

at that spot. The frequency of the Inspector's visits to each bit of work were found marked by this extra ring of bricks, here and there, instead of along the whole length of the sewer.*

Nor are these Councils in any way exceptional in their steady progress towards the elimination of the contractor. In the early days of municipal activity practically everything was let out to a contractor. Nowadays every large municipality, even if it does not possess any separate Works Department, has a staff of mechanics and artisans in regular municipal employment, and every day executes many important works and services by its own workmen, which were formerly let by tender to the lowest bidder.

Nor is it in municipal boroughs alone that we see the change in policy. Nothing was more common a few years ago than for highway authorities to get their roads kept in order by contractors. An interesting return obtained in 1892 by the County Surveyors' Society shows that this practice has been almost entirely abandoned in favor of direct employment of labor by the county surveyor. Only in one or two counties out of thirty-five furnishing particulars does the old custom linger. The county surveyor for Gloucestershire indignantly denied an allegation that he favored the contract system. "It does not commend itself to me in any way," he writes, "and encourages a low form of sweating. My own experience of road-contracting is that it does very well for five years, then the roads go to pieces, and you have to spend all your previous savings to put them to rights."†

When we thus find even the County Councils in rural districts giving up the contractor, it ceases to be surprising that the Town Council of Manchester, in the city of Cobden and Bright, now manufactures its own bass-brooms, or even that the ultra-conservative Commissioners of Sewers of the City of London actually set the County Council an example by manufacturing their own carts.‡ The superiority of direct municipal employment, under salaried supervision, to the system of letting out works to contractors has, in fact, been slowly borne in on the best municipal authorities all over the country by their own administrative experience, quite irrespective of social or political theories.

IV.—Integration of Processes.

Business men, not so very long ago, would have argued that this policy of including all kinds of industrial processes under one administration was contrary to the lessons of business experience. The last generation of captains of industry believed in each undertaking sticking closely to its own special trade, and contracting with similarly specialized undertakings for all subsidiary parts of the business. "Never make anything yourself that you can buy elsewhere" was a common industrial maxim. The last twenty years

* Report of the Citizens' Auditor of the City of Manchester for 1895.

† *Particulars of Management of Main Roads in England and Wales*, a report compiled for the County Surveyors' Society, by Mr. Heslop, County Surveyor for Norfolk. See *Builder*, March 19th and 26th, 1892.

‡ Statement of the Commissioners of Sewers, presented to the Royal Commission on London Unification.

have changed it to "Never buy from anyone else what you can manufacture for yourself."

The most familiar instance of this revolution of policy is seen in the English railway companies. Once a railway company was an association for getting a railway made, and running trains on it. An able essay written by Mr. Herbert Spencer forty years ago, protested strongly against any extension of a railway company's scope. Nowadays an up-to-date railway company runs docks, canals, ferries, steamships and hotels of its own, and carries on, besides, innumerable subsidiary businesses, and manufactures every conceivable kind of article, entirely by its own operatives, working under its own salaried staff. The directors of the London and North-Western Railway Company, for instance, with a comprehensiveness that would have staggered George Stephenson, lay it down as an axiom that the company "should be dependent on the outside world for as few as possible of the necessaries of life." The manager at the company's great workshop-town of Crewe "can think of nothing of importance that is imported in a manufactured state, except copper tubes for locomotive boilers." "As we pass from shop to shop, here may be seen a steel canal boat in process of construction (for the company, it must be remembered, is a great canal proprietor); there, a lattice-work bridge is being fitted together. Further on, hydraulic pumps, cranes, and capstans crowd a huge shed. In another place, chains of all sorts and sizes, from cables to harness traces, are being forged by the ton; close by, coal-scuttles and lamps are being turned out by the hundred. In all the works there is no stranger sight than a corner in the carpenters' shop, where two men are constantly employed making artificial limbs. Some two years back (that is, about 1885) the company embarked on this branch of manufacture, and undertook to supply legs and arms of the most finished workmanship to any man who lost his own in their service."*

Nothing indeed is too small or too great for the North-Western to manufacture for itself. Crewe turns out a new locomotive engine every five days, and you may watch the company's own rails being rolled in its own steel works. At Wolverton, Mr. Acworth recounts how he "came upon a man engaged in etching designs upon the plates of ground glass that were to form the windows of lavatory compartments, and was told that the company had recently found that it could do this work for itself at half the price it had formerly paid" (pp. 60-1). Since 1881 the North-Western has been steadily eliminating the privately-owned waggon. For over twenty years the companies have managed their own collection and delivery business. Nearly every company, too, now builds its own carriages. The Midland Railway prints its own tickets; whilst the Great Eastern goes a step further, and executes in its Stratford works nearly the whole of its own printing, including its gorgeous colored posters and pictorial advertisements. "In the printing works the company keeps

* *The Railways of England*, by W. M. Acworth, London: 1889, p. 59.