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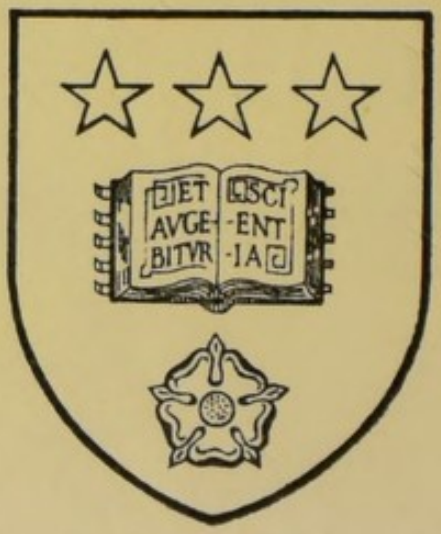

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THE

FOOD OF LONDON:

A Sketch

OF

THE CHIEF VARIETIES, SOURCES OF SUPPLY, PROBABLE QUANTITIES, MODES OF ARRIVAL, PROCESSES OF MANUFACTURE, SUSPECTED ADULTERATION, AND MACHINERY OF DISTRIBUTION,

OF

THE FOOD FOR A COMMUNITY OF TWO MILLIONS AND A HALF.

BY

GEORGE DODD,

AUTHOR OF "BRITISH MANUFACTURES," ETC.

"Such is the majestic *ensemble* of the Capital of an Empire in which a Hundred and Fifty Millions of subjects send scarcely ships enough to supply the ever-increasing consumption of an accumulation of Two Millions and a Half of inhabitants."

BARON DUPIN.

LONDON:
LONGMAN, BROWN, GREEN, AND LONGMANS.
1856.

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PREFACE.

THE subject of the following pages has never yet been treated collectively in a distinct volume. The materials, crude and heterogeneous, lie scattered in an almost endless number of works — in the Journals of learned societies; in the Reports and statistical Tables published by the government; in the chemical and dietetic works of scientific writers; in the old diaries and 'household books' published by the Camden, Shakspeare, and other societies; in daily, weekly, monthly, and quarterly periodicals; in treatises on commercial and productive industry; in reports and returns made by large trading companies; and in familiar descriptive sketches — while numerous other matters pertaining to the Food of London, and to a due appreciation of the circumstances of its supply, remain yet, and may perhaps long remain, very obscurely known.

The author has endeavoured to survey this remarkable social phenomenon, though necessarily in a cursory manner, in most of its principal aspects, — in its relation to the past history of London, the

modern improvements in means of locomotion and transport, the commercial machinery whereby wholesale trade is conducted, the docks and shipping of the Thames, the processes of food manufacture, the old markets and their modern substitutes, the retail shop-keeping of the metropolis, the open-air trading in the public streets, the gradual changes in taste or custom concerning diet, the influence of legislation on food-supply, and the prevalence or otherwise of adulteration in food. Wherever he could increase or improve the materials by personal inquiry and observation he has done so; and in this respect he has to acknowledge the favour of much valuable information from railway companies, clerks of the markets, and others possessed of trustworthy data on particular points.

It is a circumstance deserving, perhaps, neither of praise nor of blame, that this volume contains much information relating, not strictly and merely to the food of the metropolis itself, but to that of the United Kingdom generally. The truth is, that in numerous matters connected with the Food of London there do not yet exist the means for treating them otherwise than as parts of a larger subject; we have to rely, as best we may, on inferences drawn from the greater to the ess. The future must supply materials for filling up gaps in the present.

G. D.

London, Feb. 1856.

CONTENTS.

CHAPTER I.

INTRODUCTORY REMARKS.

Wide Range of the Subject. — Food-supply of London self-governing. — Archbishop Whately's Illustration. — Contrast between London and Paris in this Sense. — Imperfect Statistics relating to Food. — Uncertain Limits of the Metropolis. — Supply and Prices, Scarcity and Mortality. — Effect of Taxes on Food-supply. — Consumption of Food affected by Changes in public Opinion. — Adulteration of Food. — Theories concerning Dietetics and the Chemistry of Food - - - - - - Page 1

CHAPTER II.

HISTORICAL SKETCH: THE FOOD OF LONDON IN PAST AGES.

Scanty Notices on the Subject by early Writers. — Cheap Prices and low Wages. — Cooks' Shops in London Seven Centuries ago. — Occasional Famines. — Origin of the Fair and Market at Smithfield. — Early Days of Billingsgate. — Power of the old City Companies over the retailing of Food. — Great Feasts in the 14th Century. — Meat mostly salted in those Days. — Rivalry between Queenhithe and Billingsgate as Fish Markets. — Influence of the Fishmongers' Company. — Sale of Bread in London in the 15th Century. — Vintners and the Beer Trade. — Lydgate's 'London Lyckpenny.' — Prices of Food. — Attempts to encourage the Use of Fish as a Substitute for Meat. — Meat Markets in the Time of the Tudors. — Stringent Regulation of Millers and Bakers. — Public Granaries. — Power of the Grocers' Company. — Ale and Beer in Elizabeth's Reign. — Diet in London and in great Households. — Market Arrangements under Cromwell. — Cessation of public Granaries. — Milk-maidens of Walton's Time. — Food Monopolies. — Establishment of Excise Duties on Beverages. — Taverns and Ordinaries in the 17th Century. — Smithfield and Billingsgate in the last Century. — Assize on Bread. — Walpole and the 'Gin Acts.' — Gradual Changes in recent Times - - - - 24

CHAPTER III.

RAPID TRANSIT AN AID TO FOOD-SUPPLY.

Variety in the Modes in which Food is brought to London.—Diversity in the Sources of Supply.—Effects of good Roads on Prices.—Roads and Canals of England. — Transit of Scotch Cattle to London. — Dr. Lardner's Illustration of the Relation between Speed and Supply. — Loss in Weight of Live Stock by Road-travelling. — Economy resulting from Railway Conveyance. — Facilities afforded in respect to Country-killed Meat. — Fish-supply to Inland Towns aided by Railways. — Fruit-trade and Egg-trade facilitated by Steamers. — Provisions in general share these Benefits - - Page 101

CHAPTER IV.

THE FOOD OF LONDON IN ITS WHOLESALE ASPECTS.

Variety and Extent of the Marts and Markets for Food. — Small Influence of Government Control.—Baron Dupin's Sketch of the Port and Docks of London. — Trade of our Merchant Shipping. — Share of this Trade belonging to the Metropolis. — Origin of the Quays and Docks on the Thames.—A Day's Business in the Port of London.—Quantities of Food brought to England by Ship.—Half the National Revenue derived from Taxes on Food and Beverages. — Probable Quantities of Food brought to London. — Difficulty of the Inquiry.—Estimates by Mr. Porter and others.—Marts for Food at the Docks, Wharfs, Markets, Vaults, and Warehouses. — Metropolitan Railway Termini gradually becoming Food Depôts - 124

CHAPTER V.

CORN AND BREAD FOR LONDON.

Complexities in the Weights and Measures of Corn. — Acreage of Corn Growth in the United Kingdom. — Probable Ratio of Produce per Acre. — Relation borne by Wheat to other kinds of Corn. — Necessary addition of Foreign Corn to our Home Supply. — Probable Quantity consumed. — Corn Trade on the Thames. — Waterside and Railway Granaries. — Strange Effect of Corn Laws in influencing Supplies. — System of managing the Corn Trade at Mark Lane. — Corn-grinding by the old Wind-mills. — Corn-grinding by the new Steam-mills. — Co-operative Corn-mills among Artisans. — Qualities and Quantities of Flour from Wheat. — Strange Episode concerning

Flour Sacks in London. — Bakeries and Bake-houses. — Contrast between Paris and London in the Bread Trade. — Need of Reform in the Condition of Bakers. — Bread Mills at Carlisle and Birmingham. — No Bread Mills in London. — Relation between Corn, Flour, and Bread, in Quantities. — Controversies respecting White Bread and Brown. — Adulteration of Bread - - - Page 155

CHAPTER VI.

CATTLE AND CATTLE-MARKETS FOR LONDON.

Aggregate of our national Live Stock. — Cattle Shows, their Objects and Results.—Rearing of Live Stock as a commercial Undertaking. —Increasing Consumption of Foreign Cattle.—Smithfield as the great Cattle Market for the Metropolis. — A Hundred Years of Complaint against the old Market. — Various projected Improvements in past Times. — Picture of Smithfield on a Market Day. — Graziers, Salesmen, Drovers, and Butchers. — Mode of conducting the Dealings. — Extent of the Annual Sales. — Railway Contributions to our Cattle Supply.—Great Christmas Sales at Smithfield.—Prices and Value of London Cattle. — Recent Schemes for Improving Smithfield. — The abortive Islington Cattle Market. — Final Closing of Smithfield Market in 1855. — Planning and Formation of a Market in Copenhagen Fields. —Description of the new Market - - 211

CHAPTER VII.

COUNTRY-KILLED MEAT AND CURED PROVISIONS.

Increasing use of country-killed Meat in London. — Peculiarities of the Markets at Newgate, Leadenhall, and Whitechapel. — Anomalous Position of Newgate Market. — Smaller Meat Markets. — Modes of supplying these Markets. — Sketch of the Market Arrangements. — Probable Quantities of country-killed Meat brought to London. — Curious technical Limitation of the word 'Provisions.' — Salt-Meat Supply from Ireland and America.—Irish Bacon for London.—Hams and the Ham-Trade. —Minor Kinds of prepared Meat. — Preserved or Potted Foods: gradual Extension of their Use - - 265

CHAPTER VIII.

DAIRY PRODUCE AND POULTRY FOR LONDON.

Milk-supply. — London 'Milk-walks.' — Estimates concerning Quantity. — M. Guénon's Theory of Milch Cows. — Economy of the great London Dairies. — Milk-supply to London by Railway. — Adultera-

tion of Milk. — Butter. — Dairy Produce as a Commercial Adventure. — Butter Trade in Ireland. — Supply to London, and Nature of the Trade. — Adulteration of Butter. — Cheese. — Varieties and Quantities. — Use of Anatto. — Eggs. — Egg-rearing in France, and Egg-trade with England. — Egg-dealers in Ireland. — Railway Conveyance of Eggs to London. — Poultry and Poultry Manias. — Projects for Artificial Hatching. — Goose and Duck rearing for the London Market. — Contrast between Paris and London in Poultry Consumption. — Poultry Markets at Leadenhall and Newgate. — Game, its Varieties and Peculiarities of Supply - - - - Page 292

CHAPTER IX.

BILLINGSGATE AND THE FISH-SUPPLY.

Peculiarities of Fish-supply. — Projects for artificially rearing Fish. — Early Projects for bringing Fish to London. — 'Fish Association' in 1813. — Maintenance of Billingsgate against all competing Markets. — Billingsgate Supply before the Railway Era. — Nature of the Supply at the Present Day. — Great Fish Dealings at Yarmouth, and between Yarmouth and London. — New Market at Billingsgate. — Dealings between the Fishermen, Consignees, Salesmen, Fishmongers, Bummarees, and Hawkers. — A Day at Billingsgate. — Variety and Seasons of the Annual Supply. — Probable Quantities sold. — Peculiarities in the Oyster Trade for the London Market. — Street Dealers in Fish - - - - - 330

CHAPTER X.

COVENT GARDEN: FRUITS AND VEGETABLES.

No important Vegetable Market in London before Covent Garden. — Gradual Establishment of this Market on the Site of the old Convent Garden at Westminster. — Rebuilding of the Market in 1827. — Sources of the Vegetable Supply for London. — Market-Gardens around the Metropolis. — Distant Sources of some of the Supplies. — Supply of Fruit. — Remarkable Nature of the Strawberry Trade. — The Fruit Avenue at Covent Garden. — Daily Routine of Trade. — Vegetables and Fruit at Spitalfields, Borough, Farringdon, Hungerford, and Portman Markets. — Probable Quantities of Vegetables and Fruit consumed in London. — Importance of Steamers and Railways in expediting the Supply. — Increased Supply of Foreign Fruit in London. — Electric Telegraph and the Market People. - 366

CHAPTER XI.

THE SUPPLY OF GROCERIES AND COLONIAL PRODUCE.

Colonial and Tropical Imports of Food mostly employed for Beverages. —Mincing Lane the Mart for this Produce.—Tea.—Comparatively recent Introduction.—Extensive Consumption at the present Day. —Growth, Preparation, Sale, and Shipment in China.—Probable Consumption in the United Kingdom.—Adulteration of Tea in London.—Coffee.—Growth and Preparation Abroad.—Roasting and grinding at Home.—Coffee-drinking at different Times and in different Countries.—Probable Quantities consumed.—Chicory.—Wrangles between Coffee Importers and Chicory Growers.—Chicory and Coffee, adulterated and unadulterated.—Cocoa.—Chocolate a Preparation of Cocoa.—Increasing Use in this Country.—Frequent Adulterations.—Sugar.—Growth and Manufacture Abroad.—Sugar-refining in London.—Probable Consumption.—Beet-root Sugar little known in England.—Spiceries from the East: Pepper, Nutmegs, Allspice, Cinnamon, Cloves.—Rice.—Tobacco.—Is Tobacco a Food? —Culture and Manufacture.—Vast Stores in the London Docks.—Snuff-making.—Cigar-making.—Probable Consumption.—Adulteration of Tobacco - - - - Page 396

CHAPTER XII.

THE BEVERAGES OF LONDON.

Increase or Decrease of Beer-drinking in London, which?—Malt and Malting.—Quantities of Barley malted.—Hops and Hop-growing.—Hop-gambling.—Gradual Rise of Porter-brewing.—Vastness of the London Breweries.—Manufacturing History of a Pint of Porter.—Amount of Brewing and Beer-drinking in London.—Public-houses of London.—Anomalies in the Licensing System.—Oddities in the Signs of Public-houses.—Spirit-drinking.—Remarkable Chemistry of Spirit-distilling.—Great London Distilleries.—Distinction between Distillers and Rectifiers.—English Gin and Scotch or Irish Whiskey.—Probable Consumption.—Wine—Causes of its small Consumption in England.—Operations of the Vintage. —Probable Quantities produced.—Names and Capacities of Wine Casks.—Port and Sherry sophisticated for the English Market.—Quantities imported.—Great Vaults at the London Docks.—'Tasting Orders.'—Adulteration of Wine.—British Wine.—Rise of this Manufacture in Connection with Vinegar-making - - 452

CHAPTER XIII.

REMARKABLE ASPECTS OF FOOD-RETAILING IN LONDON.

Food Advertisements in the Newspapers. — Retailers of Food in London. —Bazaar Principle observable among them.—Dining Rooms and Cooks' Shops. — Old Taverns. — Chop-houses and Coffee-houses. — West-end Clubs considered as Restaurants or Dining-rooms. — Street Purchases on a Saturday Evening. — Itinerant Dealers in Minor Articles of Food - - - - Page 502

THE FOOD OF LONDON.

CHAPTER I.

INTRODUCTORY REMARKS.

Wide Range of the Subject. — Food-supply of London self-governing. — Archbishop Whately's Illustration. — Contrast between London and Paris in this sense. — Imperfect Statistics relating to Food. — Uncertain Limits of the Metropolis. — Supply and Prices, Scarcity and Mortality. — Effect of Taxes on Food-supply. — Consumption of Food affected by Changes in public Opinion. — Adulteration of Food. — Theories concerning Dietetics and the Chemistry of Food.

THE supply of food to a great city is among the most remarkable of social phenomena — full of instruction on all sides. It teaches much concerning the substances whence the food is formed; the processes of formation; the communities whose industry developes the edible treasures from crude materials; the transport of the food from the place of production to the busy city itself; the aid rendered to this transport by modern inventions relating to roads and canals, railways and telegraphs, clippers and steamers; the mercantile arrangements between those who sell and buy largely; and the transactions between the wholesale dealers and the retail distributors. It tells also of the establishment of docks and wharfs, warehouses and granaries,

markets and exchanges, to facilitate the wholesale dealings; of the endless array of vehicles employed in the distribution; of the busy ranges of shops in which the provisions are sold to the actual consumers; of the large staff of persons employed in this retailing; of the vast sums spent in the provisioning of a mighty city; of the influence of an adequate supply on the social and political contentment of the people; and of the relative conditions of different cities at different times, in all these particulars.

Perhaps the most wonderful characteristic is, that —'Nobody does it,'— no one assumes the responsibility. It is useless to ask by what central authority, or under what controlling system, is such a city as London supplied with its daily food. 'Nobody does it.' No one, for instance, took care that a sufficient quantity of food should reach London in 1855, for the supply of two millions and a half of human beings during fifty-two weeks. And yet such a supply *did* reach London. It is no refutation of this to say that there are thousands every day in London whose scanty food scarcely maintains life: this is painfully true; but not less true is it that the food is at hand, although the unfortunates are ill provided with the means for obtaining a goodly share. And not merely are there *nine hundred millions* of daily rations thus supplied annually for our enormous metropolis; but these rations are so infinitely varied as to meet all the caprices of taste. If a gourmand wish for a dish of peacocks' brains, or stewed humming-birds, or doves' hearts, doubtless his taste might be gratified; it would simply be a ques-

tion of price. There are rations for all, and endless variety in these rations; yet is there no commissary-general to take charge of such matters.

"Let any one," says Archbishop Whately, "propose to himself the problem of supplying with daily provision of all kinds such a city as our metropolis, containing above a million of inhabitants.* Let him imagine himself a head commissary, entrusted with the office of furnishing to this enormous host their daily rations. Any considerable failure in the supply, even for a single day, might produce the most frightful distress, since the spot on which they are cantonned produces absolutely nothing. Some, indeed, of the articles consumed admit of being reserved in public or private stores for a considerable time; but many, including most articles of animal food, and many of vegetable, are of the most perishable nature. As a deficient supply of these, even for a few days, would occasion great inconvenience; so would a redundancy of them produce a corresponding waste. Moreover, in a district of such vast extent as this (as it has been aptly called) "province covered with houses," it is essential that the supplies should be so distributed among the different quarters, as to be brought almost to the doors of the inhabitants, at least within such a distance that they may, without an inconvenient waste of time and labour, procure their daily shares." The Archbishop points

* The Archbishop, then Dr. Whately, wrote these words about a quarter of a century ago, when population was not only less dense than at present, but when many villages and parishes, now included in the vast area of London, were regarded as extra-metropolitan.

out that the provisions required, instead of being uniform, as in a garrison, must be diversified to suit the almost infinitely varying tastes of individuals; that they must accommodate themselves to the varying number of persons residing in London at different seasons of the year; that they must bear some direct relation to the richness or scarcity in the supply of different kinds of food at different times; and he then proceeds,— "Now let any one consider this problem in all its bearings, reflecting on the enormous and fluctuating number of persons to be fed — the immense quantity, and the variety, of the provisions to be furnished — the importance of a convenient distribution of them — and the necessity of husbanding them discreetly; and then let him reflect on the anxious toil which such a task would impose on a board of the most experienced and intelligent commissaries, who, after all, would be able to discharge their office but very inadequately."

The striking feature here is, that no commissariat department is necessary. "This object is accomplished, far better than it could be by any effort of human wisdom, through the agency of men who think each of nothing beyond his own immediate interest: who, with that object in view, perform their respective parts with cheerful zeal, and combine unconsciously to employ the wisest means for effecting an object, the vastness of which it would bewilder them even to contemplate. . . . . Each of these watches attentively the demands of his neighbourhood, or of the market he frequents, for such commodities as he deals in. The apprehension, on the one hand, of not realising all the profit he

might, and on the other hand, of having his goods left on his hands, either by his laying in too large a stock, or by his rivals' underselling him, — these, acting like antagonist muscles, regulate the extent of his dealings, and the prices at which he buys and sells. An abundant supply causes him to lower his prices, and thus enable the public to enjoy that abundance; while *he* is guided only by the apprehension of being undersold."*

The mournful episode in the Crimea in 1854-5 illustrated this reasoning in an inverse way. The people of England provided munificently for the wants of the soldiers; the government officers, each in his separate capacity, endeavoured to fulfil the duties of his office honestly; yet, if anything disturbed the harmonious action of the delicate machine, how sad were the results! It was well-intended to send coffee raw in stead of roasted, to retain the aroma; but what if the soldiers had neither stoves nor fuel? It was proper to send salt beef and pork; but what if there were no facilities for dressing it? It was considerate to send flour, and biscuits, and Christmas gifts of all kinds; but what if there were neither horses nor waggons to convey them from the ships to the camp? There is no need to strain the illustration: these queries may suffice to afford hints concerning probable disasters in governmental food-supply to a town.

The true bearings of this subject can best be appreciated by watching the effects of any attempt to feed a great city by the state. Take the example of Paris,

* Introductory Lectures on Political Economy, Lecture iv. p. 103.

for instance, sixty or seventy years ago. In 1793 the harvest was late in France; the large farmers were regarded as enemies to the people, and were rendered timid in their proceedings; and as a consequence, supplies in Paris were scanty, and prices high. But this was only a small part of the evil. The assignats, or national bank notes, had been issued in such prodigious quantities that their real value became ridiculously small in comparison with their nominal value; just as if (could we suppose such a thing) a five-pound English note should become worth only a few shillings instead of five sovereigns. The working classes received their wages in assignats; but the shopkeepers refused to take these notes at more than their market value in exchange for provisions. Hence ensued hunger and distress; and hence food-riots of a dreadful kind. The shopkeepers themselves became impoverished; for, estimating a franc assignat at one-third of a silver franc in July, they found it worth only one-sixth of a silver franc in August. Every one was dissatisfied; and every one called loudly upon the government.

Let us now see how the state grappled with this difficulty. An order was issued, compelling farmers to bring all their corn to market, and to sell it at a price determined by the government; the buyers, too, might purchase only a stated limited quantity; and the mode of trading in the bakers' shops was strictly laid down, with a view to each customer being served in turn. These regulations, as may well be supposed, failed to render food cheap; and ruffians were wont to break open the provision-shops, and to waylay provi-

sion-carts coming in from the country. The retail dealers complaining bitterly of the hardship of the system as it affected them, the government went one step farther, and controlled the mode in which, and the prices at which, wholesale merchants and dealers should supply the retailers. The state next thought of being the great shopkeeper for the whole food of Paris; but this threw matters into still greater confusion. In 1794 a deficiency in the supply of meat rendered the official interference with butchers as minute and vexatious as it had before been with bakers. In 1795 the harvest was deficient; and the people had become so dependent upon the government for benefits which really did not exist, that Paris was at length placed upon rations: a pound to a pound and a half of bread per day was given to each individual; but if any irregularity took place in the distribution, riot and violence ensued. Although the ration system was abandoned in 1796, the executive was still compelled, during many months, to buy provisions at the market price, and to sell at a much lower price, as the only means of preventing an *émeute*. The system gradually died out from its very rottenness.

It was the knowledge of these deplorable proceedings, perhaps, coupled with certain scenes which had occurred in England, that led Burke to say, "Of all things, an indiscreet tampering with the trade of provisions is the most dangerous; and it is always worst at the time when men are most disposed to it — that is, in the time of scarcity; because there is nothing on which the passions of men are so violent, and their judgment so

weak, and on which there exists such a multitude of ill-founded prejudices."*

But if we need not a commissariat for the supply of food to our huge larder, there are difficulties enough in obtaining an intelligible view of the whole subject. The very circumstance that food-supply regulates itself, with scarcely any interference on the part of the government, is a source of embarrassment in relation to the ascertainment of trustworthy facts concerning quantities and qualities. Abundant proofs of this have been afforded by changes in the Excise and Customs' laws. When, some years ago, the trade between England and Ireland was assimilated to the coasting trade, there at once ceased to be any official record of the quantities of commodities transmitted from the one country to the other. When a customs' impost is abolished, there frequently ensues a cessation of all official records of quantities and values imported. These and similar fiscal regulations — variations in the number and location of the persons to be supplied — misconceptions and miscalculations to which all are more or less liable — the various demands of purchasers in seasons of prosperity and of distress — the indirect effect of legislation in disturbing the ordinary currents of trade — all interfere with any complete view of the machinery whereby food-supply is kept up.

Let us illustrate this. In Belgium† committees or commissions are appointed in every district to collect information respecting the amount of corn and other

* Thoughts and Details on Scarcity.

† Porter, Progress of the Nation, p. 589.

crops in any given year; each member of each committee possessing local knowledge which enables him in some degree to test the accuracy of the returns. In France, in like manner, the prefects and sub-prefects of the eighty-six departments prepare annual tables of this kind. No such machinery exists in England. The constabulary force in Ireland, it is true, has been employed, first in 1847, and then in later years, to visit every farm in the island, and to obtain detailed information concerning the acreage under crop, and the probable quantity of produce: the work has been well done; and the results are valuable. It is no cause for wonder that English journalists should now be urging the adoption of some such system of agricultural statistics in England. A little progress in this direction was made in 1854–5, but only sufficient to show how much yet remains to be done. In Scotland the progress is more rapid and satisfactory, under the management of the Highland Society.

The Consumption in the towns, too, is as problematical as the Production. The English, as a nation, are so jealous of government interference in commercial transactions, that we have much fewer materials for correct tabulations than our continental neighbours. There are at Paris certain tolls, or civic imposts, which enable the authorities to ascertain exactly the quantity of food brought into the city from the country districts. Nothing of this kind exists in London; one consequence of which is, that all attempts to determine the amount of food brought into our metropolis are subject to great liability of error. Even the tabulation of live

stock sold at the great metropolitan Cattle-market leaves us in uncertainty concerning the amount of butchers' meat consumed in London, owing to these two circumstances — that many of the purchases made in London are for consumption beyond the limits of the metropolis; and that the quantity of dead meat brought to London is not officially recorded by any central authority. Until lately, when Sir Benjamin Hall's new measure for the government of the 'Great Metropolis,' came into force (1855), there were said to be 213 Acts of Parliament, administered by 276 bodies, relating especially to the metropolis, besides royal charters having special application; and yet all these statutes and charters, boards and corporations, were wanting in official power to ascertain the quantity of food which two millions and a half of human beings yearly consume.

A further source of perplexity in connection with this subject is, the uncertainty concerning the limits of the metropolis. In men's minds, and in the pages of journals and magazines, the question presents itself — Where does London end? Shall we adopt, as our representative of the metropolis, the *city* of London, which (including both 'within' and 'without' the walls) comprises only one square mile of surface? or the 'Bills of Mortality,' which under the old system included the cities of London and Westminster, and about forty out-parishes? or the 'Registrar General's' London, which comprises the two cities, the borough of Southwark, the forty out-parishes, and the suburban hamlets and villages of Bow, Brompton, Bromley, Camberwell, Chelsea,

Deptford, Woolwich, Greenwich, Fulham, Hammersmith, Hatcham, Kensington, Marylebone, Paddington, Pancras, Highgate, and Stoke Newington? or the 'Poor Law' London, which omits several marginal parishes included by the Registrar General? or the 'Parliamentary' London, which takes no account of the extensive district comprised in Chelsea, Pimlico, Knightsbridge, Brompton, and Kensington? or the 'Post Office' London, which gives geometrical symmetry to the metropolis by confining it within a circle of a given number of miles radius? or the 'Police' London, which travels out to a distance of fifteen miles from Charing Cross in every direction? Which of these shall be selected? For the purposes of the present volume it will suffice to consider London as the Registrar General and the Census Commissioners have considered it—a wonderful assemblage of 2,362,236 human beings, living in about 300,000 houses. It will be safe to assume that, in the interval between the years 1851 and 1855 the population has risen to two millions and a half. The Registrar calculates that, if births, deaths, immigration, and emigration advance in the ratios shown by the years 1841 to 1851, our dense London mass of human beings will be,

in 1863 = 3,000,000
1878 = 4,000,000
1889 = 5,000,000

Not only are men perplexed to determine the limits of the place which they choose to call 'London;' but there is a frequent uncertainty in parliamentary and statistical returns concerning the sense in which 'England' is to be understood. 'England' is a short, com-

pact, familiar word; its two syllables are more easily managed than 'England and Wales,' 'Great Britain,' 'Great Britain and Ireland,' the 'United Kingdom,' or the 'British Islands;' and there can hardly be a doubt that it is too often made to do duty for some of these. Whoever has occasion to consult the 'Blue Books,' the parliamentary papers issued by the Board of Trade and other departments of the Government, must hold himself on his guard concerning this source of error,—error in inferences drawn by himself from tabular statements, one of which, perhaps, may relate to England and Wales only, and another to Great Britain, or to the United Kingdom. Our eminent writers are occasionally obscure on this point. For instance, Mr. Macaulay, in comparing the agriculture of 1848 with that of 1696*, leaves a doubt whether the word 'kingdom' has a like application in both cases — whether in one, or neither, or both, he included Scotland.

Even if the means of obtaining statistical information were trustworthy, writers are frequently misled by verbal errors on the part of those who have preceded them. A striking instance of this has been adduced by Mr. M'Culloch. Newspaper readers are accustomed to see that, in the market sales of butcher's meat in London, the price is stated at so much per stone, 'sinking the offal;' that is, when the skin, horns, viscera, &c., have been removed. In oxen, calves, sheep, and pigs, the offal bears a certain known ratio to the weight of the whole animal. Now the error thus arose. "In a former edition of this work," says Mr. M'Culloch, "we inad-

* History of England, i. 314.

vertently deducted the offal from the *nett* instead of the *gross* weight of the animals; and, we regret to say, this obvious blunder was soon after quoted in the *Dictionnaire de Commerce* to show that the weight of the cattle slaughtered in Paris was greater than that of those killed in London; and that the consumption of animal food was greater in the former than in the latter." * It is not unlikely that the statement will go the round of a large number of French publications; and that the Parisians will learn to believe that they obtain more '*rosbifs*' than an equal number of the inhabitants of London.

Irrespective of the more familiar causes of variation in the supply of food, and of consequent variation in quantities and prices, there are others of special application. For instance, there is the mutual dependence of prices and mortality. Mr. Farr † has gone through the Tables of Mortality in London for nearly two centuries, from about 1602 to 1800. He finds that in ninety-eight years when provisions were comparatively cheap, the total deaths were fewer than in ninety-eight years of comparative dearth; and he further finds that, if periods of five or ten years be chosen, the deaths were almost always lower in cheap years: the difference, though not large, is sufficient to indicate a prevailing law. Another point is, that the prices of agricultural and manufactured products do not rise or fall equally in a given time. An examination of the 'official' and 'declared' values of commodities at different times has

* Dictionary of Commerce, edit. 1854.

† Journal of the Statistical Society, ix. 164.

shown this in a curious way. "A quantity of agricultural produce which in 1694 was worth 100*l.*, would, at the present prices, be worth 143*l.*; whilst a quantity of manufactured goods which, in 1694, was worth 100*l.*, would now only be worth 40*l.*"* In other words, meat, corn, fish, butter, and cheese, are relatively much dearer than cottons, linens, woollens, iron, and coal; and in this sense a Londoner of 1694 might have been better fed than clothed, while a Londoner of 1855 might be better clothed than fed.

It scarcely need be said that fiscal regulations greatly influence the kind and quantity of food obtainable in London. Where there are heavy duties, there will be evasions of duty in some form or other. Strangely circuitous is the commerce which taxation sometimes superinduces. In 1844, the duty on sugar led to an importation of confectionery which could not be explained on ordinary grounds; but a clue was found thus:—in British America refined sugar sold at 27*s.* per cwt. in bond; the duty, the freight, and the manufacture into lozenges, raised this to 74*s.*; while at the same time English confectioners were charged 80*s.* per cwt. for the sugar with which their lozenges were made. Thus the Londoners were supplied with Halifax lozenges because the sugar-duty was higher in London than at Halifax. But, what is still more remarkable, raw sugar was made into confections, called 'succades,' at Halifax, which were sent to England to be *re-converted into sugar;* the sugar thus made, after the

* Economist, Nov. 4. 1843.

double journey and double process of manufacture, was sold cheaper than any other in the English market.

Another circumstance which influences the supply of food to a particular city at a particular time, is the prevailing tone of morality concerning trade. At the present day, ardent spirits find little sale in the State of Maine—not through any deficiency in the supply, but through the operation of an anti-liquor law which treats dram-drinking as a social crime. Defoe, a clear-headed man on most subjects, seems to have been perplexed how to reconcile the interests of morality with those of trade; he would gladly have lessened the consumption of certain commodities, but was startled by the probable consequences to those who lived by supplying them. "Suppose," says he, "that no drunkenness, no extravagances, no excesses, were practised among us, either among the poor or the rich; and let any one that understands the general consumption of these liquors tell me what defalcation he thinks would be made in the revenue from what it is, as things now stand amongst us, and whether at least a million and a half of that vast revenue would not be taken off from the account: but then let them tell us also what a dreadful blow would this reformation be to trade. However necessary and called for by heaven and earth, however required for the health of soul and body, that's not the question; but it would be a clap of thunder to the nation: as it would immediately save above a million of money, so it would immediately starve above a million of people. How many ale-houses must shut up! how many bushes be taken down! what an array of drawers

and tapsters, that scum of the rabble, would immediately go a begging! What regiments of gaugers and excisemen, tidewaiters and searchers, and all the mob of custom-house and excise officers would be disbanded, and left to the grave and the gallows! and what an innumerable throng of women and children, the wretched dependants of these miserables, would come to the parish for bread! And what must be done in this case? It is a dreadful story, that's the truth of it: the nation's prosperity is built on the ruin of the nation's morals."* Many are embarrassed at the present day with the questions which thus perplexed Defoe a hundred-and-forty years ago; while others run full tilt at the indulgences without regard to the traders. The matter is mentioned here simply to indicate one mode in which the quantity and nature of the food and beverages purchased by a community may to some extent be influenced by conscientious scruples.

There is another direction in which morality, or rather mere common honesty, is concerned with the food of a great city. Are the commodities such as they seem? Do we really know how much is eaten of the several kinds? Is a pound of nominal coffee a pound of authentic coffee? The tea or the chocolate, the wine or the beer, the milk or the vinegar, the bread or the flour — do these, as purchased and consumed, correspond with their names; or if not, to what extent do they depart from genuineness? These questions are of no small moment when considering the quantity of any article of food consumed by two millions and a

* Complete English Tradesman, ii. chap. iv.

half of human beings. Our chemists have not failed to attend to this matter. Several years ago Mr. Accum wrote a 'Treatise on the Adulteration of Food,' in which he gives the results of his analyses of water, wine, bread, beer, tea, coffee, brandy, rum, gin, cheese, pepper, cayenne, pickles, vinegar, cream, confectionary, sauces, and seasonings; and these results were such as to induce him to terminate his preface with the startling words, arrayed in all the dignity of capitals, 'THERE IS DEATH IN THE POT.' More recently, in 1848, Mr. Mitchell published a 'Treatise on the Falsification of Food,' in which he traces, somewhat in the manner of Accum, the results of his examination of food and beverages purchased in the London shops; comprising flour, bread, milk, beer, cider, wine, spirits, coffee, tea, chocolate, sugar, honey, lozenges, cheese, vinegar, pickles, sauces, oils, and seasonings. This was followed, in 1850, by Dr. Normandy's 'Commercial Handbook of Chemical Analysis,' containing about four hundred articles alphabetically arranged, and comprising among them most varieties of food and drinks: each being treated in relation to the chemical means whereby adulteration may be detected. The French have published a work, by Chevallier, on the same subject, the 'Dictionnaire des Altérations et Falsifications des Substances Alimentaires, Médicamenteuses, et Commerciales.'

A more remarkable and extensive scrutiny has, however, lately been made into the honesty of manufacturers and shopkeepers. Whether the English are more prone to sophistication than other nations, we have, perhaps not the means of fully knowing. Sam Slick, who has

his own peculiar mode of judging everything and everybody, certainly represents an English dinner as being otherwise than it seems: — "Veal, to be good, must look like anythin' else than veal; you must'nt know it when you see it, or it's vulgar. Mutton must be *incog.* too. Beef must have a mask on. Anythin' that looks solid, take a spoon to; anythin' that looks light, cut with a knife. If a thing looks like fish, you may take your oath it is flesh; and if it seems rael flesh, it's only disguised, for it's sure to be fish. Nothin' must be nateral; nater is out of fashion here. This is a manufacturin' country; everythin' is done by machinery; and that that aint must be made to look like it; and I must say the dinner machinery is perfect." Sam Slick's philosophy apart, however, we must notice what has been effected through the instrumentality of the 'Lancet.' This journal, in 1851, commenced a series of searching examinations into the quality of the food sold in the London shops; and published the results at great length. In that year, the substances which came under scrutiny were coffee, arrow-root, sugar, pepper, chicory, mustard, flour, bread, cocoa, oatmeal, tea, milk, isinglas, and gelatine; in 1852, they comprised vinegar, pickles, spices, preserved meats, ale and beer, cayenne, curry-powder, bottled fruits and vegetables, anchovies, potted meats, and fish-sauces; in 1853 the researches had relation to preserves, jellies, lard, butter, tobacco, cigars, and snuff; while in 1854, after confectionary, the examination passed on to drugs and chemicals. The proprietors of the journal maintained an 'Analytical Sanitary Com-

mission,' by which the purchases were made, and the analyses conducted; and the successive papers in the 'Lancet' had the general heading — "Records of the Results of Microscopic and Chemical Analyses of the Solids and Fluids consumed by all Classes of the People." A dozen, twenty, or even fifty samples of the same substance were purchased, at as many different shops, in various parts of London; and these were all examined by the microscope, the balance, and the test-tube, as a means of determining the exact component ingredients in each. Of the average results obtained in respect to the chief articles of food, more will be said in later pages of this volume; but it may be well to show the spirit in which the investigations were conducted: —

"Experience has shown that any merely general exposure of the nature of the adulteration practised on the public through their food, is not sufficient to deter from a repetition of them; and that the only way in which it can be hoped that such fraudulent practices can be stayed, and the public protected, is by such proceedings as will entail personal discredit and possible loss. . . . . That the public at large will be greatly benefited by these inquiries is obvious; and that many of our colonists (at least such as import any article of food into this country), and the revenue itself, will be largely the gainers, might be very easily and satisfactorily proved. The honest tradesman or merchant will also be benefited: he has nothing to fear, but on the contrary much to gain; for while he will be able to secure fair prices for a genuine commodity, his name

also will be made known to the public, and he will be upheld in his true light and character as an upright and honourable tradesman. Who, then, need fear the disclosures it will be our duty to make? Fraudulent dealers, whether they be wholesale merchants, knavish manufacturers, dishonest brewers, or adulterating retailers: they alone will have cause to fear, but none whatever rightly to complain of the consequences of their own unprincipled proceedings. The urchin who filches a bun, a penny piece, or the value of one, breaks the law, and is liable to punishment and even imprisonment. Is it to be supposed, therefore, that the cunning and systematic adulterator of our food and drink, who robs us not only of our money, but sometimes even of our health and strength, is less guilty?" *

The main portion of the labour in these remarkable investigations was borne by Dr. Arthur Hill Hassall, who afterwards embodied the whole in a bulky illustrated volume: —'Reports of the Analytical Sanitary Commission of the Lancet for the Years 1851 to 1854 inclusive, on Food and its Adulterations:' a very cyclopædia of dishonesty, so far as concerns the practices therein examined and exposed. In the Session of 1855 a Committee of the House of Commons investigated this subject, examining many witnesses in relation thereto, with a view, apparently, of judging whether the legislature could usefully interfere. These inquiries and disclosures need not be further discussed here; the subject is only mentioned to show that if, according to a popular dramatist, we are 'Not so bad as we seem,'

* Lancet, Jan. 4. 1851.

there is, nevertheless, a strong impression abroad that our provisions are not so good as they seem.

Still another circumstance may be briefly adverted to, as among those which affect either the actual supply of food to a great city, or the means of determining the nature and quantity of that supply. This is the currency of particular opinions, chemical or physiological, concerning the most suitable articles of food for man. Chemists, within the last twenty years, have sedulously examined the elementary constituents of food, with a view to ascertain the part which each constituent takes in sustaining animal life. Thus Dr. Pereira has classified man's food into twelve kinds—aqueous, mucilaginous, saccharine, amylaceous, ligneous, pectinaceous, acidulous, alcoholic, oleaginous, proteinaceous, and saline. Dr. Paris, another inquirer, strives to show how the flesh of mature animals, such as beef, mutton, venison, and hare, supplies *fibrous* food; eggs, *albumenous;* the flesh of young animals, such as veal, chicken, and calf's foot, *gelatinous;* butter, cocoa, ducks, pork, geese, and eels, *fatty;* corn, rice, potato, sago, and arrowroot, *farinaceous;* milk and cheese, *glutenous*; carrot, turnip, asparagus, and cabbage, *mucilaginous;* sugar and sweet fruits, *saccharine;* oranges and other acescent fruits, *acidulous*; horse-radish, salt, and pepper, *condimentary.* But while some inquirers are endeavouring to discover what part is taken by each kind of diet in building up the complex structure of man; others are debating which are the best kinds of diet, or whether certain kinds are required at all—whether flesh ought to be included among them; whether

some kinds of flesh only should be included; whether fermented beverages are justifiable; whether tobacco is a food or a poison, — and so on. Mr. Smith's volume, 'Fruits and Farinaceæ,' is an example of this kind; in which he attempts to show, from the Mosaic writings, from comparative anatomy, from physiology, from chemistry, from general history, and from private experience, that "the flesh of animals is not only unnecessary, but decidedly prejudicial to man's health and wellbeing," and that fruits and farinaceæ are the proper food of man. Diverging widely from this are the opinions of Dr. George Fordyce, who thinks that there is nothing which can properly be called the *natural* food of man; that man, being decreed to earn his food by the sweat of his brow, must by his own industry discover substances from which he is to obtain food; and that, if he cannot find such in a natural state, he must cultivate and alter them to an artificial state. There are also the opinions of inquirers such as Dr. R. D. Thomson, who states that *variety* in food is essential to the maintenance of the human frame in a healthy state. It is easy to see that, according as any one theory on these subjects may prevail, the natnre of the supply of food to a particular community would be affected, and inference from the past to the future be erroneous.

These, then, are some of the remarkable aspects under which the food-supply of London presents itself for notice, and some of the difficulties which beset any attempt to ascertain rightly its nature and quantity. The difficulties in this matter are indeed considerable.

There is no sufficient machinery for obtaining statistical details; there is doubt respecting the actual limits of the metropolis to be supplied; there are errors of misconception and transcription; there are variations in the relative values of food and other commodities; there are changes wrought indirectly by taxation; there are changes resulting from the prevailing views concerning the moral aspects of trade in food or drink; there is the cloud of doubt which hovers around the quality of the commodities sold; and there are the conflicting opinions of dietetic inquirers concerning the best kinds of food, and the influence which these opinions exert on the plans and purchases of food consumers. All these throw embarrassment into the determination of the kinds and quantities of the provisions brought into and consumed in London at a particular time. In all probability many of these difficulties will be lessened by degrees, consequent partly on the tabulation of trustworthy statistical inquiries by societies or by the government, and partly on the general desire now felt to probe to the bottom of all great social questions.

CHAP. II.

HISTORICAL SKETCH: THE FOOD OF LONDON IN PAST AGES.

Scanty Notices on the Subject by early Writers. — Cheap Prices and low Wages. — Cooks' Shops in London Seven Centuries ago. — Occasional Famines. — Origin of the Fair and Market at Smithfield. — Early Days of Billingsgate. — Power of the old City Companies over the retailing of Food. — Great Feasts in the 14th Century. — Meat mostly salted in those Days. — Rivalry between Queenhithe and Billingsgate as Fish Markets. — Influence of the Fishmongers' Company. — Sale of Bread in London in the 15th Century. — Vintners and the Beer Trade. — Lydgate's 'London Lyckpenny.' — Prices of Food. — Attempts to encourage the Use of Fish as a Substitute for Meat. — Meat Markets in the Time of the Tudors. — Stringent Regulation of Millers and Bakers. — Public Granaries. — Power of the Grocers' Company. — Ale and Beer in Elizabeth's Reign. — Diet in London and in great Households. — Market Arrangements under Cromwell. — Cessation of public Granaries. — Milk-maidens of Walton's time. — Food Monopolies. — Establishment of Excise Duties on Beverages. — Taverns and Ordinaries in the 17th Century. — Smithfield and Billingsgate in the last Century. — Assize on Bread. — Walpole and the 'Gin Acts.' — Gradual Changes in recent Times.

WHATEVER may have been the characteristic diet of England generally during the Saxon and Danish times, we may infer that this, subject to improvement in some of the items, was also the diet of the Londoners. The cattle, the swine, the corn, the ale, were alike available in the metropolis and in the provinces. It is probable that difficulty of transport had as much effect as any other circumstance in bringing about inequality in the supply of food. There was a facility afforded to the

inhabitants of London, and a few other seaports, of tasting the luxuries supplied by foreign countries, not shared equally by the dwellers in inland districts; but the imports of food were not large in extent until comparatively modern times.

One of the difficulties in estimating the relative comforts of two distant centuries lies in the determination of the relative values of money as a measure of price. The metals for conversion into money may be more scarce at one time than at another, while the ratios which these metals bear to other commodities, and to man's labour, may be subject to great fluctuations. One thing is certain — that the shilling and the penny exchanged in past days for a much larger quantity of food, and most other commodities, than in our times. For instance, one of the Saxon laws of King Ethelred conveys indirectly the information that in his reign, an ox was valued at six shillings, a cow at five shillings, a pig at one shilling and three pennies, and a sheep at one shilling — a most tempting tariff, this, to a modern Londoner, who needs to pay as much for a pound of mutton-chops as his Anglo-Saxon ancestor paid for a whole sheep. But then, the Anglo-Saxon received, perchance, no more than a penny a day for his labour; a fortnight's labour-wages might have procured for him a whole sheep; a fortnight's labour-wages may buy a whole sheep for the working-man in London at present; and thus the account would stand more equal than at first might be supposed. We must guard against inferences from the low prices of early times. The practical question in regard to the state of a man's

larder is — not what is the money price of provisions, nor what is his money income, but what ratio does the one bear to the other.

One of the earliest notices of the retailing of food in the Metropolis occurs in the pages of Fitzstephen. This monk of Canterbury wrote the first connected account of London, about A.D. 1160 or 1170.; and in this he shows that a cook's shop is by no means a modern invention. "There is in London," he says, "upon the river's bank, a public place of cookery, among the wines to be sold in the ships and in the wine-cellars. There every day ye may call for any dish of meat, roast, fried, or boiled; fish both small and great; ordinary flesh for the poorer sort, and more dainty for the rich, as venison and fowl. If friends come upon a sudden, wearied with travel, to a citizen's house, and they be loth to wait for curious preparations and dressings of fresh meat, let the servants give them water to wash, and bread to stay their stomachs; and in the meantime they run to the water-side, where all things that can be desired are at hand." Here we have the three-fold accommodation, complete in all its forms, — a dining-room for the rich man, an eating-house for the poor man, and a ready resource in the event of a friend calling to take 'pot-luck' when there is no pot-luck to give him. If there were only one such establishment on the Thames' bank, it must have been considerable in magnitude; for we are told that, "Whatsoever multitude of soldiers or other strangers enter into the city at any hour of the day or night, or else are about to depart, they may turn in,

bait here, and refresh themselves to their hearts' content, and so avoid long fasting, and not go away without their dinner. If any desire to set their dainty tooth, they take a goose; they need not to long for the fowl of Africa; no, nor the rare godwit of Ionia. This is the public cookery, and very convenient for the state of a city, and belongs to it." The old monk was right.

In those days of limited intercourse, scarcity of crops was terrible in its results; the people had nothing to fall back upon; they were dependent upon growers living within a short distance; and if those growers had little to sell, the alternative of starvation became painfully vivid. Just about six centuries ago, London, as well as many other parts of England, suffered from a visitation of this kind. Mr. Farr * has brought forward a passage from Matthew Paris, in which the old chronicler thus narrates, under date 1258: — "Food failing, innumerable multitudes of poor people died, and their bodies were found all lying about swollen from want, and livid, five or six together, in the pig-styes, in muddy streets, and on dung-hills. Nor did those who had homes dare to harbour the sick and dying, for fear of infection. About the festival of Trinity, the pestilence was immense, insufferable. It attacked the poor particularly. In London alone, 15,000 of the poor perished. . . . . The nobility distributed bread on certain days in London. When the famine began, the *summa* of wheat in London sold for nine or ten *solidi*. Fifty shiploads of wheat, barley, and bread, were procured from Germany, and the citizens of London were

* Journal of the Statistical Society, vol. ix.

forbidden by proclamation to purchase that they might sell the grain again at a high price to the poor, according to their custom. The *summa* (about 100 lbs.) of corn rose at last to fifteen shillings and more. The rich only escaped death by purchasing foreign grain; the middle classes sold their possessions; and many of honourable degree were reduced to beg from strangers, or, restrained by shame, to pass hungry, pale, and dinnerless through the night, in uncounted sighs." It is evident that, under such a load of misery (as in Ireland during 1847), the ordinary routine of commerce could not suffice to fill up the fearful gap in food; other aid was necessary to produce any alleviation. A further observation of Matthew Paris records a fact which has received much illustration during the autumn of 1854; viz., that a good crop in any one year does not ensure good and cheap food in that year, unless collateral circumstances tend in the same direction: — "The harvest proved very abundant; but the grain was spoiled, or not gathered."

An incident is mentioned by Walsingham, showing an extraordinary rise in the price of wheat in the year 1289. A tempest destroyed the seed; and as a consequence, the modus of wheat rose in London from 3*d.* to 2*s.*, and afterwards reached 10*s.* Such a rise of price is obviously beyond anything which modern times have exhibited, let the 'modus' have been what it may. Four centuries earlier than this, the Anglo-Saxon monks of Bury St. Edmund's ate barley-bread, "because the income of the establishment would not admit of their feeding twice or thrice a day on wheaten bread;" and

there is reason to believe that this use of barley for bread continued to be prevalent.

The supply of one of the great necessaries of life, *Meat*, led at an early period to the establishment of a cattle-market in the Metropolis. The history of Smithfield, associated as it is both with the quiet of monastic times, and with the bustle of the nineteenth century, is full of interest. Nine hundred years ago Smithfield was really a field, situated just beyond the City walls, and selected by the citizens as a place for open-air sports. Like other public fields, it became afterwards the resort of the people on political occasions; and it was graced, too, by the chivalry of tournaments. Here it was that Edward III. and his mistress Alice Piers, witnessed a tournament which lasted several days; here it was that Richard II. held the splendid tournay in celebration of his marriage, when sixty fair ladies, riding on palfreys, sixty knights completely armed, and sixty esquires of honour, entered Smithfield, the knights being led by the ladies with chains of silver: of the glories of this three days' tournament, the Chroniclers treat with much gusto. A more painful association is with the persecutions and burnings by intolerant zealots, when a flaming stake at Smithfield was deemed the best cure for differences in religious opinion. Yet another aspect under which Smithfield presents itself to notice, is that of a fair-field and a market-place: the establishment of a market at this spot being connected with one of the earliest regulations of English commerce — that relating to fairs. In olden times, a commercial transaction was scarcely deemed

valid, unless openly conducted before witnesses; the honour and probity of the counting-house were not then fully understood; and hence every one attached importance to open fairs and markets, for which a royal grant or licence became necessary. Now, it appears that, durig the reigns of the Norman and Plantagenet sovereigns, several fairs were granted to Religious Houses in and near London and Westminster, to benefit the monastic revenues. Among these was one granted to the Prior and Convent of St. Bartholomew, in Smithfield. This, however, was not the only legalised fair on that spot. A charter, granted to the City Corporation by Edward III., contains a declaration that no other market shall be granted by the Crown, to be holden within several miles of the city; and this charter was the foundation of all the monopolising proceedings of later ages concerning Smithfield. Consequent on this duplicate system, the fair of St. Bartholomew became a compound of two distinct fairs, or a fair and a market. The City fair was a market for live stock, and for merchandise; whereas the Priory fair was for merchandise only. That cattle and horses have been sold in Smithfield for nearly seven hundred years is certain; Fitzstephen mentions the existence of such a market at the time he wrote; but how long before that period the same state of things had endured, does not seem to be now known. Two hundred years later, the Corporation held a controlling interest in the market by prescription rather than by any specific charter; nevertheless the City authorities succeeded in obtaining from the Crown the charter just adverted to. In what manner this

charter affected the future supply of cattle to the Metropolis, will come for notice in later pages.

Another of our great emporia for the supply of food to London, Billingsgate, can, in like manner, trace its history back to early times. A 'gate' was an old English name for a sort of landing place on the banks of the Thames. There were many such; and Billingsgate was among the number. Billing was, in all probability, the name of the person first instrumental in establishing this landing-place. It is true that Geoffry of Monmouth gives dignity to the matter by telling us that "Belin, a king of the Britons, about four hundred years before Christ's nativity, built this gate, and named it Belin's Gate, after his own calling; and when he was dead, his body being burned, the ashes, in a vessel of brass, were set on a high pinnacle of stone over the same gate." The story of King Belin has, at least, this advantage, that we cannot disprove it; but Stow takes a humbler view, and is content with the theory of some merchant or citizen named Biling or Beling. Be the real origin what it may, Billingsgate maintained, in very early times, a rivalry with Queenhithe as a landing-place. One was situated to the east, and the other to the west of London Bridge; but both were well located for the fish trade. The fishing-vessels brought their cargoes to Billingsgate and to Queenhithe; and the dealers lived in the immediate neighbourhood. The rivalry seems to have depended chiefly on this circumstance, that the revenues of the one belonged to the City, while those of the other were claimed by the Crown. Queenhithe, or the Queen's Haven, was a kind of royal sinecure, the

revenues of which belonged to the consort of the Sovereign; and many were the struggles to maintain this right in a flourishing state; for in 1225 the Constable of the Tower was commanded by Henry III. to compel vessels to bring all corn from the Cinque Ports to Queenhithe only; and two years afterwards the King issued a similar mandate in respect to fish, obviously with a view to replenishing the purse of his lady queen. There was, however, a strong disinclination on the part of the dealers to obey these orders. The ships belonging to the citizens of London were exempt from some of the restrictions placed upon others; and this exemption was probably the 'thin end of the wedge' which was afterwards driven home effectually.

The fourteenth century presents very sparing information concerning the food of London: the notices on the subject in our early chroniclers being but few and short. During the reigns of the first three Edwards and of Richard II., the marketing arrangements at Smithfield and Billingsgate appear to have become consolidated and extended; but of other large places of commerce in food we hear little. Mr. Herbert* has found an entry in one of the City records which tells something concerning the butchers of London in the year 1355. There were three Butchers' Companies at that time: the 'Butchers of St. Nicholas' occupied the site now known as Newgate Market; the 'Butchers of the Stocks' were those who had removed from shambles anciently situated at Eastcheap to a new market on the site of the present Mansion House; while the 'Butchers

* History of the Livery Companies, i. 31.

of Westcheap' were located in Cheapside. It may not be correct to designate these as separate companies; but the three fraternities contributed respectively 9*l.*, 17*l.*, and 8*l.* to the fund in aid of the French wars of Edward III.: sums which must not be estimated by a modern standard in respect to their smallness. A 'flesh-market' was at that time in existence, westward of Temple Bar, in a place called Butcher Row; it was for 'foreign' butchers — that is, those who brought meat from the country in carts and sold it just without the bounds of the city liberties. We hear a little more concerning butchers in a petition to parliament in 1380, praying that slaughterers may not throw blood and offal into the river Fleet, but do their work at "Knyghtsbrigg" or elsewhere.

In this, as in former centuries, occasional dearth afflicted London. Stow speaks of two bad seasons in succession, 1392 and 1393, when the people sickened by eating apples and nuts, wanting better food, and when the mayor and aldermen advanced corn at very low prices to the poor.

Mr. Herbert has collected some curious details respecting two classes of London traders during this century — Grocers and Vintners — illustrative of the commercial regulations of the age. The grocers, it appears, were incorporated in 1345, under the designation of Pepperers, pepper being then the chief article sold by them. The word 'grocer' was a term at first employed to distinguish merchants of this company from humbler traders; in some old books the word signifies a merchant who dealt wholesale or in the gross;

but in after times the expression became specially employed in relation to kinds rather than to quantities of goods. An old historian of the Grocers' Company, quoted by Herbert, claims for them, however, a high rank among the merchants of London. "They have been the most universal merchants that traded abroad; and what they brought home, many artists of this society found out ways afterwards to change and alter the species, by mixture, confection, and composition of simple ingredients; by which means many and various ways of dealing and trading passed under the denomination of groceries; and, indeed, this city and nation do, in a great measure, owe the improvement of navigation to merchants originally exercising their mystery, as trading into all foreign parts from whence we have received either spices, drugs, fruits, gums, or other rich aromatic commodities." The other company mentioned in this paragraph, the Vintners', was established or incorporated by Edward III. A trade in wine with Burgundy had originated two centuries earlier, consequent on the marriage of Henry II. with Eleanor of Aquitaine; Gascony wine-merchants were allowed to sell wine in London: a course which led to many contests between them and the citizens. Edward III. at length gave a charter, which recognised the vintners as the 'merchant wine-tonners of Gascoyne;' and the company was composed of merchant-importers and tavern-retailers.

Of a more important article of food than grocers and vintners furnish, Bread, the early notices are equally slight. In 'Piers Plowman,' a satirical poem, written

by Robert Longlande, in the reign of Edward III., there is a couplet: —

> "Woulde no beggar eat bread that in it beanes were,
> But of coket and clemantyne, or else clene wheate."

We can only infer from this that bean-bread was eaten in those days: not by whom. In relation to London, there are records which show that the monks of Rochester were owners of a cornmill in Southwark before the Conquest. The Templars, also, at a later date, had mills on the Fleet; and a complaint was made by the citizens that these mills diverted and interfered with the current of the Fleet (then a river, now a sewer): this complaint led to an official inspection by the Lord Mayor and the Constable of the Tower; and the inspection led to the removal of the mills. About the middle of the thirteenth century there were floating corn-mills on the Thames, set in action by the ebb and flow of the tide.

Records exist to show that the varieties of food obtainable in England, in the days under notice, were little if anything inferior in number to those now known. The substantial solids, at any rate, were plentiful to those who could purchase. In one of the later volumes of the Camden Society's publications *, an account is given of the household expenses of a bishop of Hereford in 1289-90. We find that on Friday, a 'fish day,' there were provided herrings, eels, lampreys, salmon, wine, and beer; that on the next day there were the same kinds of fish, together with hake and conger; that the Sunday's table was graced with

* Household Book of Bishop Swinfield, by the Rev. J. Webb.

pork, mutton, beef, fowls, pigeons, and larks; that Monday presented much the same bill of fare, with the addition of eggs, saffron, and spices; that Tuesday and Thursday resembled the Sunday; while Wednesday had the same fish diet as Friday and Saturday.

A curious account of the etiquette observed at the tables of the great about this period, or a few years later, is contained in the 'Boke of Curtasye,' edited by Mr. Halliwell, in 1841 *, from one of the Sloane MSS. A guest is instructed how to approach a great man's gate, how to seat himself at dinner, how to lay his trencher and cut his bread, and how to sit upright; and then the instructions proceed thus:—

"Byt not on thy brede and lay hit doune,
That is no curtasye to use in toune;
But breke as myche as thou wylle ete,
The remelant to pore thou shalle lete."

He is directed not to make a noise while eating, and is further told,—

"Let not thi spone stond in thi dysche,
Whether thou be served with flesche or fysche;
Ne lay hit not on thi dysche syde,
But cleanse hit honestly without pride;
Also eschew, withouten stryfe,
To foul the borde-cloth with thi knyfe."

He is told,—

"With mete ne bere thi knyfe to mouthe."

And is further exhorted,—

"Dip not thi thombe thi drynke into,
Thou art uncurtasye yf thou hit do."

* Percy Society's Publications.

There is one short passage which gives a little information concerning the size of the loaves eaten in those days: —

> "Of the baker now speke y wylle,
> And wat longes his office untylle;
> Of a Lundon buschel he shalle bake
> xx lovys, I undertake." *

The same old manuscript † which contains these curious rules of etiquette, also comprises an equally curious system of cookery 'done into verse.' It consists of 137 recipes, each occupying on an average about a dozen rhymed lines. Their general character may be judged from a few examples: 'To make venegur in a nede;' 'Gruel of almondes;' 'Butter of almonde mylke;' 'Mylke rostyd;' 'For to make a potage of whelkes;' 'Blancmaung of fysshe;' 'Gruel of porke;' 'For to boyle fesaunts and p'trykys;' 'Sawce best for capons rostyd;' 'Pigges in sawce;' 'For a broth of elys.' One recipe will show how a 'goose in a hotch-potch' was prepared five hundred years ago: —

Gose in a hogge pot.

> En peces thou shalt ye gose stryke
> Take water and wyne bothe y' lyke
> Do in thi gose and onyons take
> A gode quantite as E er spake
> Add erbus hacked yen take also
> And cast y'm in er thou more do
> Y'n set thi pot on ye fyre
> And hyt wele stir for ye hyre

* If the 'Lundon buschel' corresponded with a bushel of flour at the present day, these 'lovys' must have been a few ounces lighter than our four-pound loaves.

† Sloane MSS., No. 1986.

And make a lycure of brede and blode
And lye hyt therwyth for hyt is gode
Kast powder therto and salt anon
And messe it thenne thou hast done.

As we advance onward to the fifteenth century — the century in which the contests between the rival Houses of York and Lancaster formed the chief political object of attention in England — the notices of the social condition of the people become more numerous: we can learn more concerning the food of the nation generally, and of that of London in particular.

In respect of butchers' meat, there is reason to believe that the noble and the workman differed more than they differ now. Excepting in the principal towns, the mass of the people received their chief supply of meat from the feudal barons and the rich monasteries. As there was little winter feeding for cattle, the animals were slaughtered in October and November, and put into brine: there was thus a large supply of salt meat for the better classes; but salt fish was the staple winter food of the people; and this, unrelieved by a sufficiency of vegetables, gave rise to many diseases. The remarkable 'Household Book' of the Earl of Northumberland belongs to the next following century; but the details there given concerning the supply of meat apply equally to the century now under notice. Hume *, commenting on this book, seeks to show how little of the 'roast beef of Old England' could have fallen to the lot of the people in those days. We are told that 109 fat 'beeves' are to be bought at Allhallow tide, besides

* Hist. of Eng. chap. 26., *notes.*

24 lean beeves; the latter are directed to be put into the pastures to feed, and to serve from Midsummer to Michaelmas. Now, this autumnal period was the only time during which the Earl's family, consisting of 223 persons, could obtain fresh beef; during the rest of the year the beef which they ate was salted. Besides the 'beeves,' there were 620 'muttons,' which were also eaten salted in all except the autumnal months; the 28 'veals,' 25 hogs, and 40 lambs were probably reserved for his Grace's table; the servants ate salt meat, accompanied by very few vegetables. Working men out of doors, we may assume, fared no better than the servants of a grand noble. It was this which led Hume to say that "there cannot be anything more erroneous than the magnificent ideas formed of the Roast Beef of Old England" in those days.

There were reasons, also, why the beef could not have been equal in quality to that which London has obtained in later days. The agriculture was bad; the management of live stock was as imperfect as that of vegetable produce; the cultivation of such grasses as lucerne, sainfoin, and clover was little known; the root-crops were clumsily treated; the art of stalling or house-feeding for cattle was not then practised; and there was very little wherewith to feed cattle in winter. Hence it is probable that Young England eats finer beef than Old England could command. The few fatted cattle which were not killed and salted for winter use were turned out soon after Michaelmas, to shift as they could during the cold months; and miserable shifting it must have been.

The supply of fish to the Metropolis during the 15th century has received more elucidation than that of butcher's meat, partly on account of the numerous records preserved by the Fishmongers' Company. During the struggle between Queenhithe and Billingsgate, an arrangement was made, to the effect that if only one vessel came at a time with herrings, sprats, eels, whiting, plaice, cod, mackerel, &c., it should discharge at Queenhithe, and the cargo be there sold by retail; if two arrived, one should discharge at Queenhithe, and one at Billingsgate; if three, two at Queenhithe and one at Billingsgate.

While Queenhithe yet retained its position as a fish-market, the streets near Thames Street received a characteristic impress from the congregating of fish-dealers. Old Fish Street is still existing, near the still existing Queenhithe; and in this street, as well as in Old Fish Street Hill, the fishmongers were wont to assemble. Stow says, in relation to the houses in these streets, "These houses, now possessed by fishmongers, were at the first but moveable boards or stalls, set out on market days, to strew their fish there to be sold; but procuring license to set up sheds, they grew to shops, and by little and little houses, of three or four stories in height, and now are called Fish Street. Walter Tuck, fishmonger, Mayor, 1349, had two shops in Fish Street, over against St. Nicholas church; the one rented at five shillings a year, the other four shillings." Old Fish Street, we find, at the present day, to be a quiet thoroughfare parallel with, and somewhat northward of, Thames Street; Old Fish Street Hill leads from the one to

the other; and Stow speaks of a stone and leaden cistern, which was built near the northern side of St. Nicholas Church, for the accommodation of the fishmongers in and about Old Fish Street. The same authority tells us that Friday Street, which leads from Cheapside to Fish Street, derived its name from the circumstance that the fishmongers who dwelt there supplied the Friday's market — a market of some significance in the old Catholic times. The fish-market at Queenhithe extended east and west from Bread Street to Old Change; Fish Street itself was much wider than at present, thus affording space for fish-booths; and in 1413 it was a "void space," having booths only along the centre.

The distance which the fish had to be brought from the quay at Queenhithe was, as will be seen by a map, very short. Yet, as the distance at Billingsgate was still shorter, fish-stalls and shops gradually became numerous near London Bridge, especially in the line of street leading from the bridge to Grass-church or Gracechurch Market; and this line received the names of New Fish Street and New Fish Street Hill. There is a record of two fishmongers, in the reign of Edward II., who paid respectively the sums of 14*s.* and 12*s.* per annum as rentals for their shops or stalls in this street. Another fish-market was held in one of the streets between Queenhithe and London Bridge, for shell-fish only. Strange it certainly is to trace the changes which must have taken place in this vicinity: the building of the approaches to new London Bridge has thrown Thames Street, as it were, into a ravine almost escaping the ken of those

who have no direct business thither; and the mass of Londoners know it only as the odd-looking spot whence one steep and narrow avenue leads to the 'Citizen' steamboats, another to the 'Waterman' steamboats, and others to the 'Penny' and 'Halfpenny' boats, and so on.

The regulations concerning the sale of fish in London in those early days were greatly influenced by the Fishmongers' Company, one of the 'twelve great Livery Companies.' From the time when a charter gave privileges to this company, those privileges were employed as a weapon wherewith to repress the dealings of such fishmongers as were not members of the guild: an old story, which monopoly repeats over and over again. In the reign of Edward I. stringent regulations were laid down for the management of the fish trade: the market price was prescribed beforehand:—mackerel, 1*d.*; turbot, 6*d.*; soles, 3*d.* per dozen; pickled herrings, 1*d.* per score; oysters, 2*d.* per gallon; eels, 4*d.* per hundred; while the profit of the fishmongers was limited to 1*d.* in a shilling. The influence of the Crown, under Edward II., was often called into requisition to settle disputes between the fish dealers; the fishmongers endeavoured to suppress the trade of the itinerant dealers; and though they failed in this, they succeeded in preventing any other person from selling fish in the City, unless members of the Fishmongers' Company. It was ordered that purveyors for the Court should be first served, before any other of his Majesty's subjects. The sellers of dry and of wet fish formed different communities, having different interests and

separate places of assemblage; but in 1483 a new charter was granted, by which the different branches of the trade were united in one body.

Corn and bread next claim notice. The London arrangements in the fifteenth century, in relation to these commodities, do not seem to have been on a large scale: petty interferences by persons in authority were frequent; but there are few records extant of the nature of the dealings. In the 'Paston Letters,' a little information is given concerning the price of corn in Norfolk about the year 1480, which may, perhaps, serve as a guide to the price in London. The Pastons were a wealthy private family at Norwich; and Dame Margaret Paston, in one of her letters to her son, says, "As for your barley in this country, it cannot be sold above 10*d.* or 11*d.*; that is the greatest price of barley here; and but it be at a better price, I purpose for to do it malt (malt it). Malt is sold here but for 13*d.*, and wheat 2*s.* or 26*d.* at this time, and oats 12*d.*"* The quantity here indicated is supposed to have been the 'coomb' of two bushels; for in another letter Margaret Paston says, "malt is here but 10*d.* a coomb; wheat, a coomb, 28*d.*; oats, a coomb, 10*d.*" These prices thus present an average of about 9*s.* per quarter for wheat.

In regard to the London corn trade, the name Cornhill points to the locality of one of the early markets. There was another corn market at St. Michael-le-Quern or St. Michael-ad-Bladum, near Foster Lane in Cheapside; a third at Queenhithe; others of minor importance at Newgate, Leadenhall, Grasschurch or Grace-

* 'Paston Letters,' edited by A. Ramsay, ii. 91.

church, and Southwark. In the early part of the 15th century, a place of confinement, called the Cage, was constructed close to the conduit on Cornhill, with a pillory and a pair of stocks upon it. It is in connection with these dread implements of punishment that we hear something of the London bakers; for the pillory, as Stow tells us, was "for the punishment of bakers offending in the assize of bread, and for millers stealing of corn at the mills." We learn, from Fuller and Stow, that in 1435 Sir Simon Eyre, Mayor, erected the first public granary at Leadenhall; and that from thence the custom arose of maintaining granaries in the City under corporate control. The conduct of Sir Stephen Brown, Lord Mayor in 1438, is mentioned with commendation, inasmuch as during a great dearth in his mayoralty, "he charitably relieved the wants of the poor citizens, by sending ships at his own expence to Dantzig, which returned laden with rye, and which seasonable supply soon sunk grain to reasonable rates."

The nature of the trade in groceries has been already adverted to; and it need only be mentioned here, in connection with the 15th century, that there was a City officer called the Garbeller of Spices, empowered to enter shops and examine spices, chiefly to detect adulteration. The Grocers' Company obtained a share in the appointment of this officer in 1450. The articles originally placed under supervision were pepper and other spices; but galls, rice, currants, aniseed, cummin seed, dates, and senna were afterwards included. Concerning prices in those days, there are occasional entries to show that loaf sugar was rather a

choice luxury, commanding a high price. Margaret Paston frequently mentions this article of housekeeping; and in one of her letters she says, "send me word what price a pound of pepper, cloves, mace, ginger, almonds, rice, galangal, saffron, raisins of Corinth (currants), greynes (grains of Paradise), and comfits—of each of these send me the price of a pound; and if it be better cheap at London than it is here, I shall send you money to buy with such as I will have." Pity that there is no record of the prices furnished to the thrifty housewife. One thing we learn — that a wey of salt sold for 20*s*.

There is no want of information concerning the sale of ale and beer in the Metropolis in this century. As to the vintners, we gather from Stow that, during the reign of Henry VI., the Lombard merchants "corrupted their sweet wines," and that John Ranwell, then Mayor, "in divers places of the city commanded the heades of the buts and other vessels in the open streets to be broken, to the number of fifty, so that the liquor running forth, passed through the City like a stream of rain water, in the sight of all the people." This vinous torrent was, however, a trifling affair when compared with the production and consumption of malt liquors. The brewers of London formed a corporation early in the 15th century, which exercised much influence over the trade generally. In 1423 they ordered that "retailers of ale should sell the same in their houses in pots of peutre, sealed; and that whoever carried ale to the buyer should hold the pot in one hand and a cup in the other; and that all who

had pots unsealed should be fined." In the next year the brewers tried to curry favour with the Lord Mayor, John Michelle, "a good man and meek and soft to speak with;" they made him a present of an ox which cost 21*s.* 2*d.*, and a boar priced 30*s.* 1*d.*, "so that he did no harm to the brewers, and advised them to make good ale, that he might not have any complaint against them." The joyous commendations of the foaming tankard were quite as warm in those days as afterwards. Chaucer, writing early in this century, or perhaps a few years before, had something to say of the Southwark ale and its potent qualities:—

"The miller that for-dronken was all pale,
So that unethes upon his hors he sat,
He n'old avalen neither hood ne hat,
Ne abiden no man for his curtesie,
But in Pilate's vois he gan to crie,
And swore by armes and by blode and bones."

The miller declares that if his back, and feet, and head be bare, he will care not, if his "belly have good ale enough;" and he makes a protestation,—

"I am dronke, I know it by my soun;
And therfore if that I misspeke or say,
Wite it the ale of Southwerk, I you pray."*

The shops of London in the 15th century have received illustration in a curious old poem, 'London Lyckpenny' (Lickpenny, Lickpeny, Lackpenny, Licpenye: the old MS. transcribers were not very particular in their orthography). It was written by John Lydgate, a monk of Bury; a 'garrulous monk,' as some term him; a 'drivelling monk,' as a few, more

* Canterbury Tales,—'The Miller's Tale.'

severely, express it. There are two MS. copies of the poem in the British Museum, differing greatly one from another. The poem records the fortunes or misfortunes of one Lyckpenny, showing how badly a man may fare in the great Metropolis with empty purse and pocket. He was doomed to see rich store of good things without having wherewithal to purchase; and the poem depicts the scenes of these ungratified yearnings. Thus the provision shops of London are pictured: —

"Then to Westmynster Gate I presently went,
When the sonn was at hyghe pryme;
Cookes to me they tooke good entent,
And proferred me bread with ale and wyne,
Rybbs of befe both fat and ful fyne;
A fayre cloth they gan for to sprede,
But wantyng mony I might not be spede.

"Then unto London I dyd me hye,
Of all the land it bearyth the pryse;
Hot pescods one began to crye,
Strabery rype, and cherryes in the ryse;
One bad me come nere, and buy some spyce,
Peper, and sayforne, they gan me bede;
But for lacke of mony I myght not spede."

