

remarkable book, yet it had little effect in reforming the abuses it exposed. General denunciations of grocers did not touch individuals of the craft, and they were consequently not driven to improve the quality of their wares. The *Lancet* Commission went to work in a different manner. In Turkey, when of old they caught a baker giving false weight or adulterating the staff of life, they nailed his ear to the doorpost, 'pour encourager les autres.' Dr. Hassall, like a modern Al Rachid, perambulated the town himself, or sent his trustworthy agents to purchase articles, upon all of which the inexorable microscope was set to work, and every fraudulent sample, after due notice given, subjected its vendor to be pinned for ever to the terrible pages of the Commissioners' report. In this manner direct responsibility was obtained. If the falsification denounced was not the work of the retailer, he was glad enough to shift the blame upon the manufacturer, and thus the truth came out.

A gun suddenly fired into a rookery could not cause a greater commotion than this publication of the names of dishonest tradesmen, nor does the daylight, when you lift a stone, startle ugly and loathsome things more quickly than the pencil of light, streaming through a quarter-inch lens, surprised in their naked ugliness the thousand and one illegal substances which enter more or less into every description of food that it will pay to adulterate. Nay, to such a pitch of refinement has the art of falsification of alimentary substances reached, that the very articles used to adulterate are adulterated; and while one tradesman is picking the pockets of his customers, a still more cunning rogue is, unknown to himself, deep in his own!

The manner in which food is adulterated is not only one of degree but of kind. The most simple of all sophistications, and that which is most harmless, is the mixture of inferior qualities of the same substance. Indeed, if the price charged were according to quality, it would be no fraud at all, but this adjustment rarely takes place. Secondly, the mixture of cheaper articles of another kind; Thirdly, the surreptitious introduction of materials which, taken in large quantities, are prejudicial to health; and Fourthly, the admixture of the most deadly poisons in order to improve the appearance of the article 'doctored.'

The microscope alone is capable of detecting at one operation the nature and extent of the more harmless but general of these frauds. When once the investigator, by aid of that instrument, has become familiar with the configurations of different kinds of the same chemically composed substances, he is armed with far greater detective power than chemical agents could provide him with. It is beyond the limit of the test-tube to show the mind the various forms of animal and vegetable life which exist in impure water; delicate as are its powers it could not indicate the presence of the sugar insect, or distinguish with unerring nicety an admixture of the common *Circum* arrowroot with the finer *Maranta*. Chemistry is quite capable of telling the component parts of any article: what are the definite forms and natures of the various ingredients which enter into a mixture it cannot so easily answer. This the microscope can at once effect, and in its present application consists Dr. Hassall's advantage over all previous investigators in the same field. The precision with which he is enabled to state the result of his labors leaves no appeal; he shows his reader the intimate structures of a coffee-grain and of oak or mahogany sawdust; and then a specimen of the two combined, sold under the title of genuine Mocha. Many manufacturers and retailers, who have been detected falsifying the food of the public, have threatened actions, but they all flinched from the test of the unerring instrument.

THE CRUET-STAND.

The system of adulteration is so wide-spread and embraces so many of the items of the daily meal, that we scarcely know where to begin—what corner of the veil first to lift. Let us hold up the cruet-frame, for example, and analyse its contents. There is mustard, pepper (*black and cayenne*), vinegar, anchovy and Harvey sauce—so thinks the unsuspecting reader—let us show him what else beside. To begin with mustard. 'Best Durham,' or 'Superfine Durham,' no doubt it was purchased for, but we will summarily dismiss this substance by stating that it is impossible to procure it pure at all; out of forty-two samples bought by Dr. Hassall at the best as well as inferior shops, all were more or less adulterated with wheaten flour for bulk, and with turmeric for colour. Vinegar also suffers a double adulteration; it is first watered, and then pungency is given to it by the addition of sulphuric acid. A small quantity of this acid is allowed by law; and this is frequently trebled by the victualers. The pepper-caster is another stronghold of fraud—fraud so long and openly practised, that we question if the great mass of the perpetrators even think they are doing wrong. Among the milder forms of sophistication to which this article is subjected are to be found such ingredients as wheaten flour, ground rice, ground mustard-seeds, and linseed-meal. The grocer maintains a certain reserve as to the generality of the articles he employs in vitiating his wares, but pepper he seems to think is given up to him by the public to 'cook' in any manner he thinks fit. This he almost invariably does by the addition of what is known in the trade as P. D., or pepper-dust, alias the sweeping from the pepper-warehouse. But there is a lower depth still; P. D. is too genuine a commodity for some markets, and it is accordingly mixed with D. P. D., or dirt of pepper-dust.

Out of twenty-eight samples of cayenne pepper submitted to examination, no less than twenty-four were adulterated with white mustard-seed, brickdust, salt, ground rice, and *deal sawdust*, by way of giving bulk; but as all of these tend to lighten the colour, it is necessary to heighten it to the required pitch. And what is employed to do this? Hear and tremble, old Indians, and lovers of high-seasoned food—with RED LEAD. Out of twenty-eight samples, red lead, and *often in poisonous quantities*, was present in thirteen! Who knows how many 'yellow admirals' at Bath have fallen victims to their cayenne-cruets? Nor can it be said that the small quantity taken at a time could do no permanent mischief, for lead belongs to the class of poisons which are cumulative in their effects.

He who loves cayenne, as a rule is fond of curry-powder, and here also the poisonous oxide is to be found in large quantities. Some years ago a certain amiable duke recommended the laboring population, during a season of famine, to take a pinch of this condiment every morning before going to work, as "warm and comforting to the stomach." If they had followed his advice, thirteen out of every twenty-eight persons would have inhaled a slow poison. Those who are in the habit of using curry, generally take it in considerable quantities, and thus the villanous falsification plays a more deadly part than even in cayenne pepper. Imagine a man for years pertinaciously painting his stomach with red lead! We do not know whether medical statistics prove that paralysis prevails much among 'Nabobs,' but of this we may be sure that there could be no more fruitful source of it than the two favorite stimulants we have named.

MEAT AND BREAD.

Some years ago 'the Goldner canister business' so excited the public against this invaluable method of storing perishing