1) The type of coal used in England for heating purposes differs chemically from that employed in other countries. Leitch stated that the carcinogenic agent responsible for the production of chimney-sweeps' cancer is contained in the soot produced by coal mined in the Midlands of England, where a bituminous hard coal occurs. This coal was used extensively in England for the heating of houses during the latter half of the 18th century, while it became customary elsewhere at a later date, to employ pit coal for such purposes (Hope).

2) In addition to the difference in the chemical composition of the types of coal used in the various countries, consideration must be given to the fact that coal was burned in England to a large extent on open grates in fire-places which developed a great deal of soot because of insufficient draft (Butlin). Kennaway has pointed out that the cancerogenic qualities of soot depend, apparently, upon its content of tar and that this factor is directly related to the intensity of the draft and the degree of temperature under which the coal is burned (Cohen and Ruston). The soot produced by a kitchen stove having normally a strong draft contains, according to Kennaway, for this reason less tar, than that found in the chimney of a fire-place of a dining room. Analyzing the soot from various sources for its tar content, Kennaway made the following observations to bear out his contentions:

Original coal	*Tar* 1.64 per cent	*Tar* 0.88 per cent
Kitchen flue soot	12.50	25.90
Dining room flue		
5 feet from grate	34.40	
35 feet from grate	30.40	
Boiler chimney 110 feet high		
5 feet from bottom	0.09	
top	1.14	

The tar was obtained from the coal and from the soot by ether extraction. It was found that the tar content of the soot stands in inverse proportion to ash residue. It is stated that not all types of soot possess carcinogenic qualities. The soot produced by the combustion of wood and of Scottish coal is said to lack such properties (Bell).

3) Structural peculiarities of the English chimneys, especially those of older houses, represent doubtlessly important contributory factors in the production of soot cancer by influencing the intensity, duration and degree of exposure to the carcinogenic soot, as they favor the deposit of soot in the chimney and necessitate a technique of cleaning that requires intimate contact of the sweep with the soot.

The English chimneys in an earlier day were relatively wide (30 to 60 cm. in diameter), very irregular and tortuous in their construction, often running horizontally for some distance and thus permitting in such parts the accumulation of considerable amounts of soot. The chimneys of this type could not be cleansed from above by the introduction of brushes or scrapers, but had to be cleaned by hand. The sweeps were forced to enter the chimney, for loosening the soot from its walls and for the removal of the soot from its passages. The so-called "climbing boys"