He roamed about near Cheapside and Newgate, where the mercers and drapers tempted him with velvets and silks, which he lacked money wherewith to purchase. Then

"Comes me one, cryd hot shepes feete;
One cryd mackerel;"

but all to no effect.

"Then I hyed me into Estchepe;
One crys rybbs of befe, and many a pye;
Pewter pots they clatter'd on a hepe."

In Cornhill a

> " Taverner took me by the sleve ;
> Sir, sayth he, wyll you oure wynne assay ?
> I answered, that cannot much me greve,
> A peny can do no more than it may :
> I dranke a pynt, and for it dyd pay ;
> Yet sore a hungerd from thence I gede,
> And wantyng my mony I cold not spede."

Quitting Lyckpenny, and the shops and stalls which tempted him, it may be useful now to see how far the records of grand feasts illustrate the kinds and prices of articles of food in London in the 15th century. In 1827, the late Sir Harris Nicolas published a curious MS., two copies of which are contained in the British Museum library: it is a 'Chronicle of London,' extending from 1189 to 1483; and under the date 1420 an account is given of the banquet prepared for the marriage of King Henry V. with Catherine the daughter of the French king. It comprised many curious 'soteltes,' as they are called, apparently devices made in pastry or confectionary: —" A sotelte, a tygre lokynge in a mirour, and a man rydyng on horseback armed with a tygre whelp in his barme (bosom), and throwynge mirours for his defence;" " a sotelte, called a pellican on hire nest with briddis, and an ymage of Seint Katerine with a whele in hire hande dysputing with the hethen clerkes;" " a mete in paste with iiij. aungels in fourme of Seint Katerine whele in the myddes." This being a French feast, however, and the prices not given, we may pass it without further notice.

Among the publications of the Roxburghe Club is a volume edited by Mr. Botfield *, detailing the expenses

* Household Book of Sir John Howard.

of a country family between the years 1462 and 1469. Some of the items relating to food are curious: —

	£	s.	d.
Ffor perys (pears or perry?) - - -			1
Ffor vj bollokys & viii scheype - - -	4	13	4
Ffor iiij caponnys & xiii scheconnys (chickens) -			14
v pypys of byer - - - - -		28	4
A potelle wyne - - - - -			5
vj lb reysonys off corawnce (currants) - -			18
A botte of malmesyn - - - -	3	13	4
ix barelles of bere, every barelle - - -			20

Three pence per pound for currants was a high price for those days; indeed, all foreign produce was comparatively dear. An entry relating to a date somewhat later (about 1490) taken by Lysons from the parish books of Kingston-upon-Thames, contains the following items: —

	s.	d.
A dishe of fysche - - - - -	1	0
A kylderkyn of three halfpennye bere & a kylderkyn of singgyl bere - - - - -	2	4
7 bushells of whete - - - - -	6	3
2½ bushells rye - - - - -	1	8
3 shepe - - - - - -	5	0
A lambe - - - - - -	1	4
2 calvys - - - - - -	5	4
6 pyggys - - - - - -	2	0

The price of wheat here indicated is about 7*s.* per quarter, less by 2*s.* than the Norfolk price mentioned by Margaret Paston about the same time.

But the London feasts are more to our purpose here. The Companies attained a great pitch of luxury during the reign of Henry IV., having halls in which, be-

sides the Mayor and Aldermen, many of the nobility, and even royal princes, sought to partake of civic hospitality. "Then the mighty 'baron' made the table groan, towering over the lighter viands; 'furmentie with venyson,' brawn, fat swan, boar, conger, 'seahog,' and such other delicacies as were stored 'above the salt;' whilst 'sotelties' of the Company's trade or patron saint 'marvelouslye cunnyng ywrought,' recalled the origin of the fraternity; and midst the election ceremony that succeeded, the 'brethren and susterne were cheered with voydes of spice brede, ypocras and comfits,' to the renewed music of the minstrels or 'waits,' or the higher merriment of the London clerks 'playing some holy play.' . . . . We find mention made of the porpoise, and of the conger, in the fish course; of the baron, or 'ribbes of beef,' as it is termed, amongst the meats; and of innumerably more 'delicacies' of other kinds amongst their poultry, spices, and in their desserts; not to mention the supernumerary 'entremets' which were then common, and consisted of delicious little dainties to keep the appetite in play between the courses."*

The Brewers' Company, at their election dinner in 1419, provided a store of good things, the prices of which are fortunately recorded in the company's books: —

	s.	d.		s.	d.
2 necks of mutton, 3 breasts, 12 marrow bones	2	5	2 gallons frumenty	0	4
6 swans	15	0	2 gallons cream	0	8
12 conies	3	0	1 pottel fresh grease	0	8
200 eggs	1	6	Salt	0	1
			1 quart of honey	0	4

* Hist. of the Livery Companies, i. 76.

	s.	d.
Divers spices - -	2	4
Porterage of water -	0	4
4 dozen pigeons - -	4	4
100 pears - -	0	7
11 gallons red wine -	9	2
4 gallons milk - -	0	4

	s.	d
White bread - -	2	0
Trencher bread - -	0	3
Payn cakes - -	0	6
Half a bushel flour -	0	7
1 kilderkin good ale -	2	4
1 quart vinegar - -	0	1

There were also the items, 0*s.* 4*d.* for 'washing the napery,' 1*s.* 4*d.* 'given to the minstrels,' and 3*s.* 4*d.* 'to John Hardy, cook, for him and his servants.'

In the record of another Brewers' feast, in 1425, the following items appear: —

	s.	d.
Porpeys - - -	0	10
Oysters and mussels -	0	6
Salmon and herring -	0	15
A salmon - -	0	21
Codling's head - -	0	8
5 pikes - - -	6	8
Lampreys - -	6	8
Turbot - - -	3	4
Eels - - -	2	4
800 herrings - -	10	0
21 swans, at 3*s.* 9*d.* -	78	9
2 boars - - -	10	0
43 marrow bones - -	5	0
2 rounds of beef, and 2 fillets pork - -	10	0

	s.	d.
Hogshead Gascony wine -	53	4
Kilderkin penny ale -	0	12
2 geese - - -	1	4
40 capons - -	20	0
40 coneys - -	13	0
48 partridges - -	16	0
12 woodcocks - -	4	0
12½ doz. small birds -	6	3
3 doz. plovers - -	9	0
18 doz. larks - -	6	0
6 doz. little birds - -	0	9
9½ lb poudre de pepir -	3	0
2lb sugre blanch - -	2	0

Besides 3*d.* each for the services of ten assistant cooks, 4*d.* for rushes on the floor, and 6*d.* for washing table-cloths.

Passing now from the 15th to the 16th centuries, it is observable that, socially speaking, the difference between the two centuries was very marked; for the increase of regal power, and decrease of the feudal,

greatly lessened the dependence of the people on the nobles; while the dissolution of the monastic establishments threw many thousands of the poor upon their own resources, instead of relying for partial support upon the rich abbeys and convents. One of the effects of this latter change is noticed in an old song in the Somersetshire dialect, printed in Percy's 'Reliques of Ancient Poetry,' and evidently written soon after the dissolution of the monasteries: —

"I'll tell thee what, good vellowe,
Before the vriars went hence,
A bushel of the best wheate
Was zould for vourteenpence;
And vorty eggs a penny,
That were both good and new."

The meat-supply for London continued to be furnished through the medium of Smithfield. The market, as explained in a former paragraph, was maintained by a charter granting exclusive privileges. When the charter declared that 'for ever' should such and such monopolies be secured, kings and mayors little dreamed that a time would come when two or three millions of human beings would be mainly dependent for their supply of butchers' meat on the purchases made in Smithfield market. It shows how cautious charter-givers should be in using the small but significant words 'for ever.' Men, too, abstained from meat on lenten days more generally than in our times; and on this, as on other grounds, the consumption of meat per head is supposed to have been less than at present. Thus the population was small, the consumption per head small, and the area of Smithfield quite removed from the busy

centre of London traffic; it was only the two little words above noticed that imparted a mischievous character to the charter of 1327.

Of the actual condition of Smithfield in the 16th century, we have little account; but on the occurrence of a plague in 1593, a proclamation was issued to suspend Bartholomew fair or market for that year, on sanitary grounds; and this proclamation reveals a few facts. It was ordered, "That in the usual place of Smithfield there be no manner of market for any wares kept, nor any stalls or booths for any manner of merchandize, or for victuals, suffered to be set up; but that the open place of the ground called Smithfield be only occupied with the sale of horses and cattle, and of stall wares, as butter, cheese, and such like, in gross, and not by retail. And for vent of woollen cloths, kerseys, and linen cloths, to be all sold in gross, and not by retail; the same shall be all brought within the Close Yard (afterwards called Cloth Fair) of Bartholomew's, where shops are there continued. And that the sale and vent for leather be kept in the outside of the ring in Smithfield, as hath been accustomed." From this it appears that cattle, horses, drapery, leather, and probably many other commodities, were sold in the open area of Smithfield in the reign of Elizabeth.

Towards the close of the same reign, a pamphlet was published — 'Briefe Note of the Benefits that grow to this Realme by the Observance of Fish Days,' by John Erswicke, in 1593. Concerning butchers' meat, Erswicke, after showing that there were 154 fish days and 211 flesh days in a year, argues thus: — "Let us say there

be 60 butchers that be freemen within the City, and every butcher to kill weekly, the one with the other, 5 beeves apiece, that same amounteth to 13,500 beeves. The foreigners" (as the non-freemen were often called) "in the suburbs, and such as come out of the country to serve the markets in the City, as it is credibly affirmed, kill and utter in the City weekly four times so many as the freemen, which amounteth to 54,000. So joining the beeves uttered by the freemen and foreigners together, they extend to 67,500. If we will now know what number of beeves might be spared in a year, by one day's abstinence in a week, let us say in the week are five days accustomably served with flesh (for that Friday and Saturday are by the laws days of abstinence), whereof one being taken away, the rest but four; in like case, divide the said 67,500 into five parts, and the fifth part spared by the fifth day's abstinence is 13,500."

Unless the grounds whereon Erswicke's curious estimate was based were known, we could not determine its degree of trustworthiness. This may be learned, however, that country butchers brought dead meat into London for sale.

Of the London butchers, a few scattered notices are to be met with, relating to different periods in the 16th century. Stow mentions that, in 1547, upwards of forty provision stalls or boards stood in Stocks' market (where the Mansion House now stands); eighteen butchers paid together 41*l.* annually rent for eighteen of these stalls. In another place he records that 'foreign butchers' were not allowed to sell meat at

Leadenhall market until 1533. It was at that time ordered that butchers should not demand more than a halfpenny a pound for beef, and a halfpenny and half a farthing per pound for mutton. Stow adds that this order had not been found to work well; for "before that time a fat ox was sold in London for six-and-twenty shillings and eight pence at the most; a fat wether for three shillings and four pence; a fat calf the like price; a fat lamb for twelve pence; pieces of beef weighing two pounds and a half at the least, yea three pounds or better, for a penny, on every butcher's stall in this City, and of these pieces of beef, thirteen or fourteen for twelve pence; fat mutton for eight pence the quarter; and one hundred weight of beef for four shillings and eight pence, at the dearest." The gist of Stow's argument is, that the price of meat was lower before the issue of the royal ordinance than afterwards. It appears that the 'foreign' or suburban butchers for a long time occupied standings in the 'High Street of the Lime Street Ward,' probably Leadenhall Street, where they took up their station on Wednesdays and Saturdays; but they afterwards passed over into Leadenhall market, and paid city dues for standing-room.

A curious scrap of information is given by Stow in relation to the sale of pigs in London in the days of Queen Elizabeth. There was at that time in Threadneedle Street an establishment called St. Anthony's Hospital. The officers charged with the inspection of the city markets were accustomed to condemn diseased or ill-conditioned swine, and to slit their ears. One of the

proctors of St. Anthony's was accustomed to tie a bell around the necks of these luckless animals, and let them feed on the dunghills. "No man would hurt or take them up; but if any gave to them bread or other feeding, such would they know, watch for, and daily follow, whining till they had somewhat given them. Whereupon was raised the proverb, 'Such an one will follow such an one, and whine as it were an Anthony pig.' But if such a pig grew to be fat, and came to good liking (as oftentimes they did), then the proctor would take him up to the use of the hospital." — Sound philosophy on the part of the proctor.

The sale of fish in London remained during the 16th century more or less under the control of the companies. It has been stated that in the preceding century the stock-fishmongers were united with the rest in one body; but in 1506 they were disunited, and so remained for several years: the two companies having each one hall in Old Fish Street, New Fish Street, and Thames Street. The stock-fishmongers were a more important body of men than the dealers in other fish; they kept up a large store, and required the command of considerable capital. The great families were accustomed, towards the close of autumn, to lay in a store of dried ling, or herring, or other fish, and preserve it, interlaid with pease-straw, for winter use; and the principal London dealers in this article of food became thus men of extensive dealings. The famous Walworth, mayor of London during the turbulent times of Wat Tyler, was a stock-fishmonger; and so was Lovekin, who was four times mayor, and who rebuilt the church

of St. Michael in Crooked Lane, besides founding a hospital at Kingston-upon-Thames.

The attempts to induce Londoners to become a fish-eating people have been many and varied. A statute passed in 1548, for the 'Abstinence of Flesh,' imposed penalties on persons who ate flesh on fish-days; and in another Act dated 1562, for the 'Maintenance of the Navy,' these penalties were much increased. Private theorists as well as public legislators took up the matter. The pamphlet of John Erswicke, lately quoted, had for its object the substitution of fish diet for flesh diet. He states that the non-observance of the regulations had greatly injured the fish-trade; that her Majesty's navy suffered from want of a growing body of fishermen-sailors; that many sea-coast towns had fallen into decay; that Londoners, by eating more fish, would benefit the fishers, fish-dealers, shipwrights, ropemakers, and net-makers of such towns; and that the market-arrangements of farmers, in respect of poultry and dairy produce, were disturbed by the large demand of the Londoners for beef and mutton.

Harrison's account of the bread eaten in England in the time of Elizabeth does not indicate much that was favourable to the condition of the people. "The bread," he says, "throughout the land is made of such graine as the soil yieldeth; neverthelesse the gentilitie commonlie provide themselves sufficientlie of wheat for their owne tables, whilst their household and poore neighbours, in some shires, are inforced to content themselves with rie and barleie; yea, and in time of dearth, maine with bread made either of bran, peasen,

or otes, or of altogether, and some acorns among; of which scourge the poorest doe soonest tast, sith they are least able to provide themselves of better."* That oats and rye were much used in those days we learn from one of the 'Household Books,' where entries occur of 'otmell to make the poore folkes porage,' and 'riemell to make breade for the poore.'†

Reverting, however, more particularly to the supply of London with bread, it appears that corn, being the 'staff' of life,' was an especial object of protective care on the part of the state. During the dynasty of the Tudors a multiplicity of rules appeared relating thereto. One prohibited corn-dealers from having more than ten quarters of corn in their possession at one time, and authorised justices of the peace to enter barns and order any surplus quantities to be sold. Another imposed a heavy penalty on persons who bought corn to sell again. A third laid down the curious commercial equation, that when a farmer bought corn for seed, he must sell an equal quantity of corn from his store. A fourth graciously ordained, that although there might be a few corn-dealers or 'badgers' to purchase corn at fairs and markets for the supply of cities and towns, yet they must be licenced by three justices of the peace, they must be householders, they must be not less than thirty years of age, they must be either husbands or widowers, they must renew their licences annually, and they must give security against 'engrossing' and 'forestalling.'‡

The corporation of London put in force a plan for

* Description of England, p. 168.

† Household Book of Sir Edward Coke, 1596.

‡ This last severe statute was 5 Eliz. c. 12.

establishing public granaries, filled when corn could be purchased at a low price, and opened at a moderate price when corn should become dear. The motive was a kind one; but the result showed that the plan is not fitted for adoption in a country like England, where so much is left to individual enterprise. Several of the mayors had formed granaries in times of scarcity; and it came gradually to be regarded as a corporate duty. In the year 1521, according to Stow, the granaries or 'garners' in the city were nearly empty, a state of things evidently regarded as alarming; carts came from Stratford every morning laden with bread; and "there was such a press about them, that one man was ready to destroy another, in striving to be served for their money." The mayor, however, purchased a large quantity of corn and stored it in the city garners in Leadenhall and elsewhere; and a special encomium is passed on him in respect that he "kept the market so well, that he would be at Leadenhall by four o'clock in the summer mornings; and from thence he went to other markets, to the great comfort of the citizens."

It was not for the purpose of giving, but of selling at a price below that of the market, that these granaries were kept up: not mere charity, but commerce softened by kindness. Some of the corporate proceedings in relation to the public granaries were injudicious; others were powerless; and others tended to show that, after due allowance for purity of motive, such plans are necessarily inferior to the every-day operations of voluntary trading. On one occasion it was ordered, owing probably to the general state of the supply, that none

of the corn should be sold below the lowest price in the market; and on other occasions the exact quantity was prescribed which should be sold on a particular day.

The mode in which funds were provided for storing the granaries was peculiar. In 1521 the Common Council passed a resolution to borrow 1000*l.* from the 'Fellowships of sundry Mysteries and Crafts of the City,' that is, from the great companies. The share to be lent by each company was stated; while the wardens of the companies determined the share to be paid by each individual member. On some occasions the companies did "lovingly grant, assent, and agree to disburse and lay out, by the way of loan, for the provision and buying of certain wheat," sums of money of greater or lesser amount. At other times, however, the companies did not receive these applications in a very gracious spirit; and when they asked for a return of the money, they were occasionally offered corn instead, when the city granaries happened to be better supplied than the city coffers. In 1573 the companies must have been refractory, for the Corporation obtained from the Crown the issue of a mandate commanding them to assist in storing the granaries, and expressive of her Majesty's 'grief and displeasure' at their laxity. A change was made some few years afterwards, by virtue of which the companies were deemed to be owners of the corn purchased with their money: under proviso that the corn should be stored in the corporation granaries at Bridge house, and subjected to the control of the Lord Mayor and Aldermen. The granaries were divided into twelve sections, each appropriated

to one of the twelve great city companies. Under this arrangement the companies stored the granaries with 5000 quarters of corn, which they were obliged to supply to the Corporation at 28*s*. per quarter. This indicates an enormous increase of price beyond that which prevailed in the preceding century.

The Pepysian Library at Cambridge contains a curious drawing representing the granaries and corn-mills at the end of old London bridge, about the year 1578; there were two water-wheels under the granaries, between two of the starlings of the bridge; and these wheels worked the mill-stones. The companies had also ovens, ten in number, rendering the whole a great flour-factory and bakehouse. "Sir John Throston," says Strype, "sometime an embroiderer, then goldsmith, and one of the sheriffs in 1516, left 200*l*. towards building these ovens." The Corporation exercised control both over the quantity and the price of any corn purchased, operative against brewers as well as bakers.

The above details will suffice to show that the supply of bread to the Metropolis in the 16th century was a subject of much solicitude. The sale of sugar, spices, and similar commodities, was chiefly controlled by the Grocers' Company. One entry in the books of this company *, dated 1561, is to the effect that the "bags and remnantes of certeyne evil and naynte pepper" were ordered to be conveyed over sea to be sold; but the dust of the "evil pepper, syrnamed ginger," was to be burned. Thus it appears that the company,

* Livery Companies, i. 326.

although holding a reverend care for the health of their fellow-citizens, did not scruple to send the "evil pepper" for sale to the inhabitants of other countries. In 1562, the company made an order that "grocerie wares should not be sold in the streetes, figges onlie excepted;" and that the apothecaries, "freemen of the companie, should not use or exercise any drugs, simple or compound, or any other kynde or sorte of potecarie wares, but such as shall be pure and perfyt good." In 1571, one King, a member of the company, and certain others, "makers of comfytes, were charged before the wardynes for their misdemeanours in minglinge starche with the suger and such other thinges as be not tolerated nor suffered; and the said King having now in his place a goode quantitie of comfytes made with corse stuffe, and mingled as aforsaid with starch and such like, it was ordered that the comfytes should be put into a tub of water, and so consumed and poured out." It was further ordered that "everie of the comfyt-makers shall be made to enter into bondes in 20*l.* that they shall not hereafter make any biskitts but with clere sugar onlie, nor make any comfyts that shall be wrought upon seeds or any other things, but with clere suger onlie." Three facts are made evident by these curious orders: — that groceries, drugs, chemicals, and confectionary were sold largely by the same persons; that the Grocers' Company exercised great power over the sellers of such commodities; and that the art of adulteration was not left for later years to invent.

Many London trades were at that period made subjects of patent monopolies. Queen Elizabeth granted

several such patents, either to favour individuals or in return for a money contribution. "The English Sovereigns had always been entrusted with the supreme direction of commercial police. . . . . It was their undoubted prerogative to regulate coin, weights, and measures, and to appoint fairs, markets, and ports. The line which bounded their authority over trade had, as usual, been but loosely drawn. They therefore, as usual, encroached on the powers which rightfully belonged to the legislature. The encroachment was, as usual, patiently borne till it became serious. But at length the Queen took upon herself to grant patents of monopoly by scores. There was scarcely a family in the realm which did not feel itself aggrieved by the oppression and extortion which this abuse naturally caused. Iron, oil, vinegar, coal, saltpetre, lead, starch, yarn, skins, leather, glass, could be bought only at exorbitant prices. The House of Commons met in an angry and determined mood. It was in vain that a courtly minority blamed the Speaker for suffering the acts of the Queen's Highness to be called in question. The language of the discontented party was high and menacing, and was echoed by the voice of the whole nation. The coach of the chief minister of the Crown was surrounded by an indignant populace, who cursed the monopolies, and exclaimed that the prerogative should not be suffered to touch the old liberties of England. There seemed for a moment to be some danger that the long and glorious reign of Elizabeth would have a shameful and disastrous end. She, however, with admirable judgment and temper,

declined the contest, put herself at the head of the reforming party, redressed the grievance, thanked the Commons in touching and dignified language for their tender care of the general weal, brought back to herself the hearts of her people, and left to her successors a memorable example of the way in which it behoves a ruler to deal with public movements which he has not the means of resisting."* We shall presently see, however, that the monopolies were only suspended; for the system revived in the next century.

In respect of the trade in malt liquor, some of the London brewers of the 16th century brewed partly for exportation to the Low Countries. A complaint was made to the Treasurer of England, in 1586, that "there was deceit in the vessels of beer that were transported; that under the name of these passed many barrels stuffed with prohibited goods, as pike-heads, halberd-heads, pistols and match, candles, and soles of shoes of new leather, cut out in pairs of all sizes, and the like; the bungs of the barrels being besmeared with a little yeast; to the hindrance of the commonwealth, and the profit of enemies." It appears also, that foreign merchants repacked the same barrels with silk, and sent them over to England as empty casks; the brewers, smearing the bungs with yeast, delivered the casks at certain houses as if filled with beer, 'to the hindrance of the Queen's Customs.'

The English ale of early days was poor, weak drink, with broom, bay-berries, or ivy-berries instead of hops. Hops were not cultivated in England until about 1524;

* Macaulay, History of England, i. chap. i.

and the malt was frequently mixed with oats. After it became customary to use hops, the stronger liquor bittered with that plant obtained the name of beer; but in truth there never has been any clearly-marked distinction between the meaning of the two words ale and beer. Stow says, that in 1585 there were about twenty-six brewers in the city and in Westminster; some of whom were foreigners, who brought over with them the art of cultivating hops. These brewers are stated to have produced 648,960 barrels of beer in the year. Most of the breweries stood near the banks of the Thames; and some of them brewed chiefly for export to foreign countries.

In those days, when sovereigns deemed their subjects unable to eat, or drink, or dress properly without government supervision, the ale-drinking of the Londoners occasionally excited alarm. During the reign of Elizabeth, the governing authorities suppressed many of the ale-houses, on the plea that their number was more than sufficient for the legitimate wants of the inhabitants. But the sellers and brewers of malt liquor were subject to other supervision, — that of the corporation. It relates to a period somewhat earlier than the 16th century; but the following incident will exemplify the mode in which this supervision was sometimes exercised. Robert Chichele, the Mayor, sent for the master and twelve of the members of the Brewers' Company to appear at the Guildhall; to whom John Fray, the recorder, 'objected a breach of government, for which 20*l.* should be forfeited, for selling dear ale.' After much dispute about the price and quality of malt,

wherein Whityngtone, the late Mayor, declared 'that the brewers had ridden into the country and forestalled the malt, to raise its price,' they were convicted in the penalty of 20*l.*; "which objecting to, the masters were ordered to be kept in prison in the chamberlain's custody, until they should pay it, or find security for the payment thereof. The Mayor and Aldermen having gone home to their meat, the brewers asked the chamberlain and clerk what they should do? who bade them go home, and promised that no harm should come to them; for all this proceeding had been done but to please Richard Whityngtone, for he was the cause of all the aforesaid judgment." The Richard Whityngtone of this curious transaction was the far-famed hero of the cat, and the stone, and the sound of Bow bells.*

The feastings of the 16th century, like those of earlier date, are worthy of notice, in so far as they convey information concerning the kinds of food purchased, and the prices paid. As for the *personnel* of a great man's dining hall, nothing can be more striking than the establishment of Cardinal Wolsey, as described by Cavendish, and as embodied by Mr. Charles Kean in his revival of Shakspere's 'Henry the Eighth.' It is the provisioning arrangements, however, for which such matters are here noticed.

The 'Northumberland Household Book' has already been adverted to. This remarkable document relates to the household expenses of the Earl of Northumber-

* Herbert, i. 56.

land, about the year 1512, at his castles of Wresill and Lekinfield in Yorkshire. The following are among many entries relating to the prices of provisions: —

Wheat, 6*s.* 8*d.* per qr.
Wine 4*l.* 13*s.* 4*d.* per tun.
Ale, 2*d.* per gall.
Bread, 1*d.* for 6 loaves.
Beer, ¾*d.* per gall.
Young cattle, 10*s.* each.
Sheep, 1*s.* 5*d.*
Hops, 13*s.* 4*d.* per cwt.
Malt, 4*d.* per qr.
Salt, 4*s.* per qr.
Pepper, 1*s.* 4*d.* per lb.
Mace, 8*s.* per lb.
Cloves, 8*s.* per lb.
Ginger, 4*s.* per lb.
Prunes, 1½*d.* per lb.
Sugar, 4½*d.* per lb.
Currants, 2*d.* per lb.

Some of the prices are remarkable; a pound of mace was more costly than five sheep. The store of provisions for a year was prodigiously large, as the following will show: —

124 'beeves,' at 13*s.* 4*d.* for 'fatt,' and 8*s.* for 'leyn.'
667 'muttons,' at 1*s.* 8*d.*
25 'poorks,' at 2*s.*
28 'veills,' at 1*s.* 8*d.*
60 lambs, at 10*d.* and 1*s.*
140 stockfish, at 2½*d.* each.
942 salt fish, at 4*d.*
9 barrels white herring, at 10*s.* the barrel.
104 score salt salmon, at 6*d.*
3 firkins salt sturgeon, at 10*s.* the firkin.
5 kegs salt eels, at 4*s.* the keg.
550 lb. hops, at 13*s.* 4*d.* per cwt.
40 gallons vinegar, at 4*d.* gallon.

It is not less interesting to note the kinds of viands taken at breakfast by the rich and noble in those days. The bill of fare for 'lenten breakfasts' runs thus: —

"For my Lord and Lady,
A loaf of bread in trenchers, 2 manchettes, a quart of beer, a quart of wine, 2 pieces of salt fish, 6 bacon'd herrings, 4 white herrings or a dish of sprats."

Other lenten breakfasts are duly set forth for 'my Lord Percy, and Maister Thomas Percy,' for the 'Nurserie of my Lady Margaret and Maister Ingram,' for 'my Lady's Gentlewomen,' for 'my Lord's Gentlemen,' and so on through the different grades of the household. On 'flesh days' the breakfasts underwent modification: —

"For my Lord and my Lady,
A loaf of bread in trenchers, 2 manchettes, 1 quart of beer, a quart of wine, half a chine of mutton, or elles a chine of beef boil'd.

"For my Lord Percy and Mr. Thomas Percy,
Half a loaf of household bread, a manchette, 1 potell of beer, a chekynge, or elles 3 mutton bones boil'd.

"For the nurserie of my Lady Margaret and Mr. Ingram,
A manchette, 1 quart of beer, and 3 mutton bones boil'd.

"For my Lady's Gentlewomen,
A loaf of household bread, a potell of beer, and 3 mutton bones boil'd, or elles a piece of beef boil'd."

From a 'brewing' which took place at Wresill, we learn that 6lb. of hops were employed with 6 quarters of malt.

But it is of London food and feasts that this chapter more especially treats. There is a record extant of the list of viands provided for the funeral repast of Sir John Redstone, Lord Mayor in 1531. There are the payments made to the 'Pykemonger,' the 'Pulter,' the 'Bowcher,' the 'Mylke-wyffe,' the 'Brewer,' the 'Vyntener,' the 'Grocer,' the 'Baker,' the 'Chandeler,' and the 'Cooke.' Sugar was 7*d.* per lb.; eggs, 8 for a penny; butter, $4\frac{1}{4}d.$ per gallon; swans, 6*s.* each; rabbits, 2*d.* each; pigeons, 10*d.* per dozen; a sirloin of

beef, 2*s.* 4*d.*; 'four marybones,' 8*d.*; cream, 6*d.* per gallon; ale, 3*s.* 8*d.* per barrel; 'bere,' 1*s.* per kilderkin; 'half a veale,' 2*s.* 8*d.*; claret, 10*d.* per gallon; dried currants, 2½*d.* per lb.; salt, 4*d.* per peck. These prices are worthy of note, not only for the contrast with those of modern times, but for the inequality of cheapness (so to speak) among the items themselves.

The books of the Ironmongers' Company contain an entry relating to the cost of a breakfast in 1542.* Among the items are, a neck and breast of mutton, 6*d.*; a piece of beef, 4*d.*; a breast of veal, 9*d.*; a goose, 9*d.*; two couple of rabbits, 12*d.*; bread, 6*d.*; sugar, pepper, cloves, mace, and saffron, 6*d.*; 'onyons and erbys,' 1*d.*; mustard and vinegar, 1*d.*; butter, 1*d.*; beer, 7*d.*; claret and red wine, 6*s.*; water, 1*d.*; 'the cook, turnspit, and woman for dressing,' 8*d.*

Although Massinger wrote somewhat later, his 'City Madam' may be taken as a tolerably correct picture of London usages towards the close of the 16th century. Holdfast thus laments his master's extravagance: —

"Men may talk of country Christmas and court gluttony,
Their thirty pounds for butter'd eggs, their pies of carps' tongues,
Their pheasants drench'd with ambergrise; the carcases
Of three fat wethers bruis'd for gravy, to
Make sauce for a single peacock: yet their feasts
Were fasts, compared with the City's."

Whereupon ensues a conversation between Tradewell and Holdfast: —

"*Tradewell.* What dear dainty
Was it thou murmur'st at?

* Livery Companies, ii. 607.

"*Holdfast.* Did you not observe it?
There were three sucking pigs serv'd up in a dish,
Ta'en from the sow as soon as farrow'd,
A fortnight fed with dates and muscadine,
That stood my master in twenty marks apiece,
Besides the puddings in their bellies, made
Of I know not what. I dare swear the cook that drest it
Was the devil, disguis'd like a Dutchman." *

In the year 1575 the Lord Mayor ordered the following tariff of prices for poultry to be observed. *First*, by shopkeepers: — capons, 16*d.* to 20*d.*; geese, 8*d.* to 14*d.*; pigeons, 16*d.* a dozen; chickens, 3*d.* to 4*d.*; rabbits, 4*d.* to 5*d.*; swans, 6*s.* to 7*s.*; cranes, 6*s.*; herons, 2*s.* 6*d.*; turkey cocks, 3*s.*; turkey chickens, 1*s.* 4*d.*; woodcocks, 6*d.*; snipes, 2½*d.*; hens, 7*d.* to 9*d.*; plovers, 3*d.* to 4*d.*; larks, 5*d.* to 8*d.* per dozen; blackbirds, 10*d.* per dozen; partridges, 10*d.*; eggs, 4 a penny. *Secondly*, in the market: — coneys, 3*d.* to 4*d.*; larks, 6*d.* a dozen; woodcocks, 5*d.*; chickens, 4*d.*; capons, 14*d.*; pigeons, 1*s.* a dozen; geese, 1*s.*; eggs, 5 a penny. This is a remarkable example of corporate interference with prices.

One more example may be presented. Mr. Brayley † gives extracts from a household account, under date 1594–5, belonging to an inhabitant of the parish of St. Michael Bassetshaw. Among the items which indicate price, are — a fore quarter of lamb, 2*s.* 2*d.*; a capon, 1*s.* 2*d.*; a quart of malmsey, 8*d.*; a lamb, 5*s.*; 12 pigeons, 2*s.* 4*d.*; 28 eggs, 8*d.*; 3 pecks of flour, 2*s.* 6*d.*; a side of veal, 8*d.*; a calf's head, 10*d.*; a pint of claret, 3*d.*; a peck of oysters, 4*d.*; 50 oranges, 9*d.*

* 'City Madam,' Act ii. Scene 1.

† Londiniana, ii. 47.

Pass we on now to the next century.

The "sellers of oxen, sheep, swine, and such like," says Stow, writing at or near the commencement of the 17th century, "remain in their old market of Smithfield;" and so they were destined to remain for two centuries and a half longer. Some years later, during the reign of Charles I., a charter was given to the corporation of London, granting very precise and extensive powers over the market at Smithfield. While the charter from Edward III. prohibited the formation of any cattle market elsewhere, the charter from Charles I. held out an inducement to the corporation to expand the market at Smithfield when the increase of population in London should increase the demand for cattle.

Concerning the supply of poultry, Stow states that about his time (1603) the poultry-dealers removed from the Poultry to Gracechurch street and St. Nicholas shambles. He further mentions a place called Scalding alley, near the Poultry, where the poulterers were wont to scald their feathered commodities.

Much curious information concerning the market arrangements of London is to be met with in a pamphlet published in 1647: — 'Ten several Orders to be put in Execution by the Lord Mayor and Aldermen of London, for the Price and Sale of Meal, Flesh, Butter, and other Commodities; and to prevent Disorders in the Markets; with the Penalties to be inflicted upon every Person or Persons which shall not obey the same.' The pamphlet opens with a declaration that the supply of food in London is very scarce, and that 'regraters and

forestallers' have been instrumental in keeping up the price. Hence the following Orders: —

"*First.* In all the markets of this City, no victual shall be sold but by the price set by the Mayor of the City.

"*Second.* No man shall forestall any victual coming to the market as for to buy in any inn or other privy place, or yet coming to the market, whether it be found in the hands of the buyer or the seller, under pain of forfeiture of the same; and no inn-holder shall suffer anything to be sold in his house upon pain of forty shillings.

"*Third.* No man shall regrate any victual which is in the market, or buy any victual to ingrate in the market; so that the commons can or may have any part of such victual, as in special such as be known for hucksters or other people occupying their living by such victual as they would so ingross, under pain of such victual so regrated; provided always that any steward for any noble feast may buy or ingrate such victual as is convenient for the same feast.

"*Fourth.* No butter shall be sold but according to the time of the year allowed.

"*Fifth.* No poulterers shall deceivably occupy the market to sell any stale victual, or such as the poulterers of this City do stand in strange clothing so to do, under pain of forty shillings and forfeiture of such victual.

"*Sixth.* No hucksters shall stand or sit in the market but in lower places and ends of the market, to the intent that they may be perfectly known, and the stranger market people have the preheminence of the

market, under pain of three shillings and four pence if the hucksters disobey the same.

" *Seventh.* No unwholesome or stale victual shall be sold under pain of forty shillings and four pence, and forfeiture of the same victual.

" *Eighth.* No butcher or his servant shall use to drive any oxe or oxen a trot in the streets, but peaceably; and if any oxe happen to be let go, when he is prepared for slaughter, the butcher shall forfeit two shillings, besides recompence if any person be hurt thereby."

The *Ninth* and *Tenth* Orders relate to restrictions against selling 'measell hogs,' and 'old stale victual.' Not the least characteristic among these rules is that which gives favour to the 'steward for any noble feast.'

Throughout the 17th century the regulations for the sale of fish in London underwent little change; but just before the close of the century an Act was passed to limit the powers of the principal fishmongers at Billingsgate, and allow a better chance to their poorer brethren. It appears that, partly through the influence of the Fishmongers' Company, street hawkers had not been allowed to buy of the fishermen, whereby the fishmongers held the control of prices; they were also in the habit of employing one or two of their body to buy for the whole, thereby limiting still further the chance of competition.

But the corn and bread trades, in the 17th century, were under much more stringent regulations than the fish trade. The Court, the corporation, and the com-

panies, were curiously mixed up in these regulations. Mr. Herbert quotes a letter from the officers of the King's household to the wardens of the Grocers' Company, dated September 27. 1622. It has a most affectionate commencement, and a most significant purport: "To our loving friends the wardens and assistants of the Company of Grocers of the City of London. After our hearty commendations: Whereas, by the neglect of His Majesty's purveyors, his house is at this time altogether unfurnished with wheat, by means whereof there is a present want of one hundred quarters of wheat for the service of his household: we do, therefore, pray and desire you that out of your stock His Majesty may be supplied with thirty or forty quarters of your best and sweetest wheat, until his own provision may be brought in, the which we do faithfully promise shall be paid unto you again in November next at the furthest." Whether the worshipful grocers responded to this appeal does not appear. During the reign of Charles I., arbitrary in this as in many other directions, unpleasant contentions often arose concerning the city garners. In 1630, the companies were ordered to pay to the poor a fine of three shillings for every bushel which they might neglect to provide according to their due proportion; in the next year, when ordered to purchase corn from abroad, they flatly refused; and in 1632, the wardens of some of the companies were actually committed to prison, for neglecting to supply their granaries. Sometimes the corporation and the Companies could not purchase corn in certain specified counties without permission of the Lords of the Council. On one occasion the

city authorities were in collision with the county magistrates during a period of scarcity; the former wishing to draw corn to London, and the latter wishing to retain it in the country. Sometimes the government bought of the city for the use of the navy; while on other occasions the city purchased of the government. Many wranglings took place between the conflicting authorities; and it became evident that the system of public granaries had outlived its uses. The great fire of 1666, which burnt out the granaries and ovens, may be said to have burnt out the system also; for the public granaries were not again revived.

Irrespective of the regulations concerning corn, there was a tight hold maintained upon the bakers. Stow, collecting information from all sources then available, tells us how that in earlier times there was a bread market in Bread street; that there was a large public bakehouse in Basing lane; that at one time the bakers were "bounden to sell no bread in their shops or houses, but in the market;" that at another time they were ordered to bring their bread to market in baskets, that they might be held responsible for quality; that at a later date a Stratford baker, as a punishment for selling light loaves, was drawn on a hurdle through the London streets, with a fool's cap on his head, and light-weight loaves suspended about his neck. Coming down to the century now under notice, it appears that the bakers were narrowly watched by the city authorities as long as the granaries were kept up; sometimes the bakers were prohibited from buying meal, except at the city granaries, and then only in such quantities and

at such times and prices as the authorities might determine. The London bakers, too, were exposed to a peculiar kind of rivalry from those of Stratford. These latter bought corn which was brought down the river Lea, and then made it into bread for the London market; they came almost daily, by the Whitechapel route, with long carts laden with bread; they took up their station in Cheapside, between what are now Gutter and Foster lanes, as well as in Cornhill and Gracechurch street. The bread, Stow tells us, was "two ounces in the penny wheat loaf heavier than the penny wheat loaf baked in the city."

The *assize* of bread, to which much importance was attached during many centuries, was a declaration of the weight that each kind of loaf should possess. The penny loaf was a standard by which other loaves were judged. With us, in the present day, the 4lb. loaf becomes cheaper when corn is cheaper; whereas in former days the penny loaf became larger when corn was cheaper. It is difficult to understand the principle whereon the corporation or the legislature could determine what would be a fair or what an unfair price for a loaf of bread. Nor is it more easily to be seen why, as was once the case, the bakers should be prohibited from baking loaves of household bread to sell at more than twopence each, except at Christmas; nor why, 'except at funerals, and at Christmas, and Easter,' they should be debarred the liberty of making and baking and selling spice-cakes, buns, biscuits, or other spice-bread.

It appears, from Markham, that oatmeal was in

those days much eaten in English households. It was made into meat pottage, milk pottage, and gruel. He speaks of "six several kinds of good and wholesome bread" made with oatmeal; of oatcakes, with and without an admixture of wheaten flour; of haggas or haggus, made of oatmeal, and blood, and the liver of either sheep, calf, or swine, "of whose goodness it is in vain to boast, because there is hardly to be found a man that doth not affect them;" and of washbrew or flammery or flummery, made of oatmeal boiled to a jelly and flavoured with honey, wine, beer, ale, or milk, according to inclination. The unground oat appears also to have been much employed for food. Of these oat-grits were made puddings or *pots*, with blood, suet, and herbs, if the puddings were to be 'black,' but with cream, eggs, bread crumbs, suet, currants, and spices, if for 'white.' Oats and eggs to stuff a roast goose, are recommended. For seamen, a suggestion is made to eat oats boiled till they burst, and then mixed with butter; "which, although seamen call simply by the name of *loblolly*, yet there is not any meat, how significant soever the name be, that is more toothsome and wholesome." Markham calls the oat the "very crown of the housewife's garland." *

In the 17th, as in preceding centuries, we meet with very few notices of the vegetable food, such as potatoes and so forth, obtainable in London. Just about two centuries ago, Hartlib, writing on various agricultural subjects, accidentally mentions that old men then living

* Farewell to Husbandry, 1649.

could recollect the first gardener who came into Surrey to cultivate cabbages, cauliflowers, turnips, carrots, parsnips, and peas, for consumption in and near the metropolis. From this and from other sources we may infer that the meat and the fish, the bread and the ale, were garnished with but few green vegetables.

In relation to such articles as grocery, the prices approached gradually nearer to those of modern times. The 'pepperers' and grocers formerly located in Soper's lane, are said, by Stow, to have now taken up their station chiefly in Bucklersbury. One particular article, which now constitutes the leading item in English grocery, was then a choice rarity. This was *Tea*. According to the courtly Waller, the consort of Charles II. made tea-drinking fashionable: —

> "The best of queens and best of herbs we owe
> To that bold nation which the way did show
> To the fair region where the sun doth rise,
> Whose rich productions we so justly prize.
> The Muse's friend, tea, does our fancy aid;
> Repress those vapours which the head invade;
> And keeps that palace of the soul serene,
> Fit on her birthday to salute the Queen."

In this way Waller, who during a long life sided with all parties by turns, contrived to compliment the Queen and the Portuguese in a breath.

The dairy produce of England, in those days, is rarely noticed by contemporary writers; but there is reason to believe that this portion of food-supply has undergone fewer changes in regard to the modes of production and supply, than most others which here engage notice. The milkmaids and their cows, the Maydays and the

garlands, it is true, attracted more attention from pastoral and lyrical poets then than now. In Playford's 'Musical Composition,' published about 1687, there is included a song entitled 'The Praise of Milk,' which certainly enunciates some peculiar theories concerning that beverage. It tells us that,

"Among the rare virtues that milk does produce,
For a thousand of dainties it's daily in use.
Now a pudding, I'll tell ye,
Ere it goes in the belly,
Must have from good milk both the cream and the jelly;
For a dainty fine pudding without cream or milk
Is a citizen's wife without satin or silk."

It also declares, among other truths, that

"Both pancakes and fritters of milk have good store,
But a Devonshire whitepot must needs have much more.
No state you can think,
Though you study and wink,
From the lusty sack-posset to poor posset-drink,
But milk's the ingredient, tho' sack's ne'er the worse,
For 'tis sack makes the man, tho' 'tis milk makes the nurse."

The readers of Izaak Walton need hardly be reminded how numerous are the pleasant words which Piscator had to bestow on this subject of milk, and cows, and dairymaids in the country life of Charles's days.

Mention has been made, in a former paragraph, of the disgraceful system of patent monopolies which existed in such force in the preceding century. This system continued, in spite of partial checks, down to the century now under notice, when it received its death-blow, chiefly through the exposure of Alderman

Abell and Richard Kilvert, who held a patent in 1641. Mr. Herbert* quotes from a scarce tract, of satirical character, a supposed dialogue between these worthies. They accidentally meet; Kilvert claims acquaintance with the alderman as one at whose house he had often been a guest, 'when he kept the Ship Tavern behind Old Fish Street;' and the two then converse about schemes for patents: —

"*Kilvert.* You are a vintner, Mr. Alderman; what think you of a monopoly or patent for *wines* and for *dressing meat?*

"*Abell.* I doe approve of the project exceedingly."

"*Kilv.* We must first pretend both in the merchant and vintner some gross abuses, and these no meane ones either. And that the merchant shall pay to the King forty shillings for every tun ere he shall vent it to the vintner; in lieu of which, that the vintner may be no loser, he shall rayse the price also of his wine, upon all French wines a penny in the quart, upon all Spanish wines two pence in the quart; it is no matter how the subject suffer, so we get and gaine by it. Now to cover this our craft (I will not say coinage), because all things of the like nature carry a pretence for the King's profit, so we will allow him a competent proportion of forty thousand pounds per annum; when the power of the patent, being punctually executed, will yield double at least, if not treble that same, and returne it into the coffers of the undertakers."

There is sufficient in this bit of satire to indicate the mode in which the patents were managed.

* Livery Companies, i. 157.

Next as to beer and ale. The sale of these beverages in the 17th century was surrounded by more complexities than in earlier times. After many abortive attempts, Charles I. succeeded in imposing excise duties in 1643, increasing his unpopularity thereby; ale, beer, cider, and perry were the first articles brought under the operation of these laws. All the brewers were required to give notice of the quantity of beer sold, and the names of the purchasers; the duty was at first 25 per cent. on the value if sold to retailers, but only 12½ per cent. if sold at once to private families; and a tax was payable also on beer brewed in private houses. During the Commonwealth, the ruling powers found it no less convenient than the deposed monarch to hold such a tax ready at hand, although it was proposed only as a war-tax: the Londoners were nevertheless very dissatisfied, and showed their dissatisfaction by rioting and burning the Excise Office. The Republican Government, nothing daunted, declared their resolution, "through all opposition whatsoever, to insist upon the due collection" of the tax; and they authorised Fairfax, on application made to him, "speedily to suppress all such tumults, riots, and unlawful assemblies." There were numerous pamphlets published for and against the tax; but they did not assume the character of party weapons; for both Royalists and Roundheads, whatever they may have said when out of office, maintained the excise laws when in office; and thus these laws, during the remainder of the century, were not only maintained, but were

imposed upon other articles of food, such as groceries and salt.

The 17th century, with its alternation from puritanical republicanism to licentious royalty, presents many a battle between lawful authority and the questionable influence of beer and ale. Mr. Brayley has collected numerous notices, of the dates 1641 to 1659, of proceedings against evil doers in the parish of St. Giles in the Fields.* The following are a few of such as relate to ale and beer: —

		£	s.	d.
1641.	Received of the vintner of the *Catt* in Queen Street, for permitting of tippling on the Lord's Day - - - - -	1	10	0
1644.	Received of three poor men for drinking on the Sabbath Day at Tottenham Court - -	0	4	0
1645.	Received of Mrs. Thunder, by the hands of Francis Potter, for her being drunk and swearing seven oaths - - - -	0	12	0
1646.	Received of Mr. Hooker for brewing on a Fast day - - - - -	0	2	6
„	Paid and given to Lyn and two watchmen in consideration of their pains, and the breaking of two halberds, in taking the two drunkards and swearers that paid - - -	1	4	0
1648.	Received from the City Marshal, sent by the Lord Mayor, for one that was drunk at the Forts in our parish - - - -	0	5	0
1655.	Received of a maid taken in Mrs. Jackson's alehouse on the Sabbath - - -	0	5	0
„	Received of a Scotchman drinking at Robert Owen's on the Sabbath - - -	0	2	0

A curious pamphlet was published in 1641: — 'The Tapster's Downfall and the Drunkard's Joy; or a Dialogue between *Leatherbeard*, the Tapster of the

* Londiniana, iii. 12.

Sheaves, and *Rubynose*, one of his ancient Acquaintance, who hath formerly eaten Three Stone of Roast-Beef on a Sunday Morning, but now (being debarred that Privilege) slights him, and resolves to drink Wine altogether.' It appears, from the tenor of this dialogue, that the Legislature about that time encouraged the vintners more than the tapsters, the wine-sellers more than the beer-sellers. Leatherbeard reminds Rubynose of the profit which his late master's widow realised every Sunday morning "by her thin-cut slices of roasted beef; how she made the guests to pay for the vinegar and pepper they ate with the roast-beef at prayer-time; and how I sold the ale and beer at that time at double prices." He expatiated also on the "innumerable numbers of mince pies we sold every Sunday at dinner, and what benefit we made of the refuse of the slashed roast beef . . . . how many great gross of plum cakes and cheese cakes; what stewed prunes and custards we have sold every Sunday at prayer-time in the afternoon." But he complains that now "we must fall to our prayers on a Sunday, and keep our doors shut all the day long, and sing psalms if we please." He finally announces his determination to abandon the tapster's calling, and become a vintner.

From scattered notices of the period, it seems that the general ale of the country districts was poor, thin stuff, not so good as that brewed by private families. Bitter ale or beer was a growth of prudence rather than of inclination; for, the malt tax being proportionably heavier than the hop tax, brewers economised their malt and were liberal with their hops. The hopped beer was

a favourite with many old topers towards the close of the century. Dr. Westmacott declared that old English ale "is a most wholesome connatural drink. He that in his young days accustometh himself to drink his ale mixed or dashed with a little beer shall never when he is old have occasion to repent; for beerish drink keeps the stomach clear, excites the appetite, and carries off ill humours; whereas fat, new, ropy, sweet ale (too often none of the clearest) dulls the appetite, creates clam in the viscera, and lodges too long."* The bibulous doctor ends by saying, "For myself, ye may conclude that I am a toper at old beer, by my appearing such an advocate for it."

The prices of provisions in the 17th century, and the dishes which were considered to form a good banquet, receive various elucidations from writers of the period. An account of a Kentish housekeeping in 1659 to 1670 is given in the 'Household Book of Sir Roger Twysden.' Among the items are the following: — beef, 2*s.* and 1*s.* 8*d.* per stone, loin of mutton 1*s.* 6*d.*, shin of beef 1*s.* 10*d.*, loin of veal 3*s.* 4*d.*, calf's head ½*d.*, quarter of mutton 4*s.* 4*d.* and 5*s.*, side of mutton 9*s.*, eight quarters of mutton 32*s.*, six stone of beef and 2 lb. suet 18*s.*, chine and a quarter of veal 8*s.*, chine and a quarter of mutton 5*s.*, quarter of lamb 2*s.* 6*d.*; cheese varied from 9*s.* 6*d.* to 14*s.* per 56 lb.†

It was about twenty years later than this that an entry in the 'Warrant Book of the Board of Green Cloth,' quoted by Mr. Peter Cunningham in his 'Handbook of

* Historia Vegetabilium Sacra, 1694.

† Paper by Rev. J. Larking, in *Notes and Queries*, i. 225.

London,' speaks thus of the price of fruit: — "Order on this day given, that the Maides of Honour should have cherry tarts instead of gooseberry tarts, it being observed that cherrys are at threepence per pound." This was in the month of June.

If the account which Markham gives of a 'humble feast,' such as a family man in good circumstances might give to a party of about twenty guests, be taken as a true picture of the times of Charles I., it indicates rather a proud humility, to say the least. He enumerates sixteen dishes for the first course: viz. a shield of brawn, with mustard; a boiled capon; a boiled piece of beef; a chine of beef roasted; a neat's tongue roasted; a pig roasted; chewets baked; a goose roasted; a swan roasted; a turkey roasted; a haunch of venison roasted; a pasty of venison; a kid with a pudding in the belly; an olive pie; a couple of capons; a custard or doucet. And these sixteen are made up to thirty-two by salads, fricasees, and other minor delicacies.

The taverns and ordinaries of London in the 17th century meet with frequent mention by dramatists and other writers of the period. Some of these notices are exceedingly curious, especially those which relate to the early part of the century, the close of the Elizabethan era. Thus the 'Diary of Philip Henslowe from 1591 to 1609,' edited by Mr. Payne Collier from MSS. in Dulwich College*, is full of characteristic entries. Henslowe appears to have been a strange man; first a dyer, then a starch-maker, then a pawnbroker, and afterwards partner with Alleyne in the management of

* Shakspere Society's Publications, 1845.

the Hope and other theatres of those times. The following entry, which probably relates to his pawnbroking days, is a rich specimen of spelling and writing: — "Lent unto frances Henslow to descharge hime sealffe owt of the whitte Lion from a hat-macker in barmsey streete abowt his horsse which was stolen from hime and he served my kynsman at the syes for hime and to macke and end betwexte he payde hime fyve pownd which I lent him." But the tavern entries are more to our purpose. He bought the copyright of a play, in his managerial days, and gave a treat to wind up the transaction: —

'Layd out the same tyme at the tavarne in fysh streete for good cheare, the some of - - vs.'

Precisely the same sum was paid for good cheer on the occasion of his purchasing a play from Drayton, Decker, and Chettell. On another occasion, —

'Layd out for the company, at the mermayd, when we were at oure agrement, toward our super, the some of - - - - - ix*s*.'

But the actual prices are better shown by two or three items relating to Henslowe, Street, and Shaw, with whom he was in negociation respecting the Fortune theatre: —

'Payd for a bracke faste at that time with shawe - xii*d*.
Payd at the rede crosse for brackfaste when we sowght streete - - - - - ij*s*.
Payd for streete's diner and mine - - xii*d*.
P^d^ for workmen and our sellfes diner - - xviij*d*.
P^d^ for diner for Poter, Easte, and mysellfe - xviii*d*.'

Many such repasts are recorded at prices varying

from 1*s.* to 1*s.* 6*d.* On one particular feast, where venison was provided for apparently a large party, the tavern bill amounted to three or four pounds.

An ordinary, in the year 1609, is pictured in curious colours by Decker.* He gives satirical advice how 'a young gallant should behave himself in an ordinary;' but in the midst of the satire we may pick up a few facts. The gallant is recommended to repair to the ordinary "some half hour after eleven, for then you shall find most of your fashionmongers planted in the room waiting for meat." Some of the viands are mentioned here:—"When you are set down to dinner, you must eate as impudently as can be (for that's most gentlemanlike). When your knight is upon his stewed mutton, be you presently (though you be but a captain) in the bosome of your goose; and when your justice of peace is knuckle-deep in goose, you may, without disparagement to your bloud, though you have a lady to your mother, fall very manfully to your woodcocks." But the most curious mention, in regard to the information afforded, is of a threepenny ordinary attended by lawyers and others:—"There is another ordinary to which your usurer, your stale bachelor, and your thrifty attornie doe resort; the price threepence; the roome is full of company as a jaile, and indeed divided into several wards like the beds of an hospital. The complement betweene these is not much, their wordes few; for the belly hath no eares; every man's eye here is upon the other man's trencher, to know whether his fellow lurch him or no; if they chance to discourse,

* Gull's Horn-Book, chap. v.

it is of nothing but statutes, bonds, recognizances, fines, recoveries, audits, rents, subsidies, sureties, inclosures, liveries, inditements, outlawries, feoffments, judgments, commissions, bankerouts, amercements, and of such horrible matter."

The latter half of the century exhibits the rise of the coffee-house system, as an addition to the tavern accommodation of earlier days. Hutton, a writer in the early part of the next century, says: — "I find it recorded, that one James Farr, a barber, who kept the coffee-house which is now the Rainbow, by the Inner Temple Gate (one of the first in England) was in the year 1657 prosecuted by the inquest of St. Dunstan's in the West, for making and selling a sort of liquor called coffee, as a great nuisance and prejudice to the neighbourhood."* The coffee-houses were evidently places of resort for newsmongers during the later years of Charles II. Mr. Fairholt, in a collection of old London ballads, has included one, of which the following is a stanza †: —

"You that delight in wit and mirth,
And love to hear such news
That come from all parts of the earth,
Turks, Dutch, and Danes, and Jews;
I'll send you to the rendezvous,
Where it is smoking new;
Go hear it at a coffee house,
It cannot but be true."

Coffee was a recognised article of London trade before the end of the century. We meet with an adver-

* New View of London, 1708.

† Percy Society's Publications, 1845.

tisement * assuring us that 'Walsall, the coffee-man, against Cree Church in Leadenhall Street, keeps a library in his coffee-room for his customers to read. He also buys and sells books.' Two or three years later an advertiser announces, 'I sell coffee-powder; and I'll take care that what I shall sell shall be fresh and true; and all who will may have it in the roasted berry, or see it ground.' Does not this imply something like the existence of coffee-adulteration, in the glorious days of William and Mary?

A curious illustration of the open-air refreshments of London towards the close of this century, is furnished in a collection of broadsheets edited by Mr. Rimbault †, and relating to the frost-fair on the Thames in 1683-4. They are ballads or 'copies of verses.' One tells us,

"They cry good beer and ale,
Coffee or mum or wine, the heart to cheer,
Roast beef, or mutton boil'd, or brandy clear."

Another ballad sings that,

"Cooks' shops with roast victuals and taverns with wine,
Already are seen on the river with plenty,
Which are filled every morning before you can dine,
By twos and by threes, I may truly say twenty.
Jack, Tom, Will, and Harry
Nan, Sue, Doll, and Mary,
Come there to devour plum cakes and canary;
There's gingerbread, small cole, and hot pudding pies,
With bread and cheese, brandy, and good ale and beer."

Having thus noticed a few of the peculiarities relating to the supply and distribution of food in London in the

* Houghton's Collection, Dec. 28. 1694.

† Percy Society's Publications, 1844.

17th century, we may pass on to the 18th, limiting the examples to a small number, for reasons that will be explained presently.

Smithfield continued to be the market for live stock, and Newgate and Leadenhall for dead meat. Between 1740 and 1750, the average sale at Smithfield is stated to have been about 74,000 cattle, and 570,000 sheep. Many circumstances led to the gradual improvement of live stock; the cutting down of forests, and the draining of marshes, gradually led to more efficient modes of conducting the operations of the grazier; those operations began to be practised more systematically, and with a more steady appreciation of experimental trials; and hence arose a gradual increase in the weight of the animals, and an improvement in the quality of the flesh.

Not only did Billingsgate continue to be the storehouse whence the metropolis was supplied with fish, but there were from time to time projects advanced for extending this supply to the country districts, or at least for increasing the taste for fish-eating, whether supplied from London or elsewhere. Houghton proposed a plan, in 1703, whereby all the towns and villages within twenty miles of London were to be supplied with fish from thence; the fish being conveyed by horses, which would bring back loads of country commodities to London or the sea-ports. He had plans for salt fish, for fresh fish, and for preserving fish without salting them; but his plans were fruitless.

Concerning bread and its price at the commencement of the 18th century, there was an assize tariff,

which ordained that when wheat was at 30*s.* per quarter, the penny loaf should weigh sixteen ounces, or 1 lb. This does not differ much from the London ratio between corn and bread in the autumn of 1855; but the ratio was forced in the former instance, voluntary in the latter. There was also a provision made for what was evidently regarded as an enormous hypothetical price; it was ordained that when wheat was at 66*s.* per quarter, the weight of the penny loaf should be 7 oz.; and that an equivalent inverse ratio should be observed throughout the intervening range of prices. There continued to be sufficient faith in the wisdom of Parliament, down to a comparatively late period, to lead men to bow to the legislative decision that a loaf of bread should not be sold for more than a certain sum; but when the assize price tallied with the natural commercial price, the aid of the legislature was not wanted; and when the two prices clashed, the law was certain to be evaded in one way or other; and thus it ended, in 1815, by the abolition of the assize on bread. Corporate granaries, companies' granaries, Court control, and parliamentary control, all were abandoned by degrees; and London was left to make its own bargains for bread with the farmers, the corn-dealers, the millers, and the bakers. In the beginning of the century there was a corn-market at Bear Quay, in Thames Street; while Queenhithe presented a great market for flour and meal; and there was also a meal-market held at the White Hart Inn, near Holborn Bridge. Later in the century, however, the dealings in corn centred at

Mark Lane, as will be more fully noticed in a subsequent chapter.

Of the machinery whereby London was supplied with vegetables and fruit in the early part of this century, we have a curious account in one of Steele's papers in the 'Spectator.'* The writer professes to have slept at Richmond, and to have taken boat at four in the morning on a jaunt to the metropolis. "When we first put off from shore," he says, "we soon fell in with a fleet of gardeners, bound for the several market ports of London; and it was the most pleasing scene imaginable to see the cheerfulness with which those industrious people plied their way to a certain sale of their goods. The banks on each side are as well peopled, and beautified with as agreeable plantations, as any spot on the earth; but the Thames itself, loaded with the product of each shore, added very much to the landscape. It was very easy to observe by their sailing, and the countenances of the ruddy virgins who were supercargoes, the part of the town to which they were bound. There was an air in the purveyors for Covent Garden, who frequently converse with morning rakes, very unlike the seeming sobriety of those bound for Stocks Market. Nothing remarkable happened in our voyage; but I landed with ten sail of apricot boats, at Strand Bridge†, after having put in at Nine Elms, and taken in melons, consigned by Mr. Cuffe of that place to Sarah Sewell and Com-

* No. 454., Aug 11. 1712.

† The word *bridge* appears to have been used here as equivalent to wharf, stairs, or jetty.

pany, at their stall at Covent Garden. We arrived at Strand Bridge at six of the clock. . . . . I could not believe any place more entertaining than Covent Garden; where I strolled from one fruit-shop to another, with crowds of agreeable young women around me, who were purchasing fruit for their respective families."

Beverages were, in those days, ruled with a strong hand, in respect to the obtaining of revenue by the crown from fermented liquors. As the two Charleses and the Protector had all levied excise duties on ale and beer, however they might differ in other matters, so did the Catholic James, the Orange William, Anne, and the Georges. Many of those sovereigns would doubtless have been well pleased to acquire popularity by abolishing or lessening imposts which were always obnoxious to the people; but the never-ending necessities of the state rendered the wish nugatory. William and Mary, in addition to beer and ale, imposed duties on malt and spirits; and other commodities were afterwards included.

One of the most extraordinary attempts to make the people moral by Act of Parliament was planned by Sir Robert Walpole; or rather, if the attempt itself were not extraordinary, the mode of frustration was so. A gin law was passed, intended to put down intemperance by rendering gin too dear for the humbler classes to purchase; the duty was raised to the enormous amount of 20*s.* per gallon; while the licence-duty for a retail dealer in spirits was raised to 50*l.* per annum. But how was this met? Let Sir Robert himself say, in a letter to Horace Walpole: — "The scheme that was

laid was, for all the distillers, that were able, to give away gratis, to all that should ask for it, as much gin and strong waters as they should desire; and the great distillers were to supply all the retailers and small shops with as much as they should want, to be distributed and given away in like manner. The shops were to begin to be opened on Tuesday evening, the eve of Michaelmas-day, and to be continued and repeated on Wednesday night, that the mob being made thus drunk, might be prepared and ready to commit any sort of mischief; and in order to this, anonymous letters were sent to the distillers and town retailers in all parts of the town, to instruct them and incite them to rise and join their friends and do as their neighbours did."

For six years, from 1736 to 1742, the metropolis was the scene of an almost uninterrupted conflict between the Government and the people in respect to this Gin Act. The riot shadowed forth by the letters of Sir Robert Walpole was put down by the strong arm of the law, aided by military power; but the opposition continued to show itself in milder though not less pertinacious forms, frequently quite ludicrous in character. The apothecaries were permitted to sell spirits as a medicine; and advantage was taken of this permission to drive a trade under false colours. Almost immediately after the Act came into operation, the apothecaries had a prodigious demand for 'gripe water,' 'cholic water,' and so forth, the spirituous nature of which may be pretty readily surmised. One apothecary sold drams which were coloured red to appear medicinal; and around the bottle was wrapped a paper with these

directions: "Take two or three spoonfuls of this four or five times a day, or as often as the fit takes you." The ginshops and low taverns, not allowed to sell gin openly, exhibited numerous liquors which, though disguised in name and appearance, contained gin as one ingredient. The list of such drinks was quite formidable, 'sangaree,' 'tow-row,' 'cuckold's comfort,' 'parliament gin,' 'make-shift,' the 'last shift,' the 'ladies delight,' the 'baulk,' 'King Theodore,' 'cholic water,' 'gripe water,' &c.: even the modern Americans have not a greater number of odd names for beverages than had the London tavern-keepers of Walpole's time. More than two thousand persons were, in various ways, prosecuted for offences against the Gin Act during the short period of six years; but the attempt was all in vain, the drinkers vanquished the Government, and the legislature repealed the Act in 1742. It was to those days that Hogarth's 'Gin Lane' belongs, that wonderful but terrible representation, in which the very houses seem reeling with drunkenness.

There is a remark made by Defoe in one of his works*, which certainly seems to be exaggerated: — "Our very plough-fellows drink wine now-a-days; our farmers, graziers, and butchers are above malt liquors; and the wholesome breakfast of water gruel and milk potage is changed for coffee and tea." The greater comparative use of wine may be admitted, as also the increasing consumption of tea and coffee; but it is difficult to believe the alleged disdain of farmers, graziers, and butchers for beer.

* Augusta Triumphans, 1728.

Defoe's account of the habits of London tradesmen in his day is curious. He reprobates the tendency to extravagant living displayed by the shopkeepers of the metropolis about the times of Anne and George I. He says that immoderate expenditure is a 'terrible article' to a tradesman; and that custom seems to have sanctioned a very expensive style of living. "A man cannot now support a family with the ordinary expence which the same family might have been maintained with some few years ago." "Such is the expensive humour of the times, that not a family, no, hardly of the meanest tradesman, but treat their friends with wine, or punch, or fine ale, and have their parlours set off with the tea-table and the chocolate pot; treats and liquors, all exotick, foreign and new among tradesmen, and terrible articles in their modern expences." Another informant, who was a traveller and a careful observer of men and manners, expressed to Defoe an opinion that "there is at this time more waste of provisions in England than in any other nation in the world of equal extent of ground; and that England consumes for their whole subsistence more flesh than half Europe besides; and that the beggars of London, and within ten miles round it, eat more white bread than the whole kingdom of Scotland."*

Another passage in Defoe is not less interesting, inasmuch as it reveals something concerning the appearance and fittings-up of the best shops wherein provisions were sold. He speaks with wonderment and condemnation of a citizen who had spent 300*l.* in fitting up

* Complete English Tradesman, 10th Letter.

a pastrycook's shop, in the year 1710. The sash-windows had panes of plate glass, or of 'looking-glass plates,' with the prodigious dimensions of sixteen inches by twelve; the walls of the shop were lined with galley-tiles; and the back shop had a lining of galley-tiles in panels, 'painted in forest work and figures.' There were two large pier looking-glasses, and one chimney-glass, in the shop; a large pier-glass in the back shop; two large chandeliers, one in each shop; as well as 'three great glass lanthorns,' eight small ones, twenty-five sconces against the wall, and a large pair of silver candlesticks which cost 25*l.* "Six fine large silver salvers, to serve sweetmeats. Twelve large high stands of rings, whereof three silver, to place small dishes for tarts, jellies, &c. at a feast. Painting the ceiling, and gilding the lanthorns, the sashes, and the carved work, 55*l.* These, with some odd things to set off the shop, and make a show, besides small plates, and besides china basins and cups, amounted to, as I am well informed, near 300*l.* Add to this the more necessary part, which was building two ovens, about 25*l.*; and 20*l.* in stock for pies and cheese-cakes, &c."* The stock in trade seems rather small; but the shop was evidently a splendid affair; and Defoe thought that no honest, reasonable tradesman was justified in running into such extravagance as a means of catching customers.

Whatever may have been the nature of the feasting, high or low, in the days of Defoe and other writers in the first half of the last century, we have extant a curious proof of the glorying in the 'Roast Beef of Old

* Comp. Eng. Tradesman.

England,' which has not by any means yet died away. A song under this title was printed in Walsh's 'British Musician,' published in 1740. The first two verses have been attributed to Fielding, and the remaining four to Richard Leveridge. It will hardly be excusable to give it in full here; suffice it to say, for the information of those to whom the song may be unknown, that the lyrists exalt the times when roast-beef was the staple food of Englishmen, ennobling their hearts, enriching their blood, and making their soldiers brave; that the effeminacy, the ragouts, and the dances of France, imported at a later date, had deteriorated the bold Briton; that in the good old days of Queen Bess, before coffee and tea and such slip-slops were known, and when roast-beef was in full vigour, our yeomen were robust and strong, our plump tenants rejoiced and sang, our soldiers had stomachs to eat and to fight, our enemies' fleets dared not to appear on the ocean, and the world was in terror if e'en the Queen did but frown.—Such were the imputed virtues of roast-beef.

Smollett's picture of a cook's shop in a cellar, referring to a state of things such as existed in London about the year 1740, is valuable as denoting something concerning the humble dining-rooms of the metropolis in those days. When Roderick Random and Strap made their visit to London, they put up at a humble lodging near St. Martin's Lane. They asked their landlord where they could dine; and he told them that, while there were eating-houses for those who could pay well, there were dining-cellars for those poorer in pocket. The three sallied forth, and the landlord showed them

one of these places. "He carried us to a certain lane," says Roderick, "where stopping, he bid us observe him, and do as he did; and walking a few paces, dived into a cellar, and disappeared in an instant. I followed his example, and descended very successfully: when I found myself in the middle of a cook's shop, almost suffocated with the steams of boiled beef, and surrounded by a company consisting chiefly of hackney coachmen, chairmen, draymen, and a few footmen out of place, or on board-wages, who sat eating shin-of-beef, tripe, cow-heel, or sausages, at separate boards, covered with cloths which turned my stomach."

It is curious to mark how, in successive reigns and centuries, the dinner hour became later and later in the day. The whole social usages of a people would be involved in a true history, on the one hand, of the causes which led to this retardation, and, on the other, of the consequences resulting from it. As a simple fact, however, distinct from all attempts at explanation, we have evidence that the fashionable dinner hour has been retarded no less than ten hours in the course of three centuries! Perhaps, by and bye we may discover that, — as errors in the old calendar brought the seasons in the wrong place — so may midnight be a possible dinner hour. The Earl and Countess of Northumberland, in the time of Henry VIII., dined at ten o'clock in the forenoon. Queen Elizabeth and her gentry dined at eleven; while the merchants in her reign dined at twelve: a difference which does not seem to be easily explained; for in our own time the higher the rank the later the hour for dinner. Matters were exactly re-

versed in the time of James I., for the commoners then dined at eleven, and the gentry at twelve. Pepys, Walton, and other writers, speak of twelve o'clock as a very customary dinner hour in their day. By the time of George II. the dinner-hour had been greatly retarded, to one, two, and then three o'clock. In one hundred years, an additional retardation of five hours has taken place. Those who have read the gossip concerning aristocratic dinner-tables, in Mrs. Beecher Stowe's 'Sunny Memories,' will have noticed that even eight o'clock is now not the extreme of *ton;* nine o'clock dinners being more than once mentioned. Medical men, whatever may be their opinions, have not been strong enough to stem this course. It is instructive to see how the old physicians wrote on the matter. In 1572, Dr. Jones wrote concerning 'The benefit of the ancient baths of Buckstones (Buxton);' and in his instructions to patients he says, "Now for your meats, they will be best at ten or eleven o'clock, if you can fast so long. Your hour of supper shall be about six of the clock; but after that I would have you to use no more meat that night, nor yet drink, if you can abstain."

This brief historical sketch may here terminate. There will be a convenience in treating the more recent years of food-history in connection with the modern supply of each of the articles of consumption.

CHAPTER III.

RAPID TRANSIT AN AID TO FOOD-SUPPLY.

Variety in the Modes in which Food is brought to London.—Diversity in the Sources of Supply.—Effects of good Roads on Prices.—Roads and Canals of England.—Transit of Scotch Cattle to London.—Dr. Lardner's Illustration of the Relation between Speed and Supply.—Loss in Weight of Live Stock by Road-travelling.—Economy resulting from Railway Conveyance.—Facilities afforded in respect to Country-killed Meat.—Fish-supply to Inland Towns aided by Railways.—Fruit-trade and Egg-trade facilitated by Steamers.—Provisions in general share these Benefits.

'TIME is money!' If this be so, then does a nation indeed owe a debt of thanks to those, be they who they may, who increase the facilities for rapid transport. There is a double current of benefit, affecting both the wayfarer himself, and the numberless commodities required for his daily life.

