of a tannery. In continuous fine weather the Lavant was converted into a comparatively dry bed with

filthy puddles lying upon black mud, chiefly derived from the most noxious washings of the town, including that of the cattle market . . . it becomes . . . a nuisance as disgusting to the senses, as it undoubtedly is deleterious to health. As for the sewer at Northgate, it is worse than the Lavant, there being no current whatever through it. It is simply a long ditch, a great portion of which is uncovered, and full of abominable filth.

To this unsavoury catalogue Powell adds the effect of the prevailing westerly and southerly winds which blow across large tracts of marshy land near Chichester; that those parishes between the city and the coast were subject to 'unwholesome miasmas' was proved by the prevalence in them of ague and remittent fevers. The nuisances in the country districts were as unpleasant and as dangerous to health as those in the towns. That Chichester escaped the cholera attack in 1832 was, in Powell's view, miraculous, but he warned the inhabitants of the city that they might not be so fortunate in future.

In the thirty years between Bayly's recordings and Powell's printed observations there can have been little or no change for the better in the sanitary conditions of Chichester.⁶ In these conditions we have the causes of the epidemics then called 'putrid sore throat'.

Texts and Documents

¹ R. R. Trail and F. W. Steer, *The Chichester Papers*, No. 34, 1963.

² *Quart. J. roy. Meterol. Soc.*, 1929, 55, 397, 398 and *Sussex Notes and Queries*, 1928–1929, 2, 248–50.

³ C. C. Booth, William Hillary, *Med. Hist.*, 1963, 7, 297–315.

⁴ See *Dictionary of National Biography*. His success was assured after the publication of his *Account of the Sore Throat attended with Ulcers*. Of Fothergill, a philanthropic member of the Society of Friends, Benjamin Franklin said, 'I can hardly conceive that a better man has ever existed.'

⁵ Published by William Hayley Mason, East Street, Chichester, 1848.

⁶ Although we say that there is an absence of documentary evidence for the sanitary condition of Chichester in Bayly's time, perhaps mention ought to be made of the *minor* references in *Victoria County History, Sussex*, vol. 3 (1935), p. 95, F. W. Steer, ed., *The Memoirs of James Spershott* (Chichester Papers No. 30, 1962) and F. W. Steer, ed., *Minute Book of the Common Council of the City of Chichester, 1783–1826* (Sussex Record Society, vol. 62, 1963).

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News, Notes and Queries

A CONSIDERATION OF THE NATURE OF THE ENGLISH SWEATING SICKNESS

In the early autumn of 1485 there broke out in the south-west of England a strange and formidable malady, which, from the prominence of one of its symptoms, became known as the sweating sickness. Just a few days earlier, Henry, Earl of Richmond, invaded England from France, and defeated Richard III at the battle of Bosworth Field (22 August), and Richard was killed.¹ Cases of the sweating sickness occurred in London in the second part of September; it assumed an epidemic form and spread to other parts of the country. In London it may have continued for about six weeks. There were other similar outbreaks in 1508, 1517, 1528, and 1551; and in 1529 there was an epidemic in north-western Europe. After 1551 it was not seen again.

The principal English account is that written by John Caius² just after the 1551 epidemic, in which he was engaged—there seems to be no earlier description by an English physician. The Continental medical writers gave more copious descriptions of their experiences in 1529; and these, and various records by non-medical observers, make it plain that the five epidemics, and also the European one, were outbreaks of the same disease. The composite picture drawn from the numerous accounts gives a detailed description of the symptoms and course of the illness, and at the same time leaves us to speculate on its remarkable nature.

The following description of the symptoms is slightly shortened from that given by J. F. Payne:

The disease began very suddenly with a sense of apprehension, followed by cold shivers (sometimes violent), giddiness, headache, severe pains in the neck, shoulders, and limbs, with great prostration—in short, the usual symptoms of an acute febrile attack. In some cases the stomach was affected, and there was vomiting. The breathing was deep and rapid; the voice like a moan. After the cold phase, which might last half-an-hour to three hours, there followed the stage of heat and sweating. The characteristic sweat broke out suddenly, and with varying