

in France and Italy usually from Auvergne and Savoie. During the summer time they roamed in groups through the countryside similar to the English climbing boys and returned in winter to the cities for work. Boys, seven years of age, were entered as apprentices in Belgium, and boys 14 to 15 years of age served in this capacity in Germany, where some chimneys in older buildings had to be climbed. Similar conditions prevailed during the early part of the last century in Denmark, where usually Swedish boys were used in this profession and, occasionally, had to climb chimneys.

An analysis of these data indicates that, inasmuch as chimney-sweeps' cancer is a frequent occupational disease in England even in modern times under improved working conditions, hygienic precautions and governmental and medical supervision and control, the chemical composition of the coal used as well as the production of a soot rich in tar represent the main causative factors, and account mainly for the high incidence of this industrial neoplasm among the chimney-sweeps of England and Wales.

The carcinogenic properties of soot are attested also by the occurrence of skin cancer in members of occupational groups other than sweeps. Bell mentioned the presence of epitheliomas in soot workers. Earle reported the development of a cancer on the left hand in a gardener who used soot as a snail poison. A second case of soot cancer of the hand (of a woman) was recorded by Cussack. Paget saw a cancer of the external ear in a man who used to carry bags filled with soot on his shoulder. Fischer cited Will concerning the occurrence of cancer of the feet and toes in women who stamped soot with their bare feet in a soot factory. Oppenheim noted the presence of warts and of an ulcerated node on the ear in a soot burner.

V. AGE

In analyzing the data recorded by the various English investigators, it becomes evident that there has taken place a marked shift in the average age into the older age groups for persons affected with soot cancer during the course of the last 150 years.

Earle (1823) and Curling (1866) stated that the average age of the chimney-sweeps with scrotal cancer was from 30 to 40 years. Earle, however, observed 3 cases of scrotal cancer in sweeps who were 20 to 30 years old. Inasmuch as up to 1842, apprentices, 4 to 10 years of age, were started in this profession, sweep-cancer was seen occasionally at a much earlier age during the first half of the past century. Pott observed a sweeps' cancer in a climbing boy 8 years old and Wadd found such a neoplasm in a boy 15 years of age. Cooper operated on a boy 16 years old for a cancer involving the scrotum, penis and pubic region, that is, a tumor of relatively long standing. Another of Cooper's cases was 22 years old. Hannover mentioned a sweep, 18 years of age, who had suffered from scrotal cancer for seven years previously.

When Butlin (1892) studied the age distribution of the 29 cases of sweeps'