Notes and miscellanea

Percivall Pott and cancer scroti

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The name of Percivall Pott (Fig. 1) is perpetuated through three eponymous diseases, Pott's fracture, Pott's disease of the spine, and Pott's puffy tumour. His other important clinical observation, however, does not bear his name. Pott gave notice of a disease (Pott, 1775) which was

'peculiar to a certain sort of people (and) which has not at least to my knowledge, been publickly noticed—I mean the chimney-sweepers' cancer.'

The disease was not exclusive to the sweeps any more than the colic of Poitou was the sole prerogative of lead-workers, but it was a disease, said Pott, to which they had a special liability. Scrotal cancer had been described almost 40 years before Pott wrote and there is a much older reference to 'Canker of privities' in burial records of the Parish of St Botolph without Aldgate from 1589 to 1599 (Forbes, 1971). It is not clear from these records which anatomical site is meant and most authorities ascribe priority in the description of scrotal cancer to Bassius in 1731. There are grounds for thinking, however, that the condition which Bassius described was perineal abscess with the formation of sinuses to the scrotum rather than carcinoma, in which case, the first description of the malignant lesion of the scrotum should be attributed to Treyling in 1740 (Kipling, Usherwood, and Varley, 1970).

Pott has become famous for his observation because of the causal link which he established between occupation and malignancy, although in his own day, the significance of this association was not fully understood. Not that he was under-rated by his contemporaries: his standing among his colleagues was high, as much for his concern for the suffering of others as for his surgical skills. His kindness of heart was proverbial, and he frequently assisted struggling members of the profession, often having

FIG. 1. Percivall Pott. An engraving published in 1790 from a portrait by Sir Joshua Reynolds.

young surgeons to live in his own house. Pott also used his influence to see to it that some of the severe forms of treatment, such as the use of escharotic dressings and the actual cautery, common when he began his professional life, were discarded. Thus James Earle, his son-in-law, wrote 'surgery being divested of great part of its horrors, became, comparatively, a pleasing study' (Earle, 1790a).

Pott's description of scrotal cancer is probably the most succinct to be found in a surgical work; it is certainly the best.

'It is a disease which always makes its first attack on, and its first appearance in, the inferior part of the scrotum; where it produces a superficial, painful, ragged, ill-looking sore, with hard and rising edges: the trade call it the soot-wart . . . In no great length of time, it pervades the skin, dartos, and membranes of the scrotum, and seizes the testicle, which it enlarges, hardens, and renders truly and thoroughly distempered; from whence it makes its way up the spermatic process into the abdomen, most frequently indurating and spoiling the inguinal glands: when arrived within the abdomen, it affects some of the viscera, and then very soon becomes painfully destructive.'

Pott's description of the disease produced in its wake a succession of accounts from other authors. After the publication of his tract, clinical reports appeared with some regularity, increasing in number during the early part of the nineteenth century (Green, 1910). It is likely that many surgeons had been acquainted with the disease before Pott wrote on the subject but that they had wrongly diagnosed and treated it. Pott himself hinted that this was the case. The disease appeared most commonly at the age of puberty and Pott gave this as the reason why 'it is generally taken, both by patient and surgeon, for venereal, and being treated with mercurials, is thereby soon, and much exasperated.'

The disease continued to confine itself mainly to the sweeps, and of all people, they had a singularly hard fate, for, writes Pott

'in their early infancy, they are most frequently treated with great brutality, and almost starved with cold and hunger; they are thrust up narrow, and sometimes hot chimneys, where they are bruised, burned and almost suffocated; and when they get to puberty, become peculiarly liable to a most noisome, painful, and fatal disease.'