Truly does this apply to the subject of Food. It is scarcely possible to exaggerate the value of quick and easy transmission of food to so enormous a city as London; the variety of the commodities, and the prices at which they can be sold, are so intimately dependent thereon, that it becomes almost a matter of life and death to the inhabitants. There are few who trouble themselves to inquire from what sources we obtain our food; but if such an inquiry be made, the resulting answer would show the full importance of this matter. Let the query

be, whence does London obtain its butchers' meat? We find that live stock is brought to the metropolis by all the great turnpike roads, by seven railways, and by steamers which land the animals at many quays and wharfs on the Thames. We find that these animals arrive from almost every part of England, from the Lowlands and the Highlands of Scotland, from Wales and from Ireland, from Denmark and from Holland; and that, in addition thereto, freshly-killed meat is sent in a sweet and perfect state from most of the northern counties. And also concerning bacon and salt meat from Ireland; hams from Yorkshire and Germany and Spain; game from all the sporting counties of the north; rabbits from the southern counties and from Ostend; poultry from half the counties in England; eggs from Ireland and France; fish from all the seas around and between the British Islands — of all these, London receives a goodly store. If the daily bread of the metropolis be the subject of inquiry, we must travel yet farther to trace the sources of supply; for the southern Russians around Odessa and Taganrog (unless war interrupt), the Moldavians around Galatz, the Prussians around Dantzig, the Americans in the Mississippi States, to say nothing of nations nearer home, or of our own farmers — all watch intently the London corn-market. Then, in respect to dairy-produce, little indeed is furnished by any places near the metropolis. Our cheese comes from a dozen or more of English counties, and from Holland and America; our butter from fully as many counties, from Ireland, and from America: even much of the milk which we require is now brought

from distances of twenty or thirty miles. The fruits and vegetables which furnish a subordinate but valuable part of our food occupy a broad belt of market gardens around London; but we are also indebted for them to foreign countries on all sides of us. If our beverages come under inquiry, what a wide-spreading source of supply we have to take into account! — the tea from China; the coffee from Ceylon and Arabia, from Brazil and the West Indies; the cocoa from the West Indies and South America; the sugar from the Indies, East and West, from Brazil, and other inter-tropical countries; the rum from the West Indies; the brandy from France; the wine from France and Italy, Spain and Portugal, Rhineland and Hungary; the whiskey from Scotland and Ireland. Even our salt must travel a hundred and fifty miles to reach London; while the principal spices and condiments traverse one-half of the circumference of the globe.

It becomes thus obvious that the great carrying question is a great food question. The carrier is little less important than the producer; for whether he make use of road or rail, of sail or oar, of screw or paddle, any improvement in his means of transport is equivalent to so much additional food placed within reach of the inhabitants of a great city.

The influence of facility of transport on *price* is illustrated by such abundant instances, that any ordinary thinker can trace it. "The inhabitant of Western Europe," says Mr. Porter, "who has always been accustomed to have brought to his door every article that he can desire, and that his means can purchase,

can have but a faint idea of the various privations experienced by great multitudes of inhabitants of Hindostan; and it may be confidently said that the government which should place within reach of the poor cultivators an ample supply of salt — an article, the obtaining of which never costs us a thought — would be sure to receive the blessings of millions. It has been stated by a gentleman, acquainted, by long residence in different parts of India, with the practices and capabilities of the country, that the difference in the cost of transporting goods along the present ill-formed roads in the rude carts or hackerys of the natives, is less by six-sevenths than the cost of conveyance on the backs of oxen; a course so commonly rendered necessary through the absence of everything to which the name of a road can be applied. In the level plains of Candeish, and in many other parts of Hindostan, cotton wool, freed from the seed, could be sold on the spot with a profit to the cultivators at one penny per pound — a cost which is trebled or quadrupled by the expense of the conveyance to the ports of shipment." * The latter illustration does not relate to the conveyance of food; but the analogy is unquestionable.

The roads of England are of course the chief arteries along which food flows to London; for even if railways be employed, roads must bear the commodities to the railways. The turnpike roads in England and Wales are about 24,000 miles in length, while other roads of minor character measure no less than 104,000 miles; and it affords a striking proof of the magnitude of the

* Progress of the Nation, p. 372.

internal commerce of the three kingdoms that with such a splendid series of roads, so urgent a demand should have been made in past days for canals, and in the present for railways; a demand which has led to the construction of about 2800 miles of canal, and 8000 miles of railway, now (close of 1855) in action in the United Kingdom. The road-traffic of England, just before the railway system was becoming important, was enormous. In respect to passenger trade alone, Mr. Porter estimated that the mileage power of stage coaches in 1834 was 600,000,000 miles, supposing all the coaches to be full on all the journeys; he considered the actual filling to bear to the real power the ratio of about 3 to 5, which would give 360,000,000 miles travelled by stage coaches in that year. A further estimate (but this can be nothing more than a rough guess) was, that there were 2,000,000 travellers who made five journeys each on an average in the year. What concerns us more nearly here is, Mr. Porter's estimate that of 600,000,000 miles of stage-coach journeys, no less than 400,000,000 were to or from London. The passenger-traffic made a leap at once from the road to the rail; but the goods traffic had an intermediate history in connection with canals. Articles of food, however, have never been brought to London to any great extent by canal; the road was the medium of transit until the modern days of railways and steamers. Even no longer back than 1843, the coaches from Norwich carried off, in the Christmas week, 3000 packages of turkeys, geese, fowls, and game, of which two-thirds were for London.

The nature of food-transit to London in past days could hardly be better illustrated than by the great Falkirk Tryst, and the proceedings thence to the arrival at Smithfield. This tryst or cattle fair is a very important commercial meeting, held on a level moor near one of the stations of the Scottish Central Railway, about three miles north of Falkirk. There are three market days, the first for sheep, the second for cattle, and the third as a miscellaneous clearing-off of any remainders. On the first day (the greatest month being October), flock after flock arrive, generally with about a thousand sheep in each. Some of these have travelled along the roads and over the hills for five weeks, to reach Falkirk. Some are white-faced, some black; some are horned, and some polled; every Scottish breed is represented; and so many as a hundred thousand sheep may be thus collected at one time, held either by the breeders, or by dealers. The buyers are either southern dealers, or are turnip growers from other districts, who buy to fatten and sell again. The qualities of the flocks are so well understood, that there is but little haggling; a price is quickly determined, and five hundred or a thousand sheep change owners at one bargain. The immense array of sheep is cleared off in the evening; and on the following morning the cattle-fair begins. From every part of the northern half of Scotland cattle arrive, mostly small ragged blacks, but a few browns and duns; but all are speedily disposed of. The commercial arrangements are remarkable. Many of the principal banking companies have tents or sheds on the ground. Almost every

man in a respectable position in Scotland being accustomed to keep his banker, the buyers at the tryst are provided with letters of credit; and when a purchase is made, the buyer goes to a banking tent, obtains notes for his letter of credit, pays for his purchase, and the notes pass soon afterwards into another banking tent.

Such was the Falkirk tryst in past years; and it still retains many of these characteristics. We may frequently meet with some such advertisement as this in the Scotch papers, about the month of September: "John ——, cattle and sheep salesman, attends all the leading markets in Scotland; sells sheep and cattle at 4*d.* in the 1*l.*; and buys lean or dairy stock at 6*d.*"

So far as London was concerned, the cattle from the Aberdeen and Forfar districts, in past days, were transferred at Falkirk into the hands of stall-feeders, who drove them to Lincoln, Norfolk, and other English counties, and there fattened them for Smithfield.

The old days of lowland cattle-driving, while they exemplified the slow and lengthened transit of food to London, were not without their picturesque attractions. Nay, in this as in other matters, the picturesque has lessened as the commercial and scientific have advanced. Sir Walter Scott, Allan Cunningham, Robert Burns, all have found piquant materials among the Scottish drovers. Sir Walter, in the person of Mr. Croftangry, when at a loss for a subject for a new 'Chronicle of the Canongate,' catches an idea from an observation of his servant Janet. He says that, as an oyster may be

crossed in love, so may a drover be touched on a point of honour; and he proceeds to write the tale of the 'Two Drovers.' We have nothing to do here with the fatal quarrel between Robin Oig and Harry Wakefield; but it may be well to give Scott's own account of the drovers of those days, premising that he wrote the story somewhat under thirty years ago.

The opening scene of the story is at Doune fair, whither several dealers had been attracted from the northern and midland counties of England; and much English money passed into the hands of the Scotch. Many large droves of cattle were about to set off for England, under the protection either of their owners or of the topsmen whom they employed in the tedious and responsible office of driving the cattle from the market to the fattening counties of the south. The Highlanders are characterised by Sir Walter as being especially fitted for this occupation. "It affords exercise for all their habits of patient endurance and active exertion. They are required to know perfectly the drove-roads, which lie over the wildest parts of the country, and to avoid as much as possible the highways, which destroy the feet of the bullocks, and the turnpikes, which annoy the spirit of the drover; whereas, in the broad green or gray track which leads across the pathless moor, the herd not only move at ease and without taxation, but, if they mind their business, may pick up a mouthful of food by the way. At night the drovers usually sleep along with their cattle, let the weather be what it will; and many of these hardy men do not once rest under a roof during a journey on foot from Lochaber to Lin-

colnshire. They are paid very highly; for the trust reposed is of the last importance, as it depends on their prudence, vigilance, and honesty whether the cattle reach the final market in good order, and afford a profit to the grazier. But as they maintain themselves at their own expense, they are especially economical in that particular. . . . . And there was the consciousness of superior skill; for the Highlander, a child amongst flocks, is a prince amongst herds; and his natural habits induce him to disdain the shepherd's slothful life, so that he feels himself nowhere more at home than when following a gallant drove of his country cattle in the character of their guardian." *

As in the central parts of Scotland, so was it also in the Galloway district, subject to minor variations. The Galloway cattle were sent southward by thousands every year, to be fattened for the London butcher. They were purchased by jobbers or dealers, at the various cattle fairs in the south-west of Scotland; they were collected into droves of many hundreds, and driven south-east to Norfolk and Suffolk. The topsman of each drove made arrangements for their rest at different stations, and took care that grass, hay, or turnips should be forthcoming. The journey lasted about three weeks; and it affords a striking proof of the costliness of this slow mode of travelling, that the total expenses, when divided by the number of cattle, varied from 24*s.* to 34*s.* per head. The prices paid by the jobber ranged from 3*l.* to 12*l.* per head, according to the age and excellence of the animals; and thus the jobber's ven-

* The Two Drovers, chap. i.

ture became one of some magnitude. The Norfolk or Suffolk graziers bought the cattle for the purpose of fattening for Smithfield; and it sometimes happened that, in unfavourable states of the market, the jobber was forced to sell at prices which subjected him to a loss. A jobber of more slender means would make smaller purchases, and drive his herd over the border, to sell at the first English fair which would offer a chance of profit.

There were thus frequently two graziers and two jobbers concerned in the ownership of a bullock, at successive periods, before the animal finally reached Smithfield; and during this time the poor beast had to travel four or five hundred miles on foot. Some parts of this complex system are still kept up; but great changes have ensued in other particulars; and it is precisely on account of these changes that the old system has been thus briefly described.

In most countries, the supply of the chief city with food is a primary object of attention, not only on account of the quantity required, but on account also of the high prices which can generally be obtained for the best qualities. Defoe, in one of his works, expressed a very exalted opinion of the influence which a great capital exerts on the provincial districts. "It is not the kingdom which makes London rich," he asserts, "but London makes the rest of the kingdom rich. The country corresponds with London, but London corresponds with all the world. The country supplies London with corn and cattle; and if there were not such a metropolis, what would become of the farmers?

How must the produce of the land be sold? How the rent paid? The land must lay waste and uncultivated; the cattle would run wild and devour the country, or would be starved and die. The country send up their corn, their malt, their cattle, their fowls, their coals, their fish, all to London; and London sends back spice, sugar, wine, drugs, cotton, linen, tobacco, and all foreign necessaries to the country. . . . . London consumes all, circulates all, exports all, and at last pays for all; and this is trade. This greatness and wealth of the City is the soul of the commerce to all the nation; and as there is the greatest number of tradesmen in this city that are to be seen in any place in the world; so they again support an innumerable number of shopkeepers of every kind in the country, and in every part of the country. It may be thought a little assuming to say the City supports the tradesmen of the country; but the fact is plain; you cannot go to a shopkeeper of any note in the remotest town in England, but he holds some correspondence at London; or else he must be a mean tradesman, that buys his goods of some of his better furnished neighbours, and they buy at London; so that the other may be said to buy at London too, only he does it at second hand. Nor is this all; but as all these country tradesmen buy at London, so are they all in debt in London, more or less; they all owe the London shopkeepers money; so that the whole country may, in some respects be said to trade upon the City's stock, the London tradesmen giving them all credit."*

* Complete Tradesman, ii. chap. vi.

There is much force in this; but Defoe has carried it too far. A writer in the time of Queen Anne could not well have anticipated the wonderful rise of Liverpool, Manchester, Glasgow, and other towns to commercial greatness.

Be it London, or any other great city, and be its relation to other large towns in the same kingdom what it may, its food-supply is materially influenced by the state of the district immediately surrounding it. Dr. Lardner, in his 'Railway Economy,' exhibits, in a lucid manner, the various advantages which quick and cheap travelling produce in the supply of the metropolis and other large towns with provisions. There is an attempt made to arrive at something like general laws, applicable to all great cities alike. A summary of Dr. Lardner's reasoning may be useful here.

In the first place, the price paid for any commodity consists of two elements — the price paid at the place of its production, and the expense of conveying it to the purchaser. This latter item includes not merely the actual cost of carriage, but the interest of capital for the time consumed in the transit, the insurance against damage,—storage, package, transhipment, and other items. In many cases these expenses of transport amount to considerably more than half the real price of the commodity; in some to three-fourths; in a few to four-fifths. Nay, there are cases in which the cost of transport is actually greater than the price paid; townsmen will, in some instances, give the farmers not only all their sewage manure, but also a bonus to induce them to take it away.

It is a point of some importance regarding the supply of a large city with food, that the products of agricultural labour have, generally speaking, great bulk with proportionably small value, insomuch that, unless the transport be effected with economy, such produce can only be consumed at or near the spot where it grows; it becomes too costly when a high freightage is added to the original value. Besides this, in many articles of animal and vegetable produce, speedy transport is essential to cheapness on other grounds; since the produce would deteriorate, and even suffer destruction, by the operation of time alone. The disadvantage of such a state of things is felt equally by the town and the country population, but in a different way. Vegetable produce may be at a ruinously low price at the spot where grown, while the price may be as ruinously high at a distant town to which the carriage is slow and expensive; the country price may be so low as scarcely to repay the growers, while the town price may be so high as virtually to close the market against all but the wealthy; the country people would be over supplied, whilst the townspeople would have an insufficiency. An improved mode of transport would at once reconcile these contradictions. Dr. Lardner adduces the case of the central districts of France, as affording a striking example of the evils resulting from inefficient transport. France yields large and varied crops; and her productions, in the places where they are raised, can be obtained almost invariably at a lower price than similar produce in England; and yet, in consequence of the cost of transport, they would attain, if brought to the

great towns, a price which would amount almost to a prohibition on their consumption. The urban population would gladly purchase what the rural population would be equally glad to sell; but the cost of transport frustrates the wishes of both parties. Since Dr. Lardner wrote, the opening of several railways in central France has improved the condition of things in this respect, but not to so great a degree as to vitiate the above conclusions.

If the market price of food in a busy town be reduced by improved modes of transport, the demand becomes increased in a two-fold direction — by enabling former consumers to use it more freely, and by placing certain commodities within the reach of other classes of consumers who were before deterred from purchasing. The second of these modes of increase is, perhaps, more considerable than the first; but the first is also important, especially among the poor. In a family in easy circumstances, the quantity of bread consumed daily, when the price is sixpence per loaf, would not be much larger than with the price at one shilling; but in the case of a poor family, the difference becomes most sensible.

The interest of capital, and the preservation of quality, are both aided by improved transport. A part of the cost of transport consists of the interest on capital for the time elapsed; and any increase in the speed of transport, by diminishing this lapsed time, must diminish the amount for interest. As to preservation of quality, the advantage becomes much more apparent. Numerous kinds of farming produce become deteriorated

by time, and many of them absolutely destroyed if not consumed within a certain time; and the supply to a distant town, irrespective of all considerations as to price, depends on the available means of transport before the deterioration shall have commenced. Lambs and calves, under the past system, were unable to bear absence from the mother for so long a time as the journey to market frequently required; the grazier was thus obliged to send the ewes and cows with them, at least for a part of the way; and the fattening of the ewes and cows was thus delayed. All kinds of live-stock, too, are deteriorated by a long road-journey, in the weight and in the quality of the flesh. Milk, butter, and vegetables are affected by like causes, though in different degrees, in price and quality. But when, by the introduction of railways or other improved modes of conveyance, far-away counties are brought virtually within a few hours' distance, townsmen become more independent of the little belt of garden-ground and dairy-ground around them; they receive food from a distance without paying exorbitantly for carriage.

As a mathematician, Dr. Lardner makes use of the 'square of the radius,' to illustrate one of the singular modes in which increased speed augments supply. "The extent of soil by which great cities are supplied with perishable articles of food is necessarily limited by the speed of transport. A ring of country immediately about a great capital is occupied by market gardeners, and other establishments for supplying the vast population collected in the city with their commodities. The

width of this ring will be determined by the speed with which the articles in question can be transported. It cannot exceed such a breadth as will enable the products raised at its extreme limit to reach the centre in such a time as may be compatible with their fitness for use. It is evident that any improvement in transport which will double its speed will double the radius of this circle; an improvement which will treble its speed will increase the same radius in a three-fold proportion. Now, as the actual area or quantity of soil included within such a radius is augmented, not in the simple ratio of the radius itself, but in the proportion of its square, it follows that a double speed will give a fourfold area of supply, a treble speed a nine-fold area of supply, and so on.*

The principle here enunciated is of considerable importance. It is the same which, in its operation, renders Richmond, Gravesend, and even Brighton, suburbs of London in respect to passenger traffic. Double the speed, and you increase four-fold the number of surrounding towns and villages which can be reached in a given time from London; double the speed, and you increase four-fold the area of country from whence provisions can be sent in a given time to London.

That increased speed of transport not only increases the quantity of available produce, but tends to preserve the quality, is evident from many sources of proof. Mr. Wyndham Harding, an authority in railway matters, thus illustrated the matter both as to quantity and

* Railway Economy.

quality, in 1848.* It appears from facts collected by Mr. Harding, that when cattle are driven along a common road, they lose on an average 20 lb. per beast in a journey of 100 miles; that sheep lose 8 lb.; and that pigs lose 10 lb. These losses appear high; but some graziers estimate them at a still higher figure. Be the exact quantities what they may, nearly all the loss is avoided by railway conveyance. So far as regards actual farming, the late Mr. Smith of Deanston made the following supposition and estimate. He took the case of a farm of 200 acres; he supposed that the lime, guano, oil-cake, coals, and other supplies for the farm, had to be brought from an average distance of fifteen miles, and that the corn, turnips, and other produce had to be conveyed to an average distance of fifteen miles to market or to some port; and he then estimated that, while the farm-travelling and transit by common road in a year would cost 140*l.*, the conveyance by railway at ordinary goods' rates would only cost 40*l.* The farm would be worth 100*l.* a year more to the farmer in the latter case than in the former. All these estimates, whether relating to quantity, quality, or price, concur in showing that 'time is money' in relation to the conveyance of food and other commodities from country districts to a busy town.

These facts, and others of similar tenor, are producing their fruit. Railways bring live-stock to London more quickly than the road; steamers bring them more quickly from Scotland, and Holland, and Denmark, than sailing ships; and steam is hence caus-

* British Association, Swansea Meeting.

ing a revolution in the mode of transport. There were more than two millions of oxen, calves, sheep, lambs, and pigs brought to the metropolis in 1854; and of this enormous quantity, two-thirds were conveyed by steam, either on railways or in steamers.

But not only do live-stock arrive in better condition when conveyed quickly; the country-killed meat is similarly benefited. Under the old system of road travelling, such meat could hardly be rendered available for metropolitan supply, except from adjacent counties, on account of its tendency to spoil by keeping. Meat-laden railway-trucks now arrive from various counties, to the advantage of all parties. The quantity so brought to London in 1853, was estimated at not far short of forty thousand tons, or about eighty millions of pounds; and in '54 and '55 it was yet higher. Mr. Caird has thrown out a suggestion which may one day perhaps be acted on; it relates to the establishment of carcase-butchers' slaughterhouses contiguous to stations on the great lines of railway: the animals might reach those establishments alive; and the dead meat might thence be forwarded by rail to London.

The fish-trade has been influenced even more decidedly than butchers' meat, by improved modes of transport. So long as road transit alone exists, inland towns are almost debarred from the luxury of fish, owing to the difficulty of keeping it in a proper state of freshness; but when a railway places the inland town within a few hours' distance of a sea port, the state of matters becomes materially altered for the better. Birmingham is a case in point. In the year

1829, before the railway was commenced, there were very few fishmongers in this town, and fish were scarce and dear; but now the fishmongers are numerous, and fish constitutes a regular part of the food of the inhabitants. Although Birmingham stands in the very centre of England, and is distant from the nearest sea port a hundred miles, fish caught in the morning on the east and west coasts may be found in excellent order on the boards of the Birmingham fishmongers in the evening. As the season for a particular kind of fish may be different on the west coast from that on the east, there is an abundant supply throughout the year, from one coast or the other. On one morning twenty tons of crabs arrived by railway, and on another three hundred barrels of fresh herrings; and thus Birmingham became benefited by an unexpectedly good haul of fish off one or other of our coasts: a result which would have been unattainable in the old days of waggons and vans.

Everywhere around us, these advantages from the employment of steam power in conveying fish to market are apparent. Thus, a valuable bed of oysters has been discovered between the English coast and the Channel Islands, and these oysters have been made available for the London market through the medium of the Brighton Railway. In the same way Southampton and Yarmouth send up their stores by the aid of their respective railways. Again, there is a project for rendering even the west coast of Ireland a mere suburb of London in respect to the supply of fish; screw steamers are to bring the produce of the fisheries to Milford haven, whence the broad gauge will bear it to

the metropolis. But the Scotch salmon trade has been especially marked by these improvements. Before the year 1770, salmon was brought to London on horseback; after that, light carts and other wheel carriages were employed; and at a later date the custom arose of bringing it up by ship. It was then (about the time when Pennant wrote his 'British Zoology') that Scotch salmon began to find its way to London in respectable quantities. That which was caught in spring was sent up by ship in baskets; but the salmon caught in warm weather was boiled, pickled, and sent off in kits or small kegs as 'kitted' or 'pickled' salmon. The next plan was to pack the fresh salmon in ice instead of straw, whereby it was rendered possible to transmit the fish at almost any season. The salmon was packed in boxes; the boxes were filled up with ice; the ice froze into a solid mass, and thus the fish remained secure from warmth until its arrival in the Thames. When the clippers superseded the Leith smacks, the voyage became shortened; when the steamers superseded the clippers, the acceleration was carried yet farther; when railway days arrived, yet another saving of time became possible; and thus has arisen by degrees our present regular supply of salmon in London.

It is supposed that not much less than one half the supply of fish for London is now brought by the railways; and, as the Scotch steamers bring a portion of the other half, it is easy to see how rapid must be the 'turning of ready money' induced by this facility of transport.

Again, fruits and vegetables are undergoing a steam-

wrought revolution. In years gone by, oranges were brought by a tedious voyage up the Channel and round the Foreland into the Thames; but now quick steamers bring them from the Peninsula and its islands to Southampton, and a three or four hours' railway run brings them thence to London — a lessening of time which effects an important lessening of price. It is owing to these steam routes that we now frequently meet with West-India pine apples in London, saleable at prices which would have been impossible a few years ago. As to home produce, distant counties now send to London vegetables which had to seek another market before the days of railways. More than a thousand tons of green food are said to be brought to London every week by railway, in addition to the supply from other channels.

The egg-trade affords a striking example of the productive and commercial energy induced by improved modes of conveyance from Ireland to England. "Before the establishment of steam vessels," says Mr. Porter*, "the market at Cork was most irregularly supplied with eggs from the surrounding district; at certain seasons they were exceedingly abundant and cheap; but these seasons were sure to be followed by periods of scarcity and high prices; and at times it is said to have been difficult to purchase eggs at any price in the market. At the first opening of the improved channel for conveyance to England, the residents of Cork had to complain of the constant dearness of this and other articles of farm produce; but, as a more extensive

* Progress of the Nation, p. 344.

market was now permanently open to them, the farmers gave their attention to the rearing and keeping of poultry; and at the present time eggs are procurable at all seasons in the market at Cork."

Another commodity, milk, has shared these advantages in a remarkable degree. Mr. Salt states * that in 1844 he prevailed on the farmers living near the Manchester and Birmingham Railway to try the experiment of sending milk to Manchester by rail. They did so, and the result was satisfactory. The Grand Junction Railway then paid attention to this kind of traffic, and speedily realised 4000*l.* a year by it. The quantity of milk now brought to London by rail is prodigious, chiefly by the Eastern Counties Company; in 1854, the conveyance by this company exceeded three million quarts. There is one remarkable fact which may be adduced here to show the influence of improved transit upon price. Until about the year 1846, St. Thomas's Hospital had a contract with a neighbouring dairyman for a supply of milk at 1s. per gallon; but this was superseded by a contract with another person at Romford, in Essex, a dozen miles distant, at a price varying from 9*d.* to 10*d.* per gallon; out of which the dairyman had to pay for a milk-ride on the Eastern Counties rail.† Perhaps the Essex cows can be fed more cheaply than cows in the southern suburbs of London; but the fact is sufficiently striking, account for it how we may.

In short, the railway service in assisting to supply

* Facts and Figures.

† Journal of the Statistical Society, xiii. 215.

the metropolis with food has now become immense. The seven railway companies* brought nearly twelve hundred thousand head of live-stock to the metropolis in 1853. One of these companies alone, the Eastern Counties, brought 22,000 tons of solid food in that year; and the Christmas week's conveyance by the same company, even at a time when the trade was not so fully developed, was in one year as follows: — 7447 sacks of flour, 11,546 sacks of malt, 3198 sacks of wheat, 3414 sacks of barley, 1374 sacks of oats, 1052 sacks of seeds, 353 tons of country-killed meat, 193 tons of fish, 94 tons of poultry and game, 133 tuns of beer, 5594 sheep, 545 oxen, 181 pigs, 10,600 quarts of milk, and 2400 loaves of bread; besides 6000 turkeys, which formed part of the contents of 17,209 parcels sent up by passenger trains.

Enough has been stated, — not to show the total amount of gain by improved means of transport; for this is impossible, — but to indicate the general character of the services rendered to the supply of London with food, by the substitution of steam-ships for sailing-ships, and of railroads for common roads. More detailed illustrations will appear in future chapters.

* Quarterly Review, No. 190.

CHAPTER IV.

THE FOOD OF LONDON IN ITS WHOLESALE ASPECTS.

Variety and Extent of the Marts and Markets for Food. — Small Influence of Government Control. — Baron Dupin's Sketch of the Port and Docks of London. — Trade of our Merchant Shipping. — Share of this Trade belonging to the Metropolis. — Origin of the Quays and Docks on the Thames. — A Day's Business in the Port of London. — Quantities of Food brought to England by Ship. — Half the National Revenue derived from Taxes on Food and Beverages. — Probable Quantities of Food brought to London. — Difficulty of the Inquiry. — Estimates by Mr. Porter and others. — Marts for Food at the Docks, Wharves, Markets, Vaults, and Warehouses. — Metropolitan Railway Termini gradually becoming Food Depôts.

WHAT a busy world of activity is indicated by the wholesale commerce in the food for London! What enterprise, what capital, what inventions and discoveries, what anxieties, what fortunes made and fortunes lost, what wonderful influences and results — moral, commercial, social, political, geographical, are brought to one's attention! The wholesale marts for food in London are looked up to by a far larger population than two millions and a half of souls; for the supplies from foreign lands are disembarked here in quantity sufficient, perhaps, for five, or even ten millions — it is difficult to name the limit.

These wholesale food-marts are, indeed, many and important. It would be a shallow view of the ques-

tion that would limit the word 'mart' to the meaning of 'market.' To welcome the arrival of ships from other shores, and examine their cargoes; watch the stream of coasters bringing rich produce from half the counties of the kingdom; trace these abundant food-supplies into the docks which line the Thames; observe the wonderful arrangement of warehouses, and vaults, and quays in these docks; number the granaries and wharves fringing both banks of the Thames for many miles; peep into the contents of the barges which arrive laden on the canals from the north and centre of England; visit the vast depôts or goods-stations of the several companies whose lines of railway begin or end in London; trace how the supplies of live-stock, dead meat, poultry, dairy-produce, fish, corn, vegetables, fruit, are arranged and sold at the markets of Copenhagen Fields, Newgate, Leadenhall, Whitechapel, Billingsgate, Mark Lane, Covent Garden; thread a way into the coffee-houses and commercial sale rooms about Cornhill and Mincing Lane, as a means of ascertaining how and where colonial and foreign produce is sold — all this must be done by any one who would really understand the nature and extent of the wholesale food-supply of our mighty metropolis.

The conducting of such a vast trade — the organizing of the commercial machinery whereby everything shall be in its right place, at the right time, and in the right quantity, can have very little aid from the government of this country. As a general rule, the government can best serve merchants by letting them alone; active beneficial interference being an exception to this rule.

Our monarchs in past days did not think so; but about a century and a half ago, the impression was growing up that mercantile men had better carve out their own destinies than look to kings and parliaments. About the middle of the reign of William and Mary, trade in general was bad in London; and in 1693 one John Whiston wrote an essay concerning it.* In the essay he proposed the appointment of a committee to inquire into the causes of the stagnation; of which committee members were to be chosen by the East India Company, the African Company, the Turkey Company, the chief foreign countries trading with England, all the colonies, the Trinity House, and the ship, silk, coal, lead, tin, woollen, iron, and fish trades. He thus argued on the propriety of merchants and manufacturers making the inquiry for themselves: — "Upon the fitness of persons chosen depends the good or ill success of the whole design. For the arts, man is ever the best councillour in his own profession, and every honest able man is safest to be credited in the better improvement of the mistery he proposes. If the busines of salvation be in dispute, we apply ourselves to some professing the ministry; if the dispute be concerning the title to an estate, we desire the judgment of a lawyer; if sick, we consult a physician; so when the trade of a nation is to be secured or advanced, the merchant's and tradesman's advice is questionless best able to accomplish the same."

But to return to the more immediate subject — the wholesale marts of London.

* Discourse on the Decay of Trade.

Although these pages deal with the food of the great city, rather than with the external features which the metropolis presents to the eye of a stranger; yet it may be well to know what a distinguished Frenchman thought of our Thames, and docks, and warehouses, in 1851: — "How can I give you an idea of London in regard to its prosperity, opulence, grandeur, and intellectual advancement, the result of the wealth and discoveries of two happy centuries! Imagine a monster city, occupying a territory equal in superficial extent to the whole department of the Seine, and containing a population as numerous as our five departments of Normandy! Imagine this immense population spread over the two banks of a river, which bears vessels of the largest burden up to the docks forming its maritime portion! Imagine the ships of all countries lying in order at anchor, from the last of the bridges, arrayed like an army of giants in transversal ranks, succeeding each other almost without interval for a league in length, and leaving in the middle of the crowded mass a space animated with vessels, either steamers or under sail, which are going to or coming from all quarters of the globe! To supply the insufficiency of this fine natural port, imagine five groups of floating docks, which receive the vessels devoted to the commerce of the East Indies, the West Indies, and other special sources of commerce. Imagine by these means a surface of water always available, never subject to the rise and fall of the tides, and nearly equal to the area of the Champ de Mars. Imagine around those docks establishments of warehouses and workshops for

the rigging and armament of the ships of commerce and war. In this first of cities thrive an infinity of industries which are not to be found at Paris, and of which Paris has not even the idea. Such is the maritime city, which includes, like three continuous faubourgs, the ports, the towns, and the arsenals of Greenwich, Deptford, and Woolwich." In a similar strain the writer speaks of the central or shop-keeping city, and of the western or fashionable city. This eloquent tribute from the pen of a foreigner formed part of an inaugural lecture by Baron Dupin, delivered at the Conservatoire des Arts et Métiers, on the 4th of January, 1852; the baron had been one of the French Commissioners to our Great Exhibition; and his lecture was one of the results of the Exhibition. A motto for the present volume has been selected from this lecture.

Well may a foreigner marvel at the maritime trade of our little group of islands! It is, indeed, wonderful to think that the ships which arrive at our coasts yearly, besides vessels in ballast, coasting-vessels, and vessels engaged in trade between Great Britain and Ireland, should amount in number to thirty or forty thousand! In 1854, the numbers stood thus: —

27,642 sailing vessels, averaging 232 tons = 6,411,764 tons.
4,886 steam vessels, about 300 tons = 1,487,978 tons.

The ships which depart from our coasts are, as may be expected, about equal in number to the arrivals; and thus there are seventy thousand cargoes sent to or received from foreign countries in a year! Considerably

more than half are British ships. And this, be it remembered, is wholly exclusive of the coasting trade and the Anglo-Irish trade.

Our business here, however, is with London commerce. When the Victoria Dock Company gave evidence before parliament in 1853, they presented a remarkable paper, showing the number of ships which entered the port of London in 1851. These vessels, engaged in the foreign, colonial, Irish, coasting, colliery, and fishing trades, amounted to the enormous number of 38,151, having a burden of more than seven million tons. Classified, they presented these numbers—

Foreign Trade	-	10,239
Irish „	-	561
Coasting „	-	9,243
Colliery „	-	11,765
Fishing „	-	6,343

More than one hundred vessels per day, besides steam-tugs and passenger-steamers!

Although the imports, the exports, the shipping, and the general commerce of the port of London increased prodigiously during the 18th century, yet little was effected in providing the requisite facilities for this commerce. Docks there were none; and merchandise was perforce kept afloat in barges, from the sheer impossibility of finding room on the quays and wharves. Very frequently the legal quays were filled up to a great height with sugar hogsheads, bales, boxes, barrels, bags, and packages of every description; the commodities were often bought and sold at these spots, for want of better arrangements; and thus the quays

became sugar markets, spirit markets, fruit markets, and so on.

Mention is made above of 'legal quays.' These, having their origin in the time of Queen Elizabeth, were appointed as the only places where goods might be landed: a monopoly being established in their favour. They occupied the greater part of the space between Billingsgate and the Tower, where now the Custom House is situated, extending backward to a distance of forty or fifty feet from the river. There were, however, other wharves authorised from time to time, mostly on the south side of the river; but nearly all foreign and colonial produce was required to be landed at the legal quays. These quays were not suited to the mooring of vessels close to them; the ships anchored in the middle of the river, and barges or lighters transported the cargoes from them to the quays. At the close of the last century the East Indiamen were wont to cast anchor off Blackwall, and to discharge their cargoes into decked vessels of fifty to a hundred tons burden. West-India produce was transhipped in nearly a similar way. So absolutely impossible was it to accommodate the ships, except in the middle of the river, that from three to four thousand barges, lighters, punts, lugger-boats, sloops, cutters, hoys, and other small craft, were employed in bringing commodities from the ships to the quays and wharves.

The amount of depredation on the river, at that period, was almost incredible. Mr. Colquhoun* enumerates the following among the depredators:—the 'river pirates,'

* Commerce and Police of the River Thames, p. 50.

men connected with the marine store-shops; they reconnoitred by day, and made their attacks in armed boats on dark nights; they cut adrift the lighters and barges, and took out the packages of merchandise — the 'night plunderers,' watermen of the lowest class, who attacked unprotected lighters, and made over the stolen goods to receivers close at hand — the 'light-horsemen' comprising mates of ships, and revenue officers, who would wink at the robbery of the ship, in which coopers, porters, and watermen took part; casks were opened, and some of the contents transferred to bags or skins or bladders — and the 'heavy horsemen,' porters and labourers, who wore an inner dress, called a 'jemmy,' provided with multitudinous pockets wherein to stow away small quantities of colonial produce, while portering about the ships and quays. Besides these depredators, the wine-coopers pilfered while opening and repairing casks; the watermen aided all in pilfering; the 'mudlarks' picked up stolen bits which others, by previous concert, had thrown into the mud; the rat-catchers, employed to catch rats in the ships, carried away much besides rats; the lightermen concealed goods while going from the ships to the quays; the warehousemen, when sugar reached the warehouses, pilfered and sold the stolen sugar to small dealers at public houses. In short, there was a most fearful amount of dishonesty and crime connected with the commerce of the Thames in those days.

It may seem strange that the merchants of London should have borne with such enormities until the close of the last century; but in truth, any proposals for a

change had to struggle against numerous difficulties. The House of Commons took up the matter, however, in 1796, by appointing a Committee to inquire into the extent of accommodation needed in the port of London. The Committee listened on the one hand to the plans of projectors, and on the other to the arguments of those whose interests rendered them inimical to all reform. Numerous engineering projects were brought forward; and the Committee had no easy matter in weighing the respective merits and demerits; for, besides the rival claims of the projectors themselves, there were the objections of interested parties, each of whom sought to throw out one or other of the schemes. The tackle-house porters, the city porters, the carmen, the watermen, the lightermen, the proprietors of legal quays and sufferance-wharves, the city corporation, the Board of Customs, the Trinity Board, Christ's Hospital — all had something to say against measures of reform; and, with that surprising logic men are so apt to employ when their interests are concerned, they sought to show that it was nationally important that their particular objections should be especially attended to.

The result of these inquiries was that several plans, growing out of the suggestions made to the Committee, were one by one sanctioned by Parliament. The West India Docks Act was passed in 1799; the London Docks Act in 1800; and the East-India Docks Act in 1803. At various periods afterwards were passed the statutes relating to the East Country, the Commercial, and the Regent's Canal docks. After an interval of many years the St. Katherine's Docks Act received the

sanction of parliament in 1826; while a second long interval has been closed by the plan for the new Victoria Collier Dock, now (1855) being constructed between Blackwall and North Woolwich, and partially opened. This last-mentioned dock, although destined for the reception of a commodity connected only indirectly with the food of London, is worth a passing word, if it be only a word of astonishment at the vast bulk of coal which our metropolitan fire-places and furnaces and ovens consume. We require more than ten thousand tons every day! In the year 1854 nearly twelve thousand coal-laden ships arrived, bringing 3,400,000 tons of coal; and as the railways brought nearly 1,000,000 tons more, the figures show how extensively large was the aggregate quantity.

Some of these docks are vast establishments. The London Docks, for instance, have room for 300 ships and 220,000 tons of goods; and can stow away in warehouses 80,000 pipes of wine and spirits, 120,000 chests of tea, and 30,000 hogsheads of tobacco. The dock companies, in the early part of 1855, made an attempt to obtain increased powers from parliament; but the attempt was resolutely opposed by the mercantile community, and failed. It would be interesting to notice the nature of the object in view, and the grounds on which it was supported on the one hand and opposed on the other: this, however, would carry us beyond the scope of the present volume.

A Lecture on 'A Day's Business in the Port of London' was published a few years ago by Mr. Howell, presenting in a clear form an outline of this won-

derful subject. He shows, from official custom-house returns, how that, on a day selected indiscriminately, as being neither better nor worse than other days, there were 121 ships arrived in the Thames, with a registered burden of 29,699 tons, and manned by 1387 seamen; that 106 of this number were British built; that 52 brought cargoes from the colonies, while the remaining 69 were laden with foreign produce; that these were wholly irrespective of coasting and collier vessels; and that these ships from beyond the seas brought the following articles of food: —

Sugar	32,280 packages.	Peas	1,960 quarters.
Oxen	317.	Fruit	5,424 baskets.
Sheep	2,734.	Ginger	1,737 packages.
Wheat	3,967 quarters.	Nutmegs	97 cases.
Oats	13,314 „	Pepper	848 packages.
Onions	1,200 packages.	Anchovies	100 barrels.
Tea	16,000 chests.	Pine apples	120 dozen.
Coffee	7,400 packages.	Rum	1,742 casks.
Cocoa	532 bags.	Raisins	365 cases.
Rice	14,600 bags.	Wine	1,888 packages.
Tapioca	350 bags.	Eggs	900,000.
Butter	8,000 packages.	Barley	1,715 quarters.
Dutch cheese	50,000.	Molasses	1,312 puncheons.
Beans	380 quarters.		

It is almost impossible, for reasons already given, to determine the total quantities or values of the food brought to London. In like manner are there perplexities in ascertaining the quantities and values in regard to the articles of food imported into the United Kingdom from foreign and colonial possessions — partly because some of the articles, which pay no import duties, are not recorded in official tables; and partly because certain commodities are used for other purposes besides food. But, in order to give a slight notion of the subject, we

will abstract from the Board of Trade tables a list of some of the principal articles of food imported in the year 1854.

ARTICLES OF FOOD IMPORTED IN 1854.

Living Animals, viz. :—			
Oxen and Bulls			62,937
Cows			25,261
Calves			26,130
Sheep			176,354
Lambs			7,098
Swine and Hogs			11,077
Cocoa			6,258,445 lb.
Coffee, viz. :—			
Colonial	48,934,814	=	66,501,672 lb.
Foreign	17,566,858		
Corn, viz. :—			
Wheat	3,431,227	=	6,850,498 quarters.
Barley	552,972		
Oats	1,014,949		
Rye	5,916		
Peas	109,177		
Beans	385,666		
Maize	1,349,698		
Buckwheat	287		
Bere or Bigg	606		
Corn-meal and Flour, viz.: —			
Flour	3,646,505	=	3,705,161 cwts.
Barley meal	75		
Oatmeal	455		
Rye meal	2,840		
Pea meal	5		
Bean meal	1		
Maize meal	55,214		
Buckwheat meal	66		
Fruits, viz. :—			
Currants			120,255 cwts.
Figs			29,903 cwts.
Lemons and oranges			816,908 bushels.
Raisins			286,998 cwts.
Potatoes			116,446 cwts.

Provisions, viz. :—		
Bacon	410,703	
Beef, salted	192,165	
——, fresh	109	= 776,680 cwts.
Pork, salted	160,877	
——, fresh	21	
Hams	12,805	
Poultry		38,177
Butter		483,902 cwts.
Cheese		390,594 „
Eggs		85,279,323 number. 184,816 cubic feet.
Lard		274,595 cwt.
Rice		1,343,215 cwt.
—— in the husk		19,048 qrs.
Spices, viz. :—		
Cassia lignea	513,766	
Cinnamon	778,193	
Cloves	1,252,526	
Mace	116,860	= 14,770,784 lb.
Nutmegs	438,315	
Pepper	9,428,948	
Pimento	2,262,176	
Spirits, viz. :—		
Rum	8,585,455	
Brandy	2,920,625	= 11,690,262 galls.
Geneva	184,182	
Sugar, viz.:—		
Colonial	5,875,210	
Foreign	3,220,343	
Refined and Candy	405,649	= 10,526,140 cwts.
Molasses	1,024,238	
Tea		85,792,760 lb.
Tobacco		35,202,914 lb.
Wine, viz. :—		
Red	5,218,584	= 10,877,270 galls.
White	5,658,686	

It must be borne in mind that the imports do not represent the actual quantities of foreign and colonial produce *consumed* in England; for a taxed commodity

may remain in bond until a year or more after it is imported; and moreover, much of that which has been imported is re-exported to other countries. Thus (in round numbers), although there were $6\frac{1}{4}$ million pounds of cocoa imported in 1854, only $4\frac{1}{2}$ million paid duty, and were 'entered for home consumption'; 37 million pounds of coffee out of 66 million: $4\frac{3}{4}$ million pounds of spices out of $14\frac{3}{4}$ million; 5 million gallons of spirits out of $11\frac{1}{2}$ million; $9\frac{1}{4}$ million cwts. of sugar and molasses out of $10\frac{1}{2}$ million; 62 million pounds of tea out of 86 million; 7 million gallons of wine out of $10\frac{3}{4}$ million; and so on. Were these differences disregarded, we should often be puzzled at finding that something had apparently been created out of nothing, or that the whole is *not* greater than the greatest part; there are occasions on which more of a particular commodity is entered for home consumption than is imported, in a particular year: a reserve store being taken out of bond and sent into the home market.

The same Board of Trade return that enlightens us concerning the quantities of foreign and colonial produce imported to assist in feeding the population of United Kingdom, gives similar information in relation to the export of food grown or manufactured in our own country. The quantities, however, of beer, ale, butter, cheese, fish, salt, &c. which we were enabled to sell to our neighbours was small, valued at only $2\frac{1}{2}$ millions sterling, so far as official records show. The balance shows to how vast an extent we are a food-importing nation, and how deeply we are concerned in maintaining peace, so long as peace is honourably possible.

One of the most remarkable inquiries connected with our national food supply is this, — how far are the national revenues derived therefrom? We know that England is the most heavily taxed nation upon earth; but few are aware how large a portion of the taxation is laid upon articles of food. Still more singular is it when we come to consider that this food-taxation is not laid upon our solid substantial food, but mainly upon beverages or their materials. Malt, hops, and the licences taken out by victuallers, may all be regarded, so far as they are taxable, as contributions to the revenue in respect to beer and ale; the excise duty on whiskey and gin, and the customs duty on brandy and rum, belong to the class of imposts on spirits; wine occupies an obvious position; tea, coffee, and cocoa, all of them taxed foreign productions, are all imported simply as ingredients for beverages; sugar, although employed for other purposes, is mainly used by us to sweeten beverages; and tobacco, though neither a food nor a beverage, has become almost a substitute for both in many instances, and an incentive to drinking in many others. Meat, poultry, fish, eggs, butter, cheese, corn, bread, fruit, vegetables, contribute very little to the national revenues in relation either to customs or excise; whereas malt, hops, beer-licences, spirits, wine, tea, coffee, cocoa, sugar, and tobacco contribute to a most enormous amount. Perhaps the magnitude may best be shown by placing in juxtaposition, for three recent years, the total national revenue derived from all sources, and the revenue derived from beverages only, sugar and tobacco being included in the latter, for reasons just stated:

Revenue from Beverages.			Total Revenue.	
1849.	33	millions sterling, out of	59	millions sterling.
1851.	34		59	
1853.	34		60	

It will here be seen how uniformly the taxes on beverages exceed all other taxes combined. When 7,000,000*l.* additional taxes were imposed in 1854, to defray the expenses of the war, beverages still maintained nearly their old ratio; for the raising of the malt-duty from 2*s.* 9*d.* to 4*s.* was estimated to yield an additional two millions and a half sterling. Even if tobacco were omitted, as a doubtful item in the list, the remaining items would still yield about half the revenue.

London, of course, contributes its full ratio to all the elements of commercial activity treated above. Its docks, its wharves, its ships, its imports, its exports, its contribution to the revenue, all bear, unquestionably, as large a ratio to those for the United Kingdom, as two millions and a half of souls bear to thirty millions; and in many instances much more so. In the duties on imports, constituting the customs duties, the London contribution amounts to as much as that from the whole of the rest of the United Kingdom combined! This is owing to the vast quantity of highly taxed commodities, such as tea, sugar, foreign wines and spirits, and tobacco brought into the Thames. Mr. M'Culloch made an estimate a few years ago, that the London imports and exports together amount to the enormous value of 65,000,000*l.* sterling annually; of which the imports are far more valuable than the exports, as may readily be conceived.

Quitting now these facts connected with the general commerce of London, and laying aside for the present any further concern for the modes by which, and the channels through which, the food-supply reaches the metropolis, we may at once anticipate a question likely to occur to the mind of a reader, — What is the total quantity of food consumed in London? It is very easy to put forth astonishing paragraphs on this subject; for the whole subject is astonishing, view it how we may. About twenty years ago, an account was given in the 'Farmers' Magazine' of the quantity of the principal articles of food consumed in London, comprising a formidable array of tons and millions and pounds sterling: it may have been correct, or it may not; but as no hints are given concerning the data on which it was founded, it is useless as an authority.

Why such estimates must necessarily be uncertain may easily be shown. This subject has been adverted to in an earlier page; but the reasons may here receive a little more elucidation. Let us say a few words in succession concerning official tables, commercial returns, population averages, and personal expenses.

The *official tables*, prepared principally by the Board of Trade from customs and excise returns, tell us concerning the importation of such foreign commodities as pay duty to the State, and concerning the delivery into the market of such home commodities as pay duty. But these are stated, some in quantities and some in values, which it is difficult to reduce into each other. Moreover, there is an absurd difference between 'official' value and 'declared' value, which trips up many a reader who does not carefully watch his steps through these

entries. And lastly, the government authorities are not very solicitous concerning commodities which yield nothing to the revenue; there are, for instance, large quantities of Irish provisions consumed in London; but the Government has no official knowledge of these quantities.

The *commercial returns* are such as commercial establishments may make if they choose; but it is not compulsory; and there is no central authority to reconcile and bring all these returns into a focus. The several railway companies might prepare each a tabulated statement of food brought to London by them in a given period: the dock companies might do the same in respect of shiploads of food brought to their quays and warehouses; the clerks of the ten or twelve markets might make out returns of the quantities of corn, fish, live stock, dead meat, poultry, fruit, and vegetables, brought to and sold at those markets; the market salesmen and the colonial brokers might prepare rough estimates of the London consumption, appearing to them probable, of the commodities with which they are conversant. But even if all this were done, and all these returns collected, they would be very loosely approximate; for neither railway companies nor dock companies, neither market clerks nor colonial brokers, can determine how much of the food brought to London is consumed in London.

The *population averages* afford a guess-work assistance to another kind of guess-work. Taking the end of the year 1855 for our point of attention, we shall not be far wrong in assuming that the metropolis contains one-twelfth of the whole population of the United

Kingdom. Now a question presents itself, — Does the metropolis consume one-twelfth of the food consumed in the United Kingdom? No one can answer this question otherwise than by hypothesis; and yet there are many cases in which this affords the only ground for estimate and reasoning. We know, for instance, that so many thousand bullocks were sold at Smithfield in 1854; but we are not told how many of these were required to supply dinner-tables beyond the limits of the metropolis. We know how much corn was imported; and our agricultural authorities guess how much corn was home-grown, in 1854; but the means are wanting to determine whether one-twelfth of this went into London mouths.

The *personal expenses* of individuals are sometimes added up to determine whether they afford any clue to the total consumption in families, classes, towns, or counties. The late Mr. Porter made many valuable inquiries of this nature; but it is easy to see how little way this will carry us. In the first place, families and individuals are not always disposed to be communicative on such matters; and the number of correct facts thus obtained ought to be extremely large to warrant any definite conclusions respecting the average consumption of all the inhabitants of such a place as London.

In regard to this question of personal consumption of food, it may not be out of place to notice a few of the attempts made to ascertain facts on the subject. Mr. Tufnell, in the Second Annual Poor Law Report, stated that agricultural labourers and their families, throughout England and Wales, eat on an average

about 122 oz. of solid food per head per week (equal to about 400 lb. per annum); that this is chiefly bread; and that it is less than the quantity usually given to paupers. A few years ago, a calculation was made * that the average weekly cost per head of in-door paupers in all the union workhouses of England and Wales, during the quarter ending Michaelmas, 1846, was in some unions so low as 1*s.* 8¾*d.*, and thence rose to 3*s.* 0¾*d.*, which was the maximum in any one union. The metropolitan average was just about midway between these two extremes: being 2*s.* 5*d.* per head per week. The year 1846 exhibited comparatively low prices for food; the averages must have been much higher in 1853 and 1854.

The late Mr. Porter's inquiries, just adverted to, were remarkable. In his statement of the results †, he dwells pointedly on the difficulties and uncertainties of all such researches. In some cases no adequate account is kept of the expenditure for food; in others, temporary or local circumstances may render the expenditure of a particular family exceptional and unfitted to be taken as a basis for inference; while in a yet larger number of instances the head of a family might not choose to give information concerning the exact amount of his yearly tradesmen's bills for food. One example related to a private family residing in a fashionable part of London, and consisting of a gentleman, his wife, six children, and ten servants, in all eighteen persons, of whom two-thirds were adults. A second was a large trading establishment in the city, consist-

* Journal of the Statistical Society, x. 366.

† Progress of the Nation, p. 582.

ing of 114 persons, male and female, all adults. A third was a case in which some degree of control was probably exercised over the quantities eaten by each person; it being an asylum containing 9 superintendents and servants, and 158 female children, together 167 persons. A fourth was an asylum containing 290 children of both sexes; a fifth, an asylum consisting of 139 persons of both sexes; a sixth, an asylum containing 116 persons, nearly all children; a seventh, a large public establishment comprising 646 persons, nearly all boys; an eighth, another public establishment containing 365 boys and 67 girls. The varieties were thus considerable; but Mr. Porter points out how necessary it would be to observe caution in drawing conclusions from the facts obtained, as to London consumption generally. So far as regards one item, bread, the 1902 persons consumed 331 lbs. per head on an average in a year, or rather less than 1 lb. per day each.

The labours of two other inquirers may be noticed, as examples among many. In 1841, Mr. Neeld, at that time mayor of Manchester, endeavoured to ascertain the family expenditure of persons in the cotton district. He selected 12 families in Manchester, and 7 in Dukinfield, belonging to the working classes. There were from 2 to 10 persons in each family, comprising 106 in all, or between 5 and 6 in an average family. The wages per individual varied from 2*s.* 3*d.* to 9*s.* 8*d.* per week; the wages per family varied from 8*s.* 8*d.* to 90*s.* The total earnings were 26*l.* 11*s.* per week, or 28*s.* per average family, or 5*s.* per head equalised among the whole 109. Now it was found that the per-centage on total income spent in bread

and flour varied from 12 to 39 per cent.; in meat, bacon, butter, eggs, cheese, and vegetables, 22 to 56 per cent.; in tea, coffee, sugar, treacle, and tobacco, 8 to 23 per cent. The families thus differed greatly in relative kinds of food; but, combining the whole 109 persons, it was found that the outlay per head per week for bread, &c., was 1*s.* 2*d.*; for meat, &c., 1*s.* 10*d.*; for tea, &c., 9*d.*, — 3*s.* 9*d.* in all, or just three-fourths of the entire earnings.*

Dr. Pereira, in his 'Treatise on Diet,' gives a valuable list of dietaries adopted in several public establishments. Without going into details, a few of his results may be given. In the Naval service, the solid food amounts to about 300 ounces per week, of which 135 ounces consist of bread and flour; and in order to suit different tastes and constitutions, the naval authorities permit substitution to be made of some kinds of food for others; for which purpose the following scale of equalities or equivalents has been prepared: — 1 lb. flour = 1 lb. raisins = ½ lb. currants and ½ lb. suet; 1 lb. biscuit = 1¼ lb. soft bread = 1 lb. rice = 1 lb. flour; 1 oz. cocoa = 1 oz. coffee = ½ oz. tea; 1 pint peas = 1 lb. rice; 1 lb. cocoa = ½ lb. butter = 2 lb. cheese; 1 gallon beer = 1 pint wine = ½ pint spirits. The East India Company's troops, 'going out,' are supplied with 226 oz. of solid food per head per week, of which 106 oz. is biscuit and flour. The government emigrant allowance is about 200 oz. per week of solid food, of which 112 oz. is bread and flour. The army rations amount to 196 oz. of meat and bread weekly: the soldier purchasing his

* Journal of the Statistical Society, iv. 320.

other food as he pleases. The Poor Law Board gives to the guardians of union workhouses a power of selecting from any one among several dietaries; taking the average of all these, it gives 170 oz. of solid food per week for each man, and 150 oz. for each woman or child; and of this quantity, about 107 oz. of the man's ration, and 90 oz. of the woman or child's ration, consists of bread. The prison dietaries are greatly varied, ranging from 126 to so much as 254 oz. of solid food per man per week. At the Foundling Hospital, the weekly rations of solid food for children under nine years of age amount to 130 oz., of which 72 oz. is bread; and for children of nine or upwards, 180 oz., of which 92 oz. is bread. In the Chelsea Military Asylum, for boys between five and fourteen years of age, the weekly rations are 190 oz. solid food, of which 54 oz. is bread. In the Greenwich Naval Asylum the numbers show a much larger proportion of bread, and a smaller of other solid food: being 187 oz. altogether, of which bread figures at 94 oz. The Dalston Orphan Asylum is mentioned as having a superior dietary, unlimited in quantity, and therefore unfitted to be placed in comparison with the others. At the Merchant-Seamen's Orphan Asylum, containing children from seven to fifteen years of age, the rations amount to 206 oz. of solid food weekly, of which 142 is bread and flour.

Now, it scarcely needs much argument to show that, however trustworthy may be the facts elicited by these various inquiries, they furnish a very slender basis whereon to rest any theory concerning the consumption

of food in England generally, or in London in particular. There is here another proof of that which we have already had occasion to mention — the network of embarrassments in which all such inquiries are involved. And as in respect of personal expenses, so also (as lately shown) is it regarding official tables, commercial returns, and population averages. Yet, it is only by combining facts derived from all these sources, that inquirers can arrive even at a guess of the quantity of food consumed annually in mighty London.

This London — this metropolis of Britain, and in many respects of the world; this 'wen,' as one of our writers has designated it; this city which has as many suburban villages, according to another authority, as there are postscripts to a lady's letter; this realm of Cockneydom, containing more inhabitants than a dozen of the small states of Germany, as many as Denmark, five-sixths as many as the whole of Scotland, more than Norway, or Baden, or Hanover, or Saxony, or Switzerland, or Tuscany, or Würtemberg — requires indeed a goodly store for its annual provisioning; and although no one has yet been enabled to decide, from any such data as those above mentioned, concerning the exact quantities; yet estimates have been roughly formed. One of the most remarkable attempts to present statistics in a graphic form, to present numbers and quantities to the mind's eye by means of a written picture, is, perhaps, that which is displayed in an article in the 'Quarterly Review:'*—

"If we fix upon Hyde Park as our exhibition-

* No. CXC.

ground, and pile together all the barrels of beer consumed (annually) in London, they would form a thousand columns not far short of a mile in perpendicular height. Let us imagine ourselves on the top of this tower, and we shall have a look out worthy of the feast we are about to summon to our feet. Herefrom we might discern the great northern road stretching far away into the length and breadth of the land. Lo! as we look, a mighty herd of oxen, with loud bellowing, are beheld approaching from the north. For miles and miles the mass of horns is conspicuous, winding along the road ten abreast; and even then the last animal of the herd would be seventy-two miles away, and the drover goading his shrinking flank considerably beyond Peterborough. On the other side of the Park, as the clouds of dust clear away, we see the great western road, as far as the eye can reach, thronged with a bleating mass of wool; while the shepherd at the end of the flock (ten abreast), and the dog that is worrying the last sheep, are just leaving the environs of Bristol, 121 miles from the beer-built pillar. Along Piccadilly, Regent Street, the Strand, Fleet Street, and Cheapside, and the eastward Mile End Road line, for seven miles and a half, street and causeway are thronged with calves, still ten a-breast; and in the great parallel thoroughfares of Bayswater Road, Oxford Street, and Holborn, we see nothing for nine long miles but a slowly-pacing, deeply-grunting herd of swine. As we watch this moving mass approaching from all points of the horizon, the air suddenly becomes dark, a black pall seems drawn over the sky — it is the great flock of birds, game, poultry, and wild fowl, that like Mrs.

Bond's ducks, are come up to be killed. As they fly wing to wing and tail to beak, they form a square whose superficies is not much less than the whole enclosed portion of St. James's Park, or fifty-one acres. No sooner does this huge flight clear away, than we behold the park at our feet inundated with hares and rabbits; feeding two thousand abreast, they extend from the Marble Arch to the Round Pond in Kensington Gardens, at least a mile. Let us now pile up all the half quartern loaves consumed in the metropolis in the year, and we shall find they form a pyramid which measures two hundred square yards at the base, and extends into the air a height of 1293 feet, or nearly three times the height of St. Paul's. Turning now towards the sound of meeting waters, we find that the seven companies are filling the mains for the day; if they were allowed to flow into the area of the adjacent St. James's Park, they would in the course of the twenty-four hours flood its entire space with a depth of thirty inches of water; and the whole annual supply would be quite sufficient to submerge the city (one mile square) ninety feet. Of the fish we confess we are able to say nothing; when numbers mount to billions, the calculations become too trying to our patience. We have little doubt, however, that they would be quite sufficient to make the Serpentine one solid mass. Of hams and beef, preserved meats, and all the countless comestibles, we have taken no account; and in truth, they are little more to the great mass than the ducks and geese were to Sancho Panza's celebrated mess — the 'skimmings of the pot!'"

The reviewer must have bestowed his arithmetical skill on a formidable number of sums in multiplication, to work out the above results. The basis of calculation was probably a series of such returns as clerks of the markets, railway companies, steam-ship companies, custom-house officers, salesmen, and others, are enabled to make, concerning the quantities of food which enter London: the supposition being that most of this food finds its way into the mouths of the Londoners. A rough guess, if it be put forth candidly as only a guess, may be useful and entertaining; but the day has hardly yet arrived for a trustworthy summing up of results.

Be the total amount of food-consumption in the metropolis what it may, the wholesale commerce relating to its supply is truly wonderful. A stranger could in no way obtain a more striking idea of our metropolis and its never-ceasing industry, than by a visit, or rather a series of visits, to the wholesale marts for food. There are the docks, some of them veritable magazines of supply; the almost endless vaults at the London and the St. Katherine's docks, filled to overflowing with wines and foreign spirits; the vast tobacco warehouses, with their millions of pounds weight of smoke-producing material; the sugar warehouses at the East India Docks, in which the filled hogsheads are in tens of thousands; the innumerable chests of tea, bags of coffee and cocoa, packages of spices of all shapes and sizes; the rice, the arrow-root, the sago, all the riches of the east and west. Then the railway depôts should not be forgotten; where, among the countless treasures which are handed over to the tender care of the carriers, are live stock for the new Smithfield; country-

killed meat and poultry and game for Newgate and Leadenhall; cheese and butter, bacon and eggs, for the large provision dealers in the city; fish for Billingsgate; corn for the granaries; vegetables and fruit for Covent Garden; milk for the itinerant dairymen. Then the open markets themselves should be seen; old Smithfield, for what it has been; new Smithfield, as the largest cattle-market in the world; Billingsgate, as a proof how enormous an amount of business may be done in a small space under good regulations; the Corn Exchange, as an example of a system (factors and samples) under which men purchase, from other men whom they do not know, commodities which they have never seen: commercial honour being the one security for all; Covent Garden, as a proof that a public market may be owned and well managed by a private individual without any statute relating thereto; Newgate, as a standing reproof of the folly of maintaining a market in a spot utterly unsuited in size and locality for great commercial transactions in dead meat and poultry; Whitechapel, as an example of a market in which the wholesale and the retail have grown up together no one knows how; Leadenhall, as probably the largest poultry market in the world; Farringdon, as a proof that a corporation cannot make a market 'pay,' unless it have other and independent elements of success. Next, the explorer should dive into the recesses of Mincing Lane and its neighbourhood, and see the mode in which tea and coffee, sugar and cocoa, rice and spices, wines and spirits, and other foreign and colonial produce are bought and sold; how that the sellers are

the consignees, and that the buyers are wholesale grocers and wine merchants; how that the sales are effected by brokers, who hold a kind of auction at their own offices, or at the Commercial Sale-rooms in Mincing Lane, or in the queer nooks and corners known as 'Garraway's' or other coffeehouses. Then the wholesale warehouses are wonderful places, filling up miles of street within a very short distance from the Thames, and choked to their roofs with cheeses, firkins of butter, cases of eggs, sides of bacon, hams and tongues, corn and flour, oranges and lemons, groceries and spiceries, tobacco and cigars, wines and spirits. The greatness of our metropolis is, indeed, pictured in these great commercial arrangements, whereby rations of food are daily supplied to the millions of London.

The railway system has yet to see its great development in connection with this subject. We have to look forward to the railway depôts becoming food markets. Something of this kind has already commenced. Among the numerous buildings at the King's Cross terminus, may be seen a large shed or warehouse wholly appropriated as a potato market. If the Great Northern Railway bring to London thousands of tons of potatoes from Bedfordshire, from Lincolnshire, from Yorkshire, from Scotland, why should they be carted thence to the markets, and again carted from the markets to the retail dealers? The Great Northern directors asked themselves this question; and replied to it by building a potato market at their vast London depôt. Offices or counting-houses have been built for letting out to potato-salesmen as places of business, under the same roof as the warehouse; trucks laden with potatoes

arrive on the rail into the very warehouse itself; while the carts of retail dealers find accommodation along side. Here, during the night, potatoes arrive in immense quantities; the salesmen assemble in the morning at their places of business; the retailers assemble with their carts; and very speedily the red potatoes and the white, the big and the little, the round and the oblong, change hands. This is in accordance with the legitimate course of trade; if one carting through the crowded streets of London will suffice instead of two, then is there a positive gain in time, in money, and in convenience, by the adoption of this market system at the railway depôts.

It is not for all commodities that such a system would be available. Experience alone will show which articles of consumption might more easily be subjected thereto. Something of this kind has been adopted at the Nine Elms depôt, where the South-Western Company, instead of sending up to the city, by barge or by van, the foreign fruit imported at Southampton, might establish a fruit market, attended by salesmen and dealers, might thereby lessen the crowding about the wholesale-fruit region of Thames Street, and might dispense with the line of conveyance from the depôt to that region. Many persons think that the system may advantageously be adopted in the fish trade. Lower Thames Street is absolutely blocked up in early morn by vans bringing fish from the various railways; insomuch that, not only are other departments of commerce seriously impeded, and the safety of foot-passengers imperilled, but the fish can scarcely reach the stalls of the Billingsgate salesmen in time for the com-

mencement of the market. Pickford and Chaplin, Macnamara and Younghusband, are struggling to squeeze their vans into a space too small to contain them; much time is wasted, and many whipsters' oaths are uttered, in the almost hopeless struggle. The question is asked, therefore, and is at the present time waiting for solution — might not fish-markets be established at the railway depôts, thereby saving valuable time and horse-labour, and lessening the blockade of the London streets? Again, country-killed meat. This arrives in London early every morning, in enormous quantities, at the several railway depôts, whence it is mostly conveyed to Newgate market. Newgate Street is sadly narrow, even for ordinary traffic; but it is nearly impassable at the hours when the meat-vans arrive; for the market itself is too small to admit the vans; and thus those vehicles, as well as the hundreds of carts belonging to the butchers who come to purchase, must of necessity find a temporary location in an already crowded street. If railway companies, and salesmen, and butchers, could agree concerning meat markets at the railway depôts, the wayfarers of London would be benefited by the change, and assuredly time, that precious element in trade, would be economised.

Should these anticipations be realised, then will the railway depôts occupy a remarkable position among the wholesale marts for food in London.

CHAPTER V.

CORN AND BREAD FOR LONDON.

Complexities in the Weights and Measures of Corn. — Acreage of Corn growth in the United Kingdom. — Probable Ratio of Produce per Acre. — Relation borne by Wheat to other kinds of Corn. — Necessary addition of Foreign Corn to our Home Supply. — Probable Quantity consumed. — Corn Trade on the Thames. — Waterside and Railway Granaries. — Strange Effect of Corn Laws in influencing Supplies. — System of managing the Corn Trade at Mark Lane. — Corn-grinding by the old Wind-mills. — Corn-grinding by the new Steam-mills. — Co-operative Corn-mills among Artisans. — Qualities and Quantities of Flour from Wheat. — Strange Episode concerning Flour Sacks in London. — Bakeries and Bake-houses. — Contrast between Paris and London in the Bread Trade. — Need of Reform in the Condition of Bakers. — Bread Mills at Carlisle and Birmingham. — No Bread Mills in London. — Relation between Corn, Flour, and Bread, in Quantities. — Controversies respecting White Bread and Brown. — Adulteration of Bread.

"SHAKE a Leicestershire man by the collar," says an old proverb of the seventeenth century, "and you will hear the beans rattle in his belly." Whether the natives of that county had greater proneness for beans than their neighbours; whether beans were more largely eaten in those days than in the present; whether London shared in this bean-eating tendency — the proverb does not afford means for determining. But there are other sources of information, whence we may learn that bread, good wheaten bread, did not in former days constitute so large a portion as at present of the food of the people; and it may

possibly be, that beans, a wholesome though not easily digested kind of food, constituted a standard dish on the humble tables of country folk. This we may reasonably admit, without any acquiescence in the peculiar 'rattling' theory mentioned above.

The supply of bread to London, without reference to bean-eating past or present, is a subject not only vast in itself, but complicated with various difficulties which have already been touched upon. How are we to separate the supply for London from that for the kingdom generally? We are told how many acres of land are under corn culture, and how many bushels per acre constitute an average yield; we learn that so many millions of quarters of foreign corn have been imported within a given period; we know that at one time much corn passes over from England to Ireland, while under altered circumstances the transit may be in the opposite direction; but in what way London is especially affected by these circumstances cannot be determined otherwise than in a loosely approximate way. Thus it happens that a notice of the corn and bread trades generally throughout the kingdom becomes necessary, even though the object held in view relate more especially to the metropolis.

There are a few embarrassments connected with the weights and measures of corn which interfere with any discussions concerning quantities, and prices, and consumption. A bushel of wheat is a bushel of wheat. True. But a bushel of wheat at 58 lbs. or 60 lbs. per bushel is regarded by the dealer in a very different light from a bushel at 62 lbs. or 64 lbs.; although the

corn-inspectors, in their returns, know nothing of this difference. If the wheat be of poor quality, it is light, it weighs less per bushel, and the buyer expects two or three pounds extra, as the case may be, upon every bushel, to bring it up to a certain standard agreed upon in the market. The official returns and tables are silent on this point; they recognise nothing but 'imperial measure.' This measure, so far as corn is concerned, consists in the use of a bushel of definite capacity; a vessel, whatever be its shape, that will hold 10 lbs. avoirdupois of pure water, will contain a gallon of corn; eight such gallons make a bushel; eight such bushels make a quarter; and thus an imperial bushel-measure would contain 80 lb. of pure water. A bushel of English corn of average quality weighs about as follows: — Wheat, 60 lb.; maize, 60 lb.; rye, 52 lb.; barley, 48 lb.; and oats, 40 lb.

For commercial purposes, it is desirable to be able to determine the ratios between bulks and weights readily; and Mr. Braithwaite Poole has given some convenient tables for facilitating this in respect to corn and other kinds of provisions. He states* that a ton of wheat, rye, beans, or peas, contains about 5 quarters; a ton of barley, 6; a ton of oats or malt, 8; a ton of bran or pollard, 10; and a ton of flour 8 sacks. He further states that the Irish barrel, in respect to several kinds of food, weighs thus: — A barrel of potatoes, 280 lb.; of wheat, 280 lb.; of barley, 224 lb.; of oats, 196 lb.; and of malt, 168 lb. A yet more extensive table is one that relates to the weight of a sack of different kinds of

* Statistics of British Commerce.

provisions. These weights vary from 140 lbs. to 336 lbs. — potatoes being 168 lbs., barley 240 lbs., and flour 280 lbs. These are strictly conventional quantities, however; for any person may give the name of 'sack' to any quantity, if the buyer and seller agree thereto. Some of the above are technically known as 'bags' rather than 'sacks.'

These few facts being premised, we will proceed to notice some of the estimates taken respecting the growth of corn in England.

In Smith's 'Tracts on the Corn Trade,' published in 1764, when the means of obtaining trustworthy statistics were very slender, it was estimated that England and Wales consumed yearly $3\frac{3}{4}$ million quarters of wheat, 1 million of barley, 1 million of rye, and $1\frac{3}{4}$ million of oats. But coming down to recent dates, when estimates are more carefully made, we find that Mr. M'Culloch gives, for 1846, the following distribution of about 12,000,000 acres of cultivated land in England and Wales: —

Wheat	3,800,000
Barley	1,500,000
Oats and Rye	2,500,000
Root crops	2,000,000
Beans and Peas	500,000
Clover	1,300,000
Hops	50,000
Gardens	150,000
Total	11,800,000 acres.

The total crops, at the prices of 1846, he estimated at about eighty millions sterling in value.

A later estimate by the same authority* takes in the whole of the United Kingdom. According to this the produce exhibits the following average: —

	England and Wales.	United Kingdom.
	Acres.	*Acres.*
Wheat - -	3,600,000	4,450,000
Barley - -	1,200,000	1,970,000
Oats and Rye -	2,400,000	5,800,000
Total - -	7,200,000	12,220,000

England, in ratio to population, grows most wheat, Scotland most barley, Ireland most oats; rye is now very little grown or eaten in any part of the United Kingdom. Assuming a certain produce per acre, and a price agreeing with the average of several years preceding 1854, Mr. M'Culloch considers that the annual value of the corn crop in the whole United Kingdom may be taken at about fifty-four millions sterling. The whole farm-produce, everything which is sown in order that it may yield annual crops — corn, beans, peas, rape, turnips, potatoes, clover, hops, garden produce — he supposes may perhaps be set down at 120 millions sterling annually, being a little under 6*l.* per acre for the produce of about twenty-one million acres under crop. Limiting our attention to corn alone — wheat, barley, oats, rye — we have, in round numbers, about one million sterling as the weekly average value of the corn grown in the United Kingdom — a value convenient to bear in memory, and worth remembering if the estimate be based on sound data; but we must not

* Dictionary of Commerce, ed. 1854.

forget that two years of high prices, 1854 and 1855, have since occurred, and should guard against hasty conclusions.

Another computer on this subject, a 'Hampshire Farmer,' who wrote to the 'Times' on corn topics in October 1854, estimated the wheat area of England and Wales in that year at $3\frac{1}{2}$ million acres. Mr. Braithwaite Poole, writing in 1851, sets down $4\frac{3}{4}$ million acres under corn crop, not in England and Wales, but in the whole United Kingdom.

Setting these estimates one against another, it may perhaps be permitted to strike a sort of average among them, until the day arrives when trustworthy agricultural statistics shall be obtainable. Seeing that the great bread question, especially in relation to London, is almost wholly associated with wheat, we may dispense, as concerns the purpose of the present volume, with any further consideration of other crops: and may perhaps, without any very glaring departure from correctness, assume that England and Wales have about three and a half million acres, and Scotland and Ireland about one million, under wheat culture. Even here, however, caution is necessary; for the Highland Society, in 1854, found reason to believe that Mr. M'Culloch had over-estimated the cultivated average in Scotland.*

What does this tell, however, concerning the quantity of wheat grown? Who shall say that a given acre will produce so many bushels of wheat, of so many pounds to the bushel? Bountiful as nature is, she

* Report of House of Lords Committee on Agricultural Statistics, 1855.

insists on a stern fulfilment of all the conditions requisite to the growth of a luxuriant crop. The temperature of the air, the variation of seasons, the quantity of moisture in the atmosphere, the quality of the soil, the nature of the subsoil, the excellence of the seed chosen, the proper observance of the seasons, the manipulative details of culture — all are conditions whereon the abundance of the crop depends. The estimates of probable average crops are very conflicting; and well may they be so; for the growth is influenced by a host of disturbing circumstances, fluctuating in themselves, and wholly beyond man's control. How irresistibly this tells upon commerce, we are occasionally reminded in a curious and even startling way. Thus, the barometer in the Liverpool Exchange was tampered with by dishonest speculators on one occasion in 1855. Why? If the barometer fell or seemed to fall, bad weather might portend, bad weather might denote bad crops, and bad crops denote high prices: — the links of the chain will easily be detected.

