

public, on account of the intense cold produced, resulting in injuries to both man and beast, for which compensation has been awarded against the local authorities in some cases. Some superintendents are of the opinion that it is not possible to cope with a heavy fall without a liberal use of salt; but other equally important towns have found a way out of the difficulty without the employment of a freezing mixture.

It is almost impossible to formulate a scale of the costs of snow removal, the length of the haulage being so different in various places. A fall varying from 4 inches to 6 inches in depth (undrifted) in January, 1909, cost the different municipalities named the sums set against each:

Bradford £802, Bristol £1,660, Glasgow £824, Leeds, £686, Leicester £2,273, Newcastle-on-Tyne £1,100, and Sheffield £1,049.

The fall cost Liverpool £4,000, although large quantities of salt were used and the slush was washed down the sewers.

Street watering, to some extent, is almost a necessity with even the best systems of cleansing which experience has evolved. This is forced upon the local authority, not only by the inconvenience to the inhabitants of having their goods and furniture spoiled by the deposition of layers of dust, but by the irritation caused by blinding particles impossible of avoidance. Still worse is the danger to health by the inhalation of an atmosphere laden with the possible germs of disease. The well-known, and to some constitutions, painful effects of "hay fever" is attributed to the air being laden with the pollen of grasses and possibly other plants in the spring of the year, and it therefore seems equally possible that during an epidemic of some disease the spores may be carried by the winds considerable distances, to find a congenial soil, in which to propagate. Of course the macadam road, with its disintegration under rapid traffic, is the worst source of dust, and determined efforts have been and are being made to reduce the dust nuisance. It is not, however, the province of this paper to deal with the various methods which have been tried with varying success in this direction.

Tar in one form or another has been the most favored remedy, and there are probably few towns in England that have not tried experiments with tar macadam, tar painting and tar spraying. All these processes aim at binding together the surface particles into a waterproof coating, which prevents the formation of mud in wet weather followed by dust on dry days. Doubtless many papers will be contributed on the subject, detailing the experiences of their authors, as was done at the Paris Congress. But, however perfect the road surface may be, and unlikely to be disturbed by wheel action, dust will accumulate on it in towns from a variety of causes. Sweep the street as carefully as possible, let the street orderlies be ever so constantly picking up the refuse, yet on a dry day the rapidly moving vehicles, with bodies within a few inches of the ground, set up a vacuum, causing a rush of air sufficiently powerful to raise and carry a cloud of dust. It is therefore not yet possible to do without "street watering."

In all large towns there is now an ample supply of water and it is the exception rather than the rule for economy to be necessary in its use, even in dry seasons. In the great majority of cases the town supply is owned and controlled by the corporations, or in the London boroughs by the Metropolitan Water Board. In Belfast and Edinburgh the water supply is controlled by trustees outside the corporation. At Birkenhead a portion of the supply is obtained from a company, and in Bristol and Newcastle-on-Tyne,

the whole of the supply for all purposes has to be bought from private companies. The result of these various controls is that very different sums are charged to the various corporations for the water sprinkled over the street. Thus in Edinburgh and Sheffield no charge is made for the water used. In Huddersfield, the nominal charge of £150 per annum is made. Where the water is supplied by measure the charges vary from 2½d. per 1,000 gallons in Cardiff; 3d. in Leicester; 4d. in Manchester; 5d. in Newcastle-on-Tyne; 6d. in the London boroughs, Birmingham and Leeds, to 8d. and 9d. in Birkenhead and Bristol. Belfast pays £1,100 per annum for the water used on the streets, or a sum nearly equal to that expended by Bristol where the water is bought by measure. The populations are nearly equal but the length of the macadam streets in the latter is about double that in the former. There is absolutely no rule as to how the charge shall be framed, but probably the London price of 6d. per 1,000 gallons most nearly represents the cost to the undertakers. Edinburgh, Glasgow, Manchester and Liverpool with their magnificent water supplies may afford to be liberal, where the health of the community is the object.

By general consent, the watering season extends from the first week in April to the end of September, although there are no fixed dates on which to commence or finish, and as necessity knows no law it often happens that a dry, boisterous week in March brings out the carts. In like manner it may be desirable to keep some at work in October.

In the majority of the twenty towns under consideration all the important streets and roads are watered when necessary. In Leicester rather less than half the total mileage is regularly watered and in Newcastle-on-Tyne not one-fourth. In Westminster the practice of watering the entire area is confined to macadam roads, while those covered with wood, and asphalt are treated to water the channels only, where the dust generally collects. Macadam roads that have been treated with tar require a minimum of watering, a slight sprinkling before brushing being all that is necessary; the author's experience having been that the expense of tar treatment is nearly recouped by the saving effected in street watering.

CONDITIONS IN THE UNITED STATES.

An observant writer in Philadelphia, who has excellent means of information, has the following observations on current conditions and indifferent methods in the States:—

"We are going through an important and uncomfortable crisis in our life as a rapidly expanding commercial nation, and feeling the effects of past crude haste and lack of conservative experience. Also our business has grown quicker than our political clothes, in which to do our work. We are like a young man trying to do his work in the suit he wore as a boy, in other words, our financial and political regulations have not grown and expanded with our requirements, and we are in the uncomfortable process of having to enlarge them and adjust them to fit our present needs, and the process being under the management of politicians and not business men, it becomes a slow and unsatisfactory operation. We have changed our tailor, or are about to do so, but it is extremely doubtful if we have hurried our own relief by so doing, or benefited ourselves in the operation. We are in for the experiment, however, and must make the best of it."