DISEASES OF OCCUPATION

FROM THE LEGISLATIVE, SOCIAL, AND MEDICAL POINTS OF VIEW

BY

THOMAS OLIVER, M.D., F.R.C.P.

PHYSICIAN, ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE;
PROFESSOR OF PHYSIOLOGY, DURHAM UNIVERSITY

METHUEN & CO.
36 ESSEX STREET W.C.
LONDON

Boxwood: Ruler and Shuttle Making

At the Manchester meeting of the British Medical Association, Autumn, 1902, Dr. T. F. Young, of Birkenhead, described certain symptoms which he had observed in men working with a particular kind of wood for making rulers. The men complained of dryness of the throat and of inflammation of the eyes, which lasted two or three days. Some of the workmen were more susceptible than others. The wood is known as Marcaibo boxwood or Zaputeso, and is furnished by a tree known as Tabebuia pentaphylla of the order Bignoniaceæ. The fine sawdust caused inflammation of the eyes and dilatation of the pupils.

The symptoms complained of are similar to those mentioned by me [1] as occurring in joiners who saw and chip sequoia wood, and resemble those exhibited by persons who are suffering from a bad cold in the head and chest, viz., a running at the nose, frequent fits of sneezing, irritation in the throat and bronchi, accompanied by cough, laboured breathing and quickened pulse, followed by a sense of oppression at the stomach and accompanied by a smarting sensation in the eyes. The symptoms usually last only a day or two and are mostly observed in men who are working with the wood for the first time. A tolerance seems to be established in regard to it except by men who are liable to bronchitis and asthma. Wounds caused by splinters of the wood invariably suppurate and do not heal readily. The sequoia-tree is a conifer and grows in California. On several occasions I examined the sawdust both chemically and microscopically without finding in it anything to explain the symptoms. The sawdust soaked in water did not give an acid reaction, nor did it produce symptoms in a rabbit, the floor of whose hutch was kept strewn with it. Rats were susceptible to sequoia sawdust. They suffered from a running at the nostrils.

Certain kinds of wood have a bad reputation among joiners. Some sawdusts are more irritating than others,

[1] "Dangerous Trades," p. 791.

probably from the larger amount of inorganic matter which they contain.

In Lancashire the dust given off during the manufacture of shuttles for weaving purposes is a cause of malaise to the workmen employed. Many of them suffer from headache, coryza, excessive secretion of tears, and attacks of asthma. The wood from which these shuttles are made is known as West African boxwood, or Knysna boxwood, Knysna being the port in Africa from which it is exported. From the wood, Professor Harvey Gibson, of Liverpool, and Professor Dixon, of Cambridge, obtained an alkaloid which, when tested experimentally, was found to be a cardiac depressant and also a paralyser of the motor endings of nerve fibres in muscles, similar in this latter respect to the action of the arrow poison, curare.

The men who suffered presented a pale and jaundiced appearance; their breath had a peculiar camphor-like odour. Several of them had attacks of difficulty of breathing and of precordial pain accompanied by cold sweating. There was also marked slowing of the heart's action. Since the alkaloid is soluble in weak saline solution, it is more than probable that it becomes dissolved on the perspiring skin of the workmen and is thus absorbed.

Professor Harvey Gibson [1] has made a careful study of the wood and the alkaloids obtained from it. The wood comes from the Congo basin and the Cameroons. The cutting of the blocks of wood for shuttles is done by machinery and the finishing is done by hand. It is principally during the sandpapering stage of the process that the fine dust is created which is supposed to be the cause of the indisposition of the men.

Messrs. Brady and Martin, chemists, Newcastle-upon-Tyne, extracted for me alkaloids and glucosides from other forms of African boxwood, a few of which produced dilatation of the pupil but no marked constitutional effects.

Poisoning by African boxwood is one of the industrial diseases recommended by the Workmen's Compensation Act's Committee of the Home Office for compensation.

[1] *The Bio-Chemical Journal*, vol. i., No. 1, p. 39.

Workers in teak-wood occasionally suffer from dermatitis. Willmott Evans[1] mentions the case of a joiner who had suffered from a severe form of dermatitis attended by an eruption of an erythemo-vesicular nature and of an extremely itchy character spread over the whole body, but especially abundant on the back of the hands, the face, and neck, and which, in spite of treatment, continued ten days. The eruption only came on after working in teak-wood. Eight years previously the patient had been identically affected after having been similarly occupied. Six of the eight men engaged in the workshop and working in teak suffered in the same manner, although less severely. The symptoms were attributed to the action of an essential oil which is found in the central part of the tree, and which gains an entrance into the body of the workman by the dust raised during the polishing of the wood. One of my own patients who had been employed in teak-wood suffered from vomiting followed by a vesicular eruption on the skin and a desquamative dermatitis, which was still in existence six months after the acute attack.

Shoddy and Rag Sorting

Shoddy has for its object the extraction of wool contained in rags. The industry is an old one. It is supposed to have been introduced into this country by the Moors of Spain, for they are known to have made paper from rags. It was in 1813 that the shoddy industry was commenced in Batley, and for several years rags from all parts of the world found their way to this Yorkshire town, the "rag metropolis." Since the middle of last century shoddy factories have been established in Belgium, Germany, and France. Rags are divided into two kinds, (1) cotton and linen rags, (2) woollen rags. The cotton and linen rags are made into paper while the woollen rags are converted into cloth. Although rags are gathered from all sources alike by clean and dirty persons, it is astonishing how little sickness there is, comparatively speaking, among the workpeople who have to deal with them

[1] *British Journal of Dermatology*, 1905, December, p. 447.