The practical question, however, is, to determine the actual average rate of produce in a given country. The wheat produce is said to vary between the extreme limits of three fold and sixty or seventy fold, in countries which possess the two extremes of capability for its growth. Mr. Stevenson, who wrote in the 'Edinburgh Encyclopædia' about 1815, and who is regarded as an authority, estimated the wheat produce of England at 24 bushels per acre. Mr. M'Culloch, in 1846, adopted an estimate of 32 bushels for wheat, 34 for barley, 40

for oats and rye, and 30 for beans and peas. Mr. Caird, the 'Agricultural Commissioner' for the 'Times' in 1851, set down 27 bushels as the average wheat crop per acre in England. Mr. Braithwaite Poole leans rather to an estimate of 26 bushels for wheat, 32 for barley, and 40 for oats. Mr. M'Culloch, in the edition for 1854 of his valuable Dictionary, adopts different ratios for the three kingdoms, giving 30 bushels as the wheat produce in England, 26 in Scotland, and 24 in Ireland; with 32 as an average for barley, and 40 for oats. A 'Hampshire Farmer' and Mr. Caird both took part in the newspaper discussion concerning corn prospects in the autumn of 1854: the 'Farmer' estimated the English wheat-yield of that year at 34 bushels per acre; while Mr. Caird, leaving his old estimate untouched, thought that the crop of 1854 was four bushels per acre better than the usual English average, besides another bushel gained per acre in virtue of the unusual weight or density of the corn-grains.

Now here we have an '*embarras de richesses*,' a range of estimates from 24 to 34 bushels per acre. Striking a balance among all these authorities, we may perhaps be warranted in assuming 28 bushels, or $3\frac{1}{2}$ quarters, as about an average produce of wheat per acre in England and Wales, taking the good years with the bad, and the fertile counties with the unfertile. If this be a little under the estimate of M'Culloch, it is a little over those of Caird and Braithwaite Poole; if not right, it is not likely to be far wrong. Combining this supposition

with the former, we shall have $3\frac{1}{2}$ million acres of wheat in England and Wales, at 28 bushels per acre, making about 100 million bushels or $12\frac{1}{2}$ million quarters, as an average crop for the last few years — omitting 1854 and 1855, as being, owing to the war, and other disturbing causes, exceptional years. The Scotch and Irish produce would probably be about $2\frac{3}{4}$ million quarters more — making a total of about four bushels or half a quarter of wheat grown annually in the United Kingdom for every inhabitant.

In relation to price of home-grown wheat, it need hardly be said how greatly this varies. Mr. Braithwaite Poole states the average of twelve years (1840 to 1851) at 52*s.* per quarter; this, for 15,000,000 quarters in the United Kingdom, would bring in about 40,000,000*l.* annually. Mr. M'Culloch's estimate, at the close of 1853, was 30,500,000*l.* for about 16,000,000 quarters; but this related to a special price of about 44*s.* per quarter. To show how necessary it is to take long periods in estimating prices, it is stated by Mr. M'Culloch * that, in the first fifty years of the present century the price of wheat ranged from 36*s.* (the lowest in 1837) to 155*s.* (the highest in 1812). One of the most valuable estimates, perhaps, ever made in respect to the average price of corn, is that of Mr. Farr †, on account of the large number of years over which it spread. He gives the decennial averages for no less than 245 years (1601 to 1845); and he deduces

* Statistical Account of the British Empire, vol. ii. Appendix.

† Journal of the Statistical Society, ix. 70.

from these, that the average price of wheat in England for the last two hundred years, or rather from 1645 to 1845, was about 40*s.* 6*d.*, — much less than the average of the last dozen years, and still further below the average of the last fifty years. Mr. Willich, actuary of the Universal Insurance Office, communicated to the London newspapers, in October, 1855, a valuable paper, showing the average prices of wheat in four different countries during a period of 27 years, viz. 1828 to 1854. The countries were England, France, Belgium, and Prussia. He took the imperial quarter as being equal to 2·9 French hectolitres, or $5\frac{1}{3}$ Prussian scheffels. His figures come out thus: —

In England - - - -	54	10
France - - - -	45	6
Belgium - - - -	46	3
Prussia - - - -	34	10

The figures hitherto given, although more perhaps than a general reader would care to wade through, do nevertheless fail to give the requisite solution to the bread question. It is the lot of England to possess a population greater than can be fed from her own home-growth; and she is dependent in part on the fertile fields of foreign lands. A glance at the Board of Trade tables will show that in the three years 1852, '53, and '54, we purchased from foreign nations no less than 22,000,000 quarters of wheat and other kinds of corn, besides 12,000,000 cwts. of flour and other kinds of meal. Leaving out all other kinds of corn, the wheat and flour together are equivalent to something

near 5,000,000 quarters yearly,—an important addition to our home-growth. During the 54 years of this century the excess of imports over exports has been about 68,000,000 quarters of wheat, or 1,250,000 quarters per average year, besides the flour or wheat-meal.

It may not, then, be a wide departure from the truth if we assume, as a sort of convenient summary or resumé of the above figures, that the United Kingdom contains about $4\frac{1}{2}$ million acres under wheat crop; that the average produce is about 28 bushels per acre; that the average price has been about 52*s.* per quarter during a range of several years, excluding 1854 and '55; that the total value at that price would be about 40,000,000*l.* annually; that we require, besides this, something like 10,000,000*l.* worth of foreign wheat annually; that from 3,000,000 to 5,000,000 cwts. of foreign flour come in aid of the supply; and that all this is in addition to the barley, oats, and Indian corn, consumed chiefly in Scotland and Ireland. These are very general average estimates, set down for familiar illustration, but with a full consciousness that they might not accord with the numbers for any one selected year.

How much corn, in the form of bread and pastry, is consumed by each average individual yearly, is equally conjectural. Smith, in the 'Tracts on the Corn Trade,' lately quoted, made a guess (for it could be little more than a guess) that about a century ago the six million of inhabitants in England and Wales consumed corn about in the following ratios: —

3,750,000	ate	1	quarter of wheat	each	annually
740,000	„	$1\frac{3}{8}$	„	barley	„
890,000	„	$1\frac{1}{8}$	„	rye	„
610,000	„	$2\frac{7}{8}$	„	oats	„

Whatever may be the value of this estimate in other respects, the rye-eaters have since almost disappeared from England and Wales. In recent times Mr. Porter gave an estimate of the number of persons who live on foreign wheat in our country (after the home-growth has been exhausted), amounting to two or three millions in Great Britain; but so little did he trust the existing means of determining such questions, that he made two different estimates — one of 6 bushels, and one of 8 bushels — as the average quantity of wheat eaten per head per annum in Great Britain (excluding Ireland); leaving to subsequent experience to determine which of the two estimates approaches more nearly to correctness. Mr. M'Culloch, more recently, endeavoured to apportion the supply and the consumption of 54,000,000 quarters of all kinds of corn and pulse — wheat, barley, oats, rye, peas, beans; his figures give 10 bushels per head per annum throughout the United Kingdom. He also remarks that, about half a century ago, 8 bushels of corn per annum was deemed a fair average consumption; but this probably excluded peas and beans.

Under present circumstances there seems no reason to depart far from an opinion pretty extensively entertained, that the quantity of wheat, barley, oats, rye, and Indian corn, consumed as food by man in the United

Kingdom, amounts to something like 1 quarter or 8 bushels per head per annum, viz. 5 of wheat, and 3 of other grain. But the reader will at once see how embarrassed all the computers are by the difficulties inherent in the question.

The Daily Bread of London! The daily bread of two millions and a half of persons, among whom the obtainment of 'good wheaten bread' has come to be considered one of the indispensable conditions of life! This is indeed a large subject. If a Londoner would content himself with preparations of meal and of coarse corn, made into cakes or paste, into parritch or gruel, and combined with vegetables; if he would consent that oats or rye should be substituted for fine wheat, or that pollard and bran should be mixed in his loaf, to obtain cheapness at the expense of colour—then the daily supply would be more easily obtained, and the commercial arrangements less complicate. But a loaf of wheaten bread is a London staple; an artisan demands it as well as a peer; and we must be prepared to hear of marketing arrangements on a great scale.

Since very early times, corn-grinding and bread-baking have been less extensively practised as domestic employments in London than in other parts of England. This is easily accounted for on two grounds; first, that the density of population facilitates the division of employments; and secondly, that the consumer is too far distant in locality from the producer. The London housewife finds her time too valuable to justify her in buying small quantities of corn from the dealer,

taking it to the miller to be ground, and then making her own bread: others render her these services better than she can perform them for herself; it is one of the concomitants of advancing civilisation.

The London supply of corn in past days was, of course, obtained from home before foreign countries were applied to, and from neighbouring counties in preference to those more distant. A corn-market, and a system of corn-factorage, may be said to have grown up together in London. It was a custom among the Essex farmers, about the end of the 17th century, to congregate at a particular inn at Whitechapel, on occasion of their visits to London to sell corn. They were wont to leave with the landlord of the inn samples of such corn and meal as happened to remain unsold; and they named a minimum price at which the corn and meal corresponding to these samples might be sold. The landlord was thus converted into a commission agent, who received a small per centage for his trouble; and the farmer was often enabled to save thereby the time and expense of a journey to London. This is an illustration of the principle whereon all salesmen, factors, brokers, and commission-agents build their claim to employment; they save much time and trouble to the sellers, and frequently make better bargains than the sellers and buyers can make for themselves, because they are on the spot to watch all minute fluctuations in the state of the market. This corn-agency, then, having been found advantageous at Whitechapel, a few persons ventured to seek a living as corn-agents professedly, occupying stands on Tower

Hill and elsewhere; and when their number had considerably increased, they felt emboldened — aided probably both by buyers and sellers — to establish a corn-market or corn-exchange in Mark Lane, about the year 1748. During seventy or eighty years this building sufficed for the corn-trade of London, so far as the corn-factors were concerned; but at length the factors became too many for the house; and thus arose the project for the now-existing structure, planned and built about the year 1828. It did not supersede the old building, but was added to it on one side: both together forming one Corn Exchange.

Most of the corn now reaches London either by railway or by ship; although some is brought by canal and river-barges, and some by waggons along the roads from neighbouring districts. The South Eastern Railway brought up 16,000 sacks of wheat in the first half of 1855; together with 21,000 sacks of flour; but some of the other railways far exceed this limit. The foreign vessels, or British vessels from foreign ports, frequently bring enormous cargoes, of 2000 to 3000 quarters. It is curious to see how many items combine to make up the price of a quarter of foreign wheat in London. It was computed a few years ago, that a quarter of Odessa wheat incurs a charge of about 16*s.* for insurance, commission, freight, primage, charter-party, metage, lastage, lighterage, landing, wharfage, housing, delivery, granary-rent, damage, and factorage, besides the profit to the importer. Mr. M'Culloch, on the authority of Mr. Reuss, gives an account of the import of 604 quarters of wheat from New York, in

which the small charges are even still more numerous — comprising winnowing, measuring, delivery, brokerage, insurance, commission, and freightage, before the corn reaches the Thames; and afterwards primage, entry, city dues, metage, lighterage, porterage, granary-rent, fire-insurance, turning, factorage, commission, guarantee, interest, and petty charges: the whole of these expenses together being set down at about 10*s*.

The city dues, mentioned above, are among the many anomalies connected with the commerce of the Thames. When a corn-laden ship enters the port of London, the corn has to pass through an ordeal — not at the will of the seller, or the buyer, or the factor, but by command of the corporate authorities. There is water-bailliage to pay, and groundage to pay; there are Lord Mayor's dues to pay, and cocket-dues to pay: the corn or its owners may receive no earthly benefit in return, yet these dues must be met. And, again, the owner is not allowed to measure his own corn, or to take it to granaries or wharfs: the sworn meters insist upon the fulfilling of the former of these services for him, whether he will or no; while the fellowship porters equally insist upon carrying his corn from the ship to the shore. There are certain corn-meters, appointed by the 'Corn and Coal Committee;' they attend at certain offices contiguous to the spots where their services may be required. When a corn-laden ship arrives, notice must be given to these meters, who claim the right (in virtue of certain ancient grants or charters) of meting or measuring the corn while being transferred to a barge or lighter alongside. Such arrangements are sadly

uncommercial and unsuitable to our age; they have nothing but their antiquity to recommend them.

Let the corn arrive in London how it may, nearly all the sales are effected in the Corn Exchange. This great mart of commerce is worth a visit, even on the part of those who have no immediate interest in the dealings; for it illustrates a definite mode of conducting important departments of commerce. Externally, the Corn Exchange presents certain Ionic pretensions, in its six columns, its cornice, and its entablature. The building was much injured by fire in 1850, but was speedily restored. Within, it presents to view a large open hall, lighted by a lantern over the centre; around the hall are stands or counters belonging to corn-factors, corn-merchants, millers, granary-keepers, and lightermen; but the chief owners or renters are corn-factors, who act as agents or middlemen between buyers and sellers. The sellers are mostly farmers who have home produce to sell, and merchants who have received shiploads of corn from abroad; the purchasers are chiefly millers, who buy the corn to grind it into meal or flour, and dealers or speculators, who buy to sell again at a profit.

A busy scene it presents on Mondays, Wednesdays, and Fridays, when the corn-market is held. Farmers, millers, merchants, shippers, speculators, granary-keepers, lightermen, factors — all are to be met there; but principally factors, millers, and speculators. About and within the area of the hall, on any market day between ten o'clock and three, we may see from eighty to a hundred stands, with, perhaps, eighty to a

hundred groups round them. Most of these stands are decked with small wooden bowls and canvas bags containing samples of the corn to be sold. The factor has a desk at which he rapidly transacts the book-entries arising out of the day's dealings. There is the most unquestioned and unquestioning faith in the probity of the factors in this respect; that the bulk of each purchase will correspond in quality with the sample; the very existence of the factorage system depends upon scrupulous honesty in this particular. As to the bargaining, it is the same here as elsewhere; the chaffering about price speedily comes to an end between two men who pretty well know that, even if so inclined, they could not easily overreach each other. The purchaser generally gives the factor a bill at one or two months' date in payment for the corn; and the factor accounts for the proceeds to the seller, receiving a commission for his trouble. The sweepings, after each day's market, constitute a nice little perquisite; many a London chanticleer gets his dinner therefrom.

Driblets, mere driblets of corn, are seen at Mark Lane. A stranger might wonder wherein could be the mighty dealings of such a place, seeing that only a few score of small sample-bags are exhibited. But herein is one of the peculiarities of the factor or salesman system; the salesman need not encumber himself or his stall with the actual corn to be sold; he requires only a sample; the bulk may be in a ship, or in a dock, or, more likely than either, in a granary.

The granaries of the metropolis are necessarily very large, and the scene of important commercial opera-

tions. The owner of a granary may or may not be the owner of any part of the corn stored therein; the granary system is distinct from the actual purchase and sale of the corn; for it is, in fact, a warehousing of the corn until required to be sold. The granaries are structures six or seven stories in height; some will contain only two or three thousand quarters of corn, while others have a capacity for eight or ten thousand. Along both banks of the Thames, from Greenwich in the east to Vauxhall in the west, these granaries are to be met with; but most numerous about the neighbourhood of Bermondsey and Shad Thames. While threading a path through this strange district, amid stores of horns, hides, skins, guano, barrelled provisions, sea biscuits, and multitudes of other products of home or foreign origin, we cannot fail to notice the granaries, which predominate in height over all the other buildings. Since the repeal of the corn laws, and the consequent free admission of corn from all parts of the world, this Bermondsey district has acquired a vastly increased amount of trade. The granaries and the steam flour-mills have extended on every side. When the ships bring their loads of corn, the granaries are resorted to as safe warehouses, where it can be stored until required for sale or for grinding. The granary-keeper tends and turns and screens the corn; and for this service, together with granary-rent and insurance, the owner of the corn pays something under a penny per week for each quarter.

It was not always so. It was not always thus dependent on the mutual inclinations of buyers and sellers.

Mighty changes have taken place in this granary system, consequent on the removal of restrictions and import duties. Before the great measure was carried by Sir Robert Peel, the granaries in which foreign corn was bonded were places of greater security than ordinary granaries, admitting of custom-house regulations being fully attended to. Such granaries were mostly situated in or near the various docks. It frequently happened that the peculiar state of the corn market, in relation to the supply on the one hand and the import duty on the other, rendered it expedient to keep corn in the bonded warehouses for months, and even years. The duty was not payable until the corn was received from the warehouses; the fluctuating duty or sliding-scale might happen to range so high that the corn could not be liberated from bond at a profit. It takes its place among the past records of the corn-trade, that in or about 1836 nearly 2000 quarters of wheat were on one occasion thrown into the Thames: the owners not being inclined to pay the high duty upon it, or to pay further granary rent,—a sad proceeding, viewed in any light it may. Under the 'sliding scale,' the duty became lower as the market-price became higher; and the merchants were frequently able to 'rig' the market so as to bring about the maximum or nearly maximum price; they would then suddenly pay the small duty on an immense quantity of bonded corn, and make large profits by selling at that particular juncture. It not unfrequently occurred that a ship, by bringing its cargo one single day after the price had fallen and the duty risen, lost the

advantage of the market, and the corn remained in the bonded granaries for months.

All these spasmodic fluctuations are past. The price of corn may vary, on account of many contingencies; but it is no longer embarrassed by the shackles of taxation; and buyers and sellers manage their dealings without the intervention of the finance minister—at least so far as our own country is concerned.

The granary proceedings are briefly told. When a ship, in the Thames or the docks, is ready to discharge its cargo of corn, a meter and several fellowship-porters go on board, and mete the corn with a bushel measure, before it goes into the granary. It undergoes one or even two measurings in the granaries, according to the circumstances of its detention there. To prevent heating and spoiling, the corn is occasionally turned and screened; it becomes harder and more easily ground.

That most delicate and important matter, the price at which corn is obtainable at a particular time, is dependent on a multitude of circumstances, as the most cursory consideration will show. But popular favour and disfavour visit the dealers in corn in a more direct and personal way than most other dealers. This is scarcely to be wondered at, considering the vital importance of bread for food; but it may yet be unjust. Archbishop Whately defends corn-dealers from the abuse often showered down upon them in precarious times. "Corn-dealers in particular are often exposed to odium, as if they were the cause of the scarcity; while, in reality, they are performing the important service of husbanding the supply in proportion to its deficiency, and thus warding

off the calamity of famine; in the same manner as the commander of a garrison or a ship regulates the allowances according to the stock and the time it is to last. But the dealers deserve neither censure for the scarcity which they are ignorantly supposed to produce, nor credit for the important public service which they in reality perform. They are merely occupied in gaining a fair livelihood. And in the pursuit of this object, without any comprehensive wisdom, or any need of it, they co-operate, unknowingly, in conducting a system which, we may safely say, no human wisdom directed to that end could have conducted so well, the system by which this enormous population is fed from day to day."*

Let us advance one stage more in the eventful commercial history of the London loaf — from CORN to FLOUR.

'Merrily goes the mill,' as it was wont to go in past ages. But the inhabitants of London see very little of this merry work. Windmills are driven away, in part by bricks and mortar, and in part by steam. Our busy city cannot now spare room for windmills; and if there were such room, the wind could barely get at them. However, that mighty worker, steam, has taken corn as well as other commodities under its protection; it claims to be independent alike of busy streets and murky atmosphere; it says virtually, 'give me but a ration of coals and water, and I will thrash your corn, convey it to your wharfs, haul it up into your granaries, grind it

* Introductory Lectures on Political Economy, Lecture 4.

into meal, separate the chaff, and make your meal into bread or into biscuits.' Steam-power does all this, and it will probably do so in yet greater ratio in years to come. Still we have our old windmills left in the country, and would not willingly lose sight altogether of the jolly miller and his men.

A plain old-fashioned corn-mill, with nothing special or patent about it, contributes to the bread-eater's service somewhat in the following way. The wheat, when brought to the mill in sacks, is hoisted to an upper floor to be cleansed. A part of the miller's skill consists in 'mealing': that is, mixing different qualities of wheat to produce flour such as may be required. The wheat is mixed; then exposed to a kind of winnowing or blowing, to drive off dust and light particles; then beaten by revolving arms against a kind of sieve, to clean the surface of each little grain; and then very likely winnowed or blown again — for the more trouble the miller takes to cleanse his wheat, the finer and better will be the flour. The cleansed wheat descends through a hopper to the space between two millstones. These stones may be from three to five feet in diameter, and their surfaces are grooved or channelled to increase the abrasive action; the lower one is fixed, but the upper one revolves from eighty to a hundred and twenty times in a minute, through the agency of a wind-mill or a water-wheel. The rolling motion of the upper stone crushes and grinds the wheat into flour, which flies out laterally from between the stones, and is caught within a large wooden case. The flour descends through

a spout into a bin in a lower story of the mill. The husk or 'bran' escapes into the bin as well as pure flour; and to effect a separation of the two is the object of dressing. The dressing-machines differ greatly in complexity and efficiency; but however constructed, this much may be said of them,—that they separate the mingled meal and husk into several kinds of flour, one of which is wholly free from husk, while the others retain varying degrees of husk mixed with the meal. Whether it be the old-fashioned bolting-mill, with its sieve of fine cloth, or the modern dressing-machine, with its sieve of fine silk or fine wire, the principle is still the same—a separation, with different degrees of completeness, of the meal from the husk.

Ingenuity has not been wanting in the contrivance of new and improved corn-grinding apparatus. There is Messrs. Swayne and Bovill's contrivance; there is the conical-mill contrivance; there is the Gruaux contrivance. The first of these, patented by the engineers above named, consists in enclosing the millstones in a kind of box, and directing a blast of air upon the grinding surfaces: the air cools the stones, and also drives out the flour as soon as it is ground; whereby the flour is kept in a cooler state than by the ordinary process; and moreover the box prevents the fine particles from being wafted out into the mill-room. So much merit is claimed for this method by its inventors, that bakers are said to be thereby able to produce four or five additional loaves from a sack of flour, on account of its superior condition; while, as far as the miller is concerned, the new method is said to economise both

flour and time. The *conical mill* is founded on this circumstance, that in the ordinary mill a circular stone of enormous weight, perhaps as much as three quarters of a ton, flies round a hundred times or more in a minute, crushing the grain very rapidly; but the flour cannot quickly escape at the edge because the stone is of such large diameter, and thus it becomes unduly heated. To obviate this is the object of the new invention. The conical mill exhibits many novelties: the upper stone is fixed, and the lower moveable, and both are conical at their surfaces of contact; the lower stone, too, is comparatively small in size. In this case, also, a claim is put in for great advantage over the ordinary process. The *Gruaux* system relates to the mode by which the beautifully fine French pastry flour is produced: hard wheat is selected, and is ground twice and sifted three times; the processes are tedious, but the flour produced is very fine and beautiful in quality.

No doubt there are numerous other novelties in corn-grinding; and no doubt many of them are likely to be advantageous to the inventors and to the public. Indeed it would be strange if such were not the case; for man's ingenuity is ever on the watch for improvements relating to the supply of man's food.

The pleasant places at which this corn-grinding was wont to be carried on are certainly departing from the pent-up Londoners. No longer may we look on the green belt of country once familiar; the villages are becoming absorbed in the great hive; and the windmills are being pressed out and expelled, as if

they had no business there,—insomuch that it requires half a day's walk to visit a windmill.

But how smart we are with our steam-mills! Let us glance at the head of the list. The City flour-mill, the many-windowed structure just below Blackfriars bridge—a structure already becoming whitened by the vicinage of countless sacks of flour—contains all the appliances for grinding corn by steam-power on a most complete scale. It is 260 feet in length, 60 feet in width, and six or seven stories in height. It contains no less than thirty-two pairs of millstones, all provided with a patent blowing-apparatus to economise the flour and keep the building free from dust. The wheat is hoisted from barges in the river, or from waggons in the street, to the topmost floor of the mill; it is cleansed by certain processes; and it falls in between the several millstones, where it is ground into flour. The wheat travels onward and upward, by means of Archimedian screws, and 'Jacob's ladders,' and other contrivances, to rooms wherein it is distributed among sixteen dressing machines. Each of these is a sort of octagonal barrel, nearly forty feet in length by three or four in diameter, and is covered with tightly stretched fine silk gauze. The meal flows into the octagon, which is inclined in position; it flows along the silken surface; and the octagon, by being both rotated and agitated, causes the fine flour to fall through the meshes of the silk. Only the finest flour thus escapes; the bran, and pollard, and seconds travel onward to the lower end of the octagon, whence they are removed for separation by other machines. The working capabilities of the mill are im-

mense. No less than 2500 quarters of wheat can be ground in a week! Wheat can be ground and dressed within the short space of fifteen minutes, during which time it travels twice or thrice from the top to the bottom of the mill, and back again.*

Smoke-consumption or smoke-emission, be our lot which it may, such steam corn-mills are likely to increase in number in London. If the rail and the ships bring corn almost to our doors, it is an obvious saving both of time and of freight to grind the corn into flour on the spot; and the windmills in the rural districts will have tough work to maintain ground against such a competition in supplying the wants of the metro polis.

Household corn-mills are very little employed in London. It is easier, as we lately remarked, to buy flour than to buy and grind corn; it is easier to buy bread than to buy and bake flour. There are, however, many ingenious contrivances, adapted for emigrants, farmers, and private families, whereby corn can be ground in small quantities as it is wanted. Witness Lloyd's machine, which grinds and dresses the flour at once. It is a kind of chest, with a hopper at the top, and a handle and fly-wheel at the side; the hopper is filled with corn, the handle is turned, and the process goes on within. The meal, after being ground, passes into an inclined cylinder; revolving brushes within the cylinder keep the meal in motion; the heaviest particles fall lowest; and perforations in the cylinder allow

* Tomlinson, Cyclopædia of Arts.

fine flour, seconds, pollard, and bran, to fall into four separate boxes or compartments. The inventors say that a bushel of wheat, weighing 62 lbs., yields by this machine $43\frac{1}{2}$ lbs. of fine flour, $8\frac{1}{2}$ of coarse, and 10 of pollard and bran. Another hand-machine, by Dray, will grind 24 lbs. of wheat per hour.

'Every man his own miller' is not yet a maxim received by the world generally; yet attempts have been made to apply the doctrine in a limited degree to communities of men. The artisans of Leeds have become millers. During the scarcity of 1847, when flour was dear, it was determined to save the expense of all middleman agency, by a more direct system of dealing between the corn-sellers and the bread-eaters. A few persons subscribed a fund, leased or purchased an old flax-mill at Leeds, converted it into a flour-mill, appointed a committee of management, purchased corn, ground it into flour, and distributed the flour among themselves. The scheme did not at first work well; the committee had no experience as corn-buyers or corn-grinders; and the state of the law of partnership hampered their proceedings. They did not despair, however; they spent 5000*l.* in the first year, and lost 80*l.* by it; but they looked for better results after a little time. The principle of action was, to sell to the co-operators at or as near the cost-price as possible. To the main charge for the corn was added a small item for grinding, and another paid to certain shopkeepers who took upon themselves the trouble of being distributors: this total price was less than the ordinary retail price of flour, perhaps by five per cent. In a period of

about four years, from 1847 to 1851, the co-operators thus supplied themselves with upwards of 4000 stones of flour per week on an average, or 850,000 stones altogether. On this quantity they effected a saving of nearly 4000*l.*, besides obtaining better flour than had before fallen to their lot. In 1851 their business amounted to 27,000*l.*; and they then began to sell flour also to the general public, at a small profit. This extended their operations, which amounted to 70,000*l.* in 1853, leaving a clear profit of about 4,400*l.* At the end of 1854 the association comprised 3200 members; they had a small capital in the mill, twelve pairs of stones, machinery and out-buildings, and six horses and carts. This is an interesting experiment, based on frugal forethought among working men. Whether it would succeed generally, and on a larger scale, is just one of those questions not yet ripe for solution.

But to return to London, and its supply of flour. The technical classification of wheat-flour into 'firsts, 'seconds,' &c., may be thus understood. The firsts are obtained by sifting the first grinding of wheat through a sieve of 64 to 80 meshes to an inch; they constitute the finest flour, used for pastry, &c. The seconds are the next quality, sifted through sieves of 50 to 60 meshes in the inch, and intended for 'household' or second-class bread. The thirds, coarser than either of the other two, are principally used for sea-biscuits and the coarser varieties of brown bread. The pollard is the finest kind of bran or husk produced from wheat; it is used in making sea-biscuits, and for feeding pigs

and poultry. This, however, is by no means the only classification of flour. The truth is, that as there is no limit to the number of times that a miller may grind his flour if he so think proper, no limit to the degrees of fineness in the gauge through which the flour is sifted, no limit to the number of times that the sifting-process may be performed — the miller may establish as many gradations of quality as he likes, beginning at the most delicate Gruaux pastry flour, and ending with plain unmistakeable bran. Nor does the familiar appellation 'best wheaten bread' really indicate anything concerning the name of the flour; since the miller may have mixed two or three different qualities of corn to produce the flour, or two or three different qualities of flour together after grinding. The following is one among many detailed accounts of the quantities and designations of the produce from the grinding of one quarter, or 8 bushels, or about 480 lbs. of wheat:—

Fine flour - - - -	$5\frac{3}{4}$	bushels
Seconds - - - -	$0\frac{1}{2}$	„
Fine Middlings - - -	$0\frac{1}{4}$	„
Coarse „ - - -	$0\frac{1}{8}$	„
Bran „ - - -	3	„
Twentypenny - - -	3	„
Pollard - - - -	2	„
	$14\frac{5}{8}$	„

So light is the produce, that there are thus about $6\frac{1}{2}$ bushels of meal, and 8 of husk, from 8 of wheat. Another tabulated statement will show how little there is of a definite character in these designations. In this case the wheat employed was of rather superior density,

weighing 63 lbs. per bushel, or 504 lbs. instead of 480 lbs. to the quarter:—

Flour - - - -	392 lbs.
Fine Middlings - - -	10
Toppings or Specks - - -	8
Best Pollard - - - -	15
Fine Pollard - - - -	18
Bran and coarse Pollard - -	50
Loss and Waste - - -	11
	504

In round numbers, this estimate pretty nearly agrees with the former, that about four-fifths of the wheat, whether in bulk or in weight (for a bushel of flour weighs nearly as much as a bushel of wheat) are obtainable in the shape of meal or flour. Into how many 4 lb. or 2 lb. loaves the magic of the baker's act converts this produce of a quarter of corn, we shall see presently; but the technical names of the flour and bran are quite formidable in number — firsts, seconds, thirds, best, whites, household, middlings, fine middlings, coarse middlings, toppings, specks, pollard, best pollard, fine pollard, coarse pollard, twentypenny, bran!

There appear to be two principal modes of bringing corn and meal to London,—in casks and in sacks. The former is chiefly adopted in respect of foreign supplies, and the latter of the home market. Large quantities of American meal are imported in casks or barrels: the barrels are well made, and present a neat and clean appearance; yet they are very much out of favour among London bakers and corn-chandlers. They have three or four inconveniences:—a barrel cannot, like a

sack, be folded up and thrown aside when empty, and it thus remains an incumbrance in a place where room is scanty; meal, too, has a tendency to settle down in a clodded form in barrels — to consolidate indeed, to such a degree that it requires to be dug out, and sometimes to be repulverised by rotation in a cylinder; and a third fault found with the barrels is, that the 'fast' Americans occasionally make them of unseasoned wood, which tends to impart a disagreeable flavour to the meal. On these grounds the London bakers will not willingly receive their meal in barrels; and there is thus an operation frequently going on in the wharfs on the banks of the Thames, of shooting the meal from barrels into sacks. The English corn and meal dealers find the barrels so accumulate on their hands, that they are glad to get rid of them at very low prices. The American wheaten flour is of four qualities, and is packed for shipment, under strict superintendence, in barrels of 196 lbs. and half-barrels of 98 lbs.

This preference for sacks over barrels naturally leads to the manufacture of an immense number of the former in London: the strong canvas of which they are made being chiefly woven by power-looms at Dundee. There are large manufactories of sacks and bags in and around Tooley Street, near the granaries. Persons who are in the habit of crossing London Bridge betimes in the morning cannot fail to have seen troops of women laden with piles of canvas; these women go to the warehouses for canvas, take it to their own humble homes, sew it up into sacks, carry the sacks to the warehouses, and receive a small pittance for their labour. The best

sacks are made of hemp; while for inferior varieties there is an admixture of jute, a fibrous plant imported from the East Indies. Some among the recently-invented sewing-machines are said to be making deep inroads into the avocation of these women; there is here just the rough sort of work which the machines seem best able to accomplish.

Strange indeed are the diversities of employments and arrangements springing out of the supply of food to London! Who would have thought that, not only is the making of sacks for corn an extensive branch of business, but that the protection of these sacks is the avowed object of a Society? A very curious account of this system was given a year or two ago in 'Chambers' Journal,' of which the following is an abstract.

It appears that there is much peril to the safety of the flour-sacks—peril from dishonesty. The sacks are not charged to the purchaser, but are returnable to the owner when empty; and herein lies the mischief, for large numbers of the sacks never find their way back at all: they 'evaporate,' to use the language of the millers, and go through a new career as bed-sacking, door-mats, loft-roofing, summer-house wainscoting, and paper material. There is mention made of a miller who lost 16,500 sacks in three years and a half, being one-third of the whole number required for his trade. When the buyer has made his purchase at Mark Lane, he receives an order on the wharfinger or granary-keeper for a certain number of sacks of corn or flour, the empty sacks to be returned. He is not required to send them back; but there are persons who carry on

the singular trade of sack-collectors, some of whom keep a number of light carts continually driving about the town and suburbs on this errand. About twenty or thirty years ago the losses are said to have become enormous: sometimes collectors were found to be the wrong-doers; sometimes buyers of corn and flour; sometimes wharfingers; while there was no want of temptation from various petty tradesmen and dealers, who would wink at the means whereby they might acquire sacks at a very cheap price. The remedy sought was — not a change in the mode of transacting business — but the formation of a 'Sack-Protection Society.' The members of this Society pay an annual sum each, out of which a protecting and prosecuting agency can be managed. They maintain a policeman in plain clothes, who surveys the operations of suspected persons; he acquires a sort of instinctive knowledge of a flour sack; he knows it again if he happen to see it doing duty as a potato sack, or — betarred and beblackened — as a coal sack. The robberies are lessened, but not extinguished. A well-made hempen sack, price about two shillings, may be used as a flour sack forty or fifty times during an active life of ten years; but a country miller, who would employ such sacks about his own mill, has 'no notion' of sending such to London, where they are liable to be dishonestly appropriated; he will have very mediocre sacks, for he doubts whether he shall ever see them again. He would conconsider as a triumph of ingenuity a sack not worth the stealing.

Such is this strange episode in the corn and flour

trade of London. Surely it is very uncommercial, to say the least of it! Why not buy the sack with the flour, and credit the buyer with the value of such sacks as he may return to the miller?

'Wanted a BAKERY, doing ten to twenty sacks a week.' Some such advertisement frequently appears in certain of the London newspapers which circulate principally among small tradespeople. It illustrates the readiness wherewith capital, be it great or small in amount, seeks to find a useful employment for itself in the metropolis; and also the technical phraseology that by degrees envelopes every trade and occupation. A bakery 'doing' so many sacks a week tells more to the mind of a baker than any elaborate statement of income and expenditure; knowing how many loaves he can obtain from a sack of flour, a very simple arithmetic will tell him what is the status of a shop which is 'doing' ten sacks a week. The 2500 bakers' shops existing in the metropolis at the present time are all 'doing' a greater or lesser number of these sacks; and it is one of the wonders of our city, although too familiar to attract much attention, that, be the state of trade bad or good, and the price of corn high or low, there are always bakeries enough 'doing' for all our millions who can pay for bread.

How strangely should we feel if the bakers of London were placed under such restrictions as those of Paris! Some would say, when aggrieved by the stories of alum, and potatoes, and chalk in bread, that it would be better if our bakers were so controlled; but

it is not a matter to be so summarily dismissed, when we consider how much Englishmen wish to be 'let alone' in their daily commercial transactions. The Paris bakers were placed under government control many centuries ago, and have never since been freed therefrom. The weight, the quality, the time of baking and drawing, all are to a certain extent regulated by authority. Even the dress of the apprentices is prescribed by law; and all the bakers are ranked in classes, according to the quantity of flour they use daily.

Let it not be supposed that such a system, whatever may be its advantages, is free from evil. In England a famine could now scarcely occur; unless, indeed, there were a deficient harvest in most parts of the world at one time. In France, however, private enterprise being rendered in some degree stagnant by government interference, the food-question becomes more perilous in times of dearth. Circumstances occurred at Paris in 1853 that brought out many of the defects of the system. The price or assize of bread is determined every fifteen days by municipal authority, with reference to the average price of flour, with the well-meant intention that the consumer may have the full benefit of any fall in the price. It happened, however, that flour became very dear in September, 1853, and the government, fearing any exasperation on the part of the people at the high price of bread, compelled the bakers to charge the same price as before; but as the bakers could not, of course, stand long against this loss, the government undertook to reimburse them at some

future time. It was not without considerable embarrassment that the Imperial Government steered through that time of difficulty. Even so late as March, 1855, the Municipal Council of Paris voted a large sum as indemnity to the bakers for maintaining the price of bread at eighty cents for the two-kilogramme loaf, regardless of the high price of corn at the time. The peculiarity of the system gave in past times a gloomy appearance to the bakers' shops, which were protected by a strong *grille* or iron railing, imparting to them the appearance of a prison; this system of iron bars was adopted to prevent the attacks of the populace, who, in periods of dearth, have on many occasions turned their fury against the bakers, and pillaged their shops.

The bakers of London, like others engaged in the preparation of articles of food, have gradually introduced improvements in their art. Among these is the use of an oven heated by a furnace exterior to it, instead of by fuel introduced into the oven itself. The following description represents pretty nearly the general course of proceeding in the making and baking of 4 lb. and 2 lb. loaves, forming the majority of the bread consumed in London: — Boiled potatoes are mashed with a little water, flour, and yeast; and the mass is left covered up for several hours, to ferment. When in the proper state, this mixture is brought to a liquid condition with water, and is strained through a sieve. The mixture is poured upon or into a mass of flour, with which it is well mixed by the hands; and the 'sponge' thus produced is allowed to remain several hours to 'rise,' or ferment. At a particular stage in

this process the 'sponge' is softened by water, in which a little salt and alum have been dissolved, and is mixed up therewith until it forms a kind of paste. Another portion of flour is then added, and well mixed up with the paste into dough. After a due amount of kneading, performed in a most primitive and uncouth way, the dough is separated into portions large enough for loaves; and in due time these portions are placed in the oven, where, adhering slightly together, they form one continuous mass or batch. The 'under crust' is formed by contact with the heated floor of the oven; the 'upper crust' by the action of the hot air of the oven; while the 'crumb' of the sides is a consequence of the contact of the several loaves, each one sheltering its neighbour from the browning effect of the heat. Much of the difference between common bread and fancy bread is due to an alteration in the mode of placing the loaves in the oven.

Numberless variations occur in the details of the baking-trade. Take the use of yeast as an example. Ale-yeast is good, but too small in quantity for London requirements; distillers' yeast is also good, and also too small in quantity; beer-yeast is too bitter; and there is thus a necessity for employing artificial or 'patent' yeasts. One kind of patent yeast imported from Rotterdam is made from malt and rye, treated chemically, and converted into a dry mass, having a pleasant fruity smell. Then, again, there are differences in the quality of the flour used; for although the distinctions between 'best,' 'household,' and 'brown' bread are convenient, they are not so precise as to indicate

exactly the quality of the flour. Different wheats may have been mixed before grinding; different qualities of flour may be mixed by the miller; different sacks of flour may be appealed to by the baker himself; and differences may be made in the small amount or in the kind of the other substances added — even without suspicion of anything which can justly be deemed adulteration. Indeed, as was before remarked, 'best wheaten bread' is by no means a uniform commodity in London. If there were nothing else to show this, it would suffice to remember that a difference of twopence per 4 lb. loaf is observable at different shops, albeit for 'best wheaten.'

There is much that is sad and unsatisfactory in the condition of those who make bread for the millions of London. Dr. Guy, in evidence given before a Parliamentary Committee a few years ago, stated that the London journeymen bakers often work eighteen or twenty hours a day. Their health is injured by high temperature; and they become old in constitution while yet young in days. The master-bakers of Scotland are in the habit of employing apprentices, to whom they pay no wages: these apprentices, when their time has expired, finding insufficient employment as journeymen in their own country, come up to London in search of a living; and this constant accession of young hands gives rise to a competition which keeps down the position of the London bakers. If the bread-eaters will have 'hot rolls' for breakfast and 'new bread' for tea, the bakers must work at night to prepare the rolls and loaves; and it thus becomes a contest between the con-

sumer's wishes on the one hand and the baker's independence on the other; the latter gives way, and hence the poor baker works when others sleep.

That a baking establishment might be differently planned, is proved by one or two significant examples. Dr. Lonsdale communicated to the 'Journal of Public Health' an account of Messrs. Carr's great bakery at Carlisle, shortly after Dr. Guy had given his evidence. He found, in a room ninety feet long by about one-fourth that amount in width, and in subsidiary rooms, about a hundred persons employed. They were mostly in good health, — many having recovered from maladies they had contracted in other and less skilfully managed establishments. Dr. Lonsdale attributed the good condition and healthy appearance of the men to four causes: — the airiness of the apartments, the arrangements for cleanliness, the temperate habits of the men, and the short working hours. In all these points the men and boys were much more favourably circumstanced than the bakers of London; they worked less than eleven hours per day. Bread and biscuits they made, but no 'hot rolls.'

The bread-making processes are, indeed, clumsily managed in the majority of London establishments. Whoever has seen the rude and primitive mode in which dough is kneaded, by a man straddling and wriggling on the end of a lever or pole, may well marvel that such uncouthness should not long ago have been superseded by something better. Our Parisian neighbours appear to be somewhat in the same plight as ourselves. On a recent occasion, M. Payen, a distinguished French

chemist, made a Report to the Académie Française on the bread and baking of Paris. He said: "A day will doubtless come when our descendants, who shall read the technology of the 19th century, will ask themselves whether at this time of industrial progress we really prepared the chief of our aliments by the rude way which we now witness — in plunging the arms into the dough, lifting it up, and crushing it down with such effort as to exhaust the energy of the half-naked arms, and make the perspiration run down into the food; whether at such an epoch the baking was effected on the very hearth itself from whence the fuel had just been withdrawn; whether it could be believed that during these fatiguing operations the chief part of the heat should seem destined to heat, or rather to roast, the workmen, than to bake the bread!" The Parisian practice is tolerably well marked out in this passage; but improvements seem to be in progress. A committee of the Académie, MM. Payen, Poncelet, and Boussingault, have reported in high terms on a system invented and patented by M. Rolland, in which a kneading machine, worked by hand, will knead a sack of flour into dough in 20 minutes, with a vast saving of muscular labour.

It is strange that, in the greatest city in the world, we have nothing that can be called a large bread-factory. Steam-mills there are on a gigantic scale, as has already been noticed; biscuit-bakeries, in which steam-power is employed to mix and knead the dough; bakers who make frequent changes and improvements in their ovens; but no establishment

wherein the plain familiar four-pound loaf is made by machinery.

Carlisle has attempted this, if London has not. The establishment in that city belonging to Messrs. Carr comprises a finely-built stone structure, in which steam-power grinds the flour, carries it to the sifters or dressing machines, dresses it, raises it by an endless chain of buckets to an upper floor, mixes and makes the flour into dough. The ovens, built of stone, and of great thickness, retain so equable a heat that all the loaves receive an exactly similar tint of brown — a 'brown crust' being in no danger of becoming a burnt crust.

Some years ago, a bread-mill was established at Hinckley in Leicestershire, introducing peculiarities both in the corn-grinding and in the baking. The millstones were smaller than usual, and revolved with much greater rapidity; and all the corn passed through two pairs of stones, being crushed by the first pair and ground by the second. The flour was rotated in a sort of barrel churn, with a stream of water and a stream of carbonic acid gas, until it became dough. The loaves made from this dough were transferred to an immense oven, containing shelves formed of double iron plates; and steam, circulating in the vacuities between the respective plates, baked the bread without burning it. What were the commercial results of this attempt, we are not aware.

There has been a system established at Birmingham so remarkable that it is worth noticing here, as a contrast to anything observable in the metropolis.

It appears, from a sketch of the system in 'Household Words,' that in the year 1795, when wheat was dear and damp, and flour mouldy and sour, a company was formed to supply Birmingham with good flour and good bread. The company struggled against numerous difficulties, among which was the fierce opposition of the millers and bakers; but the mill maintained its ground. When the millers found that they could not crush the interloper, they made the best of their position, and set up town mills of their own; and there are now six large bread mills in Birmingham. The Birmingham work-people have the reputation of a special liking for buying at the small hucksters' or chandlers' shops; and thus there are facilities for the maintenance of the steam-mill system, which would not be presented in a city where the inhabitants would rather purchase bread at a baker's than a huckster's. At one of the largest of these mills, belonging to Mr. Lucy, lately Mayor of Birmingham, steam-worked cranes haul up the sacks of wheat from a canal to granaries at the top of the building; steam works fourteen pairs of millstones to grind the corn; steam mixes the wheat before grinding, and the flour after grinding; steam kneads the flour, and water, and yeast, and salt into well-made dough; and then comes the manipulative processes. The bakehouse has tables of large size; and around its walls are eight ovens of great capacity. The dough is made into loaves; the loaves are nicely baked in the ovens; and the baked bread is placed on shelves in a store-room which will contain 2000 loaves. The mill sells flour as well as bread. At an early hour

in the morning waggons draw up to the mill; they are filled with loaves, which are quickly conveyed to the several hucksters' shops, and the waggoner, or an attendant servant, returns with the ready money. The huckster sells the bread to the families of the working men of Birmingham. It is curious, as an indication of the influence of price on demand, that in dear times Mr. Lucy finds his bread go off more readily than his flour, whereas in cheap times the flour sells rapidly; puddings and pies, and such like, cannot be afforded when prices are high. It was estimated in 1851 that the inhabitants of Birmingham, one with another, consumed a sack of flour per head per annum, in bread and other forms; and that, of this quantity, the ovens at the various bread-mills baked nearly a quarter, the ordinary bakers nearly a half, and private ovens the remainder. Two of the mills have each frequently sent out 500 sacks of flour per week, in the form of well-made, well-baked, unadulterated bread.

Whether, and how soon, we shall see a London bakery 'doing' 500 sacks a week, the future must show.

The inhabitants of the metropolis are not biscuit-eaters, unless in holiday fashion, and in small quantities. Nevertheless, the manufacture is conducted on a scale of considerable magnitude, chiefly for the supply of shipping. Mr. Braithwaite Poole states that the various railway companies carried 6000 tons of 'fancy' biscuits in three years, to and from various parts of the United Kingdom. He roughly estimates the quantity of sea-biscuits made annually at 60,000 tons, or

124 millions of pounds. This estimate was, however, made in peaceful times, when our soldiers were living in barracks, and our navy was maintained on a peace establishment; it tells very little concerning the enormous demand when sailors and soldiers have to be supplied abroad at sea. Stupendous, indeed, is the biscuit-trade in war-time. The government biscuit establishments at Plymouth and elsewhere are on an immense scale, and adequate to the supply of enormous quantities in a brief space of time,—machinery being employed in almost every part of the operations.

None of the government bakeries, probably, have adopted the remarkable arrangement of oven invented by M. Rolland in France. In his patented oven, there is a cast-iron floor, covered with tiles; this floor can be raised or lowered by means of a vertical axis, to vary the internal capacity of the oven; and it has also a rotatory movement around this axis. The fireplace is built in masonry under the floor; and the heated air and smoke circulate around the top and bottom and sides of the oven. Any kind of fuel, it is said, can be used; and the heat is greatly economised. The floor is made to revolve while the oven is being filled, insomuch that each part may in time be brought opposite the oven-door. There is a small window or peep-glass in the ovendoor, which, with the aid of a jet of gas, enables the baker to watch the progress of his batch while baking.

In relation to the supply of ordinary loaves of bread to London, there are many minor but interesting

points concerning weight and quality. It has been mentioned, in the Historical Sketch, that an assize on bread existed for many centuries; indeed it was in force in London from 1266 till 1815. The power of establishing an assize still exists in some other towns; but it is seldom enforced, the prevailing custom in England now being to avoid any artificial interference with price. It was found, during the early years of the present century, that in towns where no assize was appointed the price of bread was generally lower than in the assize towns; and this fact was mainly instrumental in bringing the assize system into disfavour. The old assize acts used to determine, that a sack of flour must weigh 280 lbs., and must produce 80 quartern loaves. Practically, the number was sometimes less than 80, and sometimes rose as high as 86; for different qualities of flour differ greatly in bread-making power. A quartern loaf loses more than half a pound in baking; and even when baked and cold, one-fifth of its weight consists of water. Good flour absorbs more water than bad, new flour more than old; and thus there are many circumstances which influence the weight of bread obtainable from a given weight of flour. Under the old assize, loaves of bread were permitted to vary under three sizes and three qualities. The legal weight of the quartern loaf was 4 lb. $5\frac{1}{2}$ oz.; so that 128 quarterns were equal to 139 of the present 4 lb. loaves, or about 12 to 13. Since the Bread Act of 1836*, bakers have been permitted to make bread of any kinds or mixtures of corn, and in loaves of any

* 6 & 7 Will. 4. c. 37.

size; they must, however, sell by avoirdupois weight, except in relation to rolls and 'fancy' bread. All 'unwholesome' ingredients are prohibited, under penalty — a very proper prohibition, but difficult, it would seem, to enforce.

A writer in the 'Farmer's Magazine' some years ago*, who claimed to be tolerably well acquainted with the trading relations between the farmer, the miller, and the baker, stated that a quarter of wheat will yield on an average 6 bushels of flour; that a baker generally produces 94 quartern loaves from a sack of flour; that as a sack of flour contains 5 bushels, and as a quarter of wheat yields 6, the number of quartern loaves produced from a quarter of wheat is about 113. But the paper was written during a period of transition; and it is not certain whether the writer referred to the old-fashioned 'quartern' or the more modern 'four-pound' loaves.

A correspondent of the 'Times' (Oct. 26th, 1855), when best wheat was 84*s.* and medium at 72*s.*, gave an array of figures to prove that, at those prices, the 4 lb. best loaf ought to be sold at 9*d.* and the 'seconds' at $7\frac{3}{4}d.$; 96 4 lb. loaves being made from a sack of flour. These prices were $1\frac{1}{2}d.$ below the current prices of the day; and the millers and bakers would doubtless have picked some holes in his arithmetic.

Another estimate depends on an attempt to determine the proper ratio between the weights of different kinds of corn, meal, and bread. A writer† assumes

* Vol vii. p. 430.

† Farmer's Magazine, 1842.

that a bushel each of wheat, barley, rye, oats, beans, and peas, is selected; that each bushel has a certain definite weight; that a definite weight of flour or meal ought to be obtained from it; and that a definite weight of bread should be produced from the meal. His numbers run thus: —

	Weight per Bushel.	Weight of Meal.	Weight of Bread.
	lbs.	*lbs.*	*lbs.*
Wheat - - -	60	48	64
Barley - - -	48	37½	50
Rye - - -	54	42	56
Oats - - -	40	22¼	30
Beans - - -	60	51	68
Peas - - -	60	51	68

So far as wheat and flour are concerned, this corresponds with the flour-produce at one of the steam-mills; where, on grinding a bushel of wheat weighing 60lbs., there were produced 48 lbs. of flour and 12 lbs. of pollard and bran. A bushel of wheat, it thus appears, should yield about sixteen 4 lb. loaves.

The quantity of bread produced from a given weight of flour is not more important than the quality — concerning which there are one or two curious queries.

It certainly seems desirable, in view of the enormous quantity of bread consumed daily in London, that medical men, as well as consumers, could come to a satisfactory conclusion on the questions — *White* or *Brown?* *Fermented* or *Unfermented?* The number of persons has largely increased within the last few years, who resolutely maintain that brown bread is more wholesome than white, — flour and bran more whole-

some than flour without bran. Omitting, even, all mention of the alum which is alleged to be employed to whiten most London bread, there are chemical virtues in bran which we are bidden not to disregard. Captains of ships have declared that where, in exceptional cases, sea-biscuits have been made entirely of white flour without bran, the sailors have become weaker and less healthy than when dieted on their ordinary biscuits. There are warm advocates, too, of unfermented bread, made simply of meal, water, and a little salt. They say that fermented bread has a tendency to ferment a second time in the stomach, and thus bring on acidity and other inconveniences. It is an opinion held by Dr. R. D. Thomson that if bread can be 'raised,' so as to be rendered digestible, without fermentation, it retains the sugar of the meal, and incurs less loss than by fermentation with yeast. As an experiment, he 'raised' or lightened some bread by means of hydrochloric acid and carbonate of soda instead of yeast, and another batch by means of yeast; he produced 107 loaves from a sack of flour in the former case, and only 100 in the latter. The same authority points to the facts that barley-bread, oat-bread, peas-bread, and potato-bread, all unfermented, prove to be healthy food for sturdy Scotchmen; that the Jew does not appear to suffer from eating the unleavened cakes during his Passover; that the biscuits so largely consumed by seamen are unfermented; that unleavened bread is often recommended to the sick by physicians; and that the inhabitants of the northern parts of India and Affghanistan very generally make use of unfermented

cakes, similar to Scotch 'scones.' The inquiry is important, too, in a monetary sense; if the statement be correct which was made by Dr. Maclagan before the Glasgow meeting of the British Association in 1855 —that a sack of flour will make 100½ 4 lb. loaves of unfermented bread, agrinst 94½ of fermented.

This is certainly a matter worthy of notice; for, as has been remarked by one of our chemists, if unleavened bread would suffice, then our bakers need not work all night in an unwholesome heated atmosphere. But fashion is a tyrant. A Londoner deems it derogatory to his position, and a sign of poverty, if he do not eat 'best wheaten' bread; whereas many chemists, as just observed, affirm that brown bread really contains more nutriment. In 1847, when the 4 lb. loaf cost from 11*d.* to 13*d.* in the metropolis, and when the Queen is reported to have adopted the use of brown bread in the royal household, as an example to her subjects, Mr. Towers wrote an essay on the qualities of brown bread, embodying the views of Professor Johnston and other eminent chemists; and the subject has been frequently written upon since. The assertion respecting the excellence of brown bread rests simply on this ground: that brown bread contains more than white of the constituents which make up bone, muscle, and fat — which make up *man*, in fact, considering him as a chemical product. If wheat be ground with the husk or bran, it is browner than the pure flour, but contains more nutriment. Professor Johnston presents it in the following curious form. Supposing there to be 1000 lbs.

of flour, it produces, according as it is mixed or fine, the subjoined weights of living animal substance: —

	Mixed Flour. *lbs.*	Fine Flour. *lbs.*
Muscular Material - - -	156	130
Fat - - - -	28	20
Bone Material - - -	170	60
	354	210

This table is certainly a remarkable one, tending to show, so far as chemical analysis is concerned, the advantages resulting from the use of brown or household bread. Majendie has stated that animals die in a few weeks when fed only upon fine flour, but live long upon mixed flour. Professor Johnston says, "We give our servants household bread, while we live on the finest of the wheat ourselves;" but the servants, according to him, have the best of it; for while "the mistress eats that which pleases the eye more, the maid eats what sustains and nourishes the body better."

A union of different kinds of flour or meal is recommended by many chemists and physicians; and our Scottish neighbours can poke a little fun at the Londoners, in relation to the question — oatmeal or flour? Professor Johnston tells us that oats contain more muscular matter, more fatty matter, more farinaceous matter — in fact, more nutritious matter altogether — than wheat; whereupon *Blackwood* gives the Londoners a bit of raillery in the following style: — "What do you say to this, Mr. Cockney? You wont pity us, Scotch oatmeal-eaters, any more, we guess. Experience and science are both on our side. What makes your

race-horses the best in the world, may be expected to make our peasantry the best too. We offer you, therefore, a fair bet. You shall take English ploughmen, and feed them upon two pounds and a half of wheaten flour a day, and we shall take as many Scotch ploughmen, and feed them upon the same weight of oatmeal a day — if they can eat so much, for that is doubtful; we shall back our men against yours for any sum you like. They shall walk, run, work — or fight you, if you like; and they shall thrash you to your hearts' content. We should like to convince you that Scotch parritch has some real solid metal in it. We back the oat-cake and the parritch against all the wheaten messes in the world. We defy your home-made bread, your bakers' bread, your household bread, your leaven bread, and your brown Georges, your fancy bread, and your raisin-bread, — your baps, rolls, scones, muffins, crumpets, and cookies — your bricks, biscuits, bakes, and rusks — your Bath-buns and your Sally Lunns — your tea-cakes, and saffron-cakes, and slim cakes, and plank-cakes, and pan-cakes, and seed-cakes, and girdle-cakes, and singing-hinnies — your short bread and your currant-buns; and if there be any other names by which you designate your wheaten abominations, we defy and detest them all. We swear by the oat-cake and the parritch, the substantial bannock and the brose; long may Scotland produce them, and Scotchmen live and fight upon them!" All very well; but we wonder whether Blackwood himself (supposing Blackwood to personify a Scotchman) avoids wheat and sticks to the oat?

The Germans frequently make bread of wheat-flour

and beet-root: the white beet-root being the best, the red the next in quality, and the common mangel-wurzel the worst, for this purpose. Parsnips, also, are occasionally mixed with flour to make bread. Indeed there is no end to the varieties that might he produced; but whether Londoners would eat them, is another question.

Before quitting the 'daily bread' of London, it may be well to say a few words concerning an unpleasant subject — the alleged adulteration of bread. Such adulteration is practised, there is no doubt; but possibly not to so great a degree as to justify the alarm sometimes manifested. Mr. Mitchell, in his work on Adulteration, states, that on one occasion he purchased ten 4lb. loaves, and found that they contained, one with another, 82 grains of alum in each, equal to 1lb. of alum in making a sack of flour into 92 loaves. This does not seem a very glaring fraud. The 'Lancet' analytical commissioners make the following observations, resulting from their inquiries on this subject: — "The adulteration with alum and 'stuff' is practised with a two-fold object; first, to render flour of a bad colour and inferior quality white and equal in appearance to flour of superior quality; and secondly, to enable the flour to retain a larger proportion of water, by which the loaf is made to weigh heavier. Some bakers buy rock-alum in powder, and mix it up in certain proportions with salt; the majority, however, make use of an article known in the trade as 'hards' or 'stuff.' This consists of a mixture of alum and salt. It is kept in bags holding from a quarter to a cwt.; it is sold by the druggist, who supplies either the baker or

the corn-chandler. The latter again, in some cases, furnishes the baker with it from time to time as he may require. In country towns and villages the baker is put to considerable trouble to procure his supply of 'stuff;' for as he is unwilling that his friends and neighbours should know that he makes use of such an article in his bread, he generally contrives to procure it of a druggist living some miles away from his own town. On a Saturday, a druggist in good business will have several applications in the course of the evening for alum, 'hards,' and 'stuff!'"

There has been much battling, *pro* and *con*, in relation to the use of alum in London bread. The bakers in general do not like to admit that the practice is much followed; and yet chemists assert that the alum is really to be found in the loaves. The 'Lancet' commissioners analysed 49 samples of London bread; they found alum in all; but they found nothing else that could justly be termed adulterants — a fact certainly satisfactory; for various kinds of queer substances have often been supposed to exist in our bread. There is one statement, however, not quite so satisfactory to read; the commissioners bought bread — new and stale, 4lb. and 2lb. loaves — of thirteen London bakers, equal to thirty-two 4lb. loaves in all; and they found that there was a deficiency of weight amounting to $2\frac{1}{2}$ oz. on each average 4lb. loaf. Two ounces and a half out of sixty-four ounces may not be much; but still it is a 'turn of the scale' not easily to be justified. London families do not, as a rule, see their bread weighed; it is just possible that a reform in this matter might be useful.

Who would have thought that the London workhouses, supported by rates paid by housekeepers, conducted on a large scale, and frequently visited by medical men, would, in some cases, be provided with adulterated oatmeal among the store of provisions? In the year 1849 Dr. Fane and Mr. Grainger made a report to the Board of Health concerning the internal economy of the workhouses or poor-houses of the metropolis; from which it appears that, during their visits to different workhouses, the observations made led to a suspicion that the genuineness of the oatmeal supplied could not be relied on. "In several of these establishments we found that what is called 'round oatmeal,' or oatmeal coarsely ground, is preferred, because it is more difficult to adulterate this description than the fine oatmeal. In two instances it was also stated to us that oatmeal has been recently supplied which was of an objectionable quality; and one individual, having a large number of paupers under his care, for some years before he was led to abandon the use of oatmeal altogether, was in the habit of procuring it direct from Scotland, he having found it difficult to obtain good meal in London. Further inquiries have satisfied us that, although the oatmeal sold in the wholesale market comes up to London pure and unadulterated, it is liable to subsequent adulteration. Instances have been mentioned to us in which oatmeal has been sold by retail dealers at the same price as that paid to the first sellers, and yet with a considerable profit."* This is one of the black spots in the theory of cheapness; if a retailer

* Report, p. 24.

offer to sell a commodity at wholesale price, the world shows a tendency to rush to the purchase at once, without pausing to consider whether bad quality or short measure be not a necessary concomitant of such a tempting offer.

All the various kinds of meal appear to be occasionally subject to adulteration. Of the two principal varieties, oatmeal and wheatmeal or flour, the former has just been adverted to; and flour has yielded some unpleasant resultants to chemical analysis — such as potato-flour, gypsum, crushed bones, bean-flour, pea-flour, rye-flour, powdered chalk, and rice-flour. The 'Lancet' commissioners, however, give a moderately fair character to London flour; they state that out of 44 specimens examined, the adulteration presented itself only in a few samples, and to a small extent. Oatmeal obtains from them a worse verdict than flour; it being about twice the price of barley-meal, the latter is often used as an adulterant; out of 30 samples examined, about half were thus sophisticated. Arrowroot, another kind of meal somewhat largely consumed, is found to be frequently adulterated with potato-flour.

Such are the manifold aspects under which is presented to us the commercial philosophy of that most important member of the London commissariat — the Big Loaf.

CHAPTER VI.

CATTLE AND CATTLE-MARKETS FOR LONDON.

Aggregate of our national Live Stock. — Cattle Shows, their Objects and Results. — Rearing of Live Stock as a commercial Undertaking. — Increasing Consumption of Foreign Cattle. — Smithfield as the great Cattle Market for the Metropolis. — A Hundred Years of Complaint against the old Market. — Various projected Improvements in past Times. — Picture of Smithfield on a Market Day. — Graziers, Salesmen, Drovers, and Butchers. — Mode of conducting the Dealings. — Extent of the Annual Sales. — Railway Contributions to our Cattle Supply. — Great Christmas Sales at Smithfield. — Prices and Value of London Cattle. — Recent Schemes for Improving Smithfield. — Islington Cattle Market. — Final Closing of Smithfield Market in 1855. — Planning and Formation of the new Market in Copenhagen Fields. — Description of the new Market.

Until the 'Roast Beef of Old England' shall cease to be one of the 'institutions' of the country — one of the characteristics whereby foreigners believe, at any rate, that they may judge us as a nation — butchers' meat will continue to be (with the exception of bread) the chief article in our commissariat; the ox will continue to be the chief animal among those devoted to the table; and the cattle market will continue to be the chief of our food-marts in the metropolis. Little does it now import whether theorists may by and by settle the controversy for or against animal food as contrasted with vegetable; the meat-eating propensity is a fact, and a great fact, among our metropolitan millions; and as such we must treat it. None of the battles

fought by the legislature with the corporation of London, within the last few years, has been more toughly contested than the meat battle, in so far as the cattle market is connected with it; and the whole controversy has shown how important the subject has become in London.

An estimate has been given by Mr. Braithwaite Poole * concerning the number of live stock existing at one time in Great Britain. He supposes that, in the present day, an average ox may weigh about 670 lb., an average sheep 84 lb., and an average porker or a bacon hog 168 lb. Then the number, the total live weight, the average prices of 1851, and the total value, stand thus in his tabular statement:—

	Cattle.	Sheep.	Pigs.
Number -	4,200,000	28,500,000	1,500,000.
Total weight	1,250,000 tons	1,017,857 tons	112,500 tons.
Price each	£ 9	25*s.*	50*s.*
Total value	37,800,000*l.*	35,625,000*l.*	3,750,000*l.*

If there be tolerable correctness in the estimate sometimes made, that about one-fourth of the total number are killed for food every year, the above figures would lead to a conclusion that 20,000,000*l.* is about the market value of the cattle, sheep, and pigs sold and killed in Great Britain annually. A rough estimate has been made, that all the agricultural and grazing stock consumed annually in Great Britain has a value of 150 millions sterling, and that the capital sunk in producing it amounts to 230 millions.

But all such estimates must be received with caution;

* Statistics of British Commerce.

for they clash sadly one with another. Mr. M^cCulloch — after expressing an opinion that British live stock, consequent on improved methods of rearing, have doubled in average weight per head in a century and a half — supposes that our average ox now weighs 800 lb., a calf 140 lb., a sheep 80 lb., and a lamb 50 lb. He moreover estimates the total number of cattle in Great Britain in 1846 at about 5,600,000 (4,500,000 in England and Wales alone). This estimate, it will be seen, is considerably above that of Mr. Poole, both in the weight and the number of the cattle. The London cattle-salesmen agree rather with Mr. Poole than with Mr. M^cCulloch, regarding the average weight of the ox. This is one of the matters adverted to in the Introductory Chapter, showing how vague must necessarily be our estimates on such a subject, until a system of national statistics shall have been established. However, regarding London, we are fortunately better provided with data, as will presently be seen.

The annual CATTLE-SHOWS in London and elsewhere afford the means of judging whether, and in what direction, improvements have been wrought during the preceding twelve months. The monstrously-fattened animals are often erroneously estimated. So far as respects the creatures themselves, they are certainly rather to be pitied than otherwise; for a pig so fat that he can neither see out of his eyes nor stand upon his legs, and who is furnished with a block of wood to support his snout for fear of suffocation among the straw of his litter, must have rather a burdensome life of it. Nevertheless the motive of the breeders and

feeders is a judicious one. In estimating the value and excellence of live stock, breed, contour, age, the nature of the diet, its quantity, and the time of fattening — are all taken into consideration; and hence an over-accumulation of fat might be regarded simply in the light of a test by which the properties of such and such breeds are tried. An ox is fattened for exhibition to show how vegetable food may best be converted into beef.

Those who visit the Smithfield Cattle Show with nothing more than a curiosity to see the fattened stock, will bring away no other ideas than such as relate to the number of inches of fat by which the ribs of the animals are covered; but there is much information to be picked up, even by one who has nothing to do with grazing or butchering. Let us take the show of December 1855 as an example. There were 113 cattle, 261 sheep, and 64 pigs exhibited. The visitor would observe that the cattle were catalogued singly, but that the sheep and pigs were mostly catalogued in 'pens' or groups of three each, all three of each 'pen' being of the same age, and competing collectively for a medal or a prize. He would observe that the exhibitors adopt three designations for the chief kinds of cattle, viz., 'Devons,' 'Herefords,' and 'Short Horns;' while 'Highland Scots,' 'Galloway Scots,' 'Irish,' 'Welsh,' 'Pure Long Horns,' and 'Mixed Breeds,' are other names for cattle. He might learn that these kinds can in a little time be recognised by their external appearance; for instance, that the 'Devons' have long horns and rather glossy brown coats; that the 'Herefords,' also long horns, are larger than the Devons, and have much white mixed

with the brown; that the 'Short Horns' are very diversified in colour; and that black cattle are chiefly of the 'Scotch' breed. He would further see that the animals were classified into groups, not only according to the breed, but according as they were steers, oxen, heifers, or cows, and according as they were under three years old, between three and four, or over four. Concerning the food of the animals, the visitor would also learn a little; for although no restrictions were placed on the kind or quantity of food, the judges required "that the kind or kinds of food should be certified." This food, it would be seen, has a wide range in variety — five sorts of meal — oat, barley, bean, pea, and linseed; three kinds of root—turnip, carrot, and mangel-wurzel; grass of various kinds; hay, straw, and clover; vetches, oil-cake, and prepared linseed; and small quantities of miscellaneous articles;—but it would be seen that grass, hay, turnips, oil-cake, and some kind of meal, have been components in the food of nearly all the cattle exhibited. And although it affords no information concerning the ages of cattle brought to London on ordinary market days, it might not be wholly valueless to know that the average age of all the cattle exhibited was $50\frac{1}{2}$ months. The Parisians, in their cattle-shows about Easter, have in recent years given the names of 'Oncle Tom,' 'Bomarsund,' and 'Sebastopol' to the prize ox — we have not yet risen to the dignity of thus naming our choice bullocks.

Again, the sheep and pigs might be made to furnish a few items of knowledge, either by their appearance or by the mode of cataloguing them. The inquiring

visitor would have seen that the sheep were 'Long-woolled Leicesters,' 'Long-woolled' other than Leicesters, 'Cross breeds,' 'Southdowns,' and 'Short-woolled' other than Southdowns; that some were 'under 22 months,' others 'between 22 and 34 months,' and others of greater age; that the Leicesters are rough-looking, the Shropshires dirty-looking, and the Southdowns clean-looking; and if he took an average of the catalogued ages of all the sheep exhibited, he would have found this average to be about twenty-two months. Again, our supposed visitor would have seen that the pigs were classified according to age — between 13 and 26 weeks, between 26 and 52 weeks, between 12 and 18 months, and over 18 months; that the average age of the porcine stock was $10\frac{1}{4}$ months; and that the food with which the animals had been fattened comprised a remarkable variety of delectable viands — barley-meal, peas, skim-milk, pollard, whey, barley, tailings of wheat, potatoes, coarse middlings, chats, oat-meal, pea-meal, bean-meal, bran, stale milk, sharps, turnips, mangel-wurzel, dry beans, hay tea, wash, toppings, offal, cabbage, brewers' grains, and dairy slops.

But this is not all. The Smithfield Cattle Show displays at one view all the improvements the past year had brought forward in agricultural implements and processes. While the graziers and butchers are admiring, and feeling, and pinching, and measuring the exhibited animals, the farmers are deeply absorbed in the relative merits of Crosskill, Deane and Dray,

Ransome, Garrett, Clayton, Wedlake, and other celebrated makers.

Teeming as she is with a busy population, all these matters are becoming deeply interesting to England. Whatever may be the facilities for imports from abroad, she is commercially and socially interested in knowing how much live stock is reared at home, whether it increases in number, whether the animals increase in size and weight, whether the flesh improves in quality, and whether the rearing and feeding are better managed than formerly.

The conversion of vegetable food into flesh is not more surprising as a specimen of Nature's bountiful work, than important in relation to the well-being of man. What species of animal will most economically convert vegetable produce into meat fitted for the butcher? Some give the verdict in favour of swine, while others would rather select sheep. The cottager estimates very highly the omnivorous qualities of his pig, manifested as they are by the disappearance of all sorts of waste and offal, thus rendering the purchase of food scarcely necessary. Not only does the hog eat offal, but he produces less offal than the ox or the sheep; that is, the offal, or rejected part of the slaughtered animal, bears to the whole living weight a less ratio in the hog than in the ox or sheep. Mr. Morton, an authority on these subjects, states * that the proportion of offal to carcass, in a well-reared hog, is often not more than 1 to 2, or that the offal is only one-third of the live weight; while in the sheep the offal amounts to

* Agricultural Society's Journal, vol. x.

nearly one-half the live weight, and in the ox frequently to more than a half. Mr. Morton thinks that a fair average ox, ready for the butcher, may be expected to yield about 55 per cent. of the live weight in carcass, and 45 per cent. offal. Sheep, according to the same authority, convert vegetables into meat somewhat more profitably than oxen; a winter's experience gave him 1 lb. of mutton for every 150 lb. of turnips consumed by the sheep. The word 'carcass' implies bone as well as flesh; it includes all the 'meat' sold by the butcher at so much per pound.

The fine fat bullocks for London are, as has been before stated, frequently fattened in districts other than those in which they were reared. The Scotch cattle, for instance, are often fattened in Suffolk and Norfolk. But this is not all. When Mr. Youatt wrote his work on 'Cattle,' he calculated that at that time there were from 6000 to 7000 head of cattle fattened in and about London, within the precincts of various brewers' and distillers' establishments. There are certain kinds of refuse collected in those places which are very valuable for such a purpose. The cattle fattened by means of distillers' grains take very little green food, hay, or oil-cake; rough clover chaff, mixed with the solid and liquid refuse of the distillery, seems to suffice for fattening up the animals to the point required by the butcher.