The plight of the chimney-boys (Fig. 2), to which Pott referred, was a scandal which persisted long into the following century. In 1803 the Society for Superseding the Necessity of Climbing Boys, by Encouraging a New Method of Sweeping Chimneys and for Improving the Condition of Children and Others Employed by Chimney Sweepers was formed. The Society had many illustrious members, including the Dukes of Bedford and Sutherland, the Marquis of Westminster, Earls Morley, Harroway, and Surrey, and also a Royal Patron. Through its parliamentary members, the Society sponsored a number of Bills in the House and published many tracts in support of their cause. Charles Kingsley was a member of the Society and his sweep, Tom 'cried when he had to climb the dark flues, rubbing his poor knees and elbows raw; and when the soot got into his eyes, which it did every day in the week; and when his master beat him, which he did every day in the week; and when he had not

FIG. 2. A chimney boy (1850). (Courtesy of the Barnes Library, the Medical School, University of Birmingham)

enough to eat, which happened every day in the week likewise.'

Most opposition to the suggestion of the Society, that the climbing boys should be replaced by mechanical devices, came from the insurance companies who gave it as their opinion that the chimneys could only be properly cleaned and repaired by sending small boys up to do the work, and they cited many instances of fires breaking out in mechanically swept chimneys to lend force to their argument. The Master Sweeps also raised their voices against the provision of mechanical sweepers and they found such a measure of support in the House of Lords that Bills presented to Parliament in 1817, 1818, and 1819, all designed to improve the conditions of the sweeping boys, were thrown out by the upper house despite a successful passage through the House of Commons. The only protection which the chimney boys had was embodied in the *Act for the Better Regulation of Chimney Sweepers and their Apprentices* (1788) the main provision of which was that no boy under the age of eight years should be apprenticed to a sweep. It was not until 1834 that further legislation was passed and even so, the *Act for the Better Regulation of Chimney Sweepers and their Apprentices, and for the Safer Construction of Chimneys and Flues* (1834) scarcely

improved upon that of 1788. The minimum age for an apprentice was raised to ten years and the Act introduced some regulations regarding the construction of chimneys and flues. Further amendments to the law were contained in the *Act for the Regulation of Chimney Sweepers and Chimneys* (1840). This Act provided for the raising of the minimum age for apprenticeship to 16 years and further stated that no-one under the age of 21 years should sweep chimneys. Far from curbing the practice of sending boys up chimneys, the Children's Employment Commission discovered that the number of boys employed for this purpose had actually increased between the passing of the 1840 Act and their *First Report* (Children's Employment Commission, 1863).

The Commission recommended that the law relating to the chimney boys be amended still further and the result was the *Act to Amend and Extend the Act for the Regulation of Chimney Sweepers*, 1864. This act imposed prison sentences for offenders in place of the system of fines contained in the previous acts. Even so, the Commission found many instances in which this law was broken and these were documented in their *Fifth Report* (Children's Employment Commission, 1866). It was not until Lord Shaftesbury succeeded in having his *Chimney Sweepers Act* passed (1875) that the scandal was brought to an end. This Act succeeded where the others had failed by introducing a system of licensing which was imposed upon the sweeps and for which the police were made responsible. By these means Shaftesbury was able to remove a disgrace which had been peculiar to the British Isles (Hammond and Hammond, 1923).

After the passage of the 1875 Act, scrotal cancer was less frequently seen in sweeps and was less written about, although some debate continued as to the identity of the causative agent. Pott did not himself speculate on this point, but James Earl (1790b) supposed it to be due to the lodgement of soot in the rugae of the scrotum. He supported his view with a description of a cancer on the left hand of a gardener who used soot to kill slugs. Some doubts were expressed, however, when men who had long since left the trade to follow occupations which had no contact with soot were found to develop the disease. George Lawson (1878) made the suggestion that it was really caused by the friction generated between the sweep's overalls and his scrotum as he was sifting the soot to remove debris prior to its sale. Fifty years later this frictional theory was revised by Robertson (1927) who proposed this as the cause of mule-spinners' cancer instead of mineral oil which the majority held to be the causative agent.

The soot debate was not finally resolved until Passey (1922) showed that he was able to induce skin cancer in mice by an ethereal extract of soot.

Since Pott's day scrotal cancer has come to be associated with several different occupations—work with pitch and tar and shale-oil, mule-spinning, and a variety of jobs involving exposure to mineral oils. Moreover, many other tumours of occupational origin have appeared and more can be expected to appear in the future. It is fitting that some tribute should be paid to Pott, in his bicentenary year, as the founder of what might be termed occupational oncology.

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