ATMOSPHERIC POLLUTION IN ENGLISH AND SCOTTISH TOWNS.[1]

By J. B. C. KERSHAW.

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Observations with a standard type of dust-and-soot-collecting gage (see Abstract 1209B, 1913) have been made in 16 towns for a period, in most cases, of over one year. The figures obtained are summarized in a table. The largest soot and dust fall is recorded from Oldham, with 31.2 metric tons per square kilometer per month. Manchester (Ancoats) comes second, 26.8 metric tons, whereas Malvern shows only 2.1 metric tons. The Oldham fall is equivalent to 957 [Brit.?] tons per square mile per annum. Another table sets out the proportions of the insoluble deposits—tar, carbonaceous matter, and ash. Figures which have been given for the soot and dust fall of Pittsburgh (33.6 metric tons per square kilometer per month) show that the amount deposited there is considerably in excess of the amount in Sheffield (21.7 metric tons/km²/mo.), the English steel-making center. It is suggested that observations made on the Rotherham side of Sheffield might have approximated more closely to those of Pittsburgh, the prevailing winds carrying the smoke to the Rotherham side of the city. A special type of recording actinometer, which has been devised for measuring the intensity of sunlight illumination and used in different parts of Manchester, is described and illustrated. The record is made on specially prepared photographic paper. It was found that the average intensity of sunlight on the roof of the School of Technology (100 feet high) was 12.6 per cent greater than that at the ground level. Measurements with this actinometer are also to be made for comparative purposes in Abergele, in North Wales, away from the polluted atmosphere of towns.—*J. S. D*[*ines*].

[1] *See* Engineer, London (?), Nov. 19, 1915, 120: 473–475; Metall. and chem. eng., Dec. 15, 1916, 13: 967–971.

ATMOSPHERIC POLLUTION.[2]

By W. P. WYNNE.

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Monthly results of the chemical examination of rain water collected at four sites in Sheffield have been published. They do not accord with expectation and certain conclusions have been reached regarding the effectiveness of this method of measuring atmospheric pollution, which are of more than local interest. The records cover the period July, 1914, to June, 1915, and the results for the four stations are shown on two diagrams, one giving the monthly measurements of insoluble matter in the collected rain water and the other of dissolved matter. It appeared probable that the amount of dissolved matter measured in any month would depend on the amount and duration of rainfall in that month. The monthly rainfall at one of the stations (Attercliffe) has been plotted upon the same diagram as the amount of dissolved matter, and close agreement is apparent between the two curves. A similar diagram is shown for Malvern, and the similarity of the two curves is even more marked. It is concluded that the method of measurement usually adopted does not afford a reliable indication of the real degree of atmospheric pollution and that better results might be obtained if a feasible method could be devised for drawing air continuously through water and measuring the amount of the impurities extracted in this way.—*J. S. D*[*ines*[.

[2] Read before the Manchester meeting of the British Association for the Advancement of Sciences. Abstracted in Nature (London), Dec. 16, 1915, 96: 442–444.