The artisans of London would probably show themselves more dainty respecting cow-beef than the nobles of many countries. Cow-beef is regarded with some little contempt in the metropolis; yet cow-beef there

must be, and is, in some form or other; for the owner of a cow is not likely to forget that the flesh of the animal is still beef, although perchance not fine beef. The great dairies in the vicinity of London contain many hundred cows each; there is a period at which the daily yield of milk becomes less in value than the daily consumption of fodder; and at this crisis in his trading career, therefore, the dairyman must decide whether to kill, or to sell, or to fatten for the shambles. At the establishments in question there are stalls in which the cows are fattened on grains, clover-chaff, oil-cake, and other rich food; the food, in effect, is made to produce flesh instead of milk; and at length the animal reaches the shambles.

The fattening of calves for the London market is a distinct branch of grazing operations. Whether to convert the milk of cows into butter or cheese, into veal or pork, is a question determined in a great measure by the vicinity of a large town. Before railways were formed, the food-markets were so much governed by the circumstance of distance, that the whole country round London was easily separable into zones or annular belts, in which the different operations of milking, calf and lamb fattening, butter-making, cheese-making, and pork-fattening, were respectively carried on. Milking, for the supply of the metropolis, was carried on within a circuit of six or eight miles, either by cow-keepers in the vicinity, or by farmers who sent the milk in large upright tin cans by spring vans, to the retailers in town. Beyond, and surrounding this zone, was the veal and lamb suckling district, extending from ten to

thirty miles; while still farther off was the fresh-butter district, whence heavy, broad-wheeled waggons brought the butter to London.*

Railways, as noticed in a former chapter, have wrought great changes in these as in other matters; but the calf-fattening is probably conducted on nearly the same plan now as twenty years ago. The calf-fattener keeps several cows, whose milk is appropriated to the fattening, and whose quality is selected with especial reference to their milk. Each cow suckles her own calf, and also another calf if the milk be sufficiently abundant. In about ten weeks the calf becomes 'prime veal;' it weighs perhaps 17 to 20 stone of 8 lb. each (120 lb. to 160 lb.). A calf grows and fattens more rapidly after it is ten weeks old than before, and also requires less milk to maintain it in a course of improvement; but the meat is more choice, and the price obtainable higher at about the age of ten weeks than when older: hence it becomes a commercial question to calf-fatteners at what age it is most profitable to bring the animals to market. The calf-fatteners are supplied with stock by a class of men called calf-dealers, who travel in carts built for the purpose into the dairy districts and buy up all the calves to be disposed of. The system may have been affected by the introduction of railways; but some years ago the calf-dealers attended at Smithfield, and bought calves from the London dairymen. These calves were sold to the fatteners at prices varying frem 20*s.* to 35*s.*, when the animal was perhaps about a week old; and nine weeks after-

* Quarterly Journal of Agriculture, 1835.

wards the fatted calves would command a price of 4*l.* to 5*l.* at the London markets, thence to be speedily converted into veal.

Our proud little country is not content with the production of 'prime' beef and veal; she claims in addition the merit of producing — if not the finest mutton in the world — mutton that has, at any rate, no superior. The plans and experiments of the sheep-farmer are guided in a remarkable way by the never-ceasing demand for good mutton and good wool. Which will pay best, wool or mutton? Will a system of rearing that leads to the formation of good and abundant wool also lead to the formation of prime butcher's meat? and if not, which should be sacrificed to the other? These are questions of most potent meaning to the sheep-farmer, and are not forgotten in any estimate of improvements in the breed of sheep. All that we hear concerning the merino and the alpaca relates to the wool; but it would appear, from the general state of the markets, that mutton rather than wool has been the object of the English sheep-farmer's attention during the last half-century. Mr. Bakewell, the great 'improver' of sheep, candidly acknowledged that, in improving the mutton, he lowered the quality of the wool.

Another animal, a contributor to the London dinner-tables, which has been made the subject of experiments and improvements, is the pig. The pig, it appears, is not too obstinate to be 'improved.' Mr. Fisher Hobbs, of Boxstead in Essex, has the reputation of having introduced the improved breed of

black pigs, now largely reared for the London market. They are of rather small size, and of somewhat delicate appearance, remarkable for early maturity and fineness of flesh; at the age of three months they weigh about 50 lb., and increase about 20 lb. per month for six or eight months. Mr. Caird * describes an Essex farm in which pigs of this kind are reared but not bred; the farmer buys pigs at about 18*s.* each, feeds them for five weeks, and then sells them for the London market. They are fed on meal of different kinds, and sometimes on boiled Indian corn. The modern improver of the porcine breed may perhaps hardly be aware that his labours have been duly honoured in a popular tale. Mr. Kingsley, in 'Westward Ho!' compares John Brimblecombe to "A Fisher Hobbs pig of twelve stone on his hind legs — that was what he was, and nothing else; and, if you do not know, reader, what a Fisher Hobbs is, you know nothing about pigs, and deserve no bacon for breakfast." The Fisher Hobbs is further characterised as "A pig of self-helpful and serene spirit, fatting fast while other pigs' ribs are staring through their skins."

There is (or was lately, for sanitary improvers ought to have removed it ere this) an extraordinary piggery at Kensington, which supplied part of the London demand. Dr. Sunderland, of the Board of Health, described it as a group of wretched tenements, known as 'The Potteries,' inhabited by a population of 1000 or 1200 persons, all engaged in the rearing of pigs; the pigs usually outnumbered the people three

* English Agriculture, p. 140.

to one, and had their sties mixed up with the dwelling-houses; some of the pigs lived in the houses and even under the beds.

It would, perhaps, be difficult to say whether Londoners, in ratio of population, were more or less pork-eaters in past days than at present; but the balance of evidence seems to be in favour of the former view, because pigs were more cheaply reared in the forest days than at present. The New Forest in Hampshire still supplies a portion of swine-food. Bloomfield* pictures the happy pigs in their forest abode in his days:—

> "From oak to oak they run with eager haste,
> And, wrangling, share the first delicious taste
> Of fallen acorns, yet but thinly found
> Till the strong gale has shook them to the ground."

It may perchance appear strange to an inhabitant of London to learn that, in a place so near town as the western slope of the hill on which Sydenham Crystal Palace is now situated, and at a time no longer back than the middle of the seventeenth century, Norwood was described as a place where the inhabitants of Croydon had a right to all kinds of herbage and mastage for swine without stint.

As an example of forest-fed swine, contrasted with those which are farm-fed or dairy-fed, nothing can be better than those of Boldre Wood in the New Forest, as described by Gilpin.† The 'Forest' hogs are led to this wood in the autumn, to fatten on acorns and beech-mast. The forest borderers have a right to this

* Farmer's Boy. † Forest Scenery.

masting on payment of a trifling sum at the steward's court at Lyndhurst. The swineherd's course of proceedings, as sketched by Gilpin, is exceedingly curious; but several years have elapsed since the 'Forest Scenery' was written, and changes may probably have since occurred in the system to which it relates. The fact, however, remains untouched, that forest-feeding or wild-feeding is one of the modes by which the 'swinish multitude' are supplied with sustenance.

There is more variety in pig-meat than in that of the ox or the sheep, owing in part to the peculiar process of pickling and curing to which such large quantities are subjected. Hence the distinction between sucking-pigs, porkers, and bacon-hogs. The sucking-pigs are simply the young of the breed generally, and therefore bear the same relation to swine that lambs do to sheep, in being killed during the period of lactation. The pigs destined to be porkers or bacon-hogs are weaned at the age of eight or ten weeks, and are fed for a time on dairy refuse, together with potato-flour or barley-meal. According as they are to be porkers or bacon hogs, their subsequent treatment somewhat differs. Porkers are killed at ages varying from three to seven months; the young pig sells for a higher price per pound, but weighs less than when kept to a later age, and it is a question of balance account which age is the most profitable. The 'dainty, dairy-fed pork' has, as its name implies, been fed on butter milk and other dairy refuse, instead of the coarser refuse of fields and farm-yards;

it has cost the owner more, and it brings him a higher price in the market.

The bullocks, the cows, the calves, the sheep, the lambs, the pigs — all, in the early periods of their career, are affected, for good or for harm, by numerous circumstances in the highest degree interesting to the farmer and grazier. But we have not here to do with that subject; the questions are, rather, how many of their number reach London? How are they conveyed? Where and how bought and sold? Where and how slaughtered?

Scotland and Ireland, as was noticed in a former chapter, contribute largely to the supply of London with cattle. They have shared largely, too, in the advantages accruing from improved modes of transport. The formation of railways from Holyhead and Liverpool to London, and from Cork, Limerick, and Galway to Dublin, combined with the establishment of steam-transit across the Channel from Dublin to Holyhead, have largely facilitated the power of Ireland to aid in supplying London and other large towns in Great Britain with animal food. At the great annual fair at Ballinasloe there are on some occasions cattle sold to the value of a quarter of a million sterling.

The Irish pig is perhaps better known in the metropolis than the Irish ox. On his way to London or any other part of England he frequently passes through some such ordeal as the following. The Irish pig-farmers, unlike the English sheep farmers, have very small herds; indeed Paddy's riches not unfrequently consist in one single pig, whose duty and destiny it too often

is to 'pay the rint.' Such a state of things gives rise to a system of job-trading. Pig-jobbers are very numerous in Ireland; and in the dealings between them and the small farmers and cottiers there is much fun and blarney, much waste both of words and of time. Whether matters have changed in this respect within the last dozen years could only be determined by one intimately acquainted with the habits and usages of the humbler class of Irish farmers; but Mr. Inglis's picture of a pig-bargain is very graphic in illustration of the past and perhaps of the present. Most of the pigs thus purchased in the interior of Ireland are either sent to the nearest shipping port, by road or rail or canal, or are taken to establishments where they are further fattened for the market, and then sold to the pork-curers of Cork and its neighbourhood.

Owing to circumstances already noticed, means are wanting for determining clearly the number of Irish live-stock that reach Great Britain since the assimilation of the trade between the two countries to a coasting trade; but Mr. Porter, taking an average of the four years 1846–7–8–9, gave the number at about 200,000 cattle and calves and 250,000 sheep and lambs annually. The pig—the poor Irishman's solace in time of trouble—was so disturbed by the famine of 1847, that the exports about that period bore very little relation to any general average.

The change made by Sir Robert Peel in the tariff of import duties has had an important influence on the food of our principal towns; for not only corn, but cattle and vegetables, can enter our ports with as little

obstruction as other articles of merchandise. It is true that the quantities thus available at a particular time may not always be such as to ensure a cheap market; but the sphere is widened within which a supply can be obtained, and this alone will enlarge the choice at the disposal of the purchasers.

It was in the year 1842 that the prohibition on the import of live cattle was removed. The trade grew gradually; and by 1845 the imports included 17,000 oxen and 16,000 sheep; the next year witnessed an enormous rise, the number of oxen increasing threefold and that of sheep sixfold. Since 1846 the rise, although steady and nearly continuous, has not been rapid; the highest year was 1853; in 1854 the number fell off, except in oxen, the diminution in the number of sheep being especially remarkable: a decline attributable in all probability in some way to the war. The following entries apply to the two years in question:—

	1853.	1854.
Oxen and bulls - - -	56,220	62,937
Cows - - - - -	38,328	25,261
Calves - - - -	30,705	26,130
Sheep - - - - -	249,446	176,354
Lambs - - - - -	9,974	7,098
Swine and hogs - - -	12,757	11,077
	397,430	308,857

London receives far more of these animals than all the rest of the United Kingdom taken altogether; for, besides the arrivals in the Thames, those which come from Denmark to Lowestoft or Harwich find their way to the metropolis for a market. It is interesting to

observe how this subject—the supply of our large towns with food—has been instrumental towards the establishment of the railway system in Denmark. Danish produce, until recently, reached England mostly *viâ* Hamburg, on account of a deficiency in good roads, good ports, and rapid means of transit. An English company, headed by Sir S. M. Peto, after forming Lowestoft docks and establishing a line of swift steamers, undertook the construction of a railway across Denmark. A portion of this work, the 'Royal Danish Railway,' was opened in October, 1854, from the port of Tonning into the heart of Denmark; and Danish cattle for the London market will probably follow that route instead of taking a long journey by way of Hamburg.

Imbedded in the midst of a busy city,—surrounded on every side by miles of streets and thousands of houses,—associated by its burnings with the intolerant zeal of past ages, by its fairs with the amusements of thirty generations, and by its markets with the daily wants of two or three millions of people,—subject to frequent struggles on the part of the corporation to maintain privileges granted by indulgent monarchs,—viewed with distrust by sanitary reformers and street improvers,—attacked in the committee-rooms of parliament and in the columns of the daily journals for numberless shortcomings,—defended with a pertinacity worthy of a better cause by those who insist on the sacredness of vested interests,—Smithfield will ever remain a great landmark in the history of London. Even those born after the fair and the market are no more will still note the busy part which this spot has played. In the

Historical Sketch a few of the salient points in the rise and progress of Smithfield were noticed: we now take up its 'decline and fall.'

The corporate rights over the fair and over the market at Smithfield were distinct throughout. The market became city property partly by prescription and partly by charter. At the time of the dissolution of monasteries the priory rights to Bartholomew fair passed into other hands, and brought in revenues to various persons down to about a quarter of a century ago, when the city purchased the rights, licensed the fair, and received rental for stalls. Public opinion frowned down Bartholomew fair a few years ago, becoming, as it had, obstructive, disorderly, dirty, and demoralising.

The complaints against Smithfield as a spot unsuitable for a cattle-market in a great city are not of modern origin. Nearly ninety years ago Mr. Gwynn* animadverted strongly on "the intolerable practice of holding a market for the sale of live cattle in the centre of the metropolis." He pointed out the numerous evils, and concluded by saying, "It is a great pity, therefore, that, in respect to the lives and safety of the people, as well as of elegance and decorum, this market is not removed to some convenient spot."

A curious light is thrown upon the condition of the butchers' trade, and the relation held by the butchers towards the Smithfield dealers, in a publication which appeared in 1795. It is a sixpenny pamphlet of sixteen pages, having a title commencing with the ex-

* London and Westminster Improved, 1766.

citing cry, 'Roguery! Roguery! Roguery!' It professes to be written by 'A Philanthropic Butcher of Leadenhall,' who writes in the name of the whole body; and its burden is, "the cutting-butchers' appeal to the government and the people upon the high price of meat; in which the base practices of Smithfield market are completely exposed, and a remedy pointed out for the poor." It appears to have been a sort of contest, Leadenhall *v.* Smithfield. The grazier, the salesman, and the carcase-butcher of Smithfield are accused of practising shameful arts whereby to oppress the cutting-butcher, who is the apparent agent for supplying the community with meat. The 'Philanthropic Butcher' asserts, that very early on market mornings three-fourths of the cattle at Smithfield were forestalled by the carcase-butchers, who compelled the cutting or retail butchers to pay a higher price than the abundance of supply would otherwise justify. Even if a cutting-butcher were willing to purchase a whole bullock, the salesman is accused of delaying any transaction with him until the wealthy carcase-butchers have been served. The carcase-butchers are further accused of going out to meet the different droves at the roads leading to the metropolis, purchasing the best cattle in large numbers before they could reach Smithfield, and thereby limiting the supply, and raising the price in Smithfield itself to the disadvantage of the cutting-butchers. The 'Philanthropic Butcher' does his best to support the theorem that the public interests and the cutting-butcher's interests are identical, both being victims to the salesmen and the carcase-butchers. After a fierce and bitter

tirade, he says: "Some effectual means must be used to stop this *Smithfield wickedness*, or all parties may equally rue the issue; for the carcase-butchers are increasing daily, and the cutting-butchers are decreasing daily."

These mutual jealousies between wholesale and retail dealers frequently meet our view in the history of trade; but they are interesting here, in so far as they illustrate the retail sale of meat in London sixty years ago.

But it was not merely by contests between different classes of traders that a sort of butchers' war was manifested,—there was evidently on the part of the London public much anxiety concerning the supply of meat sixty or eighty years ago. Even twenty years before the 'Philanthropic Butcher' made his appearance the question was much agitated. An 'Association for reducing the exorbitant Price of Butchers' Meat' was formed in 1772, and held its meetings for a time at the Chapter Coffee house. An elaborate scheme was formed, the basis of which consisted in an attempt to get rid of butchers' profits, by selling to consumers at wholesale prices; and in an endeavour to enforce all the existing laws against 'ingrossers,' 'regrators,' 'forestallers,' and so forth. Such attempts, however kindly meant, seem to have failed almost universally. Whether relating to meat, fish, bread, or any other article of food, the middleman or dealer is always to be met with between the producer and the consumer, and any attempt to proceed without his aid is found, in almost every case, to be futile: the 'co-operative unions' of modern days exemplify this. As to the 'Butchers'

meat Association,' it does not appear to have proceeded much farther than the publication of a prospectus.

When we pass over the boundary between the eighteenth and nineteenth centuries we find Smithfield to be still a great eyesore in the city of London. In 1814 a pamphlet was published*, the anonymous author of which comments with much severity on the metropolitan markets for cattle, dead meat, fish, poultry, vegetables, and fruits. He declares that the whole of these markets were mean and filthy, and needed a radical reform. He deals severely with Smithfield, and lays down the proposition that, for the supply of nearly a million people in such a city, and the villages within ten miles of it, two cattle-markets at least ought to be provided. These, he thinks, should not be in the city, but in the suburbs; one in the neighbourhood of the New River head or Islington, and one on the south side of the river, between Blackfriars and Westminster bridges.

It is not a little curious, now that the grand move has been made from Smithfield to Copenhagen Fields, to look back at the views of two writers, the one about forty and the other about ninety years ago, concerning the best mode of appropriating Smithfield *if* the cattle-market were removed. Mr. Glynn, in the pamphlet lately noticed as being published in 1766, when he recommended the removal of the cattle-market from Smithfield, suggested a locality somewhere near Islington. He proposed that the old Smithfield should be

* Observations on the principal Defects of the Public Edifices and Architectural Ornaments of London.

converted "into a noble regular square, which might be applied either for the purpose of trade, or else as dwellings for merchants and people of opulence, as should be found most convenient." In like manner, the anonymous author of the pamphlet in 1814, after recommending the establishment of one or two cattle-markets elsewhere, would have "converted Smithfield into a grand square or circus, with piazzas all round for the sale of butchers' meat, fish, poultry, vegetables, &c."

Approaching, as we now do, the circumstances immediately connected with the abolition of the cattle-market at Smithfield, a description of Smithfield 'as it was' is especially called for. Never, perhaps, did any other country see so extraordinary a market; never, in all probability, shall we again witness such another market in our own country. It was a continued struggle against difficulties, almost against impossibilities; a continued protest against the dictates of good sense; a continued manifestation of prejudiced adherence to an old system; a continued display of the meat-buying powers of the London public; and, not less important, it was a sort of perennial declaration of the wonderful improvements gradually introduced in the size, quality, and condition of grazing-stock.

The nature of the proceedings on a market-day at Smithfield in the bygone times gave rise to much that was exciting and even savagely picturesque. Nothing like it must be looked for at Copenhagen Fields. Salvator Rosa, or perhaps the Rosa Bonheur of our own days, might have relished old Smithfield, especially by torch-

light on a winter's morning; the new market would better suit a Cuyp or a Paul Potter.

Whether the animals arrived by road, by rail, or by steamer, they might be seen moving along the suburbs of London by about nine o'clock in the evenings of Sunday and Thursday; especially on Sunday, since the Monday's market has always been more extensive than that of Friday, providing, as it does, for the next Sunday's London dinners. On they proceeded, concentrically verging from all quarters, until they found themselves assembled to the number of many thousands in Smithfield. Nine, ten, eleven, midnight, the 'sma' hours' of the morning, all witnessed successive arrivals; and the area of four or five acres, by the time the salesmen and butchers arrived, presented an extraordinary scene. If it were wintry weather, with fog or rain, mist or snow, mud or flooding, as an accompaniment, the discomforts were such as to scare away all but those attracted by the ordinary requirements of business. Drovers were hurrying hither and thither, carrying flaming torches in their hands, and arranging the cattle in rings and sheep in pens. The poor cattle could not, from very want of room, be tied up in rows, in quiet side-by-side brotherhood; large numbers were separated into groups of about twenty each, called 'rings,' in which all the animals stood together with their heads towards a common centre. The confusion and the exertion necessary for this grouping were great; and in bygone years, before the 'Editor of the Times' was uniformly called in to remedy every abuse and every short-coming, there was great cruelty practised, the

poor animals being goaded on the flanks and struck on the head before they could be marshalled in their proper places. And when one of them was sold, a further scene of turmoil and ill-usage presented itself; for the poor animal was likely to run into other 'rings' in the attempt to cross a crowded market, and had to undergo another ordeal of goading and striking.

The different classes of drovers point to three successive stages in the management of a market-day at Smithfield. There were country drovers, salesmen's drovers, and butchers' drovers. The grazier in the country consigned a number of cattle or sheep to a Smithfield salesman, and intrusted to a drover the conveying of the animals to London. There was a certain locality agreed upon where the grazier's drover should meet the salesman's drover. The former had fulfilled his commission when the animals had reached the vicinity of the metropolis, and the second drover then assumed the duty of safely depositing the animals at Smithfield. When a sale was effected, the animals were placed under the care of a third set of drovers, those with whom we are most familiar in the streets of London. These butchers' drovers, aided by their dogs, navigated (so to speak) the animals through the long and busily-thronged metropolitan thoroughfares to the respective slaughter-houses; and a very trying and difficult navigation it was, — full of harass to the drovers, activity and watchfulness to the dogs, injury to the animals, and annoyance to the passengers. Many an 'unprotected female' was set into terrible commotion by the quadrupedal force; many an animal became lamed by

the rude treatment it received; and many an angry word was uttered by those who thought it a little too bad that our already over-crowded streets should be still more blocked up by these drovers. When an animal was sold, the salesman cut off a small portion of hair from the hide as a mark; and when the final bargain was made the salesman's drover made a cabalistic mark with red-ochre, to indicate that his labours in the service had arrived at an end.

That the street-drover, or butcher's drover, has a hard life of it, who can doubt who has watched the progress of the animals through our thoroughfares? It is a continuous struggle against obstacles. And if the personal characteristics of an animal — the proverbial obstinacy of a pig for instance — be taken into account, the difficulties become yet more formidable. Leigh Hunt, in his droll 'Essay on the Graces and Anxieties of Pig Driving*,' pictures the tormenting worry which any man must bear who endeavours to steer a drove of pigs through the crowded streets of London. A pig is "sluggish, obstinate, opinionate, not very social; has no desire of seeing foreign parts. Think of him in a multitude, forced to travel, and wondering what the devil it is that drives him! Judge by this of the talent of his drover!" The Smithfield drovers, however, had much more to do with cattle and sheep than with pigs. The licensed drovers were about a thousand in number; there were about a hundred 'master drovers,' who took the contracts, attended the market, and hired the men.

The cattle salesman is a remarkable exemplar of a class which becomes important in all great commercial

* The Companion.

cities,—the class of brokers or factors who act as media between buyers and sellers. In so far as concerned old Smithfield, the grazier or cattle-owner had no need to enter the place at all; he consigned his stock to the hands of a particular salesman, with a full confidence that the latter would obtain the highest market-price, and that the proceeds would be scrupulously accounted for. As soon as the drovers, early on market mornings, had arranged the animals in Smithfield, the salesmen examined the stock, ascertained the total number likely to be exposed for sale on that morning, and formed a judgment on all the circumstances which determined prices at that particular time. Each salesman personally knew the butcher who would give a good price for the best animals; and also those who sought rather to make 'bargains;' and it hence followed that by the time the butchers had arrived, the salesman had formed his plans for the day. His endeavour was, on the one hand, not to sell at too low a price; and on the other, not to stagnate the market by holding out for too much. For all this trouble he received no more than about half-a-crown per head from the seller for cattle, and a proportionate sum for smaller animals. The butcher purchased from the salesman without knowing aught of the grazier or dealer to whom the animals actually belonged; he paid the purchase-money to the salesman, who remitted it to the grazier through the medium of one of the Smithfield bankers. There were about six hundred of these salesmen at Smithfield, about half of whom gave their 'directory' business-addresses at one or other of seven or eight banking houses in Smithfield.

The bankers just adverted to were intimately connected with the Smithfield system. When the salesman had received from the graziers an account of the animals consigned to his care, he communicated to one of the bankers the particulars respecting names, number, &c., in order that the banker might be ready to make out the accounts between buyers and sellers. When a sale was effected the buyer paid the price to the banker, and the salesman was responsible to the grazier or country dealer for the due fulfilment of the various transactions. The banker usually charged about 6*d.* per head of cattle, and $\frac{3}{4}d.$ per head of sheep, as commission for his trouble. One of the bankers has been known to take 40,000*l.* in respect of the live-stock sold in a single morning.

During the palmy days of old Smithfield, when steamers and railways contributed little towards the supply, the great northern road was the main artery of arrival; and the lairs at Islington formed a temporary resting place for the animals. The great stream that passed through St. John's street during the night was amazing, comprising thousands, or it might be tens of thousands, of fine well-fattened animals. But the old scenes are gone; the rail and the paddle interfered with them; and the curtain dropped when the market was wholly removed.

Before the era of railways, farmers living at a distance of fifteen to thirty miles from London were accustomed to send their fatted calves to Smithfield by a salesman, who kept horses and covered spring vans for the purpose. Each salesman had a tract of country

which he frequented, and in which he was well known. His van called twice a week at the farm-houses on his route to market, to take up the fatted stock. On the next day he sold the stock at Smithfield early in the morning; and in the evening he repassed homeward, leaving the proceeds of the respective sales at the farms of his employers, enclosed in a printed market bill, with the name of the purchaser, and the amount as stated by the clerk of the market. The commission for the salesman's purchases depended in part on the distance and in part on the value of the animal.

What vast numbers for such a small area! Even with the utmost enlargement of Smithfield, the number of animals that could be accommodated at one time was not more than 4000 cattle and 25,000 sheep. When, therefore, five, six, or seven thousand cattle were present, the crushing and crowding were amply accounted for. There were rails for less than 3000 oxen; the rest had to stand in rings, wherever they could. There were also pens for about 1000 pigs and 500 calves. For this limited space, certain tolls were charged — a shilling for a permanent pen; tenpence for a hurdle pen; one penny for a 'tye' of beasts or calves; twopence for a sale of a score of sheep; fourpence for a sale of a score of pigs; twenty-pence for a sale of a score of cattle; and a few others. There was a collector of these dues, who, on the Sunday and Thursday afternoons, received notices from the salesmen of the amount of space required, and on Monday and Friday received the dues.

How many fat 'beeves' and good 'muttons' are

now eaten yearly in the huge metropolis? Until recent years, much doubt surrounded the solution of this question; and even now, all that we really know on the subject relates to the number of animals exhibited and sold at Smithfield. Stowe states that the cattle and sheep sold at Smithfield in 1698 were about 610,000; Maitland gives the number, for 1725, at 630,000 — a very small increase, supposing both estimates to be correct. About a century ago the numbers were guessed to be about 660,000. Forty years ago the cattle reached an annual average of 140,000, and the sheep about 1,000,000; irrespective of calves and pigs, which may perhaps have amounted to 16,000 and 220,000. In later years the increase, although observable, was much less rapid than the increase of metropolitan population. This might lead to false conclusions, were we not to bear steadily in mind a fact (to be more fully treated in a later page), that there has been a rapid increase in the transmission of country-killed meat to London.

At a time when the population of London was somewhat under 2,000,000, but when — on account of purchases made by butchers living eight or ten miles from Smithfield — it was computed that at least 2,000,000 derived their butchers' meat from the metropolitan markets, the following calculation was made, as being approximately applicable to the year 1839. The sales at Smithfield in that year were 180,780 cattle, 1,360,250 sheep and lambs, 254,672 pigs, and 22,500 calves. It was assumed that the cattle, one with another, weighed 640 lbs. each, the sheep and lambs 96 lbs., the pigs 96 lbs.,

and the calves 140 lbs. This supposition would give, for the entire supply, 116 million lbs. of beef, 130 million lbs. of mutton and lamb, 24 million lbs. of pork, and 5 million lbs. of veal. Equally divided among the two million consumers, this would supply 136 lbs. each per annum. But there are two defects in this estimate, in opposite directions — even if the weight of the animals be rightly averaged: on the one hand, the total weights given above are those of the living animal, with offal included; while, on the other hand, the country-killed meat brought to London is not included.

The total numbers of cattle and sheep sold at Smithfield during the last thirteen years, according to the official returns of the clerk of the market, were as follow: —

Years.	Cattle.	Sheep.	Years.	Cattle.	Sheep.
1842	175,343	1,438,960	1849	223,560	1,514,130
1843	175,333	1,571,760	1850	226,728	1,540,000
1844	184,524	1,609,130	1851	240,699	1,563,980
1845	192,890	1,441,980	1852	258,942	1,565,320
1846	199,558	1,457,220	1853	276,888	1,461,070
1847	223,101	1,441,190	1854	263,008	1,539,380
1848	220,193	1,343,770			

A few comments are suggested by this table. In the first place, these are the numbers actually sold: the numbers exhibited are greater; for it never happens that the whole supply is carried off on the same day. In the second place, while the sale of cattle has steadily increased, that of sheep has remained almost stationary: nay, if we were to refer back a quarter of a century, we should find that nearly as many sheep were sold at Smithfield in 1828 and 1829 as in 1853 and 1854. This peculiarity is doubtless attributable to the fact that

an increased supply of mutton is country-killed, and does not reach Smithfield; while the increased supply of beef is in the form of live cattle imported from abroad, and mainly sold at Smithfield. Spread equally over the whole period of thirteen years, the numbers give — 220,059 cattle, and 1,499,068 sheep sold at Smithfield annually; or 4232 cattle, and 28,828 sheep weekly. Twenty years ago, the sheep were eightfold the number of cattle; now they are less than sevenfold.

An interesting Report was made in 1850 before a Committee of the House of Commons, concerning the exact modes in which the supplies of live-stock reached Smithfield. It is valuable in so far as it measures the progress made, up to that time, in opening new sources of supply and new means of conveyance. The four principal kinds of live-stock, and the ten routes of arrival, were thus given for the year 1849: —

	Cattle.	Sheep.	Pigs.	Calves.
Lond. and N. W. Ry.	55,545	285,016	9,721	4,607
Eastern Counties -	57,391	275,336	10,661	4,113
Great Western - -	7,850	153,146	824	3,837
South Western - -	4,247	130,068	7,510	4,467
Brighton - - -	558	18,591	63	323
South Eastern -	541	11,231	230	186
By sea from North -	21,841	6,911	4,275	561
„ from Ireland -	2,579	5,062	8,160	114
„ from Continent	33,535	125,269	1,949	11,318
By Road - - -	39,336	523,992	10,000	50,000
Totals - - -	223,443	1,534,622	63,393	79,526

This gives a total of 1,900,804, of which rather more than half arrived by railway.

Now comes another year, in which the Great Northern railway enters the list. According to a tabular state-

ment quoted by the 'Quarterly Review'*, the following were the numbers of live-stock brought to London in 1853, by seven railway companies, by three routes of steam-boat conveyance, and by road. We will first give the railway entries: —

	Cattle.	Sheep.	Pigs.	Calves.
Eastern Counties -	81,744	277,735	23,427	3,492
Lond. and N. Western	70,435	248,445	24,287	5,113
Great Western - -	6,813	104,607	2,909	2,320
Great Northern - -	15,439	120,333	8,973	563
South Western - -	4,885	100,960	516	1,781
South Eastern - -	875	58,320	142	114
Brighton - - -	863	13,690	54	117
Totals - - -	181,254	927,090	60,308	13,500

Next we take the sea and road traffic: —

	Cattle.	Sheep.	Pigs.	Calves.
By sea from North -	14,662	11,141	3,672	421
„ from Ireland -	2,311	3,472	5,476	21
„ from Continent	55,065	229,918	10,131	25,720
By road - - -	69,096	462,172	48,265	62,114
Totals - - -	141,134	706,703	67,544	88,276

Thus the grand total increased from about 1,900,000 in 1849 to 2,200,000 in 1853. Some of the numbers do not quite accord with those in the Smithfield return, owing perhaps to a confusion between the 'arrivals' and the 'sales.'

Of all the market days in the year, there has been nothing to compare with the 'Great Day' at Smithfield, the day in each successive December when the live-stock for the Christmas dinners was mainly purchased.

* No. cxc.

What a day was this! Take, as an exemplar of the whole, the last 'Great Day' old Smithfield was destined to witness, in December 1854. On that day 30,000 of the finest animals in the world were concentrated within an area of four or five acres. They had been pouring in from ten o'clock on the Sunday evening, insomuch that by daylight on the Monday they presented one dense animated mass, an agitated sea of brute life. All around the market, the animals encroached on space rightfully belonging to shop-keeping traffic; Giltspur street, Duke street, Long lane, St. John's street, King street, Hosier lane — all were invaded; for the caldron of steaming animalism overflowed from very fulness. In one place was a group of brown-coated Devons; in a second a group of bulky Herefords; here and there were the favourite short-horns; a black mass of Scotch cattle diversified the picture in one spot, a cargo of Holsteiners in another, and a small number of rugged-coated monstrously-horned Spanish cattle in a third: the sheep — wedged up in dense masses in pens wholly beyond the reach of water — bleated away their wretched hours in the north-east corner of the market; while the pigs squeaked lustily in the north-west. Here, at one place, was an ox towering over all the rest, and having the reputation of weighing 300 stones; and there, at another spot, was a pig of 40 score — a weight at least equal to that of an average Smithfield ox. The salesmen, drovers, and butchers, many of them booted to the thighs, dashed in amongst the dense masses, and — after incredible difficulties — separated the animals sufficiently to enable the butchers to inspect

them before purchasing. Thus engaged, it seemed to others scarcely conceivable that those men could escape injuries from horns and hoofs; especially when the conglomerated heap was disturbed by another drove passing across or into or out of the market. It was a sad sight to witness how the animals were beaten and goaded, in the almost impossible attempt to make them move into the right places at the right time: the heart sickened at it. Yet any charge of cruelty against the buyers and sellers, the salesmen and drovers, would have been unjust; for they had work to do, with insufficient room to do it in. The 'Great Day' at old Smithfield was a sight worth seeing once; but it is well that the scene is closed for ever.

The great market day, in each of the seven years 1849 — 1855, displayed the following results — in the numbers of cattle, sheep, calves, and pigs exhibited; and the average prices of beef, mutton, veal, and pork, at per stone of 8 lbs.: —

Monday, December 17. 1849.

Beef	3*s.*	6*d.*	to 4*s.*	6*d.*	Beasts	5,738
Mutton	3*s.*	6*d.*	4*s.*	6*d.*	Sheep	24,000
Veal	3*s.*	0*d.*	4*s.*	0*d.*	Calves	180
Pork	3*s.*	2*d.*	4*s.*	0*d.*	Pigs	230

Monday, December 16. 1850.

Beef	2*s.*	6*d.*	to 4*s.*	0*d.*	Beasts	6,720
Mutton	3*s.*	0*d.*	4*s.*	4*d.*	Sheep	26,800
Veal	2*s.*	8*d.*	3*s.*	8*d.*	Calves	200
Pork	3*s.*	0*d.*	3*s.*	10*d.*	Pigs	300

Monday, December 15. 1851.

Beef	2*s.*	6*d.*	to 4*s.*	0*d.*	Beasts	6,123
Mutton	3*s.*	4*d.*	4*s.*	4*d.*	Sheep	23,284
Veal	3*s.*	0*d.*	4*s.*	0*d.*	Calves	74
Pork	3*s.*	0*d.*	3*s.*	8*d.*	Pigs	260

Monday, December 13. 1852.

Beef	-	2*s.* 10*d.*	to	4*s.* 4*d.*	Beasts	- - -	6,270
Mutton	-	3*s.* 8*d.*		4*s.* 6*d.*	Sheep	- - -	20,560
Veal	-	2*s.* 10*d.*		4*s.* 2*d.*	Calves	- - -	222
Pork	-	2*s.* 8*d.*		3*s.* 10*d.*	Pigs	- - -	308

Monday, December 12. 1853.

Beef	-	3*s.* 4*d.*	to	5*s.* 0*d.*	Beasts	- - -	7,037
Mutton	-	3*s.* 10*d*		5*s.* 6*d.*	Sheep	- - -	25,832
Veal	-	3*s.* 10*d.*		4*s.* 10*d.*	Calves	- - -	260
Pork	-	3*s.* 6*d.*		4*s.* 2*d.*	Pigs	- - -	290

Monday, December 11. 1854.

Beef	-	4*s.* 0*d.*	to	5*s.* 4*d.*	Beasts	- - -	6,180
Mutton	-	4*s.* 3*d.*		5*s.* 4*d.*	Sheep	- - -	22,822
Veal	-	4*s.* 6*d.*		5*s.* 8*d.*	Calves	- - -	106
Pork	-	3*s.* 6*d.*		4*s.* 8*d.*	Pigs	- - -	238

Monday, December 17. 1855.

Beef	-	4*s.* 0*d.*	to	5*s.* 6*d.*	Beasts	- - -	6,677
Mutton	-	4*s.* 0*d.*		5*s.* 2*d.*	Sheep	- - -	22,870
Veal	-	4*s.* 4*d.*		5*s.* 4*d.*	Calves	- - -	103
Pork	-	3*s.* 10*d.*		4*s.* 10*d.*	Pigs	- - -	480

The above were the numbers exhibited, being rather in excess of the numbers sold. The total, it will be seen, was generally about 30,000 on each of the above days.

Striking is the aspect in which our London supply presents itself to view when we consider the question —how many animals are alive and growing at once, destined for the London cattle market? It is supposed that, taking the average ages of bullocks and sheep when brought to market at four years and two years respectively, the numbers cannot be far short of 1,000,000 bullocks and 4,000,000 sheep, thus marked out for metropolitan dinner-tables. Some are on the wild moors of northern Scotland; some are on

their way to the trysts at Falkirk and Galloway; some are under the charge of railway companies, for transport to the richer soil of Suffolk and Norfolk; some are fattening in those two counties, or in the midland districts; some may be growing in Flanders, Holland, or Holstein, and some in Ireland; the short-woolled sheep may be luxuriating on the Downs of Sussex; the long-woolled may be grazing in Leicestershire; some are suckling, and some are fattening. There are twice as many oxen and sheep always existing, destined for London consumption, as there are human beings in London — five millions for two millions and a half.

Not less curious are the estimates concerning the amount of money spent for meat in London — curious as illustrating the discrepancies in opinion on a subject not yet susceptible of exact determination. Mr. Hicks, when examined by a Committee of the House of Commons in 1848, estimated the Smithfield selling price of cattle to average 18*l.* 10*s.* per head, sheep 1*l.* 18*s.*, calves 3*l.* 15*s.*, and pigs 1*l.* 10*s.* Mr. Giblett, in evidence before a Commission in 1849, gave the probable average prices at 16*l.* for cattle, 1*l.* 15*s.* for sheep, 4*l.* for calves, and 2*l.* for pigs. Taking the numbers sold in the respective years, the total proceeds at Smithfield amounted to 7,251,375*l.* on Mr. Hicks' estimate, and 6,182,800*l.* on that of Mr. Giblett. The Commissioners themselves — probably not wishing to be positive when 'doctors disagree' — assumed medium prices, which gave a total value of about 6,600,000*l.* Mr. M'Culloch takes the number of live-stock sold at

Smithfield in 1852, guesses at their probable average gross weight when alive, deducts the amount of 'offal' that results from slaughtering, and finds the quantity of butchers' meat to be about 300,000,000 lbs. This, at 6*d.* per lb., would bring 7,400,000*l.*; and at 8*d.*, about 9,900,000*l.*; he offers no opinion as to the average price. Mr. M'Culloch thinks that the country-killed meat, the edible offal, the sucking pigs, and the sucking calves, may about equal in value the meat sold at Smithfield for victualling ships and for country supply: if so, the Smithfield sales will about correspond with the London consumption. We shall see, in a future page, that the dealers in country-killed meat estimate at a higher standard the value of the commodity wherein they deal.

Every newspaper reader may see that there is a technical classification of live-stock at market, according to the prices and qualities. The cattle are 'inferior beasts,' 'second class,' 'third class' (large prime), and 'fourth class' (Scots); the sheep are 'inferior sheep,' 'second class,' 'third class' (long-wooled), and 'fourth class' (South Downs); the lambs occupy a place by themselves; the calves are separated into 'coarse' and 'small prime;' and the pigs into 'large hogs' and 'small neat porkers.' These are sold at per stone of 8 lbs. We find, in a series of years, every degree of price from half-a-crown to six shillings per stone,—the average being about 3*s.* 6*d.* for fair medium beef, and 3*s.* 10*d.* for mutton of analogous quality. The clerk of the market adopts a simpler classification; he contents himself with two qualities,

'inferior,' and 'first.' Thus, for October 5th, 1855, his list stood thus:—

	Inferior.	First Quality.
Beef	3*s.* 8*d.* to 4*s.* 6*d.*	4*s.* 8*d.* to 4*s.* 10*d.*
Mutton	3*s.* 6*d.* 4*s.* 8*d.*	4*s.* 10*d.* 5*s.* 0*d.*
Veal	4*s.* 0*d.* 4*s.* 10*d.*	5*s.* 0*d.* 5*s.* 2*d.*
Pork	4*s.* 2*d.* 4*s.* 8*d.*	4*s.* 10*d.* 5*s.* 0*d.*

These prices, of course, apply to a dear year.

A rough idea may be formed of the average prices of meat in London from the official records kept in certain of the government establishments, and occasionally published. The prices paid by the Board of Ordnance, in 1850-1-2-3, for meat intended for military rations, were much lower than many persons would have supposed; they averaged, for the whole of England and Wales, $3\frac{7}{8}d.$ in 1850, $3\frac{3}{4}d.$ in 1851, $4d.$ in 1852, and $4\frac{3}{4}d.$ in 1853. The meat comprised chiefly beef and pork. At Greenwich Hospital, the whole of the meat provided for seven years' consumption (1845 to 1851) cost $4\frac{5}{8}d.$ per lb. on an average.

The share of meat that comes to every average individual in London throughout the year depends, of course, on the circumstances before adverted to — the number of animals killed, the average weight of the animals, and the quantity of country-killed meat brought to London. It has been calculated that, if the cattle were as small as many writers at the time stated, the London consumption of meat in 1750 could not have exceeded 70 lbs. per head per annum. An estimate, for 1840, brings the average so high as 153 lbs. per head; but this depends upon an average weight of 800 lbs. for all the cattle sold in Smithfield.

Mr. M'Culloch sets it down at about 122 lbs. in recent years, and Mr. Mayhew at 140 lbs. The consumption in the great towns of England, taken one with another, is set down at about 100 lbs. per head per annum. All this is very instructive, as showing the difficulties that surround any attempts to arrive at exact results concerning the consumption of food in the metropolis.

It will have been noticed that most of the foregoing descriptions and statements relating to SMITHFIELD are written in the past tense. This was designedly done. The Smithfield system was one united whole, complete in itself. The paved area, the bars and pens, the mud and filth, the drovers, the dogs, the salesmen, the butchers, the bankers, the publicans, the oaths, the blows, the noise, the confusion — all formed part and parcel of one complexus. It is dead; but the better parts of its composition have been resuscitated, to render better service at a better spot;—of the rest, when Smithfield died, the system died also.

Great has been the struggle to bring about this change. We have shown how, in the last century, indignant words were uttered against a spot so discreditable to the largest city in the world. The present century has exhibited an almost continuous protest against it. The Corporation, influenced by loud public complaints, formed a project in 1802 for removing the market to some other locality,—still retaining the control over it and property in it, as before. They chose a field near Sadlers' Wells theatre. But — mark the result! Bartholomew's hospital had

an interest in the then existing market; so had the Butchers' company; so had the Rugby charity; so had the Foundling hospital; so had the Highgate Roads trust; so had the salesmen; so had the publicans and other inhabitants around Smithfield; and the united strength of all these component forces was sufficient to defeat the attempt. Another plan was formed in 1810; another site selected; another opposition organised; and another defeat sustained. The City authorities have not been so remiss as some persons imagine; for they have obtained six or eight Acts for enlarging and better managing Smithfield market, and proposed three or four plans for removing the market to a more fitting locality — always insisting, however, that the market should not be far distant, and that the corporate control over it should not be disturbed.

In more recent years, Parliamentary Committees and Royal Commissions entered into minute inquiries respecting the state of Smithfield, and the best mode of substituting some other locality. The strangest contrariety was exhibited by the witnesses examined. Some contended that Smithfield was healthy, others that it was a hotbed of insalubrity; some thought a central market best, others advocated a suburban market; some urged that one market would be better than two, others deemed two to be better than one. The City authorities themselves brought forward a project in 1849, for a new Smithfield market on a large scale — comprising a cattle market, a dead-meat market, and abattoirs, on a site westward of Smithfield. The outlay would have been enormous, and the scheme fell to the

ground. A Committee of the House of Commons in 1848 made certain recommendations respecting a new market, and suggested the appointment of a Commission to put them in force. The government assented, and appointed Mr. (now Sir G.) Cornewall Lewis, Sir James Duke, Colonel Verney, Mr. Miles, Professor Owen, and one or two other gentlemen, as Commissioners. They examined numerous witnesses, published a voluminous report, and made such recommendations as led to the Act of 1851.

A curious episode here calls for notice, in the history of our market-improvements.

It was just about twenty years ago that a Bill, for authorising the construction of a cattle market at Lower Islington, projected by a Mr. Perkins, was brought into Parliament. The Bill met with fierce opposition from the Corporation and others; and it is curious to look back at the nature of some of the weapons employed by the belligerent forces. The periodical publications took opposite sides in the matter. The 'Farmer's Magazine,' an anti-Smithfield authority, sought to throw a little sarcasm at the opponents of the Bill, in the form of a hypothetical resolution passed by the worshipful company of Butchers — declaring, among other things, that if the Islington market were formed, "the citizens will be deprived of the wholesome excitement occasioned by the sight of half-strangled oxen dying of thirst, the bellowing of bullocks, and yelling of drovers; the salubrious smells arising from the City cellar-hole slaughter-dens; and many other delights which the said citizens have hitherto enjoyed in full swing."

When sarcasm and argument had done their work, on the one side and the other, the Act was finally passed and received the royal assent in 1835*; and a sum of 100,000*l.* was speedily laid out in forming the market. Wells were dug; pipes were laid for the conveyance of water to every requisite spot; a lofty boundary-wall was erected; nearly half a mile of slated sheds were built, and separated into compartments; open-air lairs were formed, bounded by oak palings; pens were constructed for 40,000 sheep; separate pens were formed in a distinct compartment for 500 calves and 1000 pigs; efficient accommodation was provided for 7000 cattle; offices for clerks and salesmen were built; plans were laid for abattoirs, in which the animals might be slaughtered instead of being driven through the streets of London to the existing slaughter-houses; a market tavern was built, provided with stables and sheds; and arrangements were made for building a row of shops, for the supply of various commodities incident to the wants of the market-people. The area of the market, four times as large as that of Smithfield, seemed alone to claim for it a large measure of support, as affording the means for treating the animals much more comfortably and humanely. The new market opened in March 1836, under apparently favourable auspices; but the adherents of the old system maintained so fierce an opposition, as to deter the country graziers from sending their live-stock to Islington. After a struggling existence of seven months, the new market died, and the property

* 5 & 6 Will. 4. c. 111.

became almost valueless. In the course of a few years, a mass of houses will alone mark the spot once occupied by the abortive Islington cattle market.

A very necessary stage in the proceedings connected with the supply of meat is one usually shunned by those for whom the meat is intended, as a subject unpleasant and unsightly. This is the slaughtering of the animals. The vegetarian points to this spectacle as one of the grounds of his creed, one of the justifications of his practice, one of the proofs of his moral superiority over the meat-eater. London will have reason to welcome the change from shambles to abattoirs, whenever it arrives. Considering that the markets of London have in past ages been so dispersed, small, ill-planned, and ill-organised, there is no reason to believe that the shambles were ever better than at present — except in so far as they were in the midst of a less dense population. The sovereigns and parliaments of former days were not insensible to the necessity of exercising some control over these places. In the 4th of Henry VII. a statute was passed, which, among other things, enacts that "No butcher, nor his servant, shall flea (flay) no manner of beast within the said house called the Scalding-house [this Scalding-house has been mentioned in the Historical Sketch], or within the wall of London." Then, after setting forth the penalties for disobedience, the Act proceeds: — "The same ordinance, act, and law, extend and be observed and kept in every city, borough, and walled town, within this realm of England, and in the town of Cambridge: the towns of Barwike [Ber-

wick] and Carlisle only except and foreprised." It is difficult to see the ground for this last curious exception; possibly it related to the doubtful authority of the English law over two towns so near the Scottish border.

The slaughtering of cattle has been carried on for many ages in the neighbourhoods of Smithfield and Leadenhall. Concerning Newgate and Leadenhall markets, Mr. Fletcher may well characterise them as places disgraceful to any large city at the present day.* They are great slaughtering places as well as markets, in which the cattle are killed and flayed in dark, confined, and filthy cellars; and in which the poor sheep are packed closely together before killing, from sheer want of sufficient space. Sir Gardner Wilkinson tells us that, when in Turkey and Montenegro, he "always took care not to mention to a Turk that our Smithfield and our slaughter-houses were in the heart of London, lest he should think we took a pleasure in this disgusting custom." And these sinks of garbage are close to one of the great avenues of London traffic. It is true that the actual slaughtering does not come under the public eye, for it is carried on underground, in a space still more confined than that into which the business of the market itself is compressed. Whitechapel is the chief place where the Hebrew community purchase their meat. The Jews retain the opinions held by them from olden times concerning the killing of meat for the table. There are some kinds of animal food, eaten by Christians,

* Statistical Society's Journal, vol. x.

which are avoided by Jews; there is great scruple concerning the condition of the animals at the time of being slaughtered; and there must be certain rules followed in the operation itself. The slaughterman must himself be a Jew; he is appointed by the Jewish ecclesiastical authorities, who also appoint an examiner to inspect the meat after the animals are killed. If found defective in any particular, the carcase is resold to those whose religious scruples may be no bar in the matter; but if the meat be approved, a leaden seal, stamped with Hebrew characters, is affixed to it, and the meat becomes thenceforward appropriated to Jews exclusively.*

The slaughter-houses are indeed most unsightly places. Situated behind the shops in Whitechapel, and under the shops in Newgate market, and in various obscure localities about Smithfield, they bring scenes of blood into the midst of scenes of commerce, death into the midst of life. If we were to say that they bring savagery into the midst of civilisation, it might be unjust to those concerned, for there is no absolute necessity that a slaughterman should have less of the 'milk of human kindness' within him than other men; but still the daily putting to death, even of mere oxen and sheep, comports but harshly with the literary labours of Paternoster Row and the ecclesiastical sobriety of St.

* In October, 1855, a remarkable inquiry took place at the Mansion House, to determine whether the Hebrew mode of slaughtering live-stock gives more pain to the animals than the ordinary mode; the inquiry, instituted by the Society for the Prevention of Cruelty to Animals, resulted in a decision that there is no call for the interference of the law in the matter.

Paul's — both of them close at hand to Newgate market. There is an avenue called Rose Street, said to possess slaughter-cellars under nearly all the houses. Most of the oxen are, however, slaughtered somewhat beyond the limits of the City. The slaughtermen obtain threepence per head for the blood of cattle, to be used in various manufacturing processes; besides something more for the tripe, and for various portions of the animals which meat-eaters care little to hear about. The Corporation of London obtained control over the City slaughter-houses in 1848, and caused them to be registered; the control is exercised by the City Commissioners of Sewers, who have a power of inspection. The slaughter-houses registered soon after that time were 148, — 61 in cellars and 87 on a level with the street, mostly in and around Whitechapel and Newgate, but some at Leadenhall. A few of the butchers slaughter their own live-stock; one, said to be the largest in London, slaughters 20 cattle and 200 sheep per week: he frequently purchases direct from the graziers.

There is a question which has frequently engaged the attention of ingenious men — whether the present mode of slaughtering gives least pain to the animal and least injury to the meat. The reader will gladly dispense with any minute description of the sanguinary work; but it may be well to notice a project started some years ago in relation thereto. Dr. Carson, of Liverpool, announced in 1838 a new mode of slaughtering animals for the supply of butchers' meat.* The method de-

* 8vo. Whittaker, pp. 32.

pends on this fact — that the elasticity of the lungs retards the dying of the slaughtered animal to a length of time that unnecessarily increases the suffering endured; whereas by bringing about a collapse very quickly, the animal dies from want of breathing-power; and the proposed mode of killing has reference to this collapse. An incision is made by a sharp instrument between the fifth and sixth ribs; the external air obtains entrance through a small tube into the cavity of the chest; and the animal speedily dies. Dr. Carson gives the following high character to his plan: — "The result is an increase of the edible parts of a carcase, to the amount of at least one-tenth beyond that which it would supply by any mode of slaughtering hitherto in use. The meat thus obtained is more juicy, tender, and far better flavoured. It sets sooner, and is of course earlier fit for use. It keeps much longer sweet and untainted. This remarkable and important property is evidently derived from none of the vessels being empty so as to admit the external air, and from an oozing of juice or lymph from the full vessels, when any portion is cut, upon the raw surface of that portion, and, by its tenacity, forming a sealing cement." It would be satisfactory to know whether the plan, thus highly eulogised by its inventor, is practically followed in Liverpool or other towns, and whether its advantages are admitted by those most nearly concerned in the matter.

The future of the London slaughter-houses may be considered as pretty well marked out by the terms of the 'Smithfield Market Removal Act' (14 & 15 Vict. c. 61.), passed in 1851. By one of the clauses of this

act it is declared that slaughter-houses within the metropolitan district must be licensed, "from and after December the 1st in the year next following the opening" of the abattoirs connected with the new cattle market in Copenhagen Fields; the licenses are to be obtained at the Michaelmas quarter-sessions; and a penalty attaches to any one who may carry on the avocation without such license. We must not, it is true, expect golden results from such a law; licensing does not always ensure good conduct; but still a slaughterman's license, followed by frequent inspection of premises, will do something towards an amelioration of the system. The great cure will be when the new abattoirs become so efficient as to lead to the compulsory closing of all the miserable shambles in and near the City. Surely it is not too much to hope for such a result!

We must now notice this 'Smithfield Market Removal Act' a little more closely. This Act, as already remarked, was the chief result of the Commissioners' labours in 1849; and many persons will remember the fierce opposition against which it had to struggle. While it was passing though the various stages, a multitude of discordant views presented themselves; some witnesses would have enlarged the old area, some would remove the market to the vicinity of a railway station, some preferred the north of London, some the centre. The Bill, however, passed. By the terms of the Act, the City Corporation were to do certain things within six months after the passing of the statute; in default of which the Crown was to appoint a body of 'Metropolitan Cattle Market Commissioners.' The Commissioners,

so appointed, and acting with the approval of the Secretary of State for the Home Department, were to construct a cattle market, a dead-meat market, abattoirs, and cattle-lairs. They were empowered to let on annual rentals the abattoirs, shops, and stalls, that might be constructed; and when the works were finished, the Secretary of State was to announce in the 'London Gazette' the closing of Smithfield market and the opening of the new market. The Commissioners were to be empowered to borrow 200,000*l.*, to execute the works; and were, together with the Treasury, to fix a tariff of tolls and rates in the new market. All this was to be done by the Commissioners, and the new market to become a national undertaking, if the City authorities did not signify their willingness to take up the matter within the prescribed limit of time. If, however, the City still wished to retain a corporate hold over the beef and mutton of the Londoners, the Commissioners were not to be appointed, but the provisions of the Act were to be carried out by the Corporation. In this case three years were to be allowed for the Corporation to finish a new market; failing which, the Crown might take the matter out of their control.

Such is a general outline of the Act. The Corporation delayed until almost the very last day the announcement of their willingness to accept the terms of the statute: it required six months to wipe off their disappointment. This done, however, the business gradually assumed a systematic form. A Committee was appointed to conduct the whole affair, and to select a

site for the new market; the City architect was instructed to prepare plans and estimates; the opinions of various projectors were listened to; the markets and abattoirs of Paris were studied; the wants and wishes of graziers and salesmen and butchers were considered; the extension and station plans of various railway companies were examined; the facility of access to various localities was weighed; and arrangements for borrowing money were made.

The plan that ultimately met with the approval of the City authorities was to purchase a large piece of land in the centre of which stood the Copenhagen House tavern, between Islington and Camden Town. This once famous house was opened by a Dane, about a century and a half ago; he named it after the capital of his native country; and it had, with the ground around, a long career as a tavern, tea-garden, racket-ground, fives-court, cricket-ground, and footrace-ground. It is no more; the Great Northern railway cut deeply into the field bounding it on the south-east; and the new cattle market has extinguished it altogether.

The excellent market that has resulted from these long struggles is situated on a slightly rising plot of ground. It abuts on Maiden lane or York road on the west; nearly reaches the Camden road villas on the north (a sore subject to the villa residents); is bounded by the North London and Great Northern railways on the south; and has three outlets to the Caledonian road on the east. Its contiguity to the railways is very important; for by the construction of a few small branches, all the lines round London could

be brought into connection with it — and most probably will be so ere long. No less than 75 acres of land were purchased by the Corporation; but the actual market covers 15 acres, while the lairs, &c. absorb about as much more, — leaving an ample surplus for future contingencies. At 800*l.* per average acre, the cost amounted to 60,000*l.* for land; while the total outlay for land and works nearly reached 400,000*l.*

The market itself forms a square area, paved throughout with granite, surrounded by a handsome railing with gates, ornamented with a lofty clock-tower in the centre, and provided with an abundant supply of water. In its present state it would accommodate 36,000 sheep, 6400 bullocks, 1400 calves, and 900 pigs; but whenever it may be needed, increased accommodation may speedily be provided. The area is divided into four nearly equal portions by two broad avenues, crossing each other at the centre; at which point, surrounding the clock-tower, are offices for bankers and others — designated 'Bank Buildings.' The cattle occupy the eastern sections; the sheep, calves, and pigs are placed in the western. The cattle and sheep pens are conveniently arranged in relation to access and to supply of water; while covered sheds, alongside of which butchers' carts can draw up, are provided for the calves and pigs. Everything that can conduce to the convenience of buyers and sellers, and to the lessening of suffering to the animals, seems to have been thought of by Mr. Bunning, the City architect.

The encircling adjuncts to the market comprise, — on the north, two large hotels, with shops on the ground

floor, sheds for the reception of butchers' carts, and a large area of ground available for useful purposes hereafter; on the south, lairs or covered sheds for cattle, abreuvoirs or long drinking troughs, public and private slaughter-houses, and a convenient space for railway approach; on the east, two large taverns, and a space reserved for a hide market and other purposes; on the west, lairs and abreuvoirs for sheep, and three taverns; lastly, at the extreme south-east and south-west corners are two large spaces available for future slaughter-houses. All the taverns and offices have been built by the Corporation, and are let at annual rentals. In the old days, the live-stock could be housed for a few hours only, at places most inconveniently situated around St. John Street and Islington; but the lairs will now afford a quiet, clean home for the poor animals during as long a period as their owners may be willing to pay a small rent or toll for this service.

The new market is indeed a work worthy of all concerned in it, and affords a pleasant termination to a long and unpleasant contest. When, on the ceremony of inauguration (June 13. 1855), Prince Albert took part in the proceedings, his royal highness judiciously observed: — "A certain dislocation of habits and interests must inevitably attend the removal of the great City market from the site it has occupied for so many centuries; and this may possibly retard for the moment the full development of the undertaking; but any opposition arising from such causes will soon cease; and the farmers will, doubtless, soon learn to appreciate the boon thus conferred upon them

by the London Corporation, in the increased facility afforded to them for the transaction of their business, and the comparative security with which they will be enabled to bring up and display their valuable stock in the great metropolitan cattle market."

It has been placed upon record, — as something to boast of in future years, which Norfolk grazier sent in the first bullock, — which butcher purchased it, which salesman disposed of it, which banker received payment for it, which slaughterman killed it, and at which slaughter-house the quietus was thus given to the animal. On Monday, June 11th, old Smithfield witnessed its last market; on Friday, June 15th, the new market began its career, and fatteners and consigners, salesmen and bankers, butchers and slaughterers, drovers and dogs, at once transferred their allegiance from the one to the other. It might have been that old Smithfield would have made a grand demonstration on the last day of its eight hundred years' existence; but such was not to be — it died quietly.

CHAPTER VII.

COUNTRY-KILLED MEAT AND CURED PROVISIONS.

Increasing use of country-killed Meat in London. — Peculiarities of the Markets at Newgate, Leadenhall, and Whitechapel. — Anomalous Position of Newgate Market. — Smaller Meat Markets. — Modes of supplying these Markets. — Sketch of the Market Arrangements. — Probable Quantities of country-killed Meat brought to London. — Curious technical Limitation of the word 'Provisions.' — Salt-Meat Supply from Ireland and America. — Irish Bacon for London. — Hams and the Ham-Trade. — Minor kinds of prepared Meat. — Preserved or Potted Foods. — Gradual Extension of their Use.

GREAT as is the supply of live-stock for the London market, enormous as are the commercial arrangements connected with its purchase and sale, and important as are the improvements recently wrought in grazing, we do not yet reach the limit in relation to this kind of animal food. There has been an increasing tendency, in recent years, to send up to London country-killed meat; there is a large amount of pig-meat consumed in the forms of salt-pork, hams, and bacon; and there is a portion of butchers' meat — increasing every year, though not yet large — prepared in the form of preserved meat, fitted to keep good for months or even years.

Country-killed meat, then, comes to London; but nothing less than swiftness of conveyance would render such a system practicable. The meat must be fresh

and appear fresh, to command a good position in the market; any taint arising from the long-continuance of a journey would exercise a most injurious influence on the price obtained. Newgate, Whitechapel, and Leadenhall markets might be improved in any way that capital and ingenuity could effect; but without the railways and the steamers, the country-killed meat would fail to constitute an important part of the marketable commodities. 'Time is money,' to a most significant degree, in this particular.

It is necessary to bear in mind, to understand the machinery of meat supply in London, that many of the butchers are men possessed of capital too small for purchases of live-stock at Smithfield. Such retailers transact business with the carcase-butchers, or the wholesale dealers in dead meat; and it is in Whitechapel, Newgate, and Leadenhall markets that these carcase-butchers principally congregate. They purchase live-stock in Smithfield, and slaughter for sale. The same dealers are also purchasers of country-killed meat, which arrives in the metropolis in considerable quantity, especially in the cooler periods of the year; thus saving a freightage or carriage for hides, hoofs, horns, &c., which remain in the country, applicable to manufacturing purposes. The butchers open shop and make purchases where they please, and conduct their operations with as little interruption from the government, or from any trading guild, as can well be conceived. They ask no permission from the executive, where, or how, or when, or in what quantities, to provide a stock for their daily business. The Paris butchers, as well as

the Paris bakers, are under much restriction in these particulars.

Leadenhall, Whitechapel, and Newgate have been briefly noticed in connexion with slaughter-houses; we have now to regard them as the three chief meat markets. Leadenhall market has certainly undergone curious changes; for there was once a manor-house where the market now stands; and this manor-house, or at least its site, became in succession a granary, a wool-market, a fish-market, and finally a meat and poultry-market. The sale of butcher's meat is much smaller than at Newgate; but the poultry-market at Leadenhall is believed to be the largest in the world — not in area, perhaps, but in the amount of annual sales.

Whitechapel market, besides being the place where most of the meat for the London Jews is purchased and slaughtered, has other peculiarities that distinguish it. There is simply a row of butchers' shops, on one side of a high street through which great traffic is always flowing. In so far as the meat itself is concerned, these shops constitute the real market, but there are numerous slaughter-houses behind on the southern side of the shops; and these give an additional importance to the market. It is, taken in all its parts, a market that has grown up conventionally, without any very precise corporate or official control; and beyond the appointment of an inspector of meat, the City authorities exercise little supervision. There are meat-salesmen, who sell on commission for country sellers to London butchers; and there are retail shops at which private persons can purchase joints of meat. The supply to the market is

chiefly from two sources — live stock from Smithfield, and dead meat from Scotland.

Newgate market must necessarily be a place of extraordinary activity and bustle; being, as it unquestionably is, the largest dead-meat market in the kingdom, and situated in a very dense part of the metropolis. The greater portion of the site belongs to the Corporation; but a private individual owns the building once known as the old College of Physicians; and this, or the interior area, is now occupied as a subsidiary depôt, designated sometimes the 'College market.' A strange change of fortune this! Where learned physicians were once wont to meet and discuss and lecture, there are now butchers, and meat, and saw-dust; both the outer octangular porch and the inner quadrangle are thus occupied; and we are on all sides reminded that the purveyors of food have supplanted the purveyors of health. The room over the octangular porch was the lecture-room, with windows looking into Warwick lane. The finest part of the old building, comprising the hall, the dining-room, and the grand staircase, lie on one side of the meat-market; but these, as well as the interior frontages of the College itself, are so completely obscured by the shed and roof of the market, that the butchers themselves know little or nothing about them: the architecture has been smothered behind beef and mutton.

The market is held every day in the week; but Mondays and Fridays are the chief market days. Business commences so early as four in the morning; and it is 'high change' between five and seven; by

nine or ten o'clock the larger dealings are concluded; and when the principal salesmen have consigned over to smaller salesmen any meat that may be yet unsold, they close their shops and retire for the day. There is an afternoon sale for the convenience of butchers who have been to the cattle market, and who may wish to purchase dead meat before returning home. There are also evening markets, especially on Saturday, for the sale of any remaining stock; but butchers have nought to do with this: the purchases are made by the humbler class of consumers.

The system of transacting business here is analogous to that at the cattle market. The salesman is the medium between the seller and the buyer. A grazier or dealer, in any part of the three kingdoms, writes to his salesman to announce that a certain quantity of country-killed meat will reach London by railway or by steamer at a particular time; and the meat arrives in waggons, or vans, or carts, from the station or the wharf. How these vehicles can take up their places in the narrow thoroughfare of Newgate Street is almost inexplicable. No time is lost, however. The blue-jacketed porters are ready to carry the meat from the carts into the salesmen's shops; and if a black hat or a black coat should chance to be in one of the narrow avenues at the time, a shouting of 'Time's up, Guv'nor,' and probably a thump from a huge piece of beef, will suggest to the owner of the hat or coat the expediency of getting out of the way as quickly as possible. When the butchers arrive, purchases are made and money paid with great rapidity. The salesman charges

a small commission to the grazier or country dealer, and, with this deduction, transmits the money by any of the usual modes adopted in commercial transactions. He may not see his employer from one year's end to another, or may indeed be personally altogether unknown to him; for the transactions are managed with so much regularity, that a penny post letter will be as efficient as a personal conference. The salesman's commission is so trifling as a penny or three half-pence per stone of 8 lb.; it is the same whether the market-price of meat be high or low, and on this account, when meat is cheap and the demand brisk, the salesman's profits are greater than in a time of high prices and a slack demand. The salesmen pay a weekly rental for their shops or stalls; and it is they who employ the porters that bring the meat from the vans and carts into the shops.

The markets at Newgate, Leadenhall, and Whitechapel, are so much the largest and most important of those whence the metropolis is supplied with butcher's meat, that the others may be passed over with a very brief notice. These others are not so much markets as meat bazaars — places which have grown up on the true bazaar principle, viz., a congregating of persons selling one kind of commodity, for the greater convenience of purchasers. Of these minor places, Clare market is small but densely packed; it serves middle-class purchasers in the day-time, and the poorer classes in the evening; and there is also a great diversity of small dealers, other than those who sell meat. Newport market is nearly a counterpart of the former.

Oxford market, belonging to the Duke of Portland, has shopkeepers and stall-keepers who sell poultry and vegetables as well as meat. St. George's market comprises simply a few shops on the south side of Oxford Street; while Brook's market, near Holborn Bars, is a poor decaying affair.

It is not a little interesting to trace the routes and the modes whereby dead meat reaches Newgate market. Many years ago, when railways were not, and when steamers were few, waggons and carts brought country-killed meat from neighbouring counties; but this system has become so altered, that very few country waggons now bring the supply. Dead oxen and sheep — or as we may as well call them, beef and mutton — are sent largely from Scotland. Until the railway companies made a resolute attempt to compete with the steamers for goods' traffic, most of this Scotch meat came by sea; but the time of transit is so much shortened by railway, that inland conveyance has again taken precedence of maritime. The country-killed meat is brought to Camden station, King's Cross, Shoreditch, &c., and is thence quickly transmitted to Newgate market. In many of the midland counties the inhabitants are accustomed to purchase only the secondary joints of beef, for cheapness, while the prime joints find their way up to the metropolis. The railway companies charge from 1*s.* 6*d.* to 4*s.* per cwt., according to the distance of the county whence the meat is brought. Mutton for London is brought from almost as large a number of counties as beef. Veal comes principally from some of the south-western coun-

ties, but also from Suffolk and Essex. Ireland is the great source of supply for pork, although some comes from Scotch and English counties; the dairy-fed pork is brought from the latter counties, and frequently reaches the shops of the pork-butchers without being transmitted to Newgate market at all.

There are rogues in flesh as well as rogues in grain; and both require a little watching. Among the thousand of tons of country-killed meat sent up to Newgate market are occasionally to be found pieces unfitted for human food; and unless a power of inspection and rejection were given to some officer of the market, the sale of such meat might produce disastrous consequences. Mr. Pocklington, Inspector of Newgate market, stated to one of the Parliamentary Committees, that he has condemned in one month as much as 48 quarters of beef, 56 sheep, 8 pigs, and 5 calves. In the autumn of 1854, when cholera was rife in the metropolis, there were discreditable attempts made to sell meat in a state wholly unfitted for food. It is unfortunately too true that if a country dealer can have the conscience to send up bad meat, there are persons in London who will buy it — wherewith to concoct some of the steaming messes which are sold at a low price among the poor. It is said that some of this meat is sold for a penny per pound; a price which may give a clue to the quality. Any meat condemned by the Inspector is taken to a boiling-house, and boiled down until there is no further chance of its being employed as food. The larger number of

the salesmen, it is reasonable to hope, would not lend themselves to such disreputable proceedings.

The sale of country-killed meat at Newgate market has increased so wonderfully within the last few years, that whereas there were only about a dozen salesmen in 1810, the number had increased to two hundred by the year 1850. Another curious feature presented by this system is, that carcase-butchers have established themselves at some of the towns in the north, to purchase live stock, slaughter them, cut them into a small number of large pieces, and pack them for transport to Newgate market. Beef is usually sent in quarters, pigs whole, calves and sheep both whole and in quarters. The carcases are usually packed in cloths, and the quarters in hampers. On the South Eastern Railway the packages average about 100 lbs. each; and this average may perhaps apply in respect to other companies likewise. The Eastern Counties railway company has adopted the plan of supplying cloths and hampers to small farmers and graziers, to enable them to compete with men of larger means.

There have been many accounts put forth of the quantity of country-killed meat sent to London, and sold at the three markets. Mr. Mayhew, noticing the subject about the year 1849, in the 'Morning Chronicle,' stated the quantity of dead meat sold annually at Whitechapel to be about 70,000 stones of beef, 108,000 stones of mutton, 148,000 stones of pork, and 73,000 stones of veal — the stone, in this as in similar cases, being equal to 8 lb.; the whole amounting, as will be seen, to somewhat above 3 millions of pounds.

The dead meat sold at Leadenhall at the same time was estimated at about 580,000 stones of beef, 950,000 of mutton, 450,000 of lamb, 540,000 of pork, and 400,000 of veal,—making a total of nearly 3 million stones, or 24 million pounds. These numbers did not include 27,400 sucking pigs. It is known that, in that year, the Eastern Counties railway brought 600 tons of dead meat to London weekly; while Messrs. Pickford and Messrs. Chaplin and Horne, between them, brought about 30 tons per day from Camden station to Newgate market. The Great Northern brought 17,000 tons of meat and poultry to London in 1854. So extraordinary is the inefficiency of space at Newgate, compared with the requirements of the market and the market-people, that even in 1849, when the trade in country-killed meat was much smaller than it is now, there would sometimes be 25 or 30 Eastern Counties waggons, and nearly an equal number of Camden station waggons, arrive with meat cargoes in one morning — although the interior space of the market can only receive six waggons at a time! It was to the year 1850 that Mr. Braithwaite Poole seems to refer, when he states that 67,500 tons of country-killed meat were brought to Newgate and Leadenhall markets alone, of which 20,000 tons were brought by the Eastern Counties railway. The Quarterly Reviewer* mentions 37,000 tons as the quantity brought in 1853, by all the railways and the Scotch steamers: an estimate which, in some of its items, is either much too low, or convicts Mr. Poole's of being much too high.

* No. cxc.

Useful as these statistical conjectures may be, it is necessary to employ caution both in making and in using them. Mr. Pocklington, clerk of Newgate market, states that there are no means, so far as his office is concerned, of determining the quantity of meat sold at Newgate. The tolls are charged in a manner which does not require, and indeed does not admit, of any entry of the weight of meat brought in or sold. All the consigners, all the carriers, all the salesmen — one or other of these groups, or all collectively, could alone give the real figures. Nothing better than an approximate guess can be made at present.

Without any more array of figures, it may be well to notice the opinion of an experienced man concerning the actual value of the meat sold at the principal of these markets. When the Smithfield commissioners made their inquiry in 1849, Mr. Giblett, a butcher who ranks among the first in his trade, made the following rough calculation — that the animals slaughtered in London for sale at Newgate market are worth about one million sterling annually; that the country-killed meat sent up to the same market is three times as large in quantity; and that the whole amount of Newgate market sales would thus be nearly four millions sterling annually! The average price assumed by Mr. Giblett was 2*s.* 10*d.* per stone; but the commissioners deemed this too low, and thought that the sum total would be higher even than he had placed it.

