

it is probable that this industrial neoplasm was prevalent among mule spinners of this district long before the period covered by the investigations of Wilson. It was not until 1922 that the etiological relation between the exposure to lubricating oil and the genesis of scrotal cancer in mule spinners was actually established. Southam and Wilson, while analyzing 141 cases of scrotal cancer observed at the Manchester Royal Infirmary during the years 1902-1922, noted that in 69 cases of this series (53 per cent) the tumors affected mule spinners employed in local cotton mills. A subsequent survey made by Leitch on the incidence of mule-spinners' cancer showed that no less than 20 per cent of the fatal cases of cancer of the scrotum in England involved cotton spinners. There had been, according to unpublished data of the Registrar-General for England and Wales, during 1913-1914 ninety fatal cases of scrotal cancer of which 18 cases or 20 per cent affected mule spinners. During the years 1912 to 1922, 107 men had died from this disease, of whom 26 (24 per cent) were mule spinners. Fifteen fatal cases of scrotal cancer among mule spinners were noted in 1923. Leitch estimated from these data that there was in England and Wales a yearly average of 11.8 cases of fatal scrotal cancer in mule spinners, or one fatality in 2,000 spinners employed per year [calculated on the basis of 23,000 adult male mule spinners employed (female mule spinners are exceptional)].

As subsequent investigations showed that oil cancers in mule spinners affected other parts of the skin besides the scrotal sac, White was able to note in 1926 that there were 539 cases of occupational cutaneous malignancy among cotton spinners on record. When one year later Robertson reported on the causative factors active in the production of mule spinners' cancer, he cited a total of 469 cases of this industrial neoplasia, which had been observed from 1900 to 1925 by various agencies [Blackburn Royal Infirmary (1920 to 1925), 34 cases; Manchester Royal Infirmary (1902 to 1921), 69 cases; (1922 to 1924), 16 cases; Association of Operative Spinners (1917 to 1925), 173 cases; Cases of Scrotal Cancer of Spinners and Deaths Therefrom 1923 to 1925 Notified to Home Office, 125 cases]. The committee appointed in 1925 by the Secretary of State for the Home Department of Great Britain for the study of mule spinners' cancer found records of 539 cases of skin cancer among mule spinners for the years 1876 to 1925, with evidence of a rapid increase in incidence of this disease during the last years of the period surveyed. This last observation seems to be confirmed by a statement of Southam in 1928, when he noted that there occurred each year 50 new cases of scrotal cancer among mule spinners, and that the incidence of this industrial neoplasia was approximately 2.5 cases per 1,000 mule spinners per year. In the same year Bridge and Henry listed 418 cases of occupational mineral oil cancer, which had been notified to the Factory Department between 1923 and 1927. 361 of these cases occurred in mule spinners and 57 in employees of other industries. Skin cancers by mineral