The meat-markets, as may be supposed, are supported by certain tolls paid by those who make use of them. Thus, the salesman at Newgate pays a penny for each

'hamper' of meat, twopence for a 'bundle' of meat, sixpence for a 'pack' of meat; and the other dealers pay for the privilege of bringing in poultry and game, and other eatables into the market—besides paying rent for the shops and stalls. At Leadenhall, in like manner, there are charges of a few pence for a 'tray of beef,' a 'quarter of beef,' a 'hamper of meat,' and so on.

Among the oddities of nomenclature in connection with commercial matters, is the technical acceptation of the word PROVISIONS. We are in the habit of considering this term to apply to all our food collectively. Not so the merchants. Are live-stock provisions? No. Are quarters of beef and saddles of mutton provisions? No. Are poultry and game, or bread and flour, or fruit and vegetables, provisions? No. Provisions, in the market acceptation, are certain preparations of animal food not included under any of the above items. Pickled or salt meat, cured or smoked meat, bacon, ham, lard, cheese, butter: these are the articles which engage the attention of the 'provision merchant' in our wholesale regions. It may not be that every such merchant deals in all of these, or confines himself strictly to this list; nor need all these commodities necessarily pass through the hands of the provision merchant; but such is the general average scope and nature of the trade. If we glance at the London market news in a newspaper, we are pretty certain to find, under the heading of 'provisions,' that 'bacon is looking up,' or that 'Stilton is brisk,' or that 'Dutch is heavy,' or that 'York hams go off rapidly,' or some other an-

nouncements relating to the supply and demand of the 'provisions' here named.

The salted or pickled meat eaten in London is chiefly prepared by the butchers themselves. Most of these shopkeepers have bins or boxes for the purpose; the meat and the salt (of two or three kinds) constitute all the stock in trade necessary, and the process is a very simple one. It seems to be a custom of the trade that the pickling of pork shall be left to one particular section of the butchers. From the very nature of the trade, it is scarcely possible to guess the quantity of such food consumed in the metropolis; for it is a matter of detail, managed by each butcher individually, without any concert with the others. The pickled meat cannot be deemed an *addition* to the London food; for it is simply an altered form of that which has already been included under the entries of Smithfield or at the dead-meat markets.

A patent salting apparatus was invented a few years ago, acting in principle like a forcing-pump. In the ordinary process of salting meat, the joint is placed in the brine, which is left to find its way into the pores as best it may; but with the 'patent salting apparatus' this entry is more forcible. The instrument resembles a common syringe or squirt, having a nipple perforated with three or four holes. The brine being properly prepared, the syringe is filled with it; the nipple of the syringe is forced into the most solid parts of the meat; the piston is worked by strong pressure, and in a very short time the brine is driven into and through all the pores of the meat, making its appearance again at the

surface. The excellences claimed for this method by its inventor are many — a smaller quantity of brine is said to be requisite than by the ordinary method; the nutritive qualities of the meat are better preserved; and the time for thorough salting is said to be not more than ten minutes. Whether these claims are justified, the butcher must determine.

London has probably very little to do with Cincinnati pork, else it might be desirable to notice at some length the extraordinary staple trade of that American city, in which fatted hogs, collected from a range of country three hundred miles in diameter, are slaughtered to the number of about 500,000 annually. The slaughtering is effected by persons who take the offal in payment; and the carcases are sold to curers, who cut them up into the proper pieces for pork, bacon, and hams. So vast are some of the establishments, and so efficient the arrangements, that 500 hogs, weighing 200 lb. or 250 lb. each, can be cleansed, weighed, cut up, pickled, barrelled, branded, and shipped, in twenty-four hours. Lard, lard-oil, bristles, brushes, and pig-leather for saddles, are among the residuary results of this remarkable pork trade.

Sweet is the din of war to the pork-curer or meat-salter. It is a charmed sound to him, breathing of brisk trade and large profits. When fleets and armies are being fitted out, barrels of pickled beef and pork are required in tens of thousands; because fresh meat is obviously non-available for such requirements, except under special circumstances. Pigs being largely reared in Ireland, relatively to other kinds of live-stock, the

barrelled-pork trade has become extensive in that country. Cork is the place at which this trade principally centres; and during the warlike period of 1854 and 1855, the supplies shipped thence were of vast magnitude; the government made contracts on some occasions for a million pounds at a time. The coopers who made the barrels earned high wages; they felt their importance, and re-enacted the part of the traditional organ-blower who insisted on the 'we.' At the slightest whisper of returning peace, the meat-curers became fidgetty, for it was a question of thousands to them. To give an idea of the quantity of this kind of meat required by a large fleet, it may suffice to say that the 'Duke of Wellington,' the gigantic 131-gun screw war steamer that towered over the Baltic fleet in 1854 and '55, included among her stores, when fitted for active service, 20 tons of salt beef, in 8 lb. pieces, and 20 tons of salt pork, in 4 lb. pieces, making about 90,000 lb. of salt meat altogether!

But if London has little concern with these salted provisions, except in so far as it is supplied by the retail butcher, such is not the case in relation to bacon. Bacon is very little, if at all, a London product: our metropolis is not to any great extent a pig-killing place; and none but a Cincinnati, large or small, new world or old world, affords the requisite facilities. The size and quality of the pigs, the extent and nature of the market, often determine whether pig-meat shall assume the form of bacon or of barrelled salt-meat.

When swine are to be finally disposed of as bacon-

hogs, they are taken from their indiscriminate feeding at the age of twelve to eighteen months, to undergo the fattening ordeal. They are cleaned and coddled, provided with clean straw beds and clean troughs of water; their getting up and their lying down and their sleeping are all attended to; and they receive a varied diet of middling flour, potato meal, peas, barley meal, wash, whey, butter-milk, skim-milk, cut grass, green vegetables: man carefully fattens them, in order that they may fatten man in return. Some pig-owners, however, are not so careful; they allow the animals to fatten on what they may or can; but this must obviously affect the quality of the bacon. The bacon-hog is generally fattened in autumn and killed about Christmas. Occasionally prodigies of fatness are produced, which have been gormandizing for five or six months; but the age at killing is generally somewhere between fourteen and twenty weeks.

Irish bacon, in the large flat pieces technically known as 'sides,' is roughly salted, and is sent in that state to the English ports; here it is bought by bacon-curers or provision merchants, by whom the processes are carried on to completion, and the bacon finally brought to market.

How much of this bacon is eaten in London can hardly be known. Since the assimilation of the Anglo-Irish trade with the coasting trade, means have been wanting to determine the quantity of food which reaches Great Britain from Ireland. 30,000 tons have been named as the probable weight of salt beef and pork consumed in the United Kingdom; and there has been a

like estimate of 56,000 tons in respect of bacon and ham, — both uncertain estimates. In so far as regards imports from foreign countries, the import of bacon and hams during the last few years has averaged about 20,000 tons annually, worth, probably, from 600,000*l.* to 700,000*l.* Limiting the range to the port of London, there appear to have been about 9000 tons of Irish and 6000 tons of foreign bacon and hams imported annually on an average during the last six or eight years. If we take the last three years, the import of various foreign 'provisions' has exhibited such violent fluctuations, that we must probably attribute the disturbance in some way or other to the war. The following are the Board of Trade returns for 1852-3-4.

	1852.	1853.	1854.
	Cwts.	*Cwts.*	*Cwts.*
Salted beef - - -	124,694	183,286	192,274
Salted pork - - -	95,555	152,731	160,898
Bacon - - - -	73,952	190,134	410,703
Hams - - - -	7,484	15,533	12,805

The total for 1854 was thus nearly 1000 million pounds. But this is just one of the cases where inferences concerning consumption must be cautiously made; for we have no means of determining what ratio the London consumption bore to the total import.

Hams may be regarded, practically, as certain parts of bacon cured in a particular way. Taking Westphalia hams as a representative of all, the processes they undergo are something such as this: the hams are piled in deep vessels, and covered with layers of salt, salt-

petre, and bay leaves. In this state they are left for some days, after which they are immersed in strong brine, and when this brine has thoroughly soaked into the meat, the hams are steeped for several hours in spring water; they are lastly hung up for two or three weeks in a smoke formed by burning juniper berries. Most varieties of bacon and ham are cured in a less elaborate way.

At Paris the ham trade is conducted on a different principle from that of London. There has for many ages been a ham fair held in some open place, about Easter, and lasting three or four days; the ham dealers come from every part of France, display their hams on stalls and in booths, and transact a very large amount of business.

London, as well as Great Britain generally, is mainly indebted to Ireland and to the United States for a supply of bacon. In America the flitches are packed in boxes weighing about 3 cwts.; while the shoulders, hams, and shanks are shipped in hogsheads of 8 cwt. each. Hams are frequently brought in bulk from New Orleans. It is a curious circumstance, characteristic of the low quality of diet in Ireland, that while the better kinds of Irish bacon are sent to England, large quantities of cheap American bacon are consumed in Ireland.

Although, as above noticed, the imports from Ireland into Great Britain cannot be accurately known, yet an attempt has been made by Mr. M'Culloch to arrive at an approximation to the quantity, from a careful examination of the seven years 1838–1844. He estimated the annual value at the average prices of these seven years,

of the cattle, sheep, lambs, pigs, poultry, eggs, fish, salt beef, salt pork, butter, bacon, hams, and lard, imported into Great Britain from Ireland, at little short of three million and a half sterling; but confining the entries to those which concern the present chapter, he gives them as follows: —

Salt beef - -	8,682 tierces, @ 84/	= £	48,727
Salt pork - -	22,926 barrels, @ 64/10	=	75,096
Bacon and ham -	83,546 cwts. @ 41/8	=	174,067

It is believed that London absorbs by far the larger portion of the Irish provisions brought to Great Britain.

Besides salt beef, salt pork, bacon, and hams, there is a nameless group of odds and ends which appear very trifling individually, but which collectively form a considerable item in the prepared meats consumed in London. Sausages, saveloys, polonies (not unlikely first made in Poland, for the Russians and Poles are rather prone to the sausage genus of food), black puddings, German sausages, hung beef, spiced beef, cured tongues, Bath chaps — these commodities, attended to by a special class of London shopkeepers, must be sold in enormous quantities, though not determinable with any degree of precision. When Mr. Braithwaite Poole tells us that 5000 tons of black puddings, worth 210,000*l.*, are made annually in England, what are we to think? has he made a slip in his figures, or does the sale of this apparently insignificant article really reach such an astonishing amount? Sausages are made on a large scale in some of the London establishments; a steam-engine being employed to work the knives or cutters that dissever the ingredients. There has, however, been

lately invented an ingenious hand-worked machine, applicable not only to the making of sausages, but to the mincing of meat, suet, herbs, vegetables, mince-meat, &c.; the machine is screwed down to the edge of a dresser or table, and worked by a handle; it will, according to the patentee's statement, mince eight pounds of meat in four or five minutes; and there is also a provision for forcing the sausage-meat into skins.

Whether or not a quarter of mutton could be preserved for a month without taint; whether a joint of fine beef would remain a joint of fine beef after a summer's warmth had visited it; whether butchers' meat or poultry, wild fowl or game, eggs or fish, milk or soup, fruit or vegetables, — can be shielded from contamination for weeks, or months, or even years — are questions the denizens of London do not take much trouble to answer. Happily for them, the store of fresh food is practically inexhaustible, limited only by the means of purchase; long ere the food can have lost the freshness that is one of its most indispensable characteristics, a purchaser has appropriated it. The discredit that attaches to the very existence of a piece of tainted food in London shows, by implication, how relatively small must be the quantity; the Londoners are seldom driven to keep meat until this tainted state is induced, or to preserve it by artificial means as a means of repelling the taint. It is nevertheless well to know that such a resource is left; that food-preservation has become an art; and that the art is welcomed as a benefit by our tourists, our voyagers

in distant seas, our Arctic explorers, our soldiers in distant camps, our invalids in distant hospitals, our emigrants, our adventurers bound for the golden lands of other continents.

Meat-preserving is a chemical affair. Meat decays — not because it is dead, but because certain changes ensue consequent on the death. Death and decay are not inseparable links in the same chain — at least, not in such a degree as our every-day language would seem to imply. When life has left the animal, the complex organised structure is attacked by three active agents — air, moisture, and heat: and these, if not warded off, will inevitably reduce the inanimate flesh to its ultimate atoms; fibres and gelatine, fat and albumen, all will go, 'leaving not a wrack behind.' It becomes a war of chemistry against these three antagonists; and if the war be skilfully waged, a piece of meat may be kept sweet and pure, not only for years, but for a whole generation. A canister of Gamble's boiled mutton, left in Prince Regent's Inlet by one of the Arctic expeditions in 1824, was found in excellent condition by Sir James Ross, when he visited the spot in 1849, a quarter of a century afterwards.

The idea of preserving meat seems to have arisen nearly half a century ago; but it is only within the last thirty years that the plan has been seriously entertained of including preserved meats among special naval stores. In 1830, preserved meats were issued to the navy as 'medical comforts,' and were much approved by the ships' surgeons. The use of them extended;

until at length, in 1847, such food became included among the rations for particular services.

A contract was made by the Admiralty in 1844, with Mr. Goldner, who had a commercial establishment in Houndsditch, and a curing establishment near Galatz, in Moldavia, where the cheapness of ox-flesh enabled him to preserve and pot the meat at a low price: his tallow factory at Galatz, in fact, was the primary part of his enterprise: the making of money by the lean meat was a secondary and subsidiary source of profit. This contract was terminable at any time, on three months' notice; and as many complaints were made year after year, the engagement was terminated by the government in 1849. A renewed contract was made, under more stringent conditions; but this in its turn was rescinded in 1851.

The Government has not confined its dealings to one firm. For instance, there was one contract with a house at Leith in 1850, for a supply of 1000 pints of mutton broth, at 5*d.* per pint canister; 1000 quarter-pints of concentrated gravy, at $4\frac{3}{4}d.$ per quarter pint; 1000 lb. of soup and bouilli, at $5\frac{1}{2}d.$; and 1000 lb. of boiled mutton, at 7*d.*; all to be regarded as 'medical comforts' for the navy, and to be delivered at various times. Another contract, with a London firm, was for 24,000 lb. of preserved boiled beef, at the curiously-fractional price of $5\frac{49}{100}d.$ per lb., to be delivered in 9 lb. and 12 lb. canisters. Another was for the enormous quantity of 800,000 lb. of preserved boiled beef, at $4\frac{3}{4}d.$, 5*d.*, and $5\frac{1}{8}d.$ per lb., according to the size of the canisters in which it was packed. In 1850 the Ad-

miralty advertised for tenders for the supply of preserved provisions; and this advertisement was responded to by eight or nine parties, who were either meat preservers, or agents for foreign firms so employed. The provisions were to comprise soup and bouilli, boiled mutton, mutton broth, concentrated gravy, and boiled beef. The tenders for preserved soup and bouilli varied between the wide limits of 5*d.* to 8*d.* per lb.; the boiled mutton from 7*d.* to 9*d.*; the boiled beef from $5\frac{1}{4}d.$ to $7\frac{1}{2}d.$; the mutton broth from 5*d.* to $7\frac{1}{2}d.$ per pint; and the concentrated gravy from $4\frac{1}{2}d.$ to 6*d.* per quarter pint. These wide differences indicate either that the contractors looked forward to very different rates of profit, or that there would have been very different degrees of quality in the provisions supplied. The government accepted the lowest tenders; thus relying on a hope that the quality would be sufficiently good. Eight contractors, between the years 1844 and 1852, supplied no less than 4,000,000 lbs. of preserved meats and soups, of which 3,250,000 lbs. were from the firm of Goldner.* Any one who has watched the newspaper accounts of the Crimean campaigns, must have noticed preserved meats among the entries of commissariat and hospital stores.

In the appendix to the Report of the Parliamentary committee on Preserved meats, a letter is inserted from Mr. Cunningham, British consul at Galatz, affording information concerning the mode of manufacture adopted in Moldavia. Mr. Goldner pursued exactly the same system in his factory as is pursued in the tallow fac-

* Report of Parliamentary Committee on Preserved Meats. 1852.

tories; that is, he made the production of tallow the first and chief object, and that of meat quite secondary. "As the best way of showing how Mr. Goldner prepared the meat for the navy, I will describe how the meat is treated in the tallow factories. The ox being killed, the inside fat or suet is easily separated from the beef; and then the workmen commence cutting every particle of fat from the meat; wherever a seam of fat is found it is followed out; and thus the meat is cut up into very small pieces. Such is the system followed in Mr. Goldner's factory. The small pieces thus produced in the tallow factories are, I believe, a perquisite of the workmen, or an addition to their wages, and is sold at ten paras, Ibraila money, per oke, or one-third of a penny per lb.; and of this a large quantity of ordinary sausages is made. . . . . After the meat has been separated from the fat in Mr. Goldner's factory, it is put into vats, and scalded or boiled, and then it is put into the canisters; as much soup is put into each canister as it will hold, and the crevices are filled with soup out of the vats in which the meat has been boiled. The canisters are then submitted to the air-expelling process. I believe that in the boiling process a further quantity of fat is taken from the meat."

According to an estimate given by Mr. Cunningham, the value of a pound of Goldner's preserved boiled beef is thus curiously made up: — The raw beef, 1*d.*; preparing, $0\frac{1}{2}d.$; canisters, $1\frac{1}{2}d.$; freight to England, $0\frac{1}{3}d.$; insurance, $0\frac{1}{2}d.$; petty expenses, $0\frac{1}{6}d.$; $=4d.$ He considers that 5*d.* per lb. wholesale contract price is about a fair estimate for this beef, to cover loss, interest, com-

mission, and profit. An ox in Moldavia is bought for about a fourth the English value of an average English ox; and it is reckoned that the cost of the ox is repaid by the hide and the tallow.

Perhaps the curtain may be allowed to remain down, that has fallen over the disgraceful proceedings of 1851, when out of 6000 canisters of preserved food supplied to the Admiralty, considerably more than 5000 were found to be wholly unfit for human food — filled not merely with tainted meat, which had once been good, but with substances that could not be designated meat in any sense. It was an atrocity, to be treated as such; but not in any way to be taken as evidence against the value of the processes whereby provisions may be kept in excellent order for a lengthened period.

It is not merely meat that is thus preserved. The ingenuity of the manufacturers who apply themselves to this particular art has devised the means of potting or 'canistering' an almost countless variety. There are nearly twenty kinds of soup, broth, and meat essences; twelve or fifteen kinds of fish; poultry, game, and venison; butchers' meat of every kind; tongues, hams, bacon, kidney, tripe, marrow; nearly all the fruits and vegetables ordinarily eaten; milk and cream — all are now preserved in canisters for lengthened keeping: the process depending of course on the kind of commodity operated on. Doubtless a sumptuous banquet might be made out of a selection from these viands — albeit a rather costly one.

Australia is making a bidding for popularity in

respect to this manufacture: she has cattle that feed themselves at small expense, and she can provide beef and mutton for potting at a low charge. The principle of action in Australia is something like that prevailing in southern Russia and Moldavia. When the 'Marquis of Chandos' merchant vessel, in 1846, brought into St. Katherine's docks 25,000 canisters of preserved beef from Taganrog, the lowness of price astonished English dealers. The truth is, that up to that time the cattle of southern Russia had been valued for the bones, tallow, and hides; but when Sir Robert Peel made the change in the customs' law, which so facilitated the importation of food from abroad, a market was opened for the beef of those cattle; and the meat was sent over preserved in canisters. Something like this has occurred in Australia. A London merchant established a beef depôt at Newcastle, near Sydney, mainly for the supply of English ships; he preserved and supplied 280,000 lbs. in 1851, and 400,000 lbs. in 1852; and his establishment is equal to the production of 700,000 lbs. per annum. An Australian ox, weighing six to seven cwt., will yield about two cwt. of tallow, and a hide worth about 8*s*.

Several miscellaneous kinds of preserved food have been brought under public notice; such as pemmican, meat-biscuit, dried vegetables, preserved milk, &c. When the juries of the Great Exhibition made their several reports, the jury on class 3. reported very highly concerning the preserved meats. "It is impossible to overestimate the importance of these preparations. The invention of the process by which animal and vegetable food

is preserved in a fresh state for an indefinite period has only been applied practically during the last twenty-five years, and is intimately connected with the annals of Arctic discovery. The active measures taken to discover a north-west passage, and to prosecute scientific research in all but inaccessible regions, first created a demand for this sort of food; and the Admiralty stimulated the manufacturers to great perfection in the art. As soon as the value of these preparations in cold climates became generally admitted, their use was extended to hot ones."

The use of preserved meats in London, however, is small, and hence the subject may here be dismissed.

Chemists, in France and Germany, have begun to interest themselves in the subject learnedly called Hippophagy — horse-eating. They inquire whether the flesh of the horse is good for human food; and whether, if good, prejudice ought not to be pruned down that might interfere with its adoption. But supposing all repugnance to be removed, the hippophilosophers would still have to encounter this dilemma — if a horse be unsound, or worn out with a life of hard service, his flesh would not be in a favourable state; if he were in sound condition his value would be too great to justify slaughtering for human food. Such, at least, would be the case in a country like England.

CHAPTER VIII.

DAIRY PRODUCE AND POULTRY FOR LONDON.

Milk-supply. — London 'Milk-walks.' — Estimates concerning Quantity. — M. Guénon's Theory of Milch Cows. — Economy of the great London Dairies. — Milk-Supply to London by Railway. — Adulteration of Milk. — Butter. — Dairy Produce as a Commercial Adventure. — Butter Trade in Ireland. — Supply to London, and Nature of the Trade. — Adulteration of Butter. — Cheese. — Varieties and Quantities. — Use of Anatto. — Eggs. — Egg-rearing in France, and Egg-trade with England. — Egg-trade in Ireland. — Railway Conveyance of Eggs to London. — Poultry and Poultry Manias. — Projects for Artificial hatching. — Goose and Duck rearing for the London Market. — Contrast between Paris and London in Poultry Consumption. — Poultry Markets at Leadenhall and Newgate. — Game, its Varieties and Peculiarities of Supply.

'A MILK-WALK for sale.' This advertisement, which occasionally finds admission into the columns of the newspapers, is a little perplexing to those who are not familiar with London and its usages. A milk-walk might be a milky walk, milky way, or *via lactea:* if sarcasm could be supposed to have any place here, London milk and the milky way might be said to have a certain analogy, in so far as they present to view a thin bluish tint having little of a creamlike appearance.

The truth is, that this phrase is one of the conventionalisms so profusely employed in daily commerce. 'The goodwill of a milk-trade for sale;' this is what is meant. A dairyman counts upon the patronage of some dozens, be it more or less, of customers, who pur-

chase from him their daily supply of milk. He has no rightful claim to insist on this custom; he has no copyright, so to speak, in his customers; but he has a fair chance of being called upon to supply them three hundred and sixty-five times in a year, or perhaps double this number. When he offers a 'milk-walk for sale,' he simply sells his chance; no one of the customers is bound to transfer allegiance from the old milkman to the new. It is true that he obtains, occasionally, a kind of despotic power over them; he chalks cabalistic marks on the railings, or the doorpost, or on a tally-stick, denoting the number of small portions of milk supplied on credit; and this chalk-score is a kind of mortgage of their future custom, which may be discounted or rendered of marketable value. A London boy, holding a gentleman's horse, will sometimes 'sell his chance' to another boy for a halfpenny—under the supposition, entertained by both, that the gentleman will give a penny. Something analogous to this is the sale of a milk-walk.

Mr. Braithwaite Poole's estimate of the quantity of milk consumed may well astonish by its vastness those who are in the habit of regarding this beverage as a trifling article. The consumption in the United Kingdom —comprising only such as is used in the form of milk, and excluding cheese, butter, &c. —is roughly taken at 1150 million quarts annually. Mr. Poole assumes that an average milch cow yields 7 quarts of milk as a daily average; and that the average retail price is 3*d.* per quart: and from these data a result is arrived at that the whole supply requires 450,000 milch cows,

and that the retail value amounts to the prodigious sum of 14,000,000*l.* per annum.

But limiting the inquiry to London, the same authority assumes that the carefully-reared cows that furnish most of the supply for the metropolis yield 9 quarts per daily average; that the number thus employed is 24,000; that the quantity of milk consumed is about 80 million quarts annually; and that the consumers pay not less than 1,600,000*l.* for it.

So little is really known of total numbers and quantities in these matters, that many estimates differ widely from Mr. Poole's. One computer thinks that there are 20,000 cows in and around London, yielding 12 quarts per day each; and that this quantity, aided by 'the cow with the iron tail,' *i. e.* the pump, would give a quarter of a pint per day to every inhabitant of the metropolis. Middleton, in 1806, supposed there were 8500 cows employed in supplying milk to London, at 9 quarts per day each. Mr. Youatt, in 1840, estimated that there were 12,000 cows thus employed, who supplied in a year 38 million quarts of milk, for which the public paid 800,000*l.* Mr. Low has offered an opinion that every inhabitant of the kingdom, one with another, takes half a pint per day, in the various forms of milk, butter, cheese, &c.; and that the cows, besides this supply, furnish also 200 million gallons of milk in a year for rearing young calves. Mr. Poole thinks there are a million and a half of cows in the United Kingdom, requiring two acres and a half of land to feed each of them. It is evident, not only that these estimates are inconsistent one with another, but

that they take up the matter from opposite points of view, scarcely capable of furnishing analogies: the whole is, indeed, mere guess-work.

One of the important objects of a dairyman's attention must be, to determine the ratio between the value of the fodder eaten, and that of the milk yielded, by a milch cow — not the daily yield at any particular time, but the whole quantity during the period of her efficiency as a milker. An abundant supply per day for a few weeks may not in the end be so profitable as a more moderate supply during a longer period. It is just one of those matters which practical men alone can handle; and there is very little doubt that dairy-stock has shared in the recent improvements of grazing-stock — yielding more milk per cow now than at the beginning of the present century. In 1846 Dr. R. D. Thomson, who undertook an examination, for the government, into the dietetic properties of different articles of food, found that cows give more milk from a variety in their food, than from any one kind; and that an alternation of grass, barley, malt, molasses, linseed, hay, and bean-meal, is advantageous.*

About the year 1850, the periodicals devoted to farming subjects were engaged in the discussion of a remarkable theory concerning milch cows. Supposing a question to be put — how can a good milch cow be known, by external characteristics, from one that will yield milk only in small quantities, and for a short period? — there is a Frenchman who thinks that he

* R. D. Thomson, 'Food of Animals.'

can give a trustworthy answer. M. François Guénon, of Bordeaux, tells us that, more than forty years ago, he was accidentally led to the consideration of this question. He found a certain appearance in a good milch cow; and he sought to ascertain whether other good milch cows always had that appearance, or whether all having that appearance were good milch cows. This was analogous to the principle whereon Gall endeavoured to ascertain the functions of the brain, as a foundation for Phrenology; and it is indeed a legitimate mode of applying the inductive logic towards the ascertainment of principles — always provided that it be rigidly and fairly conducted. M. Guénon asserts that there are no less than 192 varieties of cows, every one of which, according to the theory, differs from every other in the quantity of milk yielded per day, or in the continuance of the supply, or in the quality. The quantity varies from one quart to twenty-four quarts per day*. Guénon's theory is just one of those empirical formulæ which, resting on no antecedent probability, must be scrupulously tested in actual practice by competent persons before being accepted.

But to return to our subject, the supply of London with milk. At the outskirts of the metropolis are still a few large dairies, maintained at a considerable annual expenditure for fodder and other supplies. Before the railway milk-supply for London had become considerable, the management of these large dairies, such as Laycock's at Islington, was somewhat as fol-

* Découverte Guénon, 'Tracte des Vaches Laitières.'

lows. At three o'clock in the morning a bevy of milk-women assembled, each with her pail and her stool, to milk the cows — of which four or five hundred, perhaps, would be milked in an hour and a half. The milk was carried away, in tall cans or in milk-pails, to the houses of the small traders who were not so wealthy as to possess cows; and by those dealers it was dispensed to the breakfast consumers. At twelve at noon another milking took place, and another distribution among the humble dealers. The milkers were employed by the buyers, if they were not the buyers themselves; they brought their own vessels, milked the cows at stated hours, and paid so much per gallon. This system, though still continued, has been shaken by the more recent plan of bringing milk to London by railway. At the dairy just named, each cow is said to consume per day about a bushel of grains, 56 lbs. of turnips or of mangel-wurzel, and 12 lbs. of hay. At another dairy, near Peckham, there are three hundred cows, with a farm to supply them with fodder. It was stated a year or two ago, that this dairy contained one cow which had yielded 28 quarts per day for six weeks; and that the average yield of all the cows was as high as 15 quarts. There is a sort of 'quarantine-ground' for newly-purchased cows, where they are kept until their condition warrants their introduction to the company of the high-conditioned milkers. Scrupulous cleanliness is everywhere maintained; the men engaged with the cows frequently bathe and change their clothes. The milk when drawn, is strained, and poured into upright cans;

these cans are sealed, put into vans, started off at 3 o'clock in the morning, and arrive at a depôt in the city; the seals are removed by a clerk, the milk is poured into other cans; and these cans, being locked by the clerk, are carried off by milkmen, who supply the breakfast tables of the various customers. All this scruple is manifested in order to ensure that which is somewhat rare in the metropolis — pure milk.

The high price paid for milk in London ought certainly to ensure a more unadulterated article than falls to the lot of most consumers. How large the profit must be in various quarters, will be understood from the following details, on the authority of Mr. Braithwaite Poole, concerning the conveyance of milk by railway. This conveyance is effected in cans holding from 6 to 18 gallons each; the companies usually charge at the rate of three farthings per gallon for carriage, if the distance be within 40 miles, and one penny if for a longer distance — returning the empty cans free of charge. Now this milk is sold by the farmers to large dealers at 5*d.* to 7*d.* per gallon; the dealers sell it to retailers at 7*d.* to 9*d.* per gallon; while the retailers sell it to the housekeepers of the metropolis at 3*d.* to 4*d.* per quart. Nor is this all; the rich milk at (say) 8*d.* per gallon becomes too often milk and water at 4*d.* per quart. The real produce of the cow, considering that cream commands a price of 2*s.* to 3*s.* a quart in London, certainly cannot bring in less than 5*d.* to 6*d.* per quart to the retailers. The railways are bringing more and more milk to London; and there is every probability that this branch of traffic will in-

crease. It is estimated that in 1853 the quantity thus brought considerably exceeded 3,000,000 quarts, of which by far the largest proportion travelled on the Eastern Counties railway. Some of the itinerant dealers are beginning to announce their 'railway milk' at threepence, or even less than this, per quart; and we may hope that this rivalry will after a time improve the average quality of London milk.

When the 'Lancet' Commissioners examined London milk, they purchased small quantities from 26 dairymen; and, rather to their own surprise, though of course to their satisfaction, they found 12 of them to be genuine; 2 had some of the cream removed; the rest were adulterated with water, to an extent varying from 10 to 50 per cent. No adulterant was detected except water. All these specimens were purchased at the west end of the town; what results would have been afforded by an examination of the milk sold in the poorer districts of London the report does not enable us to determine. The inhabitants of New York, it would appear, have to contend against a probability of bad milk, as well as those of other cities. The 'Veterinary Record' for April, 1850, gives the following extract from a New York paper:

"There exists, on Long Island, near Brooklyn, several manufactories of milk, the process of conducting which should be known. One of these dairies covers a space of six hundred feet by three hundred, carefully fenced in so as to be as private as possible. There are four hundred cows which are fed on the refuse slop of the whiskey distilleries, given warm; the animals are fond

of it; they become vitiated in taste; but they yield a large quantity of milk. This milk, originally bad in quality, is further sophisticated by admixture with molasses, whiting, and water."

It is assuredly not pleasant to associate these thoughts of adulteration and sophistication with ideas of milk-maidens, and bright May mornings, and butter-cups and daisies. Gay, in his 'Trivia,' says: —

> "On doors the sallow milkmaid chalks her gains;
> Ah! how unlike the milkmaid of the plains."

Perhaps the milk has changed also, as well as the milk-maids.

Butter must have made its appearance in the world nearly as soon as milk; for nothing more than a good shaking is necessary to convert the one into the other; and the good shaking might in the first instance have been brought about as well by accident as design. It is interesting to notice the relation which the various milky liquids and solids bear one to another. Milk consists of three substances — one watery, or whey; another curdy, or cheese; and another fatty, or butter; and the various dairy arrangements have much to do with the separation of these one from another. Skim-milk contains nearly all the cheese, and some of the butter; butter-milk contains less butter than skim-milk; cream contains most of the butter, with a little of the whey and of the cheese; butter is or ought to be almost wholly without whey or cheese; cream-cheese contains the butter and

cheese, but no whey; ordinary cheese contains little butter, and ought to contain no whey. Such, in a general way, are the relations they bear one to another.

The ordinary butter consumed in London is made by processes that may be readily understood. As the cream for making butter tends to rise to the surface of the whey in milk, and as the curd for making cheese tends to sink to the bottom, the difference between the two is clearly marked. In making butter the milk is strained; then poured into a shallow pan to a depth of four or five inches, and left several hours in a cool clean place, shielded from the sun, but exposed to a draught of air. The cream rises to the surface; it is removed and placed in a separate vessel, and other cream is added to it until there is sufficient for a process of butter-making. The cream is a mixture chiefly of butter and butter-milk; and the former is separated from the latter by the agitation and heat produced during the process of churning. If a little cream were shaken in a bottle, butter would be produced by the severance of the butter-milk; and the whole process of churning, by whatever apparatus conducted, is nothing in effect but a shaking. Some churns have an agitator or stirrer rotating vertically, some horizontally; but the process is just the same. It is certainly a remarkable operation, for, after perhaps an hour's churning, small kernels of butter suddenly make their appearance in the midst of the cream, and gradually accumulate into a mass. When all is finished the butter is removed from the remaining liquid or butter-milk. There is

always a little butter remaining in the butter-milk, and a little butter-milk remaining in the butter; but according to the perfection of the process, so is the completeness of the separation. The butter is washed and beaten to expel the small remnant of butter-milk. The product may at once be sold as fresh butter; but most of that consumed in London is firkin-butter, packed in firkins with the addition of a little salt. The separation of cream from milk, and the extrication of butter from the cream, are the essential operations; all else are minor details, on which minor differences of quality depend, and minor varieties in colour and hardness.

In a curious pamphlet published shortly before the close of the last century it is stated, among other grievances, that the contractors for butter could determine the price of the market according to their own wishes; and the narrative affords a little information concerning the mode in which the London supply was kept up. It appears that the principal butter counties were Bedford, Buckingham, Essex, Cambridge, and Oxford. The general plan was to bring the butter to London in waggons, and deposit it at warehouses in the markets; but another plan excited the ire of the writer: "The butter is principally conveyed to a few houses at the west-end of the town, who retail it on their own terms. There is a waggon that comes regularly from Ampthill in Bedfordshire, which conveys butter to different persons in town who keep shops, but which is never brought to market. The summer contract, from May-day to Michaelmas, is,

generally speaking, cheaper than the winter contract by one penny per pound. About twenty years ago the obnoxious custom of contracting for dairies was but little known, and the butter was then sold at a reasonable rate, as it came fairly to the market. Fresh butter commonly sells three-pence per pound dearer than Cambridge butter, and Cambridge butter two-pence per pound dearer than Irish butter. The great butter jobbers in Newgate and Leadenhall markets engross an immense quantity of butter; one person in Newgate market sold in one year 18,400 flats of fresh butter (which he had engrossed) to the dealers in that article. Their practice is to ride from dairy to dairy in the country and buy up all they can. This means of engrossing such large quantities enables them to sell at two prices, the dealers being obliged to apply to them first. It (the butter) was formerly sent from the dairies to factors, who sold it to the customer; but now, by engrossers going into the country, the price is enhanced." *

The above is but a repetition of an old story in relation to food supply,—complaints against 'engrossers' or large dealers, who were supposed by their mediate agency to raise the retail price of the commodities sold. The same accusation has been brought against Smithfield dealers, dead-meat buyers, corn-dealers, and others; but the introduction of free trade has done much to remove both the complaint and the cause.

In a former chapter mention is made of the system whereby young calves are fattened for the London

* Crying Frauds of the London Markets.

market in Essex and neighbouring counties. The system admits of a singular mode of commercial comparison, thus stated — which is the better, to convert milk into veal or into butter and cheese? It may sound strangely to talk of the conversion of milk into veal; but practically such is the result to the calf-rearers, as may be shown by a very simple illustration. Among the many useful balance-sheets drawn up within the last few years by farmers, and published in various journals, is one referring to this matter of veal produce and dairy produce. A farmer tried what 100 gallons of milk would effect, in suckling a calf for veal, in making butter, and in making cheese. His balance account came out thus: —

	£	s.	d.
100 gallons of milk produce 112 lbs. of cheese, worth 6*d.* per lb. - - - - - -	2	16	0
And 5 lbs. of whey butter, worth 8*d.* per lb. - -	0	3	4
	£2	19	4
100 gallons of milk produce 34 lbs. of butter, worth 10*d.* per lb. - - - - - -	1	8	4
And 74 lbs. of poor cheese, worth 3*d.* per lb. - -	0	18	6
	£2	6	10
100 gallons of milk produce veal to the value of about -	1	17	0

So far as these figures show, dairy produce 'looks up.' Mr. Aiton, the author of 'Dairy Husbandry,' is among those who think that cheese and butter are too much neglected by farmers, for the sake of beef and veal; that, at average prices, dairy produce yields more profit than live-stock: he quotes Sir John Sinclair in support of his views. The same line of argument was adopted by Mr. Haywood in 1849, in a paper read before the

Geological and Polytechnic Society of West Yorkshire. He founded his reasoning on the chemical analysis of milk on the one hand and of butchers' meat on the other. He showed, by figures at least, that vegetable food produces a greater weight of nutriment if converted into milk than into beef: that is, if cattle be fed for the dairy than if for the slaughter-house. This is the chemical or dietetic side of the question; but he claimed no less an advantage in connexion with its commercial aspects.*

But enough of this, we have here only to know that butter and cheese, whether more or less profitable than beef and veal, constitute an important part of London food. Concerning the average amount of butter yielded by a cow, 'doctors disagree.' Mr. Marshall thought about 168 lbs.; Mr. M'Culloch leans rather to 180 lbs.; and the latter authority, moreover, supposes that 140,000 cows are required for the butter supply to the London market. In a later edition, when the population had increased, he raised this number to 160,000; and we may suppose there will be a talk about 200,000 by and by, when great London is still greater. From 3 to 4 million lbs. are sold annually at Newgate market, and a considerable quantity at Leadenhall and Portman; but the greater portion of the supply does not reach any of the public markets. Some writers have supposed that 16 lbs. per head per annum for two-thirds of the whole population would about represent the total consumption. Mr. M'Culloch's estimate for London is 10 lbs. per head;

* Farmers' Magazine, 1849.

together with 3000 tons for shipping and other purposes: in all 29 million lbs., worth about a million and a quarter sterling, if we suppose 10*d.* per lb. to be about an average wholesale price.

Butter comes to market in diverse packages and weights. The Irish dairy farmers usually pack their produce in 'firkins' containing about 80 or 85 lbs. each; while the English farmers more frequently employ a basket called a 'flat,' containing from 3 to 6 dozen lbs. There are also 'boxes' of 3 to $3\frac{1}{2}$ cwt. of butter; 'pannings,' or earthenware crocks, containing $\frac{1}{2}$ cwt.; 'cools,' or tubs cut in two, that will hold from a half to a whole cwt.; and small Scotch 'firkins' containing about $\frac{1}{2}$ cwt. So far as London is concerned, the butter from Cambridge and Epping, the highest in favour, arrives in rolls from one to two feet in length, but so small in diameter as to weigh only about 1 lb. each; and it is slightly salted before being sent to market. The Cambridge and the Epping butters are both made up nearly in the same form; but they differ in quality, the Cambridge being produced from the milk of cows fed on chalky uplands and rich meadows; whereas the cows that yield the milk for Epping butter feed during the summer in the shrubby pastures of Epping Forest. The terms Epping, Cambridge, and Dorset do not, however, always denote the places where the butter is really made.

The butter trade is an important one to Ireland. There are twenty or thirty butter merchants in Cork alone, and a large number in Waterford and Wexford; they employ agents, who go into the country districts to

buy up all the butter made by the peasants. These peasants, or rather small dairy farmers, are accustomed to salt their butter in the ratio of 7 lbs. of salt to 50 lbs. of butter; it is pressed into firkins, and the firkins conveyed by carts to the merchant's warehouse. The farmers, if very needy, will sell their butter before it is made; there are agents who come twice a year, make an offer of so much per firkin, and pay part or the whole of the money; with this money (always in such case below the current market price) the farmer carries on his dairying, and has the butter ready by an appointed time. At Cork a committee of members superintends the transactions between buyers and sellers; all the butter brought to market is inspected and branded by order of the committee, and is divided into four classes according to its quality. A sub-committee each morning fixes the prices for that day; the four kinds differ in value about 5*s*. per cwt. from each other. The number of firkins branded annually at Cork has risen from about 100,000 to 400,000, in the last seventy years. The firkins in which the butter is sent to the merchant are opened before he dispatches them to his customers; he takes off the head of each cask; he turns the cask upside down; he shakes out the butter; he scrapes the soiled exterior with a wooden knife; he powders it with fine salt; he replaces the cask; he tightens the hoop; and, finally, he brands the firkin. This branding, or marking with the name and address of the exporter, and certain trade marks, is more properly stencilling than branding; since it is effected by means of black

paint smeared through a stencil plate. The firkins of butter, thus branded, are exported to London, to Liverpool, and to the Continent. Most of it is very salt, and is in fact salted for long keeping; small shopkeepers are said to prefer it; as a firkin will stand for weeks on their counters without injury, where English or Dutch would become rank from exposure to the air. The dirty state of many of the Irish dairies causes the butter to acquire a peaty and smoky taste and smell, which lessen its value in the market. It is supposed that the quantity of Irish butter that reaches London annually is from 300,000 to 400,000 firkins.

But home butter and Irish butter do not keep us from the knowledge of that made in foreign countries. The Dutch, or, as it is called, 'Ostend' butter, is now consumed in considerable quantity in London: it is of good quality, and comes over well packed in oaken casks. The whole quantity imported lately has been thus: about 32 million lbs. in 1852, 45 million in 1853, and 54 million in 1854: this article of provisions, like many others, having been raised in demand during war time. How much of the whole is consumed in London, no one can tell.

Who would have thought that butter is sometimes adulterated? The 'Lancet' Commissioners assert that such is the case. Out of 48 samples examined by them, they found that nearly one-fifth of the whole weight consisted of salt and water, the water having been stirred up with the butter rendered semi-fluid by heating, to increase the weight. Potato-flour, too, has been met with both in butter and in lard.

Another important member of the dairy family, Cheese, now claims a little notice.

"Cheese is a surly elf,
Digesting all things but itself."

So says one of our old bits of wisdom in the form of an adage; if not absolutely true, it meets with some corroboration from every-day experience. Cheese is more eaten than butter by the labouring classes; butter more than cheese by the upper classes. There is something more than a mere difference of price to account for this; a labouring man, using his thews and sinews every day, suffers little from indigestion; he can digest cheese as well as other commodities; whereas a sedentary man, or a man in easy circumstances, often feels within him a warning against cheese. The chief organic principle of cheese, *casein*, is said by our chemists to be rich in flesh-making elements; and thus, if the cheese-eater can manage to digest this 'surly elf,' the elf may become a good muscular friend after all. Physiologists and medical men alone can decide this; meanwhile, London continues to eat its cheese.

The processes concerned in the manufacture of the cheese principally consumed in London may be readily understood. Milk, as already explained, consists essentially of butter, cheese, and whey; and the question is, how to separate these components. In making plain good cheese from plain good milk the first process is to separate the whey. This may be done either by allowing the milk to become sour, or by adding a little acid to it, or by the use of rennet—a dried piece of the inner coating of the stomach of a sucking calf; this

rennet speedily causes the milk to coagulate, or to suffer a separation between the curd and the whey. The curd is broken by a piece of wood or a cutter, until it sinks to the bottom of the whey; the whey is removed, to make whey-butter; while the curd is employed to make cheese. Every precaution being taken to expel all the whey, the curd, placed in the cheese-press, is confined within a sort of vat or tub, that determines the diameter of the cheese to be made, and the pressure is exerted in any one of many different ways. The mass is well wrapped in coarse linen cloths, which absorb the remaining whey pressed out; and a repetition of this pressing, with frequent wiping, cooling, salting, and drying, transform the whey into cheese. In fact, however great may be the difference in cheeses, cheese-making resolves itself virtually into two processes, — separating the curd of milk from the butter and the whey, and pressing this curd until it hardens into the form of cheese; all the other processes are merely adjuncts to these two. The points of difference in the various English cheeses are explained briefly, but with much clearness, by Professor Johnston.*

It is difficult to account for the taste that led to the use of *anatto* in cheese. This substance, the dried juice of a tree called the *Bixa orellana*, is used to deepen yellow pigments, to give an orange-yellow dye to silk, and to impart a similar tint to cheese. It does not appear that any one pretends to taste an improved flavour in cheese imparted by this anatto. Mr. White,

* Chemistry of Common Life, i. 137.

in a letter to the 'Times' (September 18th, 1855), states that anatto is used only in the cheese destined for London; that its use is a mere conventialism, like that of very white bread; that anatto is 7*s.* 6*d.* per lb.; that it is used in the rate of about one pound to a ton; that dishonest makers sometimes employ cheap turmuric and oil instead of dear anatto; and that our absurd taste for richly tinted cheese thus tempts men to adulterate.

The cheese made in Cheshire has had a long-established reputation. Fuller, in his 'Worthies,' after laying down the doctrine that "poor men eat cheese for hunger, rich for digestion," proceeds to say that "the county of Cheshire doth afford the best for quantity and quality; and yet their cows are not (as in other shires) housed in the winter; so that it may seem strange that the hardiest kine should yield the tenderest cheese. Some essayed in vain to make the like in other places, though hence they fetched both their kine and dairymaids." He winds up thus quaintly: "It seems they should have fetched their ground too (wherein surely some occult excellency in this kind), or else so good cheese will not be made. I hear not the like commendation of the butter in this county; and perchance these two commodities are like stars of a different horizon, so that the elevation of the one to eminency is the depression of the other." There are not wanting grounds for thinking that cheese made in other counties is sometimes designated Cheshire cheese — a too frequent mode of stealing a bit of reputation belonging to one's neighbours.

According to Mr. White, who has investigated the

statistics of the cheese trade in Cheshire with much care, the produce of the county amounts to 12,000 tons annually. The cheese dairies average about 16 or 18 cows each; the produce of cheese per dairy is from 36 lbs. to 54 lbs. per day during four or five summer months; and on land let at 30*s.* per acre about 3 cwt. of cheese per annum per cow is regarded as a pretty fair produce. According to another estimate, a Cheshire cow produces $2\frac{1}{2}$ to 4 cwt. of cheese, and a little butter, annually. A third authority says that Cheshire, a few years ago, had 1200 cows on 6600 acres of dairy-farm land; the greater part of the farms having four cows to an acre. Gloucestershire yields about $3\frac{1}{2}$ cwt. per cow per annum; much of the so-called 'double Gloucester,' however, is really Wiltshire. Suffolk has the reputation of making very good butter and very poor cheese. The Suffolk cows are capital milkers, yielding a large annual quantity, well adapted for butter-making; a good cow, in the prime of her season, will yield six gallons a day, and in some cases eight; or, if estimated in a different way, a well-conditioned Suffolk cow will, it is said, bring to the dairy-farmer, in a year, three firkins of butter, three quarters of a wey of cheese, a calf, and skim-milk enough to fatten a hog. As to Suffolk cheese, there is an old saying that 'pigs grunt at it, dogs bark at it, but neither of them dare bite it;' and Bloomfield treats it with some severity: —

"If drought o'ertake it faster than the knife,
Most fair it bids for stubborn length of life;

And, like the oaken shelf whereon 'tis laid,
Mocks the weak efforts of the bending blade;
Or in the hog-trough rests, in perfect spite,
Too big to swallow and too hard to bite."

There is no end to the modes of estimating the quantity of butter or cheese yielded by the milk of a cow in the course of a year. We have just given a Suffolk maxim; and here are two others, on the authority of Mr. Braithwaite Poole—that 450 gallons of milk should make 430 lbs. of cheese; and that a cow ought to produce her own weight and value in cheese annually.

Among many estimates concerning the supply and consumption of cheese in the United Kingdom, one arrives at 120,000 tons annually, and another at 100,000. The former depends upon the supposition, said to be adopted by many factors and dealers, that, if we allow 12 lbs. of cheese yearly to each individual of two-thirds of the population, it will bring us pretty near to the total consumption. The other estimate, by Mr. Poole, limiting the quantity of cheese consumed to 100,000 tons, and placing it under different headings, according to the principal names applied to it, presents us with the following results:—

	Tons.
Cheshire Cheese	18,000
Gloucester	14,000
Shropshire	12,000
Derbyshire	10,000
Stilton	7,000
Cambridge	6,000
Lancashire	2,000
Scottish	8,000
Irish	4,000
Foreign	19,000
Total	100,000

It will here be seen that Mr. Poole's estimate of Cheshire cheese is greatly in excess of that made by Mr. White; insomuch that, if both can be reconciled, much of the cheese called Cheshire by Mr. Poole must be made in other countries.

It is a strange circumstance, explicable perhaps by the demand for Irish butter, that scarcely any cheese is made in Ireland; the milk of the Irish cows being applied to the former article instead of the latter. Ireland, therefore, cannot assist us; if we do not make enough for English consumption, we import; and Holland and America are the chief countries whence this foreign supply is derived. The globular Dutch cheeses come over as a sort of ballast and packing, wedging up bales and casks of other commodities in the holds of vessels. The use of American cheese in England is of recent date, but is extending year by year. As to the total quantities imported from all countries, they have lately been as follows: about 33 million lbs. in 1852, 45 million in 1853, and 44 million in 1854.

If it be asked, how much of all this cheese is eaten in London? the answer must be but a repetition of one frequently given — nothing better than guess-work.

The popular taste delights in throwing any items of wisdom into the form of maxims, theorems, proverbs, adages; and resolutely combats any attempt to overturn them. Thus: 'An EGG contains as much nourishment as a quarter of a pound of meat.' Who laid down this doctrine it would be useless to attempt to determine; but it is so neat, so easy to remember, so nice an

excuse for purchasing a pleasant kind of food, that it will probably remain an article of the popular creed. There is no doubt that, if eggs were cheaper, they would be consumed in a much larger ratio than at present, in London and in England generally; for they are liked both by the sick and the healthy, both by the physician and the patient. So far as the metropolis is concerned, the inhabitants are almost wholly dependent on other regions for eggs; a cockney who 'keeps fowls' is likely to pay somewhat dearly for the eggs he obtains.

The conversion of vegetable into animal food is as instructively shown in the formation of an egg as of butchers' meat; and there are the same means of determining the cost at which this food is obtained. The following is an account* of one experiment in egg-rearing. A farmer near Guildford purchased three Polish pullets, which had been hatched about half a year previously; in a fortnight they began to lay, and they laid in twelve months 524, or about 175 each on an average. During this period they consumed 3 bushels of barley, 17 lbs. of rice, and a small quantity of barley-meal and peas; the cost of this food was 16*s.* 10*d.*, or one shilling for 32 eggs produced. Supposing the eggs to average $1\frac{1}{4}$ ounces each, there were 41 lbs. of the most nutritious of all kinds of animal food produced for 16*s.* 10*d.*, or about $4\frac{3}{4}$*d.* per lb. Of course if the object in view had been poultry rather than edible eggs, other items would enter into the calculation.

* Farmers' Magazine, vol. vii.

Our intelligent French neighbours are frequently striking out some new idea, which, if not quite sound in the form first adopted, may yet suggest a useful course of proceeding to others. Thus, as before noticed, M. Guénon thinks he has discovered external symptoms to denote the milk-producing excellence of cows; and now another Frenchman, M. Orange, claims to have discovered external symptoms to denote the egg-laying excellence of poultry. This latter observer says that, at the period when laying commences, the comb, beard, and ear-flap of the hen present different appearances according to the egg-laying power of the animal. Practical men should be able to test the value of such a theory; for the world cannot yet afford to despise empirical rules on such subjects.

Quitting egg-philosophy, however, we proceed to egg-commerce. The egg-trade between France and England is a remarkable one. Before the peace of 1815 the home supply was obtained from various parts of England; but the lower price of French eggs soon led to a large trade across the channel, when commercial intercourse was renewed. The departments nearest to the English Channel are visited by dealers, who purchase all that the country people have to sell: nay, there is even said to be a farm of two hundred acres at Bastoign, maintained solely for the supply of eggs to the London market. At most of the ports between Calais and Cherbourg vessels take in cargoes of French eggs. It is estimated that 100,000,000 eggs weigh about 3000 tons; so that a considerable number of small vessels would be required to bring over such a

number to England, even if laden with no other commodity. The French excel us in egg-eating as in egg-rearing; it has been estimated that the Parisians consume more than a hundred eggs per head annually, on an average of the whole population; while the average for the country districts of France is placed still higher, for junkets composed of eggs and milk constitute the principal items in most of the meals in some places. The egg-produce of France is so high as 7000 to 8000 millions annually — enough to form a string of beads that would coil twice round the earth. But then France is essentially a poultry country; the small proprietor-farmers are better able to rear poultry than cattle on their much-divided estates.

It is supposed by Mr. Poole that our consumption of eggs in the United Kingdom may be about 1500 millions annually; of which Great Britain produces 900 millions, Ireland 500, and foreign countries 100. This latter item is gradually increasing; it has amounted to about 110, 123, and 130 millions, in three recent years (1852–3–4). It is probable that as the home demand increases, we shall import more and more, rather than increase the home production — unless, indeed, the 'poultry-mania' effect anything in this latter respect.

Before the railway system arrived at its present degree of completeness, eggs were brought to London from a district so far north as Dumfries, on a very singular plan. Wholesale egg-merchants purchased at the market in that town, and conveyed the eggs to Carlisle by a species of land-carriage requiring skilful packing; a layer of straw was placed in the

bottom of a cart, and on this a layer of eggs, so closely wedged together as to leave no openings but such as necessarily resulted from the shape of the eggs; this done, another stratum of straw, and another layer of eggs succeeded; and so on until the body of the cart was filled. It is said that a mass thus packed is so firm, that a load of meal might be placed upon the eggs without breaking them. When the eggs had been brought to Carlisle, thus packed in carts, they were sold to other dealers, who conveyed them along the Newcastle and Carlisle railway to Newcastle; from Newcastle they were shipped to the metropolis by steamers. This system has necessarily undergone modification, consequent on railway extension.

Among the changes Ireland has witnessed within the last few years, some may have occurred in the mode of conducting the egg-trade — irrespective of those relating to the employment of steam-power in bringing them over to England, mentioned in a former chapter. About twenty years ago Mr. Weld* described a remarkable system, tending to show how commerce subdivides itself when left to its own spontaneous operation. The eggs were collected from the cottiers by *runners*, boys from nine years old upwards, each of whom had a regular beat or route. The runner would go ever his beat daily, bringing back the eggs carefully packed in a basket; and the necessity for steadiness and caution in carrying the frail charge imparted a kind of trustworthy stability to the boys. The beat frequently embraced a range of fifteen English miles in a day.

* Statistical Survey of the County Roscommon.

The boy's share of the produce was one shilling upon every six score of eggs brought in, a penny for every ten: the risk of purchase and carriage resting entirely on himself; the price paid to the cottiers varied from 2*s.* 6*d.* to 5*s.* per long hundred of six score. The dealers, at Lanesborough, Tarmonbarry, and other towns, then packed the eggs in layers with straw, in crates containing about 10,000 each, which were sent on to Dublin on speculation, or direct to England. The sale of eggs from Ireland to England at that time was roughly estimated to bring in about 70,000*l.* annually; taking a medium price at 4*d.* per dozen, this would be equivalent to the number of 50,000,000 eggs.

Before the opening of the Holyhead railway, the London and North Western Company sometimes received a million eggs from Ireland in a day at the Liverpool station, for conveyance to London and other parts; but this trade is now in part shared by Holyhead. The boxes in which they are packed contain from one to eight thousand eggs each.

Even at one halfpenny each, the 1500 million eggs supposed to be eaten annually in the United Kingdom would cost 3,000,000*l.* — a large sum for such apparent trifles. How large a share of the consumption may be attributed to London, any one may guess, but no one determine.

What will result from the 'Poultry Mania?' At present amateurs are giving extravagant prices for favourite breeds, and are full of lore concerning the

merits of Dorkings and Cochin Chinas. In many quarters it is really a mania; but those who take the lead in the matter are influenced by a praiseworthy desire to improve and increase a very welcome article of food. A society for this object was formed in 1852, and held its first show in January, 1853; since which time there have been several shows. The Smithfield Cattle Club and the Royal Agricultural Society have both lent countenance to this new movement. If, by any such means, an increased number of eggs and fowls can be reared by the expenditure of a given sum, a material benefit will be obtained, in which London will share at least in ratio to its population; it is of no national advantage, however, that an enthusiast should give a hundred guineas for a 'Cochin China.'

One of the most curious processes connected with the supply of animal food is that whereby nature is aided in extricating a chick from its egg — a converting, so far as commerce is concerned, of a penny egg into a shilling chicken. What does this 'artificial hatching' mean? Persons with a fair amount of intelligence need not be ashamed to ask this question; for the rationale of the subject is not so easy as may at first appear. The egg, after being laid, requires a certain number of days to arrive at maturity — time enough for the little imprisoned chick to grow in strength, and burst through its white walls. It requires to be kept warm during this period; and the hen, like a tender mother, knows better than any one else what is needed. But during the twenty days, or

whatever it may be, that the hen is tending the egg, there is what commercial men might call a loss of the interest on capital; if an artificial mother could be devised for hatching the eggs, the hen might be liberated, and live her ordinary life, and render her ordinary service in the farm-yard. Hence the use of boxes kept warm by external heat; hence the complicated Egyptian plan of egg-ovens; hence Mr. Bucknell's 'Eccaleobion'; hence Mr. Cantelo's 'hydro-incubator.' All are ingenious, and all will aid in hatching fowls; but until evidence is afforded that any of these plans are practically adopted in England in a commercial spirit, they will have very little bearing on the supply of London with its daily food.

Let us proceed to another member of the poultry-family — the goose. Enclosure Acts have interfered with the liberty of geese, as with that of bipeds of a higher class. In bygone years, farmers had the right of grazing geese on the commons within reach of their farms; and hence geese were reared by many persons who afterwards abandoned that mode of grazing when the commons became enclosed. Some of the commons of Wiltshire, now enclosed, were formerly grazing-grounds for thousands of geese belonging to different owners; each owner had his own mark impressed by a punch on the web between the toes of the birds; and thus, though many flocks intermingled, each goose was easily identified; they were attended by gooseherds, whose duty it was to watch over their safety. Many of these geese were consigned to fatteners for the London

market. Geese are still largely reared on the commons and heaths of Surrey and Lincolnshire; the best are said to come from Suffolk, Norfolk, and Berks; but the best feathers are from Somersetshire geese. The fodder picked up on the heaths and commons does not suffice for the birds; they require a daily supply of oats and barley; and thus the rearing of geese becomes a regular branch of grazing.

The fattening for the London market is a separate occupation. The fatteners pay unremitting attention to the wants of the geese, — classing them according to their condition; keeping them always clean; feeding them three times a day, alternating dry with soft food; and supplying them with good water and an exercise ground. The young geese begin to reach the fatteners about the month of March, from which time they arrive weekly throughout the season. Some of the fatteners have pens capable of containing four or five thousand geese. Young or green geese are brought early and in large numbers to the London market, where they command high prices; they have been fed on oats, oatmeal, peas, and buttermilk or skim-milk; whereas the Michaelmas geese have picked up a portion of their food in the stubble-field and the barn-yard. There appear to be magnates among the goose-fatteners, as among other purveyors to the public wants; for one fattener, at Boston, is reputed to have sent to London, at one Christmas time, no less than 2500 dead geese, which, together with 1000 ducks, and 500 turkeys, weighed twenty tons, or more than 40,000 lbs.! This is one among many examples of

the enormous supplies required for a London Christmas.

London is not supplied with its Michaelmas geese without an awful amount of slaughter: the battle-field being in the fens of Lincolnshire and the neighbouring counties. Sometimes there will be 5000 geese penned closely together, 'cackling their sorrows to the winds, and awaiting their melancholy doom.' When the fatal hour arrives, a boy drives about a dozen geese from a pen into a room, a second boy takes each poor bird in its turn, entangles its pinions behind its back, and inserts its legs into a noose hung against the wall over a trough; a third boy finishes the tragedy by means of a knife. When the bird is dead, its legs are disentangled from the noose, and it is tossed through a window into the plucking-room, where, behind a large table, sit several men and women, who speedily become enveloped in a cloud of dust and down; their duties consist in plucking the feathers from the geese, for which they receive a shilling a score. Every goose, so soon as plucked, is thrown upon a dresser, whence a man takes it for the purpose of trussing; and when scores or hundreds have thus been treated, the geese are packed in baskets containing twenty-five birds each. In the days of broad-wheeled waggons, twenty-five baskets made a waggon-load; if the average weight of a fattened goose be estimated at 10 lbs., each waggon would thus contain nearly three tons of goose-flesh; but these goose-waggons must now be numbered among the things of the past. Thus did the goose-supply reach the London householder, the 'paterfamilias,' who, to

quote the quaint description of Sir George Head*, "whether his income be large or small, and no matter what his religious or political persuasions, in conformity with irrefragable custom, at least once in every year, at the head of an obedient family, like a mail-coachman mounted on the coach-box on a gala-day, sits in the pomp of conjugal and paternal authority, knife and fork in hand, behind a fat fragrant goose on Michaelmas Day."

Buckinghamshire, especially near Aylesbury, is the great source of ducks for the London market. The 'Aylesbury breed' is in much repute; and many families derive a considerable portion of their support from the ducks which they rear for the metropolis. The rooms of the cottagers may be seen furnished with boxes, pens, &c. ranged round the walls for the protection of the ducks; and the good-wife devotes the greater portion of her time and attention to the feeding of her young brood. The ducks hatched early in the season are brought up almost wholly by hand on this indoor system. There is thus, in respect both of ducks and of common fowls and other poultry, a certain localisation, a tendency in some districts rather than others, to attend to poultry-rearing as a department of profitable employment; cottagers, however, in most counties, manage to economise the odds and ends from their gardens, and apply them as food for poultry.

The capture of wild ducks in the Lincolnshire fens is managed in a remarkable way; requiring the use of

* Home Tour in the Manufacturing Districts.

artificial ditches, screens and fences of withes, nets, dogs, and decoy-ducks; and calling for the exercise of a wonderful amount of patience and circumspection, to overreach the no less wonderful sensitiveness of the ducks, who have a natural dislike to 'come and be killed.'

Considering poultry in its collective sense, without further relation to the rearing or capture of particular kinds, a little must now be said on the subject of price.

That poultry is a more costly food in London than butcher's meat is a fact too well known to need demonstration; although in Paris there is an impression that the advantage lies the other way. About twenty years ago, before the railways had begun to bring food to London, the following rough estimate was made: — The average weight of a turkey is about 10 lbs.; the average price is 10*d.* per lb.; the loss in preparing for the spit is $2\frac{1}{2}$ lbs.; so that the turkey in effect costs 13*d.* per lb., at a time when a leg of mutton costs 8*d.* per lb. Again: a goose may be taken as also 10 lbs. weight, and the price 7*s.*; about 4 lbs. of giblets and offal will have to be removed; the giblets may be worth 1*s*; and thus the price of the whole will be practically 1*s.* per lb. Again: a fowl of 3 lbs. costs 3*s.*; but as the offal is to be deducted, the real cost is more than a shilling per pound. All are thus much dearer than butcher's meat. The French, as lately remarked, eat more poultry, and less butcher's meat, than the English; and thus poultry-rearing constitutes

an important element in French farming. The Parisian consumption is said to be about—2,000,000 fowls, 1,500,000 pigeons, 900,000 turkeys, 600,000 geese, 400,000 capons, 300,000 ducks, annually,— quantities much larger than those consumed in London, relatively to the population. The Londoners are famous for their devotion to the goose, when they purchase poultry at all; not so the Parisians — they consume more turkeys than geese.

Our London markets for these articles of food are, as is well known, very scattered. At Portman market, a few years ago, it was estimated that about 16,000 nead of poultry were sold annually. A few other markets contain poultry stalls; but Leadenhall and Newgate are the chief marts. Inferior as it may be in arrangement, Leadenhall is believed to be the largest poultry-market in the world, regarding the amount of business transacted. Not only are the ordinary kinds of poultry sold, such as fowls, ducks, geese, turkeys, and pigeons; and the ordinary kinds of game, such as grouse, partridges, pheasants, snipes, hares, rabbits, &c.; but also a number of birds and other animals not very easily classed together — white rats, gold-fish, ravens, hawks, hedgehogs, foxes, fancy dogs, owls, ferrets, guinea-pigs, squirrels, swans, fancy cats, parrots — all are to be met with at Leadenhall.

The trade in Game is a strange one. Until about twenty years ago, the sale was illegal; and game reached the market only by surreptitious means. Whether the noble owner of a 'preserve' kills the wild

poultry or game for sport, or whether he has an eye more especially to Leadenhall market, is known best to himself; but on either supposition the traffic is peculiar. Pheasants and partridges are brought by railway chiefly from Norfolk and Suffolk; but other kinds of game reach London from various places:— thus, wild ducks are brought principally from Holland and Lincolnshire; Cambridgeshire is perhaps the chief county for turkeys, and Lincolnshire for geese; the two million fowls, or thereabouts, sold annually in London, are reared chiefly in Surrey and Sussex; in Norfolk and Cambridgeshire the farmers attend so much to this matter, that small farmers often pay their rent with the profit on poultry.

According to Mr. Poole, the quantities of game sold annually in Newgate and Leadenhall markets, taking an average of the last few years, are about as follows:—

	Leadenhall.	Newgate.	Totals.
Rabbits - - -	680,000	180,000	860,000
Hares - - - -	48,000	55,000	103,000
Larks - - -	213,000	100,000	313,000
Partridges - - -	85,000	66,000	145,000
Snipes - - -	60,000	47,000	107,000
Pheasants - - -	44,000	20,000	64,000
Wild Ducks - -	40,000	20,000	60,000
Grouse - - -	45,000	12,000	57,000
Plovers - - -	28,000	18,000	46,000
Woodcocks - - -	27,000	17,000	44,000
Widgeons - - -	30,000	8,000	38,000
Teal - - - -	10,000	5,000	15,000
Totals - -	1,310,000	542,000	1,852,000

In like manner the quantities of poultry present the following numbers: —

	Leadenhall.	Newgate.	Totals.
Fowls, dead - - -	1,266,000	490,000	1,756,000
„ alive - - -	45,000	15,000	60,000
Geese, dead - -	888,000	114,000	1,002,000
Ducks, dead - -	235,000	148,000	383,000
„ alive - -	20,000	20,000	40,000
Turkeys, dead - -	69,000	55,000	124,000
Pigeons - - -	285,000	98,000	383,000
Totals - - -	2,808,000	940,000	3,748,000

The 'Morning Chronicle' estimate agrees with this pretty nearly, but omits a few of the items. Altogether, it presents a total of about five millions and a half head of poultry and game, sold annually in the two markets. Newgate has the additional credit of selling 40,000 stone of venison in a year. Ostend rabbits are becoming a remarkable element in the London supply; they are skinned in Holland or Belgium, sent over quickly by steamers, and sold while fresh and good at a very reasonable price: this trade is rapidly increasing. Strange cargoes come over sometimes from other quarters; thus it is said that not very long ago 17,000 quails were sent by steam from Rome to Liverpool, and by rail from Liverpool to London; and it may be supposed that the Londoners had an unusual quail-feast accordingly.

What all these good things may be worth in the market is very doubtful. Mr. Poole thinks that, one with another, poultry may perhaps weigh 3 lbs. per

head, and may sell at 8*d.* per lb., taking the average of all the English markets; thus 36 million head, in the United Kingdom, would weigh 48,000 tons, and would bring 1,200,000*l.* But is 3 lbs. a fair average weight; and is 8*d.* per lb. a fair average price; and is the total number 36 millions? Where there are three elements of uncertainty, the estimate must of course be taken with all due allowance.

It is obvious that the period of the year in which each kind of food is most abundant and in finest condition depends primarily upon natural causes, beyond the control of man,—subject, however, to slight modifications; and it is needless to say that the commerce in these articles of food, whether poultry or any other, must be regulated by these seasons.

CHAPTER IX.

BILLINGSGATE AND THE FISH-SUPPLY.

Peculiarities of Fish-supply. — Projects for artificially rearing Fish. — Early Projects for bringing Fish to London. — 'Fish Association' in 1813. — Maintenance of Billingsgate against all competing Markets. — Billingsgate Supply before the Railway Days. — Nature of the Supply at the Present Day. — Great Fish Dealings at Yarmouth, and between Yarmouth and London. — New Market at Billingsgate. — Dealings between the Fishermen, Consignees, Salesmen, Fishmongers, Bummarees, and Hawkers. — A Day at Billingsgate. — Variety and Seasons of the Annual Supply. — Probable Quantities sold. — Peculiarities in the Oyster Trade for the London Market. — Street Dealers in Fish.

The bounty of Providence, in regard to the supply of Fish, is exhibited in a manner somewhat peculiar, so far as man's wants are concerned. The denizens of the deep grow ready to our hands, without demands on our care. The animals that supply our meat-markets; the poultry, more of a luxury; the hams and bacon prepared for long keeping; the dairy produce of butter and cheese, milk and eggs; the bread and other preparations from corn and flour; the fruits and vegetables constituting so valuable a proportion of our daily food; the tropical productions — tea, coffee, cocoa, sugar; the beer and ale, the spirits and wine — all require much care, patience, industry, capital, ground, house-room, utensils. It is true that, in countries little advanced in civilisation, men may still obtain such food without any great solicitude, provided nature has

been bountiful at the particular spot in question. Natty Bumpo and Leatherstocking were able to obtain a delicious roast from a bison's hump in the prairies; the South American Indians prepare beverages of many kinds, and many substitutes for corn-bread, from vegetables growing wild in the forests and plains; the sportsman can obtain game by the aid of his gun and a little powder; and those who grudge the trouble of preparing artificial beverages, can find a resource in the crystal spring or the nearest river. Nevertheless it remains true that the supply of edible fish is less dependent on man's exertions (except in the actual capture) than any other considerable article of human food.

Relying trustingly on this truth, there has been too great a tendency to neglect the welfare of the piscine class. Fish have their likings and dislikings, as other beings; they have their preferences, some for salt and others for fresh water, some for turbid and others for placid streams; most fish prey upon other fish, and are in their turn liable to be preyed upon; and there are certain seasons and temperatures necessary for the full development of each particular kind. Now it is unquestionable that carelessness in our fishery arrangements leads to the wasteful destruction of an immense quantity of fish, by a want of due attention to some or other of the above conditions. There may be such a thing as fish-culture as well as corn-culture; man does not cause the corn to grow, but he brings about the conditions necessary for the growing; and the analogy may be applied, within a certain limit, to fish. The popular opinion is, that fish

are inexhaustible, and that we have naught to do but to catch them; the scientific view, on the contrary, is, that man by careful attention can store with fish streams and lakes unprovided with this natural wealth at present.

This subject is a very curious one: many persons regard it as a means of multiplying food to an enormous extent; but be this an exaggerated estimate or not, it is clearly a very legitimate problem for inquiry, how far the supply of fish is under man's control. Jacobi wrote and experimented on the matter ninety years ago; and within the last twenty years the subject has been taken up by Rusconi, Agassiz, Shaw, De Quatrefages, Boccius, Gervais, Milne Edwards, Coste, Haxo, Ashworth, Millet, and other writers. Dr. Allman, Professor of Botany at Dublin University, has given a very useful summary of the whole inquiry*, from which a few facts may be condensed.

It has long been known that the salmon rivers of Scotland and Ireland have become impoverished by injudicious fishing. Laws have been passed to prevent this, but the laws have been disobeyed; it is found necessary to keep a sharp watch on such rivers, to prevent improper modes and times of fishing. But this is not all; there is a diminution of supply occurring, for which no one can account; fish which were wont in past years to visit certain rivers now avoid them. Be the causes of diminution few or many, an inquiry arises whether a supply can be artificially kept up? The attempts to answer this question consist in a sort

* Sullivan's Journal of Industrial Progress, 1854.

of artificial breeding. Jacobi formed an artificial rearing-pond at Hanover, nearly a century ago; but it does not appear that he met with any marked success, and the subject slept for seventy or eighty years. In 1836 Mr. Shaw, manager of the Duke of Buccleuch's salmon-fisheries at Drumlanrig, took up the matter, with a view of experimenting thereon; and in 1841 Mr. Boccius of Hammersmith wrote concerning it. But the most remarkable experiments have been made in France. Joseph Rémy, a fisher of trout in the Moselle, observing a gradual diminution in the supply, resolved to watch the habits of the fish: day and night he persevered in his self-imposed task; in summer and in winter. Another fisher, Géhin, joined him in a series of experiments; and the two together at length reared many hundred thousand fine trout, by a careful management of the milt and roe; with these fish they stocked many streams and rivers. M. Haxo, a physician of Epinal, then brought the subject under the notice of the French government; and in 1850 the government appointed M. Milne Edwards and other distinguished men as a committee to investigate the new enterprise. This enquiry resulting in a very favourable report, Rémy and Géhin received appointments in connection with a kind of national fish-rearing scheme. French scientific commissions are rather prone to issue highly-coloured reports; but practical men, both in France and England, assert with much distinctness that salmon really can be taught to grow or made to grow in rivers which they have before not visited. The French Government, consequent on Milne Edwards'

report, founded an establishment on the canal which connects the Rhine with the Rhone. M. Coste, one of the commissioners, travelled in various parts of France, to collect all the available facts relating to the artificial rearing of fish, and to apply his knowledge in furtherance of the government plan. Poor Rémy died in the early part of 1855, from the effects of constant exposure to streams, rains, and variations of temperature.

All the facts connected with the growth of fish have been ascertained by narrowly watching the proceedings of the animals; and the fish-rearers have laid down certain rules for the management of their young broods. M. Coste, one of the directors of the French establishment, has embodied these rules into a code. One curious part of this system is, that the fecundated eggs, or roe of the fish, may be packed in sand in boxes, and conveyed from place to place, or kept for weeks in rooms: by this means, rivers may be stocked with salmon or other fish not before contained therein. Another plan of packing consists in interlaying the ova with aquatic plants instead of sand; or bog-moss may be substituted for aquatic plants. The young brood can be more safely transported before than after the fish have extricated themselves from their confinement.

There are differences of opinion among experimenters on almost all parts of the method of proceeding; and some of the fish-philosophers entertain extravagant hopes concerning the ultimate advantage of the system. One advantage certainly is, that the plan may be adopted either to stock new rivers, or to replenish

those which are exhausted; in France the first of these objects has been more successfully attained than the second; many of the French rivers are now being artificially stocked with trout by this means; and it has been suggested that smelt, char, carp, and eels, might be similarly treated. There are eel-preserves, at the Lagune of Commachio, communicating with the Adriatic, which yield 2,000,000 pounds of eels annually. The artificial breeding of salt-water fish may be considered as an art more in its infancy, on account of the difficulty of ascertaining the habits of the fish —a knowledge of which is necessary to the due arrangement of the plan.

Towards the close of 1854 it was stated in some of the Scottish newspapers that an experiment was in progress at Perth connected with fish-rearing. The annual salmon rental of the Tay is 10,000*l.*, of which Perth city obtains about 1000*l.*; and it was deemed wise economy to expend a little money in the new experiment of preserving the ova and re-stocking the river. It may exemplify some of the danger and destruction to which the ova are exposed to state that, on a late occasion in the Tay, a trout was caught with 200 salmon ova in its inside! At the Glasgow meeting of the British Association, in 1855, Mr. Ashworth gave an interesting account of the progress of this experiment, from which favourable results seem likely to be obtained.

These remarkable views and researches, interesting as they may be both to naturalists and to economists, have, however, little to do at present with the supply

of fish to London: we must wait many years to witness any appreciable result in this respect. But, without reference to any increase in the total quantity of fish, there have been many attempts to increase the supply available for the London market. The Historical Sketch has shown that, at many former periods, sovereigns and parliaments made endeavours to induce the English to become a fish-eating people; and we have now to notice two later projects of a similar kind, both relating to London.

About the close of the last century a remarkable pamphlet of twelve pages was published, containing 'A Plan for the better supplying this Metropolis with plenty of Fish, from distant Seaports and Rivers, by Land Carriage.' In these days of railways and clippers, it may be interesting to see what were the go-a-head notions of former times — illustrative, as they are, of the points brought forward in a former chapter, on the influence of quick transit on the price of food.

The author of the plan proposes to have 'machines' capable of carrying eight or ten cwt. of fish each; secured from jolting, but ventilated by fresh air. They were to be drawn by two horses each; they were to ply on the coach-roads leading to London from all the eastern and southern ports; they were to travel six miles an hour, and to change horses at stations twelve miles apart; and the same horses, after an hour or two of rest, would carry back an empty 'machine' over the same stage of twelve miles. There would thus be a constant double string of carriages on each road; the one coming to London laden with fish, the other re-

turning from London empty. The projector makes out an estimate that fish might thus be brought to London from an average distance of 72 miles at a cost of a penny per pound. There appear two woful deficiencies, however, in his estimate; for there is nothing charged as interest on the capital expended in building the 'machines,' nor is there any entry for turnpike tolls. Another part of the plan is, the appointment of an agent at each of the principal fish ports, to purchase the fish, see it well packed, and despatched in a proper manner to London in the 'machines.' A general depôt was to be provided for these machines and their contents; and the neighbourhood of the Orphan School in the Westminster Road is pointed out as a spot whence the supply could be equitably distributed between the two cities of London and Westminster. The fish-supplying theorist expresses a hope that the Corporation of London, and the Fishmongers' Company, and the fish salesmen and others, would not take umbrage at his plan; and he proceeds to give a delightful picture of the manner in which his fish-market would be conducted. "Many persons are deterred from going to market for fish, on account of being asked double the price of what may afterwards be taken. This manner of haggling has proved a hindrance to many, both as purchasers and sellers; but by this plan, it is intended that the stalls for the sale of the fish brought by land-carriage shall be parted into several divisions, according to the different kinds and qualities of the fish; where each sort will be sold at a stated moderate price, for ready

money, either by weight or tale; and papers of the price of such fish, according to their different kinds, daily affixed over each stall or division; so that the customer will be enabled to purchase at a certainty, without being subject to exaction, or being asked a higher price by the seller than what will be taken. And as these stalls will not be opened till nine in the morning, the buyer will have the opportunity of choosing and purchasing such fish as he shall like best, without further trouble." But then comes one provision, showing how anxious the projector was to conciliate 'vested interests': — "No person will be kept to carry fish home to the purchasers' houses, that those usually employed in such service about the markets may have the opportunity of getting their livelihood thereby." There were other benefits 'looming in the distance' to the eye of the projector. By bringing up the fish regularly to London, the fishermen on the coasts would be induced to enter more heartily into their work; by obviating the delays occasioned by stormy weather to fish-laden vessels on the coast, the fish would reach London more generally fresh; by encouraging the consumption of fish, there would be an increase in the number of fishing-vessels and fishermen; and these fishermen might perchance learn to be good sailors in time of war.

Such was the project—out of which, however, nothing came; London did not profit by the wisdom.

A later project, a 'Fish Association,' originated in a meeting held at the Thatched House tavern in 1813, of which the Duke of Kent was chairman. A report, soon

afterwards issued by the association, commences by an expression of the necessity for encouraging the use of a greater variety of food, owing to the vast requirements for fleets and armies and the rapid increase of population; and fish is adverted to as a specially suitable item in this variety. "The uncontrolled command of the sea," it is alleged, "and the insular situation of Great Britain and Ireland, encircled by inexhaustible shoals of nourishing and gratifying food, are capable of affording at all seasons an abundant supply, and require only that the marine harvest should be reaped, which the bounty of Providence has bestowed. It is also to be observed, that the immense quantities of salt, which the surrounding ocean and our own internal salt-mines afford for preserving fish, at a price exclusive of duty so low as not to exceed sixpence a bushel, offer the means of preserving cod, haddock, mackerel, herrings, and other fish, to an indefinite extent, both for our own use, and for exportation to Spain, Portugal, and the Mediterranean, in exchange for the corn, wine, and other articles of those countries."* The Report insists that one wholesale fish-market, especially so far eastward as Billingsgate, cannot suffice for the wants of the metropolis. Many obstructions to the fish-trade are noticed. A poor basket-woman, who can afford to buy only a small quantity of fish at once, must lose much time in the necessity of resorting to Billingsgate between three and six o'clock in the morning, and carrying her small

* Report, p. 6.

store of fish many miles on her head before she could distribute it among her customers. Then, again, concerning price:—"The housekeeper who is going to market knows pretty correctly what will be the price of mutton, beef, bread, cheese, butter, milk, and almost every other article of subsistence, but has no means of guessing whether fish will that morning be twopence or two shillings per pound. The restriction and uncertainty thence arising injure the fishmonger as well as the fish-buyer; for at times when there is even a glut of fish, there is very little means of diffusing the information, or of increasing the facilities for sale."

To remove these various obstructions, and to remedy the defects, the members of the association thought that it would be necessary to enlarge Billingsgate, and to establish a second wholesale fish-market somewhere in Westminster. They advised that the fisherman who brought his store up the Thames should be assured a certainty of sale, to a limited amount and at a low price, of the fish sought by the middle and lower ranks of society, and which might be preserved by salt or vinegar. A third obstacle it was thought to remove by having the Westminster fish-market in proximity to Covent Garden market; not only to enable the itinerant fishwives to supply the west-end of London without trudging through the busy streets from Billingsgate, but that they might also be able readily to substitute dealings in fruit and vegetables for dealings in fish, at times when the latter commodity was scarce or dear. The uncertainty concerning abundance or scarcity of

supply was to be removed by the adoption of some plan whereby, on occasion of any extraordinary glut of fish, notice thereof might be given in different parts of the metropolis. In relation to uncertainty as to price, it was recommended to fishmongers to adopt the custom of affixing prices each day to their stock, whereby housewives might readily judge whether the prices were within their available means.

For carrying out these several measures, money was required; and the association expressed a hope that housekeepers generally would subscribe one guinea a year each towards the establishment of the necessary fund. But the fate of the association was the fate of most organised attempts to interfere with the supply of commodities in England. It failed. Albeit the motive was a kind one, the project never went beyond the publication of the report.

Billingsgate remains, as it was in the old Norman times, the chief fish-market of our great metropolis. All the other markets for food-supply have been changed, removed, modified in some way or other in locality; but Billingsgate is where it has been any time these eight hundred years. It may have put on a new face, and decked itself out with new adornments; but it is still the same Billingsgate at heart. It has seen out the Normans and the Plantagenets, the Lancasters and the Yorkists, the Tudors and the Stuarts, the Orangists and the Georges; and it has supplied fish to all of them. It has witnessed great fires, great plagues, frost fairs, gilded barges, river pageants, Tower executions, City insurrec-

tions, custom-houses new and old, London Bridge with houses and without; and yet there it is still. Beling's Gate supplied the old city in 1055, as Billingsgate now supplies the monster metropolis in 1855.

In the old times all the fish was brought to Billingsgate by vessels: the waggons could not have brought it by road with sufficient quickness; and quick road-conveyances there were none. But there have been mighty changes wrought within the last few years; rapid steamers bring the fish to our coasts, and still more rapid railways reduce to a few hours the journey from the coast to Billingsgate. The localities whence the supplies are obtained must of course depend in some degree on the distance. The coasts of Ireland and of the northern and western districts of Scotland are fringed with countless shoals of herrings and other fish; and it becomes a question of quickness and cheapness of freight, whether such fish can profitably be brought to Billingsgate. The sea-fisheries, also, must, for the same reason, depend on a swift means of conveyance, so far as London supplies are concerned. It is now unquestionable, however, that the British Channel, the Irish Sea, and the German Ocean, are virtually brought by steamers and railways within reach of our metropolitan fish-market; and the Scotch rivers, rich in salmon, have a command both of steamers and of railways as media of fish conveyance to London.

Any description of the fisheries, *per se*, would be beyond the scope of the present volume; but there are reasons why the Yarmouth district calls for a little notice.

The fishing off the Norfolk and Suffolk coast does not refer exclusively to London as the great centre of consumption; but still the transmission of fish to the metropolis from Yarmouth and Lowestoff has become an appreciable item in relation to the food of London. That which is known collectively as the Yarmouth fish-trade is not conducted wholly by vessels belonging to that and the neighbouring ports; for north-country fishing-boats frequently come into Yarmouth as a convenient port. The herring season at Yarmouth occurs during the last three months of the year; it being brought to a close shortly before Christmas. The owners of the fishing-vessels employ their crews at stipulated wages; but the herring-boats that enter Yarmouth from other localities are manned by crews who share the produce among them. This diversity gives rise to a difference in the modes of conducting the sales; and the Yarmouth men are frequently obliged to accept prices forced upon them by the keen competition of the 'foreigners.' It would be more correct, however, to describe the Yarmouth system as a combination of two other systems — those of wages and of partnership; for while the owner provides meat and drink for the crew, each man receives a definite money-payment according to quantity. The fishing-vessels anchor at half a mile or so from the shore, because the beach is too shallow to permit a nearer approach; and the services of boatmen or beachmen are required to bring the fish ashore. Sometimes Yarmouth boats, when they go to great distances in search of mackerel, sell their fish at the nearest port, instead of

returning home with it; but the usual custom is to bring-to off the port whence they started, and depend on the services of the beachmen to convey the fish to land. No sooner do the glittering silvery fish make their appearance on the beach, than all is life and bustle; each fish salesman has his domain on the sands, marked by a flag; and he immediately begins to carry on the dealings between sellers and buyers. The fish belong to the vessel-owners; there are large dealers who attend to purchase the finest kinds; there are small dealers or hawkers who pick up at a cheap price what is left; and there are salesmen who, having no fish to buy or sell for themselves, buy and sell for others. It is wonderful to see how quickly the whole produce of a night's fishing is carried off; and one must needs admire the 'chaff' and gammon and wheedle and coaxing with which the salesman manages to get rid of the inferior portions of his store; for got rid of they must be, on some terms or other.

So far as regards the London trade, the fish caught off the Yarmouth coast are speedily packed in hampers, and placed in a 'fish-train' on the Eastern Counties railway; at Lowestoft this is still more conveniently done, on account of the railway coming down to the quay of the excellent new harbour; the fish-train starts every evening, in time to accommodate Billingsgate next morning. The dealers of course send their store to the best markets they can find; and Billingsgate is at most times the best. This refers to the fresh fish; but the Yarmouth herring-boat owners are for the most part herring-curers also: they prepare the famous

'Yarmouth bloaters,' which come to the metropolis in such prodigious quantities. The fresh herrings are in the first instance stored in sheds; and then they are converted either into 'bloaters' or into 'dried herrings': the former for home consumption; the latter for sale to catholic countries, where they are largely eaten on fish-days. The herrings that are to be dried are kept in salt for ten or twelve days, then hung upon spits in the drying-house, which is heated by large oak logs; and after thus hanging for a week or a fortnight, they are ready for packing. But the more delicate 'bloater' is otherwise treated; a little salting and a little drying suffice; for the bloaters are frequently packed within twenty-four hours after the fish were taken out of the water.

The Yarmouth arithmetic is very strange, in the numbering of fish: 4 herrings make a 'warp;' 33 warps, or 132 herrings, make a 'hundred;' and 100 hundreds, or 13,200, make a 'last.' Practically the fishermen and salesmen do not count a last; for they employ a basket called a 'swill,' which will contain just about 5 long hundreds (660) average herrings; and 20 of these basketsfull are deemed to make a last.

But let us hasten to Billingsgate, and witness the animated, busy, exciting scene there exhibited.

Former pages of this volume have contained notices of various attempts to establish a fish-market in rivalry to Billingsgate. Queenhithe was such a rival during many reigns; but it is now wholly given up to commodities of other kinds. Hungerford, an attempt of recent days, has undergone some curious modi-

fications. The old market, belonging to the Hungerford family, was established in the seventeenth century; but the present structure was built in 1831. A resolute attempt was made, shortly after the opening of the new building, to establish a wholesale fish-market; but this utterly failed; and the Hungerford fishmongers obtain their supply from Billingsgate, as do the fishmongers elsewhere. The central area, at first intended for the wholesale fish-trade, is now covered over by a sort of music-hall or exhibition-room; many of the shops are occupied by venders of penny ices, photographs and miniatures, frames and prints; while the avenues of the market itself are traversed rather by steam-boat and bridge passengers than by persons whose direct object is marketing.

Billingsgate, the undoubted and 'only original' Billingsgate, has been rebuilt within the last few years. Formerly it was a group of sheds and stalls, accumulated — no one knew how. The extension of business led to an extension of premises; until the sheds and the people became so crowded that the prosecution of business met with much obstruction. At length a new market was built, partially opened in time for 'oyster-day,' in August 1852, and finished soon afterwards. The structure is of red brick, and is a somewhat novel and pleasing specimen of the Italian style. There is a central tower, which serves at once as a clock-tower and a ventilating shaft. The market itself is divided into two stories, one above another; the upper one, on a level with the street, is for the ordinary kinds of fish; while the lower story is the market for shell-fish.

Large as the market is, when compared with old Billingsgate, it will be yet larger when the lease of certain dilapidated premises adjoining terminates. Mr. Billing, the able architect of the structure, has contrived to obtain much additional space by making a stone river-wall, and levelling the surface from thence to Thames Street. The lower market is lighted by two large galleried openings from the upper; and the upper market is itself so divided that the northern part is chiefly appropriated to the dried fish-dealers. The roof is formed of semi-circular bays of corrugated iron, supported by iron pillars, and lighted by thick rough glass. The river-front presents an arcade of seven round-top arches, supported on iron columns; over the centre arch is the clock-tower, and over the remaining arches are the offices of the clerk of the market, &c. For purposes of ventilation an air-chamber has been constructed by Mr. Bessimer, containing two of his revolving pump-discs; these draw out the air from the lower vaults and market by suction, and propel it up the air-shaft enclosed within the clock-tower; by which contrivance it is said that 50,000 cubic feet of contaminated air can be expelled in a minute. For the supply of water there are two filters placed near the bed of the Thames, through which 70,000 or 80,000 gallons of water can pass in an hour; as much is drawn up, by a centrifugal pump, as will suffice for washing fish, washing hands, washing the market, and keeping everything neat and clean — a quantity which, if supplied by the water companies, would be charged at something like 4000*l.* per annum. When, finally, we

add that the whole space is brilliantly lighted with gas on dark mornings, it will be apparent that the new Billingsgate is an excellent market, highly creditable to those who have planned and executed the various arrangements, and who were required to effect so much in a little space.

At this market, then, is bought and sold nearly all the fish eaten by two millions and a half of persons. Nay, more, large quantities of fish are transmitted from Billingsgate to the country districts for retail sale; and this still further enlarges the circle of operations.

Salesmen, fishmongers, bummarees, porters, street-hawkers — all have their peculiar characteristics, as relating to Billingsgate.

First, for the salesmen. There is a tradition of a Billingsgate salesman having retired with a fortune of a quarter of a million sterling; but be this as it may, there are doubtless some warm purses among them, in despite of the 'very ancient and fishlike smell' that they have to endure. They succeed, son after father, to the same stalls, which thence come to be regarded as a kind of family heirloom. They are not fish-catchers, fish-owners, or fish-buyers; they simply sell fish, and receive a small per-centage for so doing. The system is analogous to that observed at the cattle and dead-meat markets, and is attended with similar advantage to all parties. The Billingsgate salesmen receive consignments of fish from the various owners, and exercise their own judgment as to prices demanded; if they ask too low, they injure their clients; if their demands be too high, the sale may slacken, and the fish remain on

hand too long; and the salesmen watch attentively every circumstance likely to occasion fluctuations in the state of the market. Some confine their attention chiefly to trawl-fish, to salmon, to cod, to herrings, to shrimps, or to lobsters; while others attend equally to all kinds. Some are salesmen on a large scale, who supply the first-class fishmongers; others, of humbler rank, look rather for customers among the street-dealers.

The 'bummarees' are in possession of a mysterious designation; no one seems to know the origin of such a strange name. Be the meaning what it may, however, the bummarees are speculative dealers, who buy largely of the salesmen, and sell in smaller quantities to the fishmongers. There is an element of hazard in their trade; for there is no certainty that the purchase which they have made at an early hour in the morning will go off briskly at an enhanced price: indeed many of the market arrangements in regard of fish are influenced by the singular precariousness in the supply. In the dealings between bummarees, salesmen, fishmongers, and hawkers, much technical gibberish is employed; the stock-broker talks of 'contango' and 'back'ardation' in a manner only to be understood by one of his craft; and something of the kind is observable in most fraternities, who do not choose that 'outsiders' should know more than is necessary; thus the Billingsgate dealers had, in past years — and perhaps yet have — a knack of applying words wrong end foremost, to form a new lingo: using *flah* for half, *eno* for one, *owt* for two, *dnuop* for pound, and so forth.

The porters are also a peculiar body at Billingsgate.

Two of the 'vested interests' in the metropolis are the fellowship-porters and the ticket-porters; the former, so far as concerns Billingsgate, claim the privilege of bringing from the ships all fish to be sold by tale or measure: they employ 'foreigners' or non-freemen as assistants, at (of course) a lower rate of remuneration; whereas the ticket-porters bring in the dry fish, mostly from the waggons ranged along in Thames Street.

At an hour when London is fast asleep, and when half a million fires have not yet begun to vomit forth their smoke into the unfortunate atmosphere, Billingsgate is alive and busy. Fishing vessels and railway vans arrive as near the spot as possible by five o'clock, to catch the prime of the market. The salesmen place themselves at their stalls; the porters bring in the fish, brushing ruthlessly past any idle lookers on; and the fishmongers arrive. All the best fish are displayed and sold first. The bargains are soon made; for both salesmen and shopkeepers contrive to ascertain the state of the market; and the fishmongers carry away their purchases in the carts which, for want of sufficient accommodation, blockade Fish Street Hill as far up as Gracechurch Street. Perhaps no other place in the world exhibits so great a variety of fine fish at one time as Billingsgate in early morn; but vast as is the quantity, it speedily disappears, the best kinds first and then the second best; insomuch that, by the time the City merchants have commenced business, the Billingsgate salesmen have nearly ended their day's labour. The sprat season is one of especial excitement: it is 'high change' with the fustian-jackets; for, probably,

ninety-nine hundredths of all the sprats are bought by street-dealers. The sprat-vessels draw up as near to Billingsgate quay as is practicable; boards and gang-ways are laid down, and incessant streams of people flow to and fro: the sprats, at a busy time, are not brought up to the market, for the buyers go to the vessel, and there make their purchases. It is no exaggeration to say that five hundred of these persons may be seen thus engaged at one time; and the eager earnestness of countenance shows that the transactions are to them matters of commerce, of profit or loss. Baskets of all shapes and sizes, laden with glittering sprats, are brought ashore, sometimes by the itinerant dealers themselves, sometimes by porters who earn a halfpenny or so for their services. Another turmoil, of somewhat similar kind, is exhibited at the height of the oyster season.

Such is the animated picture presented by Billingsgate during its hours of business. The fish, as may well be supposed, come from widely-separated sources. There is salmon from the Tweed, the Tay, the Forth, the Clyde, the Dee, the Don, the Spey, the Ness, the Linn; there is cod from Holland, from Norway, from the Yarmouth coast; there are brill, turbot, halibut, sole, plaice, haddock, whiting, and skate, all trawl-fish (caught by the trawl-net), and brought from nearly the same waters as the cod; there are mackerel from Devon and Cornwall, eels from Holland, oysters from the Thames and the Channel Islands, lobsters from the coasts of Scotland and Norway, crabs from the south coast, shrimps from the Thames and Boston.

But it is becoming more than ever difficult to define the localities whence particular kinds of fish are brought; for, as improved means of rapid transit are provided, portions of our coast fisheries become available for the London market, which until lately were virtually excluded. The rail, in this, as in so many other circumstances, almost annihilates distance.

The present regulations of Billingsgate market are mainly determined by an Act passed in 1846, designating it a free and open market both for the wholesale and the retail trade in fish. The City authorities are, by this Act, confirmed in their ancient control over the market. Every fishing-vessel passing the Nore, with fish intended for Billingsgate, pays a customs' toll, of which a part is presented to the Marine Society; the tolls depend in amount partly on the size and kind of vessel, and partly on the kind of fish. The various designations of peter-boat, small boat, wherry, skiff, hatch-boat, great boat, smack, lighter, barge, lug-boat, and cock-boat, are given to the vessels that bring the fish: the toll per vessel varying from 6*d.* to 5*s.*; an oyster-boat pays 2*d.* per day groundage, $\frac{1}{2}d.$ per bushel metage, and 13*d.* per voyage; while the vehicles bringing fish from the railway termini pay 1*s.* or 1*s.* 6*d.* according to the number of horses.

Besides these tolls levied on the vessels or vehicles there are others depending on the privilege of using the market. There are wholesale stands, with the use of a table and gas; there are retail stands and casual stands; there are planks and ladders to lay down from

the vessels to the quay; and there are sheds for mussel and other shell-fish. A rental of 3*s.* to 9*s.* per week is paid for the principal stands; 6*d.* to 1*s.* per day for casual stands and sheds; and 5*d.* to 1*s.* for the use of planks and ladders in landing a boat-load of fish.

Nearly half the fish-supply for London now reaches Billingsgate by rail. The Eastern Counties is the great fish line, owing to its connection with the Yarmouth district; but the Great Northern, the North Western, the Great Western, the South Western, the Brighton, all bring up their thousands of tons annually. There may be seen, in early morn, fifty or sixty railway fish-vans, drawn by two or four horses each, marshalled along in Thames Street, blocking up the already too narrow thoroughfare, and shedding forth their barrels, boxes, and baskets of finny prisoners. So far as the boats and vessels are concerned, salmon are brought to Billingsgate in boxes, soles in hampers called pads and pots, oysters in bulk, cockles and periwinkles in sacks, haddock in baskets, cod in hatch-boats, mackerel in pads; but the requirements of land conveyance lead to modifications in some of these particulars. Lately the value of screw steamers in the conveyance of fish has become so evident, that the lobster trade has assumed remarkable features; screw-propellers have been fitted into deep-welled fishing-smacks, which have been known to bring twenty thousand lobsters in one cargo, without any deaths; whereas a slower conveyance is generally attended by some loss in this particular. A sum of 1300*l.*, it may here be remarked, has been spent upon

a lobster-ground near Southampton, where lobsters, brought from the coasts of Brittany and Ireland, are kept for several weeks, to the number of 70,000 at a time, and fattened on fish. Salmon are occasionally brought to London from the furthermost coasts of Scotland, and cod from distant parts of the German Ocean, by screw steamers; some of the northern fish are brought only to Grimsby by steamers, and thence to London by the Great Northern railway. The Barking fishermen, who are the principal of those that supply Billingsgate, keep vast storehouses of ice; they send out this ice to the deep-sea fisheries, to keep the fish cool while in the vessels; and they have a relay of swift vessels to bring the fish to land.

The South Eastern railway, though not remarkable for the quantity of fish brought by its trains to London, illustrates one among many modes in which commerce carves out its own line of procedure. Of course the quantity, on all railways and in all districts, depends greatly on the season: thus, in June 1855, there were about 24,000 baskets of fish, weighing 670 tons, brought to London on that line,—far more than in any earlier month in the year; but the fishermen and the railway people contrive to know beforehand something concerning the probabilities of the case. Certain fish make their appearance in a shoal off the north of Scotland, some days afterwards they are found off Yarmouth, and still later they appear off Ramsgate and Dover; the fishermen off the Foreland, therefore, when they hear of a shoal far up in the north, look out for a good haul after a certain interval; and the railway folk prepare accordingly.

A convenient classification of fish — convenient in a commercial rather than a scientific sense — is into Wet, Dry, and Shell-fish, of which the following are about two dozen kinds: —

	WET FISH.	
Herring.	Whiting.	Eels.
Plaice.	Cod.	Flounders.
Soles.	Sprat.	Turbot.
Mackerel.	Salmon.	Haddock.
	DRY FISH.	
Haddock.	Cod.	Sprat.
Bloater.	Herring.	Salmon.
	SHELL-FISH.	
Oysters.	Cockles.	Lobsters.
Periwinckles.	Shrimps.	Crabs.
Mussels.	Whelks.	Crawfish.

But a matter more immediately interesting than the mere classification of fish, is the available quantity at any given time. How much fish is sold in a year at Billingsgate? Many estimates have been made on this subject. Mr. Mayhew, in 1849, gave the following (in the 'Morning Chronicle') as one year's sale of fish at Billingsgate: —

Salmon - -	29,000 boxes, 7 in a box.
Cod, live - -	400,000, averaging 10 lbs. each.
„ barrelled - -	15,000 barrels, 50 to a barrel.
„ salt - -	1,600,000, averaging 5 lbs. each.
Haddock - -	2,470,000, at 2 lbs. each.
„ smoked -	65,000 barrels, 300 in a barrel.
Soles - - -	97,520,000, at $\frac{1}{4}$ lb. each.
Mackerel - -	23,620,000, at 1 lb. each
Herrings - -	250,000 barrels, at 150 each.
„ red - -	100,000 barrels, at 500 each.
„ bloaters -	265,000 baskets, at 150 each.
Eels - - -	9,800,000, at 6 to 1 lb.
Whiting - -	17,920,000, at 6 oz. each.

Plaice - - -	36,600,000, at 1 lb. each.
Turbot - -	800,000, at 7 lbs. each.
Brill, Mullet - -	1,220,000, at 3 lbs. each.
Oysters - -	500,000,000, at 400 to a peck.
Crabs - - -	600,000.
Lobsters - -	1,200,000.
Prawns - -	12 tons, at 120 to 1 lb.
Shrimps - -	192,295 gallons, at 320 to a pint.

Mr. Braithwaite Poole gives an elaborate table differently arranged: —

Description.	Number.	Tons.	Value.
Wet Fish.	Millions.		£
Herrings, in bulk - -	1050	112,500	1,050,000
„ 250,000 barrels -	175	18,750	175,000
Plaice, 1 lb. each - -	34	15,000	90,000
Soles, ¼ lb. each - -	98	12,000	20,000
Mackerel, 1 lb. each -	24	10,500	130,000
Whiting, 6 oz. each -	18	3,000	9,000
Cod, 10 lbs. each - -	0½	1,785	5,000
Sprats - - -	?	1,780	12,000
Salmon, 29,000 boxes -	0½	1,555	124,000
Eels - - -	10	730	26,800
Flounders - - -	0¼	20	100
Dabs - - -	0¼	21	100
Haddock, 2 lbs. each -	2½	2,250	30,000
Dry Fish.			
Haddock, 65,000 barrels -	20	4,873	20,000
Bloaters, 265,000 baskets -	147	4,732	75,000
Cod, 5 lbs. each - -	1⅓	3,571	4,000
„ 15,000 barrels -	0¾	1,875	3,000
Herrings, 100,000 barrels -	50	625	25,000
Sprats, 9,600 bundles -	0¼	42	3,000
Shell-fish.			
Oysters, 309,935 barrels -	496	31,000	125,000
Periwinkles, 76,000 baskets	304	1,900	15,000
Mussels, 50,400 baskets -	50	1,260	4,000
Shrimps, 192,295 gallons -	498	875	6,000
Cockles, 32,400 bushels -	69	810	3,000
Whelks, 24,300 bushels -	5	608	2,500
Lobsters - - -	1¼	535	30,000
Crabs - - -	0½	262	7,500

In the above table we have swept away a large array of figures in the column of 'numbers,' by approximating to the nearest quarter of a million. Mr. Poole does not venture to estimate the number of sprats; but, omitting those, we have a stupendous total of 3000 millions of fish, weighing 230,000 tons, and valued at about 2,000,000*l.*

One computer estimates that the fish sold at Billingsgate bring, one with another, about 2½*d.* per lb. But a puzzling embarrassment presents itself here — how about the oyster shells? If the oysters weigh 31,000 tons, the shells must present a formidable item in this account. According to Mr. Poole's list the fish — oyster-shells, mussel-shells, cockle-shells, winkle-shells, and all included — bring rather less than a penny a pound; if the shell-fish be omitted altogether, Mr. Poole's entries still give less than a penny a pound for the remainder. The above refers not to the retail prices but to the prices obtained, first hand, by the salesmen: what may be the profit made by the various dealers is a trade secret.

It is worthy of note, however, as a commentary on all such estimates, that Mr. Goldham, clerk of Billingsgate, is himself quite without means of knowing the quantity of fish sold at that market. The rates and tolls are not charged according to the weight of fish, as was lately explained; and he possesses no record of quantities. Unless all the salesmen were candidly to announce each the exact amount of business transacted by him, it is difficult to see how a correct aggregate could be arrived at; for even if the railway

arrivals were added up, there would still he the indefinite quantities which arrive by ship or boat, and the owners of which are — no one knows whom, except the salesmen. Guess-work, it appears, must suffice at present.

Whatever may be the recognised seasons for fish, the quantities brought to market fluctuate to a degree quite beyond all control: whether the supply be deficient or in excess, seems to be a matter wherein the dealers are wholly at the mercy of the seas and rivers.. Sometimes the supply is so scarce as to drive up prices to an inordinate amount. As much as four guineas has been known to be given for a lobster; there was only one to be had at a particular time and place, and as two epicures longed for it to make lobster-sauce, they purchased and divided it between them. It is recorded that in May, 1807, the first cargo of mackerel on a particular morning brought forty guineas at Billingsgate, being equivalent to seven shillings each; the next cargo, coming when the wealthy buyers had been supplied, was sold at the rate of two shillings each; but the later cargoes speedily sank to an ordinary rate. Hence there were wonderful exertions made to be 'first in the market,' to obtain the crack prices. On the other hand, soles have been sold at Billingsgate at 3 lbs. per penny. At some of the fishing-ports, the glut of a particular fish at a particular time is occasionally such that the fishermen scarcely know how to dispose of their treasures; mackerel have been hawked about Dover at five for a penny; and on one fishing night off the Brighton coast the mackerel swarmed into the nets in such countless myriads that fish, nets and all, fairly

went to the bottom. Mackerel are sometimes very abundant in London in the summer; and a curious inquiry arose out of this abundance, in July, 1855. As many as 1,200,000 mackerel arrived at Billingsgate on a Sunday morning, for several weeks in succession. What were the salesmen to do? The market is closed by law on Sundays; and yet the fish would spoil if kept till Monday. The salesmen held fish-auctions in Love Lane and Billingsgate Alley, and disposed of the mackerel chiefly to hawkers; the police authorities interfered; but the matter was compromised by the salesmen undertaking to clear off all their store before nine o'clock in the morning.

The fish ordinarily eaten vary greatly in the amount of nutriment contained. MM. Payen and Wood lately made an investigation * into this matter. They found that in 100 lbs. of eels there are 63 lbs. of oily or fatty matter; that in cod there is only 1 lb. to the 100 lbs., and that the other common kinds of fish occupy medium positions in respect to the fatty quality; herrings come next to eels, and skate to cod; nearly nine tenths of the live weight of barbel and skate consist of water. Oily or watery, however, the finny tribe present a beautiful appearance while their freshness is yet upon them. "It would gladden the heart of a Dutch painter," says the Quarterly Reviewer †, in relation to the appearance of the fish at Billingsgate, "to see the piled produce of a dozen different seas glittering with silver and brilliant with colours. Gigantic salmon, fresh caught from firths and bays of Scotland, or from the productive Irish

* Comptes Rendus, Aug. 1854. † No. cxc.

seas, flounder about, as the boxes they have travelled in disgorge them upon the board. Quantities of delicate red mullet, that have been hurried up by the Great Western, all the way from Cornwall, for the purpose of being furnished fresh to the fastidious palates at the West-end; smelts brought by the Dutch boats, their delicate skins varying in hue like an opal as you pass; pyramids of lobsters, a moving mass of spiteful claws and restless feelers, savage at their late abduction from some Norwegian fiord; great heaps of pinky shrimps; turbots that lately fattened upon the Doggerbank, with their white bellies bent as for some tremendous leap; and humbler plaice and dabs from our own craft, — all this bountiful accumulation forms a mingled scene of strange forms and vivid colours, that no one with an eye to the picturesque can contemplate without interest."

Many of the kinds of fish sold at Billingsgate deserve a few words of separate mention. Such fresh-water fish as plaice, roach, and dace, are said to be purchased chiefly by the Jews. Salmon, as sent to Billingsgate, weigh about 8 lbs. each on an average; about half the Scotch salmon are sent to London, and realise, one season with another, from 9*d.* to 10*d.* per lb.; it is salmon that constitutes most of the fish brought by the North Western railway to the metropolis. Herrings are sold at Billingsgate in enormous quantities: indeed, Yarmouth depends almost wholly on London as a market for its herrings, and will sometimes send up 100 tons per night by the Eastern Counties railway; of the cured herrings, it is estimated that about half the wholesale price is for the fish, and half for the barrel, salt, and

labour of the curers. Lobsters, in hampers containing 1 cwt. to 3 cwt., are more influenced by recent improvements in rapid conveyance than most other fish. We lately spoke of the screw steamers which bring them from the north; there is one particular salesman to whom they are consigned in larger quantity than to any other, and who is said to receive and sell 15,000 sometimes in a single morning; they are sent to boiling-houses in Duck Lane and Love Lane, near the market, and here they are boiled for twenty minutes in huge caldrons, a small charge per score being made for this service. Eels are brought mostly from Holland in clumsy vessels that anchor midway in the river; two of those boats have been known to bring 600 or 700 tons of eels to Billingsgate in a morning.

The oyster trade is especially remarkable in many of its features. Oysters are quite revolutionised as to seasons, owing to the influence of quick transit from distant stations. There was a mid-channel bed discovered a few years ago, between Shoreham and Havre; and it depended on the railways to determine whether these oysters could be rendered available for the London market. The Brighton company solved the problem, by enabling the fishers to transmit the fish at a low rate; there are ponds, or rather embanked portions of the river Adur, near Shoreham, where many of the oysters are washed and kept for a few hours before being sent up to London. The mid-channel oysters are, however, coarse; and although cheap, they cannot compete with the 'natives' in quality. There are oyster-cultivating companies, so to speak, in various places on the banks of

the Thames, and along the south coast; they purchase the 'spat,' or fecundated sperm of the oyster, which is kept in pits; and this they carefully develope on beds or oyster-nurseries. The 'native' oyster may thus really be considered as a cultivated product. There is one oyster-fisher, or oyster-bed owner, who sent up 40,000 bushels of oysters in 1853, and paid 800*l.* metage dues to the city for services, or rather ceremonies, which were perfectly useless to him. The same extensive dealer lost many thousand pounds in 1854–5, because in the cholera season of '54 the public distrusted oysters; and in the second place, because the severe cold early in '55 killed millions of his bivalve protégés. One result of the changes in the oyster trade is, that the glories of 'oyster-day' are past: the seasons for this fish have undergone a revolution, and no one can determine when oysters are really 'out.' A curious novelty in the oyster-trade was established at Southampton a few years ago; there is a wide margin of muddy shore near the town, a part of which was leased by an oyster company; the company brought the oysters from the Channel fisheries, fattened them on beds, took them up, opened them, placed them in tin cans without their shells, and sent them up to London by the South Western railway, for the making of sauces and pickles.

Out of so many thousand tons of fish, it of course happens that some are too far decayed to be fitted for use. Unless stringent rules were observed at Billingsgate, a most offensive and disastrous state of things might result; but the inspection is strict and effective. Dr. Pereira states that, in 1841, there were 50,000 plaice,

40,000 mackerel, 28,000 haddocks, 27,000 herrings, 36 bushels of sprats, 1200 lbs. of eels, 5600 large shell-fish, and 173 bushels of small shell-fish, condemned. The bad fish are put into lighters, mixed with gas-tar, and carried off to be sold as manure.

The fish-dealing in the London streets is curious. As may readily be supposed, the finest kinds are bought up by those who supply the wealthier classes, leaving to the humbler dealers the cheap and too often decayed residue. Still their cheapness need not necessarily be accompanied by questionable freshness; for in an abundant season there is plenty for all. Salmon and cod occasionally find their way into the hucksters' baskets, whence they are sold by weight; mussels, cockles, periwinkles, shrimps, and a few other kinds of fish, these hucksters sell by measure; but most kinds are sold by tale — unless, indeed, we except sprats, which are parcelled out in that indefinite quantity called a 'plateful.' That the scales, the weights, and the measures of these itinerant fish-dealers will bear scrutiny, is more than can safely be asserted. One dealer carries his whole stock in trade upon his head; another shares with a companion the burden of carrying a basket by the two ends; a third rises to the dignity of a wheelbarrow; while a fourth has a veritable donkey-cart, and relies upon the profit of his business to support both his donkey and himself. Many of these dealers borrow their baskets, barrows, trucks, and carts, paying a rent which, though small per day, amounts to an enormous rate of interest on the value of the articles borrowed. Some, indeed, are so poor that they borrow the money

wherewith to buy their fish at Billingsgate, paying for this also a most usurious rate of interest.

The hucksters or stall-keepers — those who have the privilege of trading rent-free — although they wait until the regular fishmongers have made their purchases, do nevertheless carry off an amazing quantity of fish. There was a rough estimate made a few years ago, that, of the whole Billingsgate supply, one-third is bought by the London fishmongers, one-third by the London hucksters, and one-third sent into the country. Be this as it may, the hucksters, in whatever part of the metropolis they may reside, soon learn when a glut of fish occurs at Billingsgate; there is some sort of conventional telegraphic system among them, whereby the news is disseminated with wonderful celerity; and the apple-woman may become a fish-woman; for many of these street-dealers impartially share their favours between Covent Garden and Billingsgate, according as fruit or fish happen to be most cheap and abundant. The 'half-penny steamers,' from London Bridge to the Adelphi, are much patronised by these fish-people, who find that the halfpenny is well laid out in the saving of time, strength, and shoe-leather.

The specimens of the fair sex engaged in the Billingsgate trade have had a peculiar and long-enduring reputation,—language and persons strong rather than elegant. We may learn from Lupton that they were notable dames more than two hundred years ago: — "These crying, wandering, and travelling creatures carry their shops on their heads; and their storehouse is ordinarily Billingsgate or the bridge-foot, and their habitation

Turnagain Lane. They set up every morning their trade afresh. They are easily set up and furnished, get something, and spend it jovially and merrily. Five shillings, a basket, and a good cry, is a large stock for one of them. They are merriest when all their ware is gone. In the morning they delight to have their shop full; at even they desire to have it empty. Their shop's but little, some two yards' compass!" *

But has not the march of intellect touched the fish-wives? Are they not a shade less scurrilous than in times of yore?

* Country and City Carbonaded, 1632

CHAPTER X.

COVENT GARDEN: FRUITS AND VEGETABLES.

No important Vegetable Market in London before Covent Garden. — Gradual Establishment of this Market on the Site of the old Convent Garden at Westminster. — Rebuilding of the Market in 1827. — Sources of the Vegetable Supply for London. — Market-Gardens around the Metropolis. — Distant Sources of some of the Supplies. — Supply of Fruit. — Remarkable Nature of the Strawberry Trade. — The Fruit Avenue at Covent Garden. — Daily Routine of Trade. — Vegetables and Fruit at Spitalfields, Borough, Farringdon, Hungerford, and Portman Markets. — Probable Quantities of Vegetables and Fruit consumed in London. — Importance of Steamers and Railways in expediting the Supply. — Increased Supply of Foreign Fruit in London. — Electric Telegraph and the Market People.

Subordinate as may be the produce of the garden, compared with that of the farm or the fold; secondary as may be the value of such produce on the tables of the metropolis — there is nevertheless much that is indispensably necessary, much that is of unquestioned importance, and much employment of skill, experience, capital, and labour, in the supply of London with vegetables and fruit. One computer has ventured to surmise that there are 50,000 persons always employed in growing, or carrying, or selling fruit and vegetables for London consumption; but this seems excessive. Our green fields are departing; our trees and shrubs, herbs and wild flowers, are being swallowed up in the wilderness of new streets and squares exhibited by

the metropolis on all sides; and were it not for the market-gardens, the suburbs would be still more wearisome. The grounds about Fulham, Hammersmith, Putney, Mortlake, Battersea, Mitcham, Deptford, render this service, in warding off for a time the approach of the builders. But only for a time: building-societies are bidding for these plots of land; and railways are bringing up vegetables and fruit from distant counties; insomuch that we are perhaps destined to lose our suburban market-gardens ere long.

Little was said in the Historical Sketch concerning the sale of fruit and vegetables in London in early times; for the arrangements to this end were much scattered, and barely subjected to any system or organisation. When one bridge only spanned the Thames in or near London, the market for vegetable food, as well as for live-stock, would naturally be established within a moderate distance of that bridge; and thus it happened that the chief depôts for vegetable produce were in the City. The Stocks market and Honey Lane market were for many generations the chief of these localities. When the former of these, preparatory to numerous street improvements, was removed, two other markets gradually became established — one in Spitalfields for the east end, and one in Covent Garden for the west. There appears to have been no formal establishment of Covent Garden market, at a particular time by a particular authority; it resulted from casual grouping of market people in an open space. Persons interested in the maintenance of a vegetable market in the city complained of the effect produced by the formation of

Spitalfields and Covent Garden markets, and advocated the establishment of a new market near Dowgate. When Westminster bridge was opened, in 1750, thus affording a second channel of communication over the Thames, the utility of Covent Garden market was increased. Where once was the Stocks market is now the Mansion house; where the Honey Lane market was once located, is now the City of London School; and since those removals, the City has never had a vegetable market equal to that at Covent Garden.

Few of our market-places link the present with the memory of the past so fully as the Convent Garden market — for Convent Garden it was, before men clipped it and shortened it to Covent. The open area was once a garden belonging to the monks of Westminster Abbey; the ground is known to have been thus appropriated as far back as the year 1222; and there has probably never been a week, during a period of six centuries and a half, in which this plot of ground did not contain fruit, flowers, and vegetables — first as a garden, and then as a market. In the time of Queen Elizabeth, the (former) Convent Garden was a walled space, very much larger than the present market; extending from Drury Lane on the east to St. Martin's Lane on the west, and from open meadows on the north to Bedford House on the south. This house, the town-residence of the lordly family of Russell, occupied a part of the ground now constituting Southampton Street. The open space thus marked out comprised fields and gardens, with rows of trees, and a few buildings. The change of destination in this open space

occurred at the time of the Reformation, when the Convent Garden, as well as a field called the Long Acre, were taken from the monks of Westminster, and given to the Duke of Somerset; on whose attainder they passed into the possession of the Earl of Bedford in 1552. It was this earl who built Bedford House, standing until the year 1704. One of his descendants, in the seventeenth century, in spite of prohibitions against the undue extension of London, planned large building arrangements on the then wide-spreading Convent Garden. The north side of the present market, with its Italian-looking arcades (misnamed piazzas), was built after the designs of Inigo Jones, and formed part of a plan intended to be of much magnificence; with the exception of the northern, and one half of the eastern sides, the boundary of Covent Garden was finished in a much inferior style; while King Street, Charles Street, Henrietta Street, Russell Street, &c., were built on other portions of the old Convent Garden.

At the period when the marginal portions of the old garden were thus covered with straight streets of new houses, the central area or square was enclosed by rails, and had a sun-dial in the middle. The south side of the area alone, between the enclosure and the garden of Bedford House, was used as a market for fruit and vegetables. When Tavistock and York and Southampton Streets were built, at a somewhat later date, the market-people were driven nearer to the centre of the enclosure; this offended the aristocratic dwellers on the north side, who one by one left; their deserted mansions became occupied mostly as hotels; and to this

day the Covent Garden hotels constitute a distinguishing feature in the locality. The market grew and grew, in area and in importance; but it did not grow in cleanliness or comfort. Until within the last quarter of a century it was very unsightly and incommodious; the sheds and wooden structures were in ruinous condition; the filth and disorder were terrible; and the reckless character of the market-people was rendered still more reckless by the total neglect of all means of conducing to their comfort and orderly management. The Earls and Dukes of Bedford have for three centuries been the owners of the site; and public opinion, as well as private interest, impelled the noble member of the house of Russell who was Duke in 1827 to make important changes: he obtained an Act of Parliament to empower him to rebuild the market; and by degrees the structure now presenting itself to view was reared.

The buildings of the present market, as is known to most persons at all familiar with London, occupy the centre of the quadrangle: a wide space being left between these buildings and the houses bounding the whole area. There are three piles of structure running east and west, connected only at the eastern end: the central pile consisting of a double row of shops, with a covered walk or avenue; while the two outer piles have colonnades on the north and south. The central pile contains the shops in which the choicest fruits and flowers are exposed for sale; the central avenue is the favourite lounge of those who would see the wonders and costly rarities of the market; while the lateral piles are occupied chiefly by the shops wherein vegetables,

herbs, and seeds are sold. There are two open courts between the ranges or piles of buildings, crowded during market hours with green produce and the buyers and sellers whom that produce brings to the spot. Nearly the whole area is excavated beneath, to form vaults and cellars wherein produce may be warehoused or kept for a time: some of these underground places being provided with all the conveniences for washing potatoes. The blessing of a plentiful supply of water is ensured by means of an artesian well, sunk to a depth of about three hundred feet; and this supply, aided by a well arranged system enforced by the clerk or agent maintains Covent Garden market in an admirable condition as to cleanliness. At the east end of the buildings is a terrace raised on columns; it is occupied partly as a promenade, and partly by two conservatories.

The fruit and vegetable dealers in the shops apply the names 'centre row,' 'fruit-market,' 'long-market,' 'north row,' 'south row,' and 'square market' to the several groups of buildings; but the peculiar characteristics of the market are better exemplified in the open-air dealings than in the shop-dealings. Without any very precise regulations tending thereto, the area of the market has gradually become appropriated in certain divisions, convenient for buyers and sellers. There are, for instance, fruit-stands, flower-stands, potato-stands, yearly pitching stands, yearly cart-stands, and casual cart-stands. The fruit-stands or stalls are congregated chiefly about the north-eastern portion of the quadrangular cluster of buildings; and, for retail sales of choice fruits, in the central avenue, which,

especially near the western end, is the flower-market also; subsidiary to this are the conservatories at the eastern end of the buildings. The potato-stands are on either side of the central avenue, but chiefly the southern. The yearly pitching stands are plots of ground, exterior to the cluster of buildings, for which an annual rental per square foot is paid; and the yearly cart-stands are of similar character. The casual cart-stands are hired at a daily rental. The rents, tolls, and dues are definite and well understood between those immediately concerned. At the fruit-stands, besides a small rental for space, there is a toll per sieve, bushel, head-load, sack, chest, box, or score, according to the nature of the packages of fruit exposed for sale. The flower-dealers in like manner pay a rental for space, and a toll per waggon-load, cart-load, head-load, basket, or dozen roots, of flowers. The potato-dealers, besides rent, pay a certain toll per sack or per ton, according to the quantity; and so of the others. So completely does this obtain the lead before all other vegetable and fruit markets in the metropolis, that the property will doubt less become more and more valuable as years roll on; for there will arise a more eager competition for the space and facilities afforded by the market. Unquestionably it was capital well invested, when the present market replaced the dirty, dingy, dilapidated, unsightly, unhealthy, inconvenient bundle of sheds and stalls that constituted the older market,—a market which had grown up, no one knew how, or when, or by what authority.

A question that early presents itself to the notice of an observer who attentively watches the arrivals at

Covent Garden market is—whence are the supplies obtained? And another question is, what is the value of these supplies? Towards the close of the last century, Middleton, in his 'Agricultural Survey of Middlesex,' set down the London consumption of vegetables at an average annual value of somewhat over one million sterling; of which about two-fifths was for fruit. This was not the amount of the consumers' payments, but of the growers' receipts; consequently all the profits of wholesale and retail dealers would have to be added to the above sum; and as the ratio between the grower's price and the retailer's price varies extremely, according to the fluctuating state of the market, very little inference can be drawn from Middleton's estimate.

That the London supply has been obtained from a wide-spreading belt of suburban country during a period of at least a hundred and forty years, is well shown in Steele's pleasant paper in the 'Spectator,' from which an extract was given in the Historical Sketch. In all probability, the extent of market-garden required for the supply of London has never been equalled at any other time or place. What are we to think when told that there are pea-salesmen at Covent Garden whose business is almost wholly confined, during the season, to managing the sales of peas for country growers; that one grower will sometimes send to one salesman in a single day five or six thousand pecks of peas; that he will supply daily seven or eight waggon-loads of cabbages, each comprising a hundred and fifty dozen; at

another time fifteen hundred baskets of cabbage-sprouts in a day; while the same grower will transmit five or six thousand tons of potatoes in a year?

One of the market-gardens at Fulham has often been adduced as an example of the wonderful completeness of the arrangements for supplying London with vegetables. Such a course of activity as a piece of ground here goes through meets with no parallel except in the vicinity of large towns. Towards the close of October, cabbages are planted out; in November, when these are off, the land is trenched and cropped with early celery, rows of lettuce or colewort being interposed between the rows of celery; when the celery is removed, the ground is cropped with winter greens, which form a speedy and profitable crop for the London market; by the beginning of March the colewort is cleared off, and is speedily replaced by onions; when the onions are gathered, more cabbage or colewort is put in; and then come cauliflowers, gherkin cucumbers, French beans, or scarlet runners. So the gardener proceeds, never allowing his ground to remain idle for a single day, and acting upon the well-assured maxim that the enormous expense of manure and labour will be more than repaid by the enormous returns per acre per annum. It is said that, in the month of November, this garden contains more than twenty acres of London greens: every hole and corner under trees, and every bit of spare space, being filled with them. There are fifty acres of apple, pear, and plum plantations; the trees are pruned after the manner of currant bushes; and the ground under them is cropped with rhubarb, currants, and gooseberries in summer,

and with colewort and cabbages in winter. That the rental should be high, may be easily understood; for the soil must necessarily be of rich quality; and the land-owner would be tempted to convert his estate into building-land in such a locality, unless paid a high rental for it as market-garden ground.

There is a sort of conventional distribution of produce among the suburban gardens; thus we hear of the onion-gardens of Deptford, the cabbage-gardens of Battersea, the asparagus-gardens of Mortlake, the celery-gardens of Chelsea, the pea-gardens of Charlton, the potato-fields of Dagenham, &c.; but the truth is that distant counties now compete with all these gardens and gardeners, being enabled so to do by railway facilities. Peas, asparagus, new potatoes, are thus brought, to the advantage of the London consumers, if not of the suburban growers. Some of these growers hold very large tracts of garden-ground; one at Dagenham is said to possess 500 acres; and one of the asparagus-gardens contains 80 acres, devoted to this vegetable alone! Many of the peas grown in Essex are subject to a curious commercial arrangement; a London dealer finds the seed, the Essex grower cultivates the peas, the dealer takes all the crop, and a certain understood payment is made by the dealer to the grower.

Before the railways had begun to bring potatoes to London, there was a rough estimate that the quantity required could not be much less than 3000 tons per week. About half of this supply was obtained from the neighbouring counties, chiefly Kent and Essex; but when prices ranged high, and offered a temptation

to the farmers, waggons would come in laden from more distant counties. Very nearly half the supply reached London by sailing vessels, arriving from the districts on the banks of the Humber, Trent, and Ouse,—districts fertilised by artificial flooding and the deposit of a rich silt. Scotland, Jersey, and Devonshire aided the supply. At certain seasons of the year potato-laden vessels were always to be seen lying off the wharfs at Tooley Street, the great centre of the trade: vessels varying from 50 to 300 tons, according to the distance whence they had come; the potato-salesmen had large warehouses, and the daily arrival and departure of the carts of purchasers caused a busy scene.

About the year 1843, Mr. Platt sought to arrive at something like a fair estimate of the probable quantity of potatoes eaten annually in the metropolis. He adverted to the fact that the Irish Railway Commissioners, a few years before, had estimated the quantity of food consumed by an adult living wholly upon vegetable food at 11 lbs. per day, inclusive of waste, which is very great; the quantity of vegetables consumed by the next class, who enjoy a limited use of other kinds of food, is set down at 2 lbs.; while those who are unrestricted as to the nature of their food consume about 1 lb. of vegetable food daily. "Now, taking the population of London, requiring a supply of potatoes from the market at 1,500,000," says Mr. Platt, "and allowing the consuming powers of a population of 1000 adults and children to be equal to that of 655 adults, we have in the metropolis the full consuming power of 982,250 persons. As so many other vegetables are

used besides potatoes, would it be very far wrong to estimate the consumption at 1 lb. for each adult per day, that is, 3070 tons per week, or say 3000 tons, or 156,000 tons per year?" *

The above is one of that class of estimates derived by an inverse process; we shall presently speak of estimates made in a different way. The potato-trade, it may here be remarked, has undergone a great revolution lately, by the introduction of railways. There have been years in which 1,200,000 sacks of potatoes have been landed at the wharfs in the Tooley Street vicinity; but a new aspect has lately been given to the trade — as was explained in a former page, relating to food-markets at railway-depôts.

The water-cress trade in London, humble as at first it may appear, is in many respects an interesting one. Growing in brooks and on the borders of fresh and running streams, the water-cress may be regarded as a wild plant; but the great demand in London has also made it a cultivated plant. Time was, when Tothill Fields contained water-cress, growing in the marshy hollows of a district now wholly covered with houses. About the beginning of the present century, cress was brought to London in sacks, by stage-coaches running from Newbury and Hungerford in Berkshire — the coachman sharing in the profits derived from the trade. The Great-Western railway is said to bring up a ton a week from the neighbourhood of Cookham and Shrivenham. Many acres of water-meadow have been laid down with cress near Rickmansworth in Hertford-

* Knight's London, No. cix.

shire; and other water-cress grounds are to be met with near Waltham Abbey, and in other directions around the metropolis. But none are so well known to the Londoners as those at Springhead near Gravesend. Who that has enjoyed a steam-boat run down the river is ignorant of Springhead and its water-cresses? The joyous walk across the hay and corn fields on a bright summer's day; the rich ripe fruit in the garden; the cold and transparently-clear rivulet; the water-cress growing in the stream; the arrangements for gathering and sending to market — all are elements in a very pretty picture. At Springhead, as at the other water-cress grounds, the plant requires careful and constant attention, especially in winter; and it is really surprising, when this attention and the cost of carriage have been duly taken into account, that this little adjunct to the tea-table can be sold so cheaply. A round guess has been made that London disposes annually of 15 millions of the 'bunches' in which water-cress is usually tied up, weighing something like 700 or 800 tons.

Well may we be assured that fruit receives its due share of attention at Covent Garden, although vegetables may, commercially and dietetically, be perhaps more important. So far as classification is concerned, the botanists and the market-people do not care much for each other; the two employ different systems of arranging fruits in groups. One mode of grouping is into 'stone,' 'pip,' and 'shell' fruits; the first comprising such as the olive, palm, cherry, apricot, peach, plum; the second consisting of the quince, pear, apple,

lemon, orange, fig, raspberry, strawberry, mulberry, currant, gooseberry, grape; and the third including the almond and the various kinds of nut, such as hazel, Brazil, walnut, chestnut, filbert, pistachio, and so forth. But any such classification is of very little consequence in relation to market arrangements; the point to appreciate is, that London is becoming more and more richly supplied with fruit as means of conveyance improve. It is true that there are many tropical fruits whereof we yet know little in the metropolis, on account of the difficulty of transport; but it is equally true that many, once strangers, are now familiar.

Among the past curiosities of the London markets was the system whereby the metropolis was supplied with strawberries. The supply was chiefly from the neighbourhoods of Isleworth, Brentford, Ealing, Hammersmith, Fulham, and Mortlake, where were nearly a thousand acres of garden ground appropriated to the growing of this fruit for the metropolis. From about the middle of May in each year, the strawberry-trade afforded employment to a large number of women, who assembled in the gardens as soon as daylight appeared, and commenced plucking the fruit; the best fruit was taken to the packing room, and carefully put into pottles; fifty or sixty of these were placed in a larger basket; and before seven o'clock in the morning the women were despatched to the metropolis, each bearing a large basket supported by a cushion on her head. The weight of these laden baskets varied from 30 lbs. to 40 lbs.; and yet those sturdy dames trotted along at an astounding pace — not walking, not running, but a something

between the two, which enabled them to cover five miles within the hour. The skill and address necessary for the retention of the burden in its poised position led the women to adopt a very erect posture; and it is just possible that a young lady, whose stooping gait is regarded as a defect, might have reaped benefit from a short apprenticeship to these strawberry-women. Many of these porteresses migrated from Worcestershire, Shropshire, and Wales; they earned a decent pittance in the metropolis during the strawberry season, and returned home with a little store for the winter. Railways and light spring vans have, however, in modern days, effected changes in this system. The pottles are made by women and girls in some of the Kentish villages, at a penny per dozen.

It is a fragrant treat to walk along the fruit-laden arcade at Covent Garden market; for none of the fruit remains so long as to acquire that sickly odour which marks the first symptoms of decay. All is good, the best of the best kinds; all is abundant; all well kept and well served. The fruiterers know that they can command a sale for their store, be it high-priced or otherwise: there are long purses in London that will command the best of everything, regardless of price. Sir Richard Steele was in love with these shops a century and a half ago; and Mr. Leigh Hunt has been in love with them in our own day; for he says:—"There is great beauty as well as agreeableness in a well-disposed fruiterer's window. Here are the round, piled-up oranges, deepening almost into red, and heavy with juice; the apple with its brown-red cheek, as if it had

slept in the sun; the pear, swelling downwards; thronging grapes, like so many tight little bags of wine; the peach, whose handsome leathern coat strips so finely; the pearly or ruby-like currants, heaped in light long baskets; the red little mouthfuls of strawberries; the large purple plums; cherries, whose old comparison with lips is better than anything new; mulberries, dark and rich with juice, fit to grow over what Homer calls the deep black-watered fountains; the swelling pomp of melons; the rough inexorable-looking cocoa-nut, milky at heart; the elaborate elegance of walnuts; the quaint cashew-nut."*

But indeed Covent Garden market is a place to spend a day in. There are rich fruits for the epicure; there are wholesale vegetables for the family circle; there are large commercial dealings to attract the notice of the merchant; there are rough and homely scenes for the observer of every-day life; there are organised arrangements which show how much can be done in a few hours when good generalship has a hand in it; there are picturesque bits of colour and still-life and moving-life, for the artist; and there is much to call forth a spirit of thankfulness that our busy city can be so amply supplied with wholesome food from the fields and gardens.

An intelligent observer will soon make out a multitude of little facts for himself in Covent Garden market. He will find that on Tuesdays, Thursdays, and Saturdays wholesale markets are held, while the other three days exhibit the characteristics of retail trade; that during the

* The Indicator.

busy market hours carts fill up the whole of the open space from Long Acre on the north to the Strand on the south, from Drury Lane on the east to St. Martin's Lane on the west; that the servants of the salesmen unload the carts, but that hired porters take away the fruit and vegetables when sold; that large shopkeepers purchase first, then cooks and private families, and then costermongers take off all that is left, frequently at very cheap prices; that the porters employed, several hundreds in number, are mostly sturdy Irishwomen, who are registered and badged, and who live in some of the humble courts about Wyld Street and Drury Lane; that the east side of the market is mostly taken up by the Essex people, and the south by those from Surrey; while the northern area, from James Street to the Opera Piazza entrance, is the 'casualty side,' for those who pay for standing-room by the day. He will perchance learn that, in the pea-season, one salesman will keep sixty women constantly employed in shelling peas; that 3000 costermongers are supposed to attend the market in summer, and buy up what no one else will buy; and that in early season, when fruits and vegetables can only be developed by forcing, there are persons in London, having more riches than sense, who will give extravagant prices merely for the pleasure of enjoying that which no one else can afford — such as grapes at 25*s.* per lb., strawberries at 1*s.* per oz., French beans at 3*s.* per hundred, new potatoes at 4*s.* 6*d.* per lb., and peas at two guineas per quart.

No feature connected with a day's business at Covent

Garden is more remarkable than the portering, or carrying of the heavily-laden baskets; women, as we have said, are the chief porters; and sturdy dames they are, who in power of fist and power of tongue would yield to few lords of the creation. The outlying parts of the market, exterior to the buildings, are those best worth visiting, in early morn; when laden waggons, baskets without number, vegetables in incalculable quantity, salesmen, greengrocers, costermongers, and feminine Sampsons, completely fill the open spaces, and a busy hum of voices is heard on all sides. Wonderful is it to think of the power of ordinary commerce in this place. Whether there be or be not an extra supply of any one vegetable on any one morning — off it all goes: the costermongers will buy whatever the greengrocers do not want; insomuch that the afternoon sees the market-place clear and clean, swept and washed, whether the supply have been large or small. What Commissariat department could do the work so well?

As has before been implied, none of the other vegetable markets — Spitalfields, Borough, Farringdon, Hungerford, or Portman — can at all compare with Covent Garden, in the choiceness of quality or the abundance in quality. Nevertheless, they require a brief notice here.

Spitalfields market is perhaps the most important of these five; it lies in the midst of the poorest neighbourhood in London; one consequence is, that the provisions in demand at the market must be almost wholly of a cheap kind. The potato-trade is extensive

here; indeed, one salesman was said, a few years ago, to be able to store 1400 sacks at once on his premises. The market covers a space of three or four hundred feet square, and is occupied in part by unsightly buildings. It is private property, supported by rents and tolls: the stalls and standings being rented, some by salesmen, and some by growers who sell for themselves. Many purchasers obtain their supply of vegetables at this market for the shipping in the Thames; the greengrocers throughout the vast area known as the Tower Hamlets attend here; while the costermongers or street-dealers of the eastern half of the metropolis assemble here in great force. The produce is, as may be supposed, obtained from various quarters, but principally from Middlesex and Essex, brought chiefly by the Eastern Counties railway, the goods' station being near the market; the growers who act as their own salesmen bring their produce mostly in waggons and carts, which are only emptied as the produce is sold. A singular circumstance is recorded in connexion with this market—that any produce brought from Enfield is exempt both from road-tolls and market-tolls; this exemption is traced to the fact that when the metropolis was visited by the plague in 1665, Enfield was almost the only place having the courage to send vegetable supplies to the stricken city; and the toll-exemption is a kind of perpetual reward for this service.

Farringdon market has not had a very bright history. It was formerly held in Farringdon Street, under the name of Fleet market, the stalls and stand-

ings being placed under sheds in the middle of the street; but the Corporation of London, to whom it belonged, removed the market from the open street and built a commodious structure for it between Farringdon Street and Shoe Lane. There are stands for salesmen, and 'pitchings' for other dealers; and the expenses are (or ought to be) defrayed by a rental from these, in addition to a toll on the produce exposed for sale. The green-market, however, is a poor affair, as is the meat-market; for there is generally a melancholy intermingling of closed shops and stalls.

The Borough market, small but busy, is situated near St. Saviour's Church; it supplies the neighbouring greengrocers and fruiterers wholesale, and the humbler inhabitants retail, with all but the choicest kinds of fruits and vegetables. This market is one of the most ancient in the metropolis, having existed nearly three centuries; it was formerly held in the Borough High Street, but was removed to its present locality about a century ago, and is under the control of commissioners, churchwardens, and other inhabitants of St. Saviour's parish. The market having undergone enlargement more than once, to accommodate the increasing trade, now comprises about two hundred stands or stalls. The wholesale market is held on Tuesdays, Thursdays, and Saturdays, but there are retail dealings every day; the wholesale venders pay a yearly and the retail venders a daily rental for the stands.

Hungerford market, in relation to its sale of fruit

and vegetables, is quite insignificant; there are, in fact, only a few retail shops in this trade.

Portman market, situate in a comparatively modern part of the metropolis, owes its existence and prosperity to the necessity for some nearer market than those of older date; it has become a somewhat valuable property to the nobleman from whom it is named, and on whose estate it is situated; the stands are rented chiefly by the growers of market vegetables; but wholesale and retail dealers occupy a few of them.

How much vegetables and fruit the two millions and a half of dwellers in London consume in a year, no one knows, but the quantity must necessarily be enormous. When Mr. Mayhew wrote his account, in 1849, of the London markets in the 'Morning Chronicle,' he gave, among other tables, lists of the good things sold at Covent Garden, Spitalfields, and Farringdon markets. We read of 18 million heads of celery, of 60 million heads of asparagus, of 2 million heads of brocoli and cauliflowers, of 35 million cabbages, of 20 million turnips, of 12 million carrots — all sold at one market in one year. Indeed the millions roll about here most prodigally. And concerning fruit, too, Covent Garden market receives credit for its 360,000 bushels of apples, its 230,000 bushels of pears, its 90,000 bushels of cherries, and as much of plums, its 150,000 bushels of currants, its 600,000 pottles of strawberries, its 1000 tons of filberts. Spitalfields, in like manner, is credited with 50,000 tons of potatoes, 50,000 sacks of peas, 12 million cabbages, 250,000 bushels of apples, and so forth, in long strings of figures. One would almost

imagine, on looking at the formidable array, that Londoners had nought else to do but eat sacks of vegetables and bushels of fruit.

Mr. Braithwaite Poole, from the usages of his office as goods' manager on a great railway, is accustomed to estimate quantities by the ton weight, which sometimes renders it difficult to compare his estimates with those of other authorities. The following remarkable table is given by him as representing the weight of the principal kinds of vegetables sold at the London markets in 1850: —

	Covent Garden.	All other Markets.	Total
	Tons.	Tons.	Tons.
Potatoes - -	72,000	66,000	138,000
Cabbages - -	30,000	50,000	80,000
Turnips - -	25,150	18,450	43,600
Onions - -	12,500	24,350	36,850
Brocoli - -	400	31,550	31,950
Carrots - -	5,350	2,700	8,050
Turnip tops - -	650	3,500	4,150
Peas - - -	2,400	1,500	3,900
Cucumbers - -	50	2,150	2,200
Rhubarb - -	150	1,950	2,100
Lettuces - -	350	1,700	2,050
Beans - - -	1,800	830	2,630
Celery - - -	350	450	800
Radishes - -	50	700	750
Spanish onions -	200	450	650
Vegetable marrow -	150	150	300
Asparagus - -	160	100	260
Herbs - - -	50	200	250
Totals	155,360	206,230	361,590

Mr. Poole gives the detailed quantities for the Borough, Spitalfields, Farringdon, and Portman markets separately; but we have combined them as above.

It is worthy of note that, although Covent Garden market far excels any of the rest in importance, there are certain kinds of vegetables that appear to reach some of the other markets in larger quantities. The total weights, in round numbers, are nearly as follow: —

Covent Garden - - -	155,000 tons.
Borough - - - -	68,000 „
Spitalfields - - - -	69,000 „
Farringdon - - - -	36,000 „
Portman - - - -	29,000 „

The same authority, adopting the same grouping into tons' weight instead of measures of capacity, gives another table relating to fruit. As before, we combine the four minor markets under one entry: —

	Covent Garden.	Other Markets.	Total.
	Tons.	Tons.	Tons.
Apples - -	9,000	8,150	17,150
Pears - - -	5,750	3,575	9,325
Gooseberries - -	3,500	3,400	6,900
Plums - - -	2,375	2,175	4,550
Currants - -	1,500	2,400	3,900
Damsons - -	515	537	1,052
Cherries - -	482	445	927
Strawberries - -	300	400	700
Filberts - -	100	130	230
Hazel nuts - -	70	156	226
Mulberries - -	8	46	54
Raspberries - -	10	6	16
Totals	23,610	21,420	45,030

Other computors, wishing to get rid of wearisome columns of figures, have regarded rather the value than the quantity; and have roundly estimated the value

of the fruit and vegetables consumed annually in London, at about three millions sterling.

Here, as in former chapters, however, it may be well to hint a caution respecting the too ready acceptance of any such estimates. The clerk of Covent Garden market is himself entirely unacquainted with the quantity or value of produce sold there annually,—the tolls and dues being so calculated as to involve no record either of quantities or values. If he do not know, who does? Each grower of course knows the amount of his consignments, and each salesman the amount of his sales; but there is no available machinery for ferreting out all the consignments or all the sales. Unless we know the modes in which the before-mentioned estimates were arrived at, it cannot be well decided whether they are anything more than mere guesses.

Certain it is that, be the quantities and values what they may, steam-ships and railways are gradually effecting changes both in the quality and the extent of the supply. Look, for instance, at the pine-apples in the London streets; how would our forefathers have wondered at such a choice fruit being sold in pennyworths! It was about a dozen years ago that steamers and rapid clippers began to afford the means of bringing this fruit to Southampton with sufficient speed to meet the requirements of the London markets; and there are now said to be 200,000 pine-apples in a year thus brought.

The orange-trade in London has reached a degree of immensity that few persons would imagine. "As we

listen," it has been well asked, "to the street child, crying 'fine St. Michael's, four a penny!' how many of us have bestowed a single thought upon the many interests involved, the many energies brought into action, in the production and transport of these fruits from the south to our cold dull countries of the north? How few of us have any conception of the vast tracts of land required to rear these pleasant products of the soil; of the hands employed in the culture; of the beautiful ships, of the noble steam-vessels engaged in transporting them from foreign lands to these shores; of the railway trains employed at certain seasons, to whisk the cooling cargoes from Southampton to London, while their consumers are sleeping in their beds; of the large piles of massive warehouses required to store, to sample, and to sell them by auction; of the mean squalor and desolation of the great retail orange-mart in Duke's Place; of the thousands of men, women, and children, who draw a subsistence from their sale in the streets, in steam-boats, at fairs, in theatres, or wherever people congregate."*

It appears, from details given in the article just quoted, that before steam-boat days, our oranges and lemons were derived almost wholly from Spain and Portugal; but that now the Azores, the Madeiras, Malta, and Crete are laid open to us for a supply. The import-duty, too, until lately about 1*s.* 6*d.* per bushel, has been reduced to less than one-half; and this still farther increases the abundance of the supply. Whatever names the oranges may bear — 'St. Michael's,'

* Household Words, No. 210.

'China,' 'Maltese,' 'Seville,'—they all appear to be brought from the Peninsula, and the islands above-named. St. Michael, one of the Azores, annually exports 200 shiploads of oranges, comprising altogether 200,000 boxes of 1000 oranges each; Terceira, Fayal, and the other Azores, also export largely. It is mentioned, as one of the disastrous effects of high duties, that in bygone years all the large oranges at the Spanish and Portuguese orange-gardens were thrown into the rivers rather than being packed for England, since the small oranges would better support the tax! Our lemons mostly come from Sicily, in square boxes; whereas oranges are packed in oblong boxes. It is supposed that altogether not less than 300 millions of oranges are brought to this country yearly, of which 100 millions are absorbed by the great metropolis. The transport of such an enormous quantity employs more than 200 smart clipper-built schooners, which arrive below London Bridge during the winter and spring months. Sturdy porters carry the boxes of oranges to warehouses in Botolph Lane, Pudding Lane, and their vicinity; and any one who passes down Lower Thames Street at such a time will do well to look to his hat, or think of his head. The bulk of the oranges arrive in this way; but the choice cargoes land at Southampton, and are whipped up to London by rail with great celerity; barges convey them from Nine Elms to Thames Street; and they are eagerly purchased by the fruiterers. One-fourth of our London supply of oranges, say 25 millions annually, is said to be sold in the streets and theatres; leaving 75 millions to be sold

by the shopkeepers. Duke's Place, in the Hebrew regions of Houndsditch, is the head-quarters for the costermongers in the east end of the town, and perhaps for the west also; the Jews buy largely at the fruit auctions, and dispense to the itinerant dealers. The London consumption of lemons is supposed to be about 20 millions annually.

The foreign fresh-fruit trade has a clearly-marked character in London. It has its own locality, its own salesmen, its own buyers, its own porters. Around the lanes just named the warehouses are placed and the salesmen transact their business. In more than one of them we may see the names of Keeling and Hunt written up on the fronts of warehouses which appear more like vast granaries than mere fruit store-houses; this firm has the reputation of being at the head of the trade. The wilderness of sweets about this neighbourhood is graphically sketched by the writer just quoted: "The huge warehouses in Botolph and Pudding Lanes are the great fruit-emporiums of our metropolis. There floor upon floor, story upon story, may be seen piled, and heaped, and blocked up with chests, boxes, sacks, baskets, barrels, all bursting with their rich fruitiness. In cold, dark, stone cellars, in lofty ground-floors, in topmost cockloft, not a foot of space is wasted; every square yard is economised, and made to perform its utmost function. Grapes, chestnuts, pine-apples, citrons, hazel-nuts, oranges, lemons, all are there in overwhelming abundance, in waggon-loads, in heaped-up piles, in towering pyramids. A busier and a noisier scene is going on in another part of the great 'Orange

territory.' In Monument Yard is one of the largest fruit firms in this metropolis — in the world. They are the brokers who, almost daily during the season, hold auctions of the fruits they have on hand. In a long, not over-cleanly room, looking out upon the great stone Monument, are some desks, a solid table, and rows of benches, on which, in all sorts of attitudes, are to be seen all sorts of fruit-buyers. When pine-apples, grapes, and French and Dutch soft fruit are on sale, the assembly will be rather more select; but for the orange and lemon business the company comprises several west-end buyers, with a motley crew of noisy greasy folk from the purlieus of Duke's Place, Covent Garden, and Spitalfields. Those men it is who, buying the fruit in lots of eight cases, retail them out at a good profit to costermongers and small shopkeepers." An electro-telegraphic message announces that a clipper-load of fine early oranges has just arrived at Southampton; when immediately, "all is bustle at Monument Yard; and in a few minutes circulars are conveyed by messengers to the buyers, north, south, east, and west of the metropolis, informing them that by ten o'clock on the following morning their first parcel of the new St. Michael crop will be on view in their warerooms," — trusting securely in the fact that the railway company will transmit the fruit in due time.

This foreign fruit trade has become, indeed, a large one. No less than a million and a half of bushels of foreign nuts, of various kinds, were brought to London in 1853, and a million and a half pounds of grapes; besides the immense stores of oranges and lemons, and

a goodly quantity of pine-apples, cherries, apples, pears, and other fruits.

Fruit and vegetables, the costly and the humble, the British and the foreign — all are now experiencing the benefit of rapid conveyance, so far as the supply of London is concerned. The Great Northern brings up enormous quantities of potatoes — 64,000 tons in 1854; and all the railways together now convey hundreds of thousands of tons of fruit and vegetables to London in a year. One of the curious results of our modern improvements is, that if Covent Garden has a plethora of good things on any one morning, she sends off a telegraphic message to Birmingham, or other large towns, to ascertain the state of the supplies there; if there be room for more, waggon-loads of fruit are sent off by rail; and thus prices become equalised and supplies diffused. On one night several *tons* of gherkins arrived at the King's Cross terminus! The South-Eastern railway brought up to the Bricklayers' Arms depôt, in the first half of 1855, no less than 48,000 baskets and other packages of fruit and vegetables, weighing 1150 tons. But this is far below the amount in the second half of the year, when more vegetable products are in their prime; on three days in the months of July and August, the arrivals amounted to more than 10,000 packages each day. On one very busy night, the goods' trains brought up 120 tons of peas, and 40 tons of filberts, grown in Kent, together with 40 tons of ripe plums from abroad, superadded to a fair average of other vegetables and fruits. The Kent Road was in a turmoil all night,—nothing but

laden waggons following in a stream almost continuous. Of the wonders of the hop-trade at the Bricklayers' Arms depôt, a future chapter will tell. It is obvious that, when Covent Garden market receives such special inundations of good things, it would be advantageous to avoid an excessive laxity of price by sending portions into the country for sale; and the electric telegraph offers a peculiar aid here, by diffusing a knowledge of the state of the markets in any part of England.

CHAPTER XI.

THE SUPPLY OF GROCERIES AND COLONIAL PRODUCE.

Colonial and Tropical Imports of Food mostly employed for Beverages. —Mincing Lane, the Mart for this Produce.—Tea.—Comparatively recent Introduction.—Extensive Consumption at the present Day. —Growth, Preparation, Sale, and Shipment in China.—Probable Consumption in the United Kingdom.—Adulteration of Tea in London.—Coffee.—Growth and Preparation Abroad.—Roasting and grinding at Home.—Coffee-drinking at different Times and in different Countries.—Probable Quantities consumed.—Chicory.—Wrangles between Coffee Importers and Chicory Growers.—Chicory and Coffee, adulterated and unadulterated.—Cocoa.—Chocolate a Preparation of Cocoa.—Increasing Use in this Country.—Frequent Adulterations.—Sugar.—Growth and Manufacture Abroad.—Sugar refining in London.—Probable Consumption.—Beet-root Sugar little known in England.—Spiceries from the East: Pepper, Nutmegs, Allspice, Cinnamon, Cloves.—Rice.—Tobacco.—Is Tobacco a Food? Culture and Manufacture.—Vast Stores in the London Docks.—Snuff-making.—Cigar-making.—Probable Consumption.—Adulteration of Tobacco.

IT is one of the consequences of the position of England in the temperate region, that the foreign productions we receive from near neighbours include the more important articles of food; whereas those derived from tropical climes are less essential, though unquestionably valuable. Our bread and our meat, in so far as home growth will not supply the whole demand, are obtainable from temperate climes like our own; but coffee, cocoa, chocolate, sugar, spices — these we must purchase from the sunny regions of the South. How large a part of the vigour, bodily and mental, of

the inhabitants of temperate regions, may be traceable to this cause, the physiologist must say; but it is important to remember that bread and meat, the real flesh-makers, belong to regions of medium temperature, being of finer quality there than in very hot or very cold countries, saving a few special examples.

Another peculiarity connected with the tropical produce above named is, that most of it is employed in the preparation of Beverages — as if the very spirit of thirstiness dwelt within the hot countries. It is true that tea, that general English favourite, is grown not in a hot, but in a temperate part of Asia; but in the instances of coffee, and cocoa, and sugar, the glowing heat of tropical climes is evidently wanted for their growth. The first three of these are almost wholly employed in the making of beverages; and as to the fourth, sugar, far more of this is employed for an analogous purpose than for the preparation of solid foods. In respect of tobacco, few will doubt that it serves, if not for food, at least as a substitute for food, or as an accompaniment to beverages; and the finance minister is well pleased with the existence of a taste or habit bringing four or five millions sterling per annum into the national exchequer. Another member of this tropical series is spicery, used indifferently both with solid and liquid food.

Mincing Lane, as stated in a former chapter, is the great 'exchange' for all these commodities, so far as the metropolis is concerned. Supposing a London sight-seer to be in search of knowledge in this particular, he must ferret his way into the 'Commercial Sale-rooms'

in that region. The busy men in the news-room, glancing rapidly over newspapers, shipping-lists, customs' entries, and market returns; the group in the refreshment-room, snatching a hasty bit or sup in a few minutes or even seconds, and then off again — all are more or less connected with the foreign and colonial trade. Our supposed visitor mounts the stairs, and threads a labyrinth of passages almost as intricate as those of the Law Courts at Westminster. Room No. 1., room No. 2.— any one will serve the purpose. He enters one of these. He sees one man in a kind of pulpit, and perhaps fifty others apparently in a state of violent excitement, judging from the spasmodic mode in which they jerk out syllables in a loud voice. Every man has a pamphlet in his left hand and a pen in his right. The visitor understands nothing of this at first; the syllables uttered are unintelligible; but suddenly the fifty men lay down the fifty pens, and walk away with the fifty pamphlets; and the man in the pulpit puts on his hat and walks away likewise.

The seeker for information has witnessed a sale of groceries or drugs by public auction. The colonial brokers, whose offices are in or near Mincing Lane, are mostly licensed auctioneers also, in their respective departments; they may sell either by public auction or by private contract; and their auctions are held at the Commercial Sale-rooms, at Garraway's, or the Baltic Coffee-house, or at their own offices, as they may please. They personally know most of the wholesale dealers in the trade. A sale being announced, catalogues provided, and pens and ink for whomsoever may

wish to take notes, the auction proceeds. In no department of London commerce, perhaps, is business conducted more rapidly. The broker knows almost to a fraction the probable prices of the day; and when the biddings have reached that limit, he waits not an instant: he 'knocks down' the lot at once, and thus gets rid of several lots within one single minute. This renders the mode of bidding very remarkable; the dealers present — partners or clerks in wholesale grocery and drug firms — must make up their minds instanter, and must speak loudly but tersely — in one single syllable, if possible — that the broker may at once recognise the voice. He knows every face, every voice; to a stranger, the bidding is a mere convulsive shout; to the broker, it is an intelligible number of shillings per cwt. for 'Muscovado' or 'Plantation,' or so many farthings per lb. for rice or pepper.

In the newspapers devoted to these matters, Mincing Lane and its vicinity occupy a prominent place. In the midst of the drug sales, relating to gum, opium, scammony, colocynth, mastic, asphaltum, bark, castor oil, senna, camomile, aloes, and so forth; in the midst of the skin sales, relating to 'salted Newfoundland Seals,' 'Cape goats,' 'African monkeys,' 'South American kids,' &c.; in the midst of the savoury array of bones, guano, and the like,—we are certain to meet with numerous advertisements concerning groceries and spiceries: — '3 cases nutmegs,' '28 cases Trinidad chocolate,' '710 bags Arracan rice,' tea, coffee, cocoa, sugar, ginger, cinnamon, mace, pepper —

all present themselves. And then, under the head of Market Intelligence, we may perhaps find that "the tea market is quiet; Congou at 8½*d.* or 9*d.*," or "brown lumps 60*s.* to 61*s.*"—information which, though leaving us in ignorance of the retail prices charged by the grocers, is significant to the grocers themselves.

Of the grocery supplies thus brought by our ships from distant climes, and sold by the Mincing Lane brokers for the importers to the wholesale dealers, it may now be well to treat a little in detail—so far as they contribute to the food-supply for the metropolis.

Suppose we allow Tea to head the list.

The story of the tea-trade is pretty well known:—how that the establishment of the mighty East India Company virtually rested on tea; and that tea-drinking and the China trade grew up together. For a long period the company's sole object was to import tea; all of which was brought to London, to be sold quarterly—the company retaining one year's stock in hand. Great was the curiosity when two packages of tea were first brought over; and when the import rose to 5000 lbs. in 1678, men marvelled at the spread of luxury in England. A Quarterly Reviewer has recently met with a curious notice of tea in the 'Mercurius Politicus,' under date Sept. 30. 1658.—"That excellent and by all physicians approved China drink called by the Chineans *Tcha*, by other nations *Tay* alias *Tee*, is sold at the 'Sultaness Head' Coffee-house, in Sweeting's Rents, by the Royal Exchange, London."

From five thousand to fifty, from five hundred thou-

sand to five millions, from five millions to seventy millions — thus have the imports increased. How far this traffic has led to warlike contention, or to peaceful development, is among the problems of the day: if China tea led to the growth of the East India Company, if this growth led to the establishment of a British Empire in India, and if this empire has led to wars in Scinde, Caubul, the Punjab, Burmah, and China, then has tea much of good or evil to answer for.

Tea drinkers are not much concerned with the processes whereby Long-Chin-Pooh makes the black and green tea brought in such millions of pounds to London; yet, considering that adulteration does much of its nefarious work in reference to the supposed differences between the two classes of teas, it may be well to know what our travellers say on the subject.

The tea-plant yields leaves fit for the market from about the third to the sixth or seventh year, generally three crops each year — or perhaps about twenty crops from each plant altogether; the leaves in the earlier years are better than in the later, and better in the spring crop than in the summer or autumn. The most scrupulous care is taken in gathering them; the gatherers must wear gloves, must bathe and wash frequently, and must refrain from eating anything that may affect the breath. A fine and high-priced tea might degenerate into a poor and cheap tea, by any want of caution at or a little before the time of gathering. The gathered leaves are placed in open baskets, dried in the air or the sunshine, and then roasted in a flat cast-iron pan over a charcoal stove. The leaves are

heated, and stirred, and rubbed between the hands, and heated and rubbed again—until they have become curled up, dry, and changed to a certain colour. This 'certain' colour is the chief mystery of John Chinaman. It used to be supposed that green tea and black tea are two distinct growths, having slight botanical differences; but later investigators assert that the differences are rather in manipulation than in growth; and that any tea may become either black or green at the pleasure of those who prepare it for market.

An estimate has been formed of the mode in which the price of a pound of tea was made up, before the late reductions in duty. A fair average quality of black tea, at 4*s.* 6*d.* per lb., paid very nearly half its retail selling price in duty. The cost of such tea at the ship's side was about 11*d.* or 12*d.*; export duty in China, 1½*d.*; freight to England, 2*d.*; insurance and small charges 2*d.*; interest on merchant's capital, ½*d.*; profit of merchant in China, 2*d.*; duty, 26*d.*; profit of brokers and dealers in England, 8*d.* Thus the retail price in England was four and a half times as much as the wholesale price in China. This vast augmentation of price is not now so great, consequent on a reduction of the duty; and if war had not interfered with the national coffers, the change would have gone yet further.

It is very easy for retail grocers, aspirants for public favour, to advertise the 'Empress of China's Tea,' or 'Howqua's Mixture,' or any other superexcellent specimen of the Chinese leaf; but it is believed that none of the really choice teas reach England. The Chinese regard us as barbarians, who do not deserve

their exquisite Yen Pouchong, which they themselves will, on the spot, readily purchase at fifty shillings per pound! The extreme grades of society in China differ more in the quality of their daily tea than the extreme grades in England; for while our nobles certainly do not indulge in tea at fifty shillings a pound, the servants who wait at table on an ambassador would still more certainly 'turn up the nose' at tea made from second-hand leaves —such as was eagerly sought by the Chinese attendants on Lord Macartney during his embassy. But then servants are not the very poor in our own country, whatever they may be in China. A rough guess has been made that the enormous quantity of 1500 million lbs. of tea is made into beverage annually by the Chinese.

Statists have tried how to make most intelligible the amount of tea consumed in the United Kingdom. If a person, says one computer, takes tea of average strength and in average quantity once a day, he will probably consume about $7\frac{1}{2}$ lbs. in a year; but our home consumption would only allow 7 million persons to enjoy the luxury to this extent; therefore, either less than one-fourth of the population take tea once a day, or else the tea so taken must be poorer in quantity or quality than is here assumed. Mr. Porter, without any attempt to determine how many persons drink tea, compared the home consumption in particular years with the total population in those years; and he found that the consumption per head has remained more steady than might perhaps have been supposed. Curiously enough, this annual ratio fell between 1801 to 1821, and rose between 1821 to 1851; it was 20 ounces in 1801, 16 ounces in

1821, and 22 ounces in 1851. But the great bulk of the inhabitants of Ireland drink very little tea, insomuch that the English average probably exceeds 2 lbs. per head; and as the Londoners are perhaps 'the most tea-drinkingest' of her Majesty's subjects, the metropolitan average must be placed yet higher.

Be the ratio of distribution what it may, the imports now increase faster than the population, showing that tea-drinking is increasing among us. Besides supplying our wants, Mr. M^c^Culloch estimates that China sends about an equal quantity to other countries — the choicest being sent overland to Russia. Other estimates, however, differ widely from this; Mr. Montgomery, in 1847, thought that the total exports from China were only 72 million lbs.; Mr. Simmonds, in 1851, set them down at 90 millions. We re-export several million pounds a year, to the colonies and elsewhere; and deducting this, the quantity lately retained for home consumption has been—55 million lbs. in 1852, 59 millions in 1853, and 62 millions in 1854. This shows that, whatever may have been the case a few years ago, our consumption has reached, if not a little overpassed, 2 lbs. per head per annum on the entire population. The tea comes over in chests; and it is customary, in 'trade intelligence' in newspapers, to state the amount of imports in a given week or day by the number of chests. Congou, a low-priced tea, constitutes five-sixths of all imported. In the early days of the tea-trade, when the Chinese leaf was regarded as a choice luxury, 1 lb. of tea was worth 40 bushels of wheat; the equivalent fell in 1680 to 12 bushels, in

1784 to 1 bushel, and in 1854 to about 1 peck — so enormous has been the change. This, be it remembered, is the wholesale price of tea in bond, without duty and without retailers' profit. In recent years Congou of fair quality, in bond, has been about a shilling a pound; what the retail grocer charges, after the duty has been paid, every housekeeper knows. According to the scheme on which the tea-duty was reduced in 1853, the duty, until then 2*s.* 2*d.* per lb., was to be 1*s.* 10*d.* until April 1854, 1*s.* 6*d.* until April 1855, 1*s.* 3*d.* until April 1856, and 1*s.* thereafter; but the wants of the public purse have nipped this beneficial change halfway on the road. As to the wholesale prices in bond, they vary from about 6*d.* for the cheapest Congou, to 4*s.* for the finest Hyson.

The accusations brought, and the suspicions entertained, concerning the adulteration of tea, are somewhat formidable. The leaves of the beech, elm, chestnut, plane, oak, willow, poplar, hawthorn, sloe, and many things that are not leaves of any kind, find admission among the list of suspected ingredients. Old tea-leaves, re-dried, are largely used. There are, it must be confessed, many temptations held out to the dishonest in respect of this commodity. The public pay twelve millions sterling per annum for tea; and so much of this large sum goes away in the form of duty, that the probity of the seller is likely to be tempted. The article itself, too, the mass of little crooked curly dark-greenish leaves, is so indefinite in its character, that it holds out further hopes of the non-detection of surreptitious practices.

The 'Lancet' commissioners set to work on the examination of tea with great minuteness of detail. It was ascertained that the Chinese frequently adulterate the tea before shipping it to England, and that the materials used consist chiefly of ash and plum leaves. The leaves used by English adulterators, after the tea arrives, are more numerous in kind; they are dried, crushed, made into a paste with gum and catechu, ground, coloured, and mixed with genuine tea. Mr. George Phillips, an officer of the Inland Revenue, sent a letter to the 'Lancet' commissioners relating to the re-manufacture of exhausted tea-leaves. "In the year 1843, there were many cases of re-dried tea-leaves which were prosecuted with vigour by this Board; and the result was, so far as we could ascertain at the time, the suppression of the trade. It was supposed, in 1843, that there were eight manufactories for the purpose of re-drying exhausted tea-leaves in London, and several besides in various parts of the country. The practice pursued was as follows:—Persons were employed to buy up the exhausted leaves at hotels, coffee-houses, and other places, at $2\frac{1}{2}d.$ and $3d.$ per lb.; these were taken to the factories, mixed with a solution of gum, and re-dried; after this the dried leaves, if for black tea, were mixed with rose-pink and black-lead, to 'face' them, as it is termed by the trade." The newspapers record that, on May 26. 1851, two persons living in Clerkenwell were detected making spurious tea; the officers found a large furnace, before which was suspended an iron pan containing the leaves, and also tea-leaves which had been purchased from coffee-shop

keepers. On searching the premises, they further found an immense quantity of used tea, bay-leaves, and other spurious ingredients — all to be mixed with copperas and a solution of gum to aid in the manufacture of illicit tea. The heat of the place was excessive; the woman was employed in stirring the ingredients in an iron pan; in one part of the room was a quantity of spurious finished tea, closely resembling the genuine article; and in a back room was nearly 100 lbs. weight of bay and other leaves drying on the floor. Another police report of earlier date, related to a seizure made in another part of London; the rogue was wont to employ men to buy up the old tea-leaves at 2*d.* per lb., boil the leaves, squeeze them in a press, dry them on sheets of copper over the fire, curl them by rubbing with the hand, and dry them.

When the 'Lancet' commissioners began their inquiry, they purchased about eighty specimens of tea, from almost as many retail grocers in London. They found, somewhat against their expectation, that in 59 specimens of black tea there were very few that exhibited any symptoms of adulteration — thereby showing that popular suspicion had gone a little beyond the truth. In the green teas, however, nearly all the specimens were more or less adulterated, apparently with a view to the presentation of a fine bloom.

Many substitutes for tea, under the names of 'Veno Beno,' 'Chinese Tea Improver,' 'Chinese Botanical Powder,' &c., the commissioners found to be very worthless affairs. Mr. Phillips told them that 'Veno Beno' — which, according to the high-sound-

ing advertisement, "has four times the strength of the strongest tea; is delicate, healthful, strengthening, and an improver of the voice" — consists of three-fourths catechu or terra japonica and one-fourth sumach-leaves; and that the 'Chinese Botanical Powder' consists mainly of catechu and wheat-flour.

COFFEE stands next on our list of drink-making commodities.

There are many who think that the London coffee-shops — the rooms in which refreshment and reading can be obtained by the outlay of a few pence—are among the civilising agents of the day: not that the decoction of a tropical berry is itself a civiliser; but that it brings with it certain collateral usages. It is as an antagonist to the public-house that the coffee-room is in this sense regarded. Leaving medical men to determine whether a pennyworth of good beer or a pennyworth of good coffee possesses most strength-giving power, this at least may be said — that a man is never tempted to get drunk upon coffee, to lower himself below the level of the brutes. The evil connected with fermented beverages is, not that the liquid is bad in itself, but that men do not 'let well alone' by stopping in time. A beer-drinker, too, in the evening, cares to read nothing but a newspaper; a coffee-drinker has a head in a sufficiently clear state for appreciating books and periodicals of various kinds. This, however, is touching upon many disputed questions, into which there is no occasion to enter here; nevertheless it is certain, whatever else be doubtful, that the establish-

ment of coffee-shops has worked some change in the prevailing usages of the London working-classes in relation to beverages.

Coffee is fully as curious a plant as tea. As met with in America, Brazil, Arabia, and other hot countries, the plant is generally from four to five feet in height; it does not arrive at maturity until its fourth or fifth year, but then it retains its fruit-bearing powers for about twenty years. The crop is gathered late in the autumn, when the berries present a dark-red colour; in Jamaica the berries are picked by hand, a good picker being able to bring in four bushels per day; but in Arabia the trees are shaken, and the ripe berries drop upon cloths placed underneath; whence they are then spread out to dry. Each tree will yield from half a pound to two pounds at one crop. It is not the berry itself that constitutes the coffee of commerce, but the seed within the berry; the berry is much like an ordinary cherry in size and colour, and thus there is a considerable substance of pulp surrounding the seed. The pulp being removed by crushing, the two halves of the seed are seen closely enveloped in a thin membrane; at a subsequent period this membrane is removed by rubbing, washing, and winnowing; and there is then left the 'raw' coffee such as our grocers purchase from the merchants. Many weeks are required after the gathering, before the coffee is in a state fitted for the market; and many circumstances combine to bring about those differences that determine the relative prices of the product — such as the temperature of the climate, the humidity, the quality of soil, the mode of culture, and

the care bestowed by the planters on the subsequent processes.

During the disasters in the Crimea in the winter of 1854–5, it must have been especially provoking to the soldiers to be supplied with unroasted coffee at a time when there was scarcely a possibility of roasting it; for unroasted coffee is a greenish sickly-tasting bean, unfitted for yielding any decoction. The change produced by roasting is remarkable; and we need not be surprised if the quality of the decoction depends very much on the degree of skill displayed in this process. There is a point at which the aroma becomes fully developed, and beyond this the roasting is a kind of scorching. The English are said to roast their coffee more than the French; and the superior delicacy of French coffee is in part attributed to this circumstance. Perhaps it is with our coffee as with our port wine: we may have acquired a sort of national taste for strong in preference to delicate flavours. The seeds (for it is an error to call them berries; they cease to be berries when the pulp that surrounds the seed is removed) are placed by the coffee-roasters in cylindrical vessels, sometimes lined with silver to prevent injury to the aroma of the coffee; the cylinder, heated on the outside, is kept slowly rotating, that all the seeds may be equally affected by the heat. The process is the simplest possible in its nature, for it consists merely in the application of a certain degree of heat to the seeds; but there is much nicety required in its conduct to catch and secure the aroma just at the critical time. Real coffee-drinkers bring forward two complaints against the customary

mode of preparing and selling coffee in the London shops — irrespective of any defects either in the coffee itself or in the roasting; it is roasted too long before being ground, and it is ground too long before being sold.

We must learn from the natives of the southern lands how to drink coffee; they understand it; they are bred as it were to it; they know the taste of the unsophisticated berry. As the Chinese would deem us barbarians for putting milk and sugar into our tea, so do the coffee-drinkers of tropical countries consider it to be barbarism to introduce such additions to the fragrant decoction of their favourite berry. Lieutenant Welsted gives an amusing illustration of this: — "A party of Bedouins were disputing respecting the sanity of Lady Hester Stanhope, — one party strenuously maintaining that it was impossible a lady so charitable, so munificent, could be otherwise than in full possession of her faculties. Their opponents alleged acts in proof to the contrary. An old man with a white beard called for silence — a call from the aged among the Arabs seldom made in vain. 'She *is* mad,' said he; and lowering his voice to a whisper, as if fearful such an outrage against established custom should spread beyond his circle, he added, 'for she puts sugar to her coffee!' This was conclusive."

It may be well to notice the curious mode in which coffee and coffee-houses were introduced into Paris and London. In 1669, an embassy having arrived at Paris from the Sultan to Louis the Fourteenth, Soliman Aga, chief of the mission, received much Parisian company, including ladies, and caused coffee to be served to his

guests according to the custom of his country. The very novelty of the circumstance induced the ladies to drink of that which they might otherwise possibly have declined; the beverage became talked about; the merchants began to import the berry; and in 1672 an Armenian named Pascal opened the first coffee-house at Paris, on the plan of those at Constantinople. It appears to have been about the same period that coffee was first known in London; a Greek named Pasqua opened a coffee-house in George Yard, Lombard Street; this was really a coffee-house, and not a tavern, like the so-called coffee-houses of the 'Spectator,' and 'Tatler' days.

Coffee-drinkers have so rapidly increased in number, that the cultivation of the berry must have spread in various directions. One rough guess, a few years ago, was to the effect that the quantity of coffee grown in the whole world amounts to 480 million lbs. per annum; while another estimate has recently placed it so high as 616 millions. An ambiguity appears, however, in these guesses; for in some cases it is not clear whether is meant the total growth in, or the total exports from, all the coffee-growing countries. There is very little doubt, whatever be the total quantity, that Brazil grows far more coffee than any other country. The European consumption alone has been roundly estimated at 400 million lbs. per annum.

The use of coffee in London, and in England generally, has advanced steadily since the introduction of the berry in the time of Charles the Second; but our economists think that the extension is not such as it

would and ought to have been if import duties had not interfered. The imports rose from 1 million lbs. in 1805 to 6 millions in 1810, 8 millions in 1824, 31 millions in 1850, and to 35 millions in 1852; in 1853 and 1854, the quantity entered for home consumption, after making allowance for the quantity re-exported, was just about 37 million lbs. in each year. The price has considerably lessened within the last twenty years, leading many economists to think that the consumption ought to have increased more rapidly. The truth is, however, that coffee has even yet hardly become a national beverage among us. About the time when George the Third ascended the throne, the coffee consumed in the United Kingdom was so small that it did not amount to an ounce per head per annum on the whole population; from this it has risen to about a pound and a quarter. Mr. Crawford, in a paper on this subject in the Statistical Society's Journal, points out how small our consumption is compared with that of most European countries. While the United Kingdom consumes per head only about $1\frac{1}{4}$ lb. per annum, the account in other countries stands thus:—

Prussia - - - -	$3\frac{1}{2}$ lbs.
Zollverein (average) - -	$3\frac{1}{4}$ „
Denmark - - - -	$5\frac{1}{3}$ „
Belgium - - - -	9 „

The Americans appear to have made extraordinary strides in this respect, having risen from a consumption of 1 lb. to about 8 lbs. per head, during the last thirty-five years. We, in the United Kingdom, drink nearly twice as much tea as coffee; whereas our Anglo-Saxon breth-

ren across the Atlantic drink nearly four times as much coffee as tea. Query? Could our ethnologists discover any national differences of character, arising from these diversities in tea-drinking and coffee-drinking? It must be remembered, concerning the relative quantities of tea and coffee consumed in our own country, that not only is the weight of the dry tea nearly twice as great as that of the dry coffee, but that each pound of tea produces two or three times as much beverage as a pound of coffee — the tea-beverage must be at least five times as great, in liquid measure, as the coffee-beverage.

The Brazilians are said to be thinking about coffee-leaves instead of coffee berries. The leaf is used in Sumatra like tea-leaf, to make an infusion instead of a decoction; the Sumatrans prefer it; and some of our chemists deem it more wholesome. Should such a taste extend, it would be commercially very important; for the leaf will arrive at maturity in a greater number of districts than the berry; it can be bought at 2*d.* per lb. in Sumatra; and Brazil is 'looking ahead' in the same direction.

From coffee to Chicory the leap is but short. A curious battle has been fought in many parts of the country, and in London in particular, within the last few years, between what may be called the coffee-interest and the chicory-interest. Men are so apt to make their own welfare a measure of the excellence of public laws, that while the coffee merchant insists on the moral propriety of a restriction on chicory, the

chicory-dealer expatiates on the wisdom of that kind of free-trade which would lead to an extension in the use of chicory as a substitute for coffee. So long as there are excise duties and customs' duties, however, there will necessarily be these occasional antagonisms; for the dealer in a duty-paid article will naturally feel aggrieved at any facilities offered for the admission of a substitute on which no duty is levied.

Chicory was first imported in 1832, the duty being levied on it the same as on colonial coffee; it was, however, rendered imperative that the chicory should be sold separately from coffee. In 1840 the high prices of tea and coffee led the Treasury to give permission that chicory might be sold mixed with coffee, to produce a compound commodity at a moderate price. A few whispers of complaint against this were heard in some quarters; but it was not until about 1845 that the complaints became loud and frequent — consequent on the growing of chicory in England, and the admission of this chicory in the market free of duty. The coffee-importers rebelled; they said 'either tax chicory, or remove the tax from coffee' — a request not altogether unreasonable. About the year 1850 Mr. Simmonds supposed that there were 18 million lbs. of chicory then sold annually in England, as a surreptitious substitute for coffee; while Mr. M'Culloch about the same time estimated the total consumption at 28 million lbs. — quantities of serious import to coffee-growers and dealers. In 1852 a Treasury order was issued, declaratory that chicory must not be sold mixed with coffee. The arguments in newspapers and at

public meetings have been very conflicting on the subject; but matters have settled down to this basis — that retail grocers may mix chicory with coffee, provided the fact of the mixture be honestly stated on the printed wrapper.

Chicory appears to have been used in France earlier than in England, as a substitute for coffee. The plant, however, grows in abundance in England as well as in central Europe; insomuch that there is no difficulty in obtaining it, if once a taste for it should arise. There are many reasons why, used alone, chicory is less pleasant and less wholesome than coffee; it has a narcotic quality, but neither oil nor alkaloid. As a substitute for coffee, chicory is poor; as an imitation of coffee, it is fraudulent; but as an addition to coffee it is wholesome and economical; and there is a growing opinion in England that it is pleasant also. Chicoried coffee is largely used in France and Germany; but especially in Belgium, where 4½ million persons are said to consume 20 million lbs. of chicory annually. It appears probable that, whatever may be the 'Orders in Council' or the Acts of Parliament relating thereto, the mixture will become a recognised part of the ingredients for beverages in England; for no statutes can permanently check the sale of an article of food which meets the public approval: the difficulty is, how to render justice to all while obnoxious imposts press upon some commodities and not upon others which may be used as substitutes.

That an acquired taste may mislead the judgment is exemplified in connection with coffee as with more im-

portant articles. Dr. Lankester, in a lecture delivered some years ago, stated that he knew a coffee-dealer who conscientiously objected to mix chicory surreptitiously with the coffee sold by him; if he designated it coffee, coffee it should really be. Persisting in his coffee-purism, he gradually found his sale of that article diminish. He was for some time unable to account for the decline; but a lady one day said to him, "You do not sell such good coffee as your neighbour." The dealer examined his neighbour's coffee, and found chicory in it. The next coffee he sold to her he treated with an admixture of a little chicory; and she said, "Now your coffee is very good." He then resolved on experimenting with his own family; he gave them common coffee mixed with chicory; whereupon surprise was expressed that he had favoured them with 'some of his best coffee!"

The appearance of chicory is that of a pale brown powder; and a few words will describe how it arrives at that condition. Chicory is not, like coffee, a berry; nor like tea, a leaf; it is a root. The chicory plant belongs to the same class as the garden lettuce and the dandelion; it is cultivated in France for the use of its leaves as herbage, and in Germany, Flanders, and England, for its root; Arthur Young introduced its cultivation into England in 1780. The plant grows readily in poor sandy soils, and is useful for pigs and cattle, irrespective of the purpose to which its root is applied. In Flanders the leaves are sometimes eaten at table instead of endive, to which they bear some resemblance in taste. Wheat is said to alternate well with chicory, so that the crop is not likely to be in disfavour

with farmers of certain qualities of soil. Mr. Caird, the 'Times' commissioner on agriculture, describes a Norfolk farm in which chicory is cultivated. The chicory is taken after wheat instead of an oat-crop; it is drilled in May with artificial manure, and is treated exactly like a carrot-crop; it is taken up in autumn in quantities as it can be manufactured, being uninjured by frost, and receiving no damage by being left in the ground. An acre produces from 12 to 15 tons, drying to about one ton in the state in which it is sent to London; Mr. Braithwaite Poole makes the produce per acre much less, and the ratio of dried root to fresh root much more, than Mr. Caird; but the latter gentleman's estimate has the advantage of being formed from actual observation of a particular farm.

In preparing chicory for the London market, the roots are thoroughly washed, and placed in a cutting-machine, resembling one of the numerous varieties of turnip-cutter; this cuts the chicory-root into pieces about half an inch in length. These pieces being dried, and roasted in cylinders exposed to a steady fire, the chicory is ready for pulverisation, effected either by revolving stones or by small mills. A rough estimate is made that chicory brings in the farmer about 20*l.* per ton on an average, or perhaps a little more.

In the present state of matters in London, the worst that can be said of chicory is, that it is often unfairly sold as a substitute for coffee. Let them be sold separately, and purchasers can select as they may; but when chicory at 4*d.* per lb. is mixed with coffee at 1*s.* 4*d.*, and the mixture sold at 1*s.* 4*d.*, every

schoolboy versed in 'Alligation' knows that the sum will come out wrong, — in plain words it is a cheat and a fraud. The love of cheapness is somewhat to blame here; if buyers will have low-priced coffee, say at a shilling per lb., the grocer has a temptation to mix unacknowledged chicory with it. But chicory is not the only addition unfairly used in London coffee. The 'Lancet' commissioners, out of 42 specimens of coffee, found 31 to be adulterated with chicory only, while 12 had roasted corn in addition to chicory; 1 had beans, and 1 had potato-flour; the total result was that one-third of the whole weight consisted of adulterants; and in some cases chicory was present to the extent of more than one-half. It was found that some of the grocers use a 'coffee colourer,' of a rich brown colour: it consists chiefly of burnt sugar, and appears to be used to deepen the colour of poor coffee, or of coffee which has been chicoried. The sellers of cups of coffee at a cheap price are said to be very familiar with this 'improver.' The commissioners adduce some curious examples of the discrepancy between the quality and the high-sounding names of particular samples; thus, a packet of 'celebrated Jamaica,' was found to be nearly all chicory; 'finest Java coffee' consisted of half coffee, much roasted corn, and a little chicory; 'superb coffee' was principally chicory and roasted corn, with very little coffee; 'fine plantation Ceylon' was nearly all chicory; 'fine Java' contained much chicory and potato; 'delicious drinking coffee' contained a large quantity of chicory and roasted corn. In short, if the commissioners' experience be anything like a fair repre-

sentative of average results, there seems to be only one certain plan to follow — to purchase the coffee whole, and grind it at home, or see it ground.

Another strange fact in relation to this unpleasant subject is, that not only is coffee frequently adulterated with chicory, but that chicory itself is adulterated! The commissioners examined 34 samples purchased indiscriminately at different shops; and amongst them they found carrot, parsnip, mangel-wurzel, beans, acorns, roasted corn, biscuit-powder, and burnt sugar. It has been stated in other quarters that such strange substances as burnt rags, red earth, and rope-yarn have been found in chicory; but this belongs to the transcendental regions of rascality.

Concerning this jugglery of coffee and chicory, there is one statement made by the commissioners so extraordinary, that we must give it in their own words: "An article has lately been introduced into the market under the attractive name of 'coffina,' said to be a 'Turkish plant,' and to have been found highly nutritious on analisation. It is in the state of powder, and has much the appearance of coffee in colour, a very bitter taste, and emits the odour of lentils. On an examination of this powder with the microscope, we find it to consist entirely of a seed, including even the husk, belonging to the family Leguminosæ. Of this worthless if not pernicious article, no less than eighty tons were offered within the last few day for sale by a Scotch house, at about 12*l.* per ton, that is at less than $1\frac{1}{2}d.$ per lb. On this single transaction, therefore, the revenue would be defrauded of no less a sum than 4480*l.*, and

the public of at least four times that amount, viz., nearly 18,000*l.* This article, the name of which is borrowed from another substance, of which it does not contain a particle, is not recommended as a substitute for chicory, but to be used with chicory in place of coffee! A recent importation of about one hundred tons of lupine-seeds from Egypt into Glasgow has led, a correspondent writes, to the suggestion that this 'coffina' is made from them; from a careful comparison of the structures found in 'coffina' with those of lupine seed, we are of opinion that this conjecture is well founded. The same firm to which a sample of 'coffina' was sent has recently been offered five hundred tons of acorns, at 5*l.* per ton, or less than three farthings a pound; should these find a purchaser, as they will doubtless do, if they have not already been bought up, the revenue will be cheated to the extent of 28,000*l.* and the public to about 112,000*l.*: these also were intended to be used in the adulteration of coffee."*

Among the beverages common in London, Cocoa may be said to occupy some such position as tea and coffee held a century or two ago. It is growing gradually in favour; it is becoming an object of large commercial arrangements; and its use is being advocated by those who wish to establish some rivalry or antidote to fermented drinks.

Cocoa and chocolate are two forms of the same substance, obtained from a tree growing in the West Indies. The tree, twice in a year, yields a crop of

* Lancet, March 13. 1851.

reddish spongy fruit, shaped like a cucumber: the ripe fruit being collected at the decline of the moon. The tree itself, about the size of a dwarf apple-tree, continues its yield for twenty or thirty years. Each fruit or pod contains from 6 to 50 beans, usually about 20; and there are from 10 to 20 lbs. of such beans from each tree at each crop. The beans are usually about as large as almonds; they are frequently, from a confusion of language, called indifferently beans, seeds, nuts, berries, and fruits; but their character will be better understood by regarding them as beans contained within a pod. They are picked out and dried before exportation. Besides the beans, the pulp contains a creamy and cordial juice; and by steaming and pressing, the beans will yield one-third of their weight of a kind of butter, to which the richness of cocoa is due. The three words cocoa, cacao, and chocolate, are used very confusedly; for the substances cacao and chocolate are the same in origin, whereas cacao and cocoa are not the same; cocoa-nuts are obtained from the 'cocos nucifera;' whereas the beverage-material is derived from the 'Theobroma cacao,' an entirely different tree.

For preparing the beverage material, the beans are brought to England in the original state, to be converted either into cocoa or chocolate by a manufacturing process. They are first roasted in slowly-rotating ovens; then broken by a machine, to such a state that the husks may be separated from the kernels by a blast of air; afterwards heated and beaten, and converted into a pulp by means of their own oil.

The pulp, when ground between millstones till it assumes a consistence something like that of treacle, is in a state to receive any of the modifications that will fit it for the market. It may be 'plain cocoa' or 'homœopathic cocoa,' or 'soluble chocolate,' or 'vanilla chocolate'; it may have arrow-root, or sago, or sugar mixed with it; or, if the manufacturers be tinctured with roguery, there may perchance be bean-meal or red-earth mixed with the pulp. The pulp, when fully prepared in any of these diverse ways, is cast into large moulds; the cakes thus produced are cut into minute shreds by a machine, and the shreds are sifted and packed for sale. The preparations of cocoa and chocolate made by the Parisians are more numerous than those usually made in London; they comprise vanilla chocolate, milk chocolate, chocolate bonbons, chocolate papillotes, chocolate crackers, chocolate pastiles, chocolate with taraxacum or with sarsaparilla—in short there is no end to the list; for once admit the principle of mixing the cocoa with vegetable infusions or decoctions or essences, and the variety becomes interminable. The French limit themselves to the use of the word 'chocolate,' derived from the Mexican name (chocolatl) of the plant: they seldom speak of 'cocoa.' What are called cocoa-nibs, in the London market, are the beans roughly crushed; flake-cocoa, also, is another name for the beans when crushed between rollers, but before anything else has been added to them. The husk of the seed, after roasting, contains a good deal of nutriment; indeed so do the pods likewise; and all three are more or less employed in making cheap cocoa. The plant is cer-

tainly used in more ways than coffee — drunk as a decoction, made into a kind of gruel, eaten as bonbons, &c.; while a poor decoction is drunk in some places, made by boiling the husks separated from the beans.

Mr. Simmonds gives a high character to chocolate — designating it as literally meat and drink. He wishes that our "half-starved artisans, over-wrought factory-children, and ricketty millinery-girls," would drink chocolate instead of tea, as being more nutritious. "The price, too," he urges, "is in its favour; cacao being eightpence per lb.; while the cheapest black tea, such as the Chinese beggar would despise, drunk by milliners, washerwomen, and the poorer class in the metropolis, is three shillings a pound, or three hundred and fifty per cent. dearer, while it is decidedly injurious to health. The heads of the naval and military medical departments in England have been so impressed with the wholesomeness and superior nutriment of cacao, that they have judiciously directed that it shall be served out twice or thrice a week to regiments of the line, and daily to the seamen on board H. M. ships."* It would not be difficult to cite expressions of opinion antagonistic to this, in relation to tea; but medical men unquestionably admit that cocoa is nutritious.

Londoners, it would appear, are not permitted to enjoy their cocoa or chocolate in its purity. The 'Lancet' commissioners detected flour, potato-starch, sugar, cocoa-nut oil, lard, tallow, mutton-suet, ochre, chalk, old sea-biscuit, and bran, in various specimens

* Commercial Products of the Vegetable Kingdom, p. 31.

they examined. If cocoa were sold, or professed to be sold, in an unsweetened, unprepared state, there would be a better chance of meeting with it genuine; but the very circumstance of mixing it up into a paste, to which a high-sounding name is given, offers a temptation to the dishonest to introduce unacknowledged substances. The commissioners assert that out of 56 specimens, bearing a formidable array of designations, only 8 were in a genuine state — a sad truth, if truth it be.

During the last fourteen years, our imports of cocoa have varied from 3 million to 8 million lbs. per annum, the maximum having been in 1853. These, however, are the total imports: the quantity retained for home consumption, and charged with duty, has risen within the last few years from 3 to $4\frac{1}{2}$ million lbs. per annum —equal to about one-eighth of our consumption of coffee, and one-fourteenth of that of tea. If we content ourselves with a rough approximation, it might suffice to say that the inhabitants of the United Kingdom consume as much weight of tea in a day as coffee in two days, or as cocoa in a fortnight; and there is no reason to doubt that London would present a nearly similar ratio.

One more of these curious estimates may be given, before passing onward to a saccharine region. It has been roughly guessed that, in the whole world,—

500	million persons drink	2240	million lbs. of	tea.
112		600		coffee.
50		80		chicory.
50		100		cocoa.
712		3020		

— or, in the whole, 712,000,000 human beings drink annually the decoctions and infusions prepared from 3,020,000,000 lbs. of these substances!

The wilderness of sweets, exhibited in London and other populous towns in the shape of shop-window attractions for the palate, owe their sweetness for the most part to one single product — Sugar. Of course ripe fruit is exempt from this classification, as it carries the source of its own sweetness within it.

Every one knows that the sugar-cane is a native of hot climates; the West Indies, the East Indies, Central America, Brazil, the Mauritius and other islands — these are the countries whence our sugar is obtained. It appears that the Saracens introduced the cultivation of sugar into the warm countries of southern Europe many centuries ago, and that Columbus took a few canes with him to America in 1493 — whence the sugar-culture of the New World has been derived. Sugar might still be grown in the sunny lands of Spain, Sicily, and Italy, but not with sufficient luxuriance to enable the growers to compete with those of hotter climes.

We are seldom in the habit of thinking that the poor dark-skins carry on manufacturing processes to a considerable extent in connection with the sugar-trade — much more than in the product of a bale of cotton. What is it that the sugar-field actually yields? Nothing more than an assemblage of juicy reeds or canes. The golden-yellow canes, when ripe, are cut down; they are severed into smaller pieces, which are

tied up in bundles and conveyed to the sugar-mill; they are crushed in this mill, two or three times in succession, until all the juice is expressed; and the remaining dry cane is useful as fuel. The juice, liable to become acid if not operated on immediately, is conducted into large clarifying vessels, each containing several hundred gallons; here it is rapidly boiled, until brought to the state of a thick syrup; and the syrup, being cooled in open vessels, becomes a mass of sweet crystals imbedded in molasses or a kind of treacle. Now as this molasses, from its chemical constitution, never can and never will granulate or crystallise, it must be separated from the rest before dry sugar can be produced; the whole mass is put into casks having small holes in the bottom; the molasses trickles through a filtering layer placed over these holes, and leaves the brown granulated sugar in the cask. The molasses is distilled for rum, while the granulated particles are shipped as 'raw' or 'Muscovado' sugar. The swarthy workmen are thus manufacturing chemists, or chemical manufacturers, although they may not be fully aware of the dignity of their position as such. Of the disasters of the West India planters, and of the improvements lately introduced into the machinery of the sugar estates, we have not here to speak: suffice it to know that hogsheads of brown sugar are shipped to London.

According to certain calculations recently made, it appears that the quantity of sugar obtained from one acre varies between the wide limits of 500 lbs. and 3000 lbs., but that the average may be about 900 lbs. It requires

about 25 tons of cane to yield one hogshead of (15 or 16 cwts.) of sugar. From 6 lbs. to 8 lbs. of juice is the usual quantity required to produce 1 lb. of sugar.

So far as London is concerned, the processes of the sugar-trade are mainly limited to the transformation of brown moist into white loaf sugar. This is the work of sugar-refiners, nearly all of whom carry on their operations in the neighbourhood of Whitechapel and the Commercial Road — one of the curious examples, so numerous in London, of the congregation of similar traders in one locality. The sugar-refineries are among the largest buildings in the eastern half of the metropolis; from their numerous floors, their ranges of innumerable windows, and the nature of the processes conducted, they are in every way remarkable establishments. Any one who travels on the Blackwall railway will have ample means of becoming familiar with the external aspect of the refineries: the railway threads its path through the midst of them. The interiors are a very labyrinth of sweets and dirt.

The differences between brown moist and white lump sugar are mainly two — all the remaining uncrystallisable sugar is removed; and all colour is bleached out of the syrup. The alphabet of transformation — brown sugar into white — may be rendered very brief. Coarse brown sugar is discharged from the hogsheads into large vessels; it is boiled up with water, and also with lime or some other ingredient that will cause impurities to float at the top; it is filtered through tubes of cloth, to remove yet more impurities; and it is again

filtered through a thick bed of powdered charcoal, until the syrup presents itself as a liquid clear and transparent as water. The syrup is boiled in vacuo to drive off the water; and the thickened residue, after being heated and stirred in a separate vessel, is poured into conical sugar-moulds; the liquid or syrup that flows from an aperture at the apex of each mould is treacle, and the remaining solid, after a few more processes, becomes beautiful white loaf sugar.

Like that of most other tropical products, the use of sugar in England has greatly extended since the spread of intercommunication between distant countries. Our consumption is forty times as great as it was a century and a half ago, although the population has not much more than trebled in this period. It has been roundly estimated that the total production of sugar all over the world may amount to $2\frac{1}{2}$ millions of tons, or 6000 million lbs., annually; and that the European consumption may be about one-third of this quantity; but such estimates are very uncertain. At any rate, we have the means of knowing how much sugar comes to the United Kingdom; for, being a taxed commodity, an exact entry is made of all the imports. At the beginning of the present century we consumed about 300 million lbs. annually; and this average did not rapidly rise until the change in the duties in recent years; in 1852 it reached 1000 million lbs., and in 1853 and 1854 it was still higher. Every one is aware that the price of sugar in London (exception being made of a short period at the close of 1855) is very much lower than was the wont a few years ago; and

there can be no doubt that this lowering of price has materially increased the consumption.

As with other articles of diet and beverage, so with sugar, we want means of knowing whether the London consumption is greater or less than would be due to the ratio of population. Our statists have found that, if all the sugar consumed in the United Kingdom had been equally divided, there were about 16 lbs. per head per annum during the first forty years of the present century; but during the last fifteen years the consumption has increased much faster than the population, insomuch that in 1854 it amounted to about 36 lbs. per head. Mr. Porter, in speculating how the supply was distributed among the different classes of society, arrived at the following conclusion, at a time when the consumption was about 24 lbs. per head: he supposed that the rich and middle classes take about 40 lbs. per head per annum, and that this quantity remains pretty nearly equal year after year, whether the price be constant or variable; consequently, any cheapening of sugar must affect its sale chiefly among the humbler classes. His idea evidently was, that the enormous increase in the consumption is due to the extension of this luxury to those who could not afford to purchase it when prices were high; that it is, in short, a distinct and positive increase to the comforts of four-fifths of our population — being those who are not included in Mr. Porter's 'rich and middle classes.'

London has little reason to care about beet-root sugar; but a few words concerning it may be desirable.

The root of the beet yielding a sweet juice whence

sugar may be obtained, the question arises whether such sugar can be made and sold at a price sufficiently low to compete with cane-sugar in the market: if it cannot, then are the beet-projects likely to languish. The estimates put forth on this subject are occasionally so extravagant, marked with a pen dipped in ink of such glowing colour, that they have done more harm than good, by raising hopes not likely to be realised. Viewing the subject soberly, however, it is believed that 150,000 tons of beet-root sugar are now made annually in Europe. Foreign nations have not such easy access as England to colonial-grown sugar; and they have thus a greater inducement to obtain beet-sugar from home-grown plants. It was rather more than a century ago that the chemist Margraf discovered or invented a mode of obtaining sugar from beet; fifty years later, Achard published minute details concerning the processes; and since then the French have published numerous treatises bearing on the subject. A factory was established at Thames Bank about twenty years ago, for making sugar from beet, and then making brown paper from the refuse; but it failed. There was an estimate in 1851 that at that time France produced 60,000 tons and Germany 45,000 tons of beet-root sugar annually. A newspaper paragraph has stated that there were 337 beet-sugar factories in France in 1853, and 303 in 1854, several firms having shown a disposition to withdraw from the trade, as not being sufficiently remunerative; the quantity said to have been made in 1854 was 77 million kilogrammes, equal to 169 million lbs.

The statements concerning the culture of the beet,

and the production of sugar therefrom, are so conflicting, that little reliance can be placed on them. One set of figures leads to the following:—That we may obtain $1\frac{1}{2}$ to 3 tons of sugar per acre, according to the soil; that in Ireland an average crop will yield 26 tons of root per acre, from which may be obtained 2 tons of sugar; that the European produce ranges from 16 to 26 tons of root per acre; that the expense of growing an acre of beet in Ireland is about 8*l.* 10*s.*; and that the expense of manufacturing sugar from that acre would be about 10*l.* 10*s.* more. From these and similar data, some enthusiasts have arrived at a conclusion that Irish beet-root sugar might be produced at $1\frac{1}{2}d.$ per lb.! Professor Hancock, in a paper read in 1851 *, gave a sad blow to such estimates. He analysed the farmer's expense in growing an acre of beet, the produce of root per acre, the percentage of sugar in the root, and the cost of the sugar manufacture; then, comparing the sum total with the market-price of cane-sugar, he came to a conclusion that English or Irish beet-sugar could not compete with cane-sugar—unless by a protective duty, which is of course out of the question in these free-trade days. It has been proved by experience that in Canada and the United States maple sugar can be made at an expense ranging from 2*d.* to $3\frac{1}{2}d.$ per lb., and can therefore be advantageously introduced into the market; but the capabilities of the beet-sugar manufacture in the United Kingdom have yet to be shown. The well-intended schemes brought forward in Ireland with this view are yet in the early stage of

* British Association, Meeting at Ipswich.

their career. Supposing the manufacture to be worth attending to, the processes are somewhat as follow:— The roots are washed and scraped; they are rasped and reduced to a pulp; the pulp is squeezed in a press, to yield the juice; the juice is heated and boiled, with provision for removing both scum and sediment; the clear liquor is evaporated to a syrup; and the syrup is treated much in the same way as cane-syrup, until it becomes granulated sugar.

A word concerning adulteration. Sugar is certainly less sophisticated than many other articles of food; yet did the 'Lancet' commissioners meet with a few adulterants in some of the many specimens examined by them. It is worthy of being remembered, however, that they found nearly all the specimens of lump sugar pure; indicating (supposing the honesty were the same in both cases) that crystallised white sugar is less easily adulterated than granulated brown. It appears, however, that cheap confectionery is much more extensively adulterated than any kind of sugar; gamboge, lead, copper, mercury, chalk, starch, plaster, pipe-clay, Cornish-clay, are items in a list of strange things met with in cheap sweetmeats; some as a fraudulent substitute for white sugar, and some as colouring ingredients. Mr. Accum's 'Death in the Pot' may perhaps be applied more seriously to such trifles than to articles of solid food; for medical men have, it is said, been able to trace disease and death to the eating by children of cheap and adulterated sweetmeats.

The wonders of the East, in past times, were a sso-

ciated quite as much with balmy SPICES as with anything else. The fragrant essences and spices, perfumes and cosmetics, have always been more largely produced in the East than in the West; and at the present day a considerable tonnage of shipping is employed in bringing over to England such portion of the produce as we require. A few lines will suffice for such a notice of the subject as need be given in connection with the Food of London.

Pepper is imported by England in vast quantities. Simple as is this spice or condiment, its consumption carries us into the region of millions; for we season our food with more than $3\frac{1}{2}$ million lbs. annually in the United Kingdom; besides purchasing nearly as much more to sell again to foreign countries. This humble-looking article of commerce is the dried unripe fruit or berry of an oriental plant; it is supposed that 50 million lbs. are annually grown, of which about one-half is the produce of Sumatra. The accumulation of price, as the commodity passes from hand to hand, is remarkable; for it appears that white pepper, worth $1\frac{1}{2}d.$ per lb. in Singapore, rises to two shillings or more by the time it is retailed in England. In the culture of pepper in Sumatra, 1000 trees yield about 450 lbs. of the spice; and one acre of such trees about 1160 lbs. Like as green tea and black tea are two preparations from the same plant, so are black and white pepper; the berries are gathered when yet green, and quickly dried on mats, by which their colour darkens, and they become 'black' pepper; but when 'white' pepper is required, the berries are steeped in water until

the outer husk can be removed; and the greyish-white berries then remaining are smaller, smoother, and less powerful in taste and smell, than black pepper. It is worthy of note, that while the price of pepper in England was 6*s.* per lb. just before the discovery of the route to India round the Cape of Good Hope, it lowered to 1*s.* 3*d.* very soon after that discovery.*

Ginger is the 'rhizome' or rootstock of a plant growing abundantly in the East and West Indies. When cut at the proper season, the rootstock is scalded in boiling water, and dried by artificial heat, to produce 'black' ginger; or peeled, and dried in sunshine, to constitute 'white' ginger: it presents, as is well known, the appearance of branch-like pieces, two or three inches in length. When the rootstock is gathered young, it is used for preserves and syrups. The produce is said to be about 1500 to 2000 lbs. of ginger per acre. It is imported in bags containing about 1 cwt. each; the quantity imported being three or four times as large as that of pepper.

Nutmegs are the seed or fruit of a tree growing in the Moluccas and other islands of the East. More familiarly, nutmeg may be regarded as the kernel of a nut; the fruit itself is similar in size and shape to a peach; the pulp is removed, the nut remains exposed, and of this nut the kernel constitutes nutmeg, and the shell mace. Two or three gatherings of the nuts occur in a year; and the nuts being dried to separate the mace, the mace is peeled off, flattened, dried, and screwed down for shipment. An acre is said to accommodate about

* Simmond's Com. Prod. of Veg. Kingd. p. 427.

92 trees, and each tree to yield about 1000 nutmegs annually; one pound of mace is obtained from about 430 nutmegs. The nutmegs are smoke-dried for many weeks before being fitted for shipment. Our consumption of these products in the United Kingdom is not very considerable; about 210,000 lbs. of nutmegs, and one-ninth of this quantity of mace, annually.

Allspice is the berry of a tree cultivated with great care in Jamaica; a single tree will sometimes yield a hundred lbs. of dry berry in a year; but the average is much less. The berries are gathered unripe, and are then dried for shipment: they come over in bags of about 1 cwt. each. The berries combine in some degree the taste of cinnamon, nutmeg, and cloves; and to this is attributed the name of 'allspice:' the Customs authorities recognise it only by the name of 'pimento.' We consume about 400,000 lbs. annually.

Cinnamon is the aromatic bark of a small tree growing in Ceylon. The bark-peeling is carried on during the latter half of the year; it is effected by slitting the bark longitudinally, and then cutting it across, so that it can be readily turned back from the wood underneath. The bark, when removed, is tied up in bundles, left twenty-four hours to undergo fermentation, deprived of the cuticle or inner skin, rolled up into long slender pipes, sent to Colombo, and assorted into three kinds for the English market. The best cinnamon occurs in pieces about a yard in length, containing six or eight narrow strips rolled up together; it is about as thick as vellum paper, and is shipped in bales containing about 90 lbs. each. *Cassia* bears much resemblance to cinnamon,

being the bark of a plant belonging to the same genus. About 40,000 lbs. of cinnamon, and three times this weight of cassia, are used annually in the United Kingdom.

Cloves are the flower-buds of a tree growing in the Moluccas and other tropical regions: they are gathered before they open, and are dried in the sun. A tree yields from 5 to 60 lbs. of these flower-buds annually, according to its age; and as the plant is very long-lived, one single stem may yield more than 1000 lbs. weight during its career. We consume about 200,000 lbs. in a year.

Rice stands apart from all these colonial or tropical products, inasmuch as it belongs to the farinaceous class, and may be used as a substitute for bread; it is grown in India, China, the West Indies, and many parts of America, in large fields requiring abundant irrigation. There are many different varieties; but in all the rice is thrashed from the ears, and corresponds to barley-corns or grains of wheat; when separated from the stalk it is known by the name of 'paddy,' with the husk adhering closely to the grain; this husk is separated by grinding, sifting, and winnowing; and afterwards another envelope, a reddish skin or cuticle, is removed by friction. As the import duty is much lower on paddy than on cleaned rice, many of the imports are in the former state, and the rice is cleaned in England. Rice comes to us in bags of 1½ cwt., and tierces of 6 cwts.; in 1852, '53, '54, we imported on an average about 150 million lbs. annually; but this was more than was required for home use, and we re-exported two-fifths of it. Many persons think

that the London population might increase the present ratio of consumption in this article of food, with advantage both tohealth and to pocket.

It would be useless to attempt any extension in this list of tropical items: only those largely used in London have any claim to a place here, insofar as they aid to swell the enormous catalogue of comforts and luxuries now taking part in our daily food. If we were to look nearer home, and bestow a few thoughts on the two humble 'seasonings' *salt* and *mustard*, we should find that, although the latter may be trifling in amount, the former is used in quantities truly immense. Our own salt-works, chiefly in Cheshire and Worcestershire, turn out 800,000 tons of salt annually; one Cheshire work alone makes 50,000 tons in a year, and can store 10,000 tons at once. Nearly all the rock-salt, dug in a solid state in pits, is exported; but nearly all the fine table-salt is obtained from brine, pumped up from a great depth underground, and then evaporated by heat. M. Necker, the French statesman, once estimated that salt is consumed in France at the rate of 19½ lbs. per head per annum; Mr. M'Culloch, a few years ago, estimated the English consumption at 22 lbs.; but the average must now be largely increasing on account of the great cheapness of the commodity.

According to the experience of the 'Lancet' commissioners, spices are not more exempt than other commodities from the degradation of adulterants. About 40 samples of pepper were examined by them; and among the ground powder were found linseed, mustard-seed, wheat-starch, pea-meal, sago-meal, pepper-

sweepings, and pepper-husks; it is indeed said that, 'once upon a time,' the pepper-corns themselves were actually imitated, by a mixture of oil-cake and common clay rendered pungent by cayenne. Ginger has sometimes an improved external appearance given to it by processes of barking and bleaching, to pass off inferior as superior; if ginger be purchased in a ground state, increased facilities for fraud are given; and accordingly there have been found flour, arrow-root, potato-starch, sago-meal, turmeric, mustard-husk, and ground rice, in what purported to be ground ginger. The commissioners found most of the samples of all-spice, cinnamon, mace, and cloves examined to be pure, or nearly so. Mixed spices offer a temptation to roguery; and they are frequently treated somewhat in the same way as ground ginger. It would hardly be supposed, perhaps, that so humble a product as mustard falls under the same ban; mustard is (or ought to be) a meal obtained from the orange-coloured seed of the mustard-plant, grown extensively in Durham and Yorkshire, the black husk of the seed being separated before grinding. But of the 2000 tons of mustard, said by Mr. Braithwaite Poole to be annually sold in the United Kingdom, we must not be quite certain that it is what it professes to be; for the commissioners, out of 42 samples examined, found most to contain an admixture of flour, cayenne, bay-salt, radish-seed, pea-meal, turmeric, rape-seed, or capsicum.

One more example, and we have done with this vegetable series.

TOBACCO among the 'Food of London.' Is this right, morally or dietetically, commercially or courteously? It is of little use now to determine whether this conjunction be 'right' or not; the plain fact stares us in the face, that men of all classes do now consume tobacco, not only in London but in almost every part of the world, civilised or uncivilised; and another fact is, that to thousands among the humbler classes the tobacco serves virtually as a substitute for food. If our poor soldiers in the Crimea — wasting upon half-cooked meat, green coffee, ragged clothes, snow for beds, piercing winds for blankets — if they had been asked whether a pipe in such circumstances would have been food to them, how joyful would have been their 'Yes'! Professor Johnston treats this as part of a larger subject — a sort of craving of mankind for some kind of narcotic indulgence: — "The aborigines of Central America rolled up the tobacco-leaf and dreamed away their lives in smoky reveries ages before Columbus was born or the colonists of Sir Walter Raleigh had brought it within the precincts of the Elizabethan court. The 'coca' leaf, now the comfort and strength of the Peruvian muleteer, was chewed as he does it in far remote times, and among the same mountains, by the Indian natives whose blood he inherits. The use of opium, or hemp, or of the betel nut, among Eastern Asiatics, mounts up to the time of most fabulous antiquity. The same, probably, is true of the pepper plant among the South Sea Islands and the Indian Archipelago, and of the thorn-apples used among the natives of the Andes and on

the slopes of the Himalaya; while in northern Europe the ledum and the hop, and in Siberia the narcotic fungus, have been in use from time immemorial."*

It is nevertheless a truly strange circumstance, that tobacco, now used all over the world, was not known in Europe three centuries ago! The moralists made a terrible onslaught soon after its introduction; and royalty took up the cudgels also. King James's 'Counterblast to Tobacco' was written about 1616, only thirty years after Raleigh had introduced the plant into England. The rebuke was intended to be grave and severe. "Have you not reason," asks the royal moralist, "to be ashamed, and to forbeare this filthy noveltie, so lately grounded, so foolishly received, and so grossly mistaken in the right use thereof? A custome loathsome to the eye, hateful to the nose, harmfulle to the braine, dangerous to the lungs, and in the blacke stinking fume thereof neerest resembling the horrible Stygian smoke of the pit that is bottomlesse." He adverts to what appears to have been a dinner-table abuse — "making the filthy and smokey stinke thereof to exhale athwart the dishes." Smoking, in fine, "maketh a kitchen of the inward parts of man, soyling and infecting them with an unctuous and oyly kind of soot." But all in vain: the smokers heeded not the kingly rebuker.

The tobacco, as we know it in the shops, gives but little information concerning the appearance of the leaf at the plantations. The tree attains a height of six or eight feet; and the leaves vary from ten to twenty

* Chemistry of Common Life, ii. 3.

inches in length; they have a yellowish tint and a rough surface. At the proper season, the plants being cut down nearly close to the ground, they are hung upon slender sticks to dry, either in the air or by the aid of a wood-fire. When properly dried they are taken in-doors to be 'stripped;' a party of negroes — men and women, boys and girls — squat in a circle on the floor, and pull the leaves from the stalks: the leaves being placed in three or four heaps, according to their quality and appearance. Some of the leaves are sent to England with the midrib attached, while others are stripped from the midrib; but in either case they are left some time in heaps on a platform to 'sweat' or undergo a slight fermentation. The leaves are finally packed in hogsheads, to the extent of ten or twelve cwts. in each; the pressure applied being so intense as to convert them into a mass nearly as hard and solid as wood.

The stores of tobacco in our docks are truly extraordinary. The London Dock Company have built a vast warehouse, which the Crown rents at a large annual sum; and it is thus virtually in the hands of the government — a structure well built, well glazed, and well barricaded. We can imagine that an enemy to smoking would be quite disheartened by an exploration; for the sight and the odour of tobacco encounter him on every side. Roaming east and west along one series of avenues, and then changing to another series of north and south avenues, he finds ranks and double ranks of hogsheads on either side, piled one on another and ranged one behind another; five acres

of space are thus occupied; or, to change the scene a little, square chests of tobacco alternate with round hogsheads and flattish matting bags, according to the countries whence the tobacco is brought. A cigar warehouse attached has doors and locks and keys to itself; and we may perchance find 24,000 hogsheads of tobacco, and 1500 chests of cigars, under one roof.

There are some curious operations carried on when the hogsheads of tobacco, after being stored at the London or St. Katherine's Docks, are about to be removed for sale. Almost every hogshead of tobacco becomes slightly injured by the voyage to England; and as the duty is enormous, the importer takes care not to pay on any but saleable portions. The Chancellor of the Exchequer is a hard man to deal with; but there is still a little mercy in some of his dealings; his official language to tobacco importers is virtually this: "You have here a hogshead containing a thousand pounds' weight of tobacco; you must pay me duty on the whole of this before you can be permitted to remove it from the docks: if, however, any portion has been so injured that you would lose money by the sale, then I will permit you to abandon it and save the duty—but, observe, I insist on the absolute destruction of that which escapes duty." The bargain thus made is carried out. The hogshead is loosened and lifted from off the mass of tobacco; the tobacco is examined, and any damaged portions of exterior are cut off by the aid of large knives; the remainder, all good and saleable, is weighed for the calculation of duty; and the damaged shreds

or cuttings are burnt in a kiln within the precincts of the docks. It is to prevent any subterfuge in connection with this drawback of duty that the damaged tobacco is destroyed; and thus the shredded refuse, useless to the importer and useless to the finance minister, becomes nothing but—a material for tooth-powder. The explorer at the London Docks will not have failed to meet, in the vast tobacco warehouses, an inscription directing him to the 'Kiln,' or, as it is familiarly termed, the 'Queen's tobacco pipe.' In this pipe her Majesty officially smokes not only tobacco, but kid gloves, mutton hams, or any other commodities which, being injured, are left with the import duty unpaid.

The connoisseurs in smoking may be supposed to know all about the differences between 'returns,' 'bird's-eye,' 'shag,' 'Cavendish,' 'Orinoco,' 'knaster,' 'negro-head,' 'pig-tail,' &c., but the origin of many of these names it would be no easy matter to find out. Some of the kinds of tobacco are made from dark leaf; some from light; some are more wetted and darkened in the preparation than others; some are better in the leaf; some are cut into threads finer than others; some have small bits of stalk shredded with the leaf; some are not shredded at all—and thus arise the many diversities in price and appearance. The ordinary cut tobacco, constituting, perhaps, nineteen-twentieths of all that is consumed in England, is prepared for retail sale somewhat in the following way:—the hard masses of tobacco require to be dug out of the hogshead by forcible means, and moistened with water before they can be separated; the midrib is stripped from each

leaf, if that process had not already been done at the plantations; the leaves are packed together into a hard cake; the cake is placed in an apparatus acting something like a chaff-cutting machine; and the leaves of tobacco become the shreds so familiar to us.

If tobacco be often a substitute for food to an Englishman, there is some reason to think that snuff may frequently serve the same purpose to a Scotchman: it has been said that Celts and Scandinavians snuff more than smoke; while Germans and Anglo-Saxons smoke rather than snuff. Be this as it may, a large quantity of tobacco-powder is forced up the nostrils of her Majesty's subjects. Much of the snuff consumed in London is ground in the neighbourhood of Mitcham, in Surrey. Snuff is prepared from various parts of the tobacco-leaf; some kinds are made from leaf without stalk, some from stalk without leaf, and some from a combination of stalk and leaf; there is also great attention paid to the colour and quality of the leaves. The 'Scotch' and the 'Welsh', the 'Lundyfoot' and the 'Hardham', the 'rappee' and other well-known kinds — all differ in the modes of preparation; but the chief processes are those of grinding and drying. Sometimes the drying is carried on to such an extent that the snuff becomes 'high-dried.'

Another form in which the 'Virginian weed' is consumed largely is that of cigars. The making of Manilla cheroots appears to be thus managed, according to the account given by Mr. Mac Micking. Women only are engaged in this employment; the number thus employed in the great factory at Manilla is generally

nearly four thousand; but, besides these, numerous men are employed in another establishment making cigarillos, small cigars enveloped in paper instead of tobacco-leaf, and usually smoked by the Indians of the island. The women work eight hundred or a thousand together, in very large rooms — all seated or squatted, Indian-like, on their haunches, upon the floor; they are grouped around tables, at each of which presides an old woman to keep the younger hands in order. The women are supplied with a certain weight of tobacco, of the first, second, or third qualities, used in forming a cigar; they are obliged to account for a proportionate number of cheroots, the weight and size of which are thus regulated; they employ stones for beating out the leaf on the wooden tables before them; and the noise thus produced, by perhaps a thousand working together, is described as almost deafening. The workers are well paid by the government, to whom the monopoly belongs.*

As with Manilla cheroots, so with Bengal cheroots, Havanna cigars, and all the members of the cigar family; they are all made by rolling up tobacco-leaves, slight differences being observable in the manipulations. An enormous proportion of those sold in London, under the high-sounding designations of Havannas, Mexicans, Regalias, Lopez, Cubas, Principes, Bengals, Fragancias, Queen's, and so forth, are made in the neighbourhood of Whitechapel. A real foreign cigar must necessarily be high-priced on account of the enormous duty; insomuch that we may safely infer

* Recollections of Manilla and the Philippines.

that a cheap cigar is made at home, although the tobacco itself may possibly be genuine.

Contrary as it may be to expectation, there is not more tobacco consumed now, per head of population, than at the commencement of the present century — so far as the customs' returns afford the means of judging. Mr. Dalton, Mr. Porter, Mr. Crawford, and other inquirers, have set down the quantity 'entered for home consumption' in certain years, and the amount of population in those years; and from these comparative columns they have found that if all the tobacco were equally divided among all the inhabitants, it would have amounted — in 1801 to about 16 oz. per head per annum, in 1811 to $18\frac{1}{2}$ oz., in 1821 to $11\frac{3}{4}$ oz., in 1831 to $12\frac{3}{4}$ oz., in 1841 to $13\frac{1}{2}$ oz., and in 1851 to 16 oz. The pounds consumed annually are now just about equal to the total number of inhabitants in the United Kingdom — about 30 millions, or 1 lb. per head per annum.

It has been conjectured that the money paid retail for tobacco in the United Kingdom cannot be less than 6,000,000*l.* annually, of which three-fourths go to the crown in the form of duty! Five-sixths of all our tobacco is brought from the United States — a ratio of dependence nearly as complete as that in cotton. As an illustration of the small quantity of coffee consumed in Ireland a few years ago, it was stated that the Irish get rid of four times as much tobacco as coffee. We nevertheless occupy a very humble position as smokers; for Mr. Crawford, in an essay in the Statistical Society's Journal, states that the United Kingdom consumes less

than most other European nations per head; that Europe takes less than the other quarters of the globe; that France consumes 18 oz., Denmark 70, and Belgium so high as 73 per head annually; that this latter is far above the European average, but far below the Asiatic average, and that it may possibly be a fair average for the whole world. In short, he thinks that 1000 million people may take 70 oz. per year each, making a total annual consumption of tobacco amounting to 2 million tons! He further supposes that the average price all over the world may not exceed 2*d.* per lb., which would give a total retail expenditure for tobacco of 36 millions sterling per year, mostly driven off in smoke. The average wholesale price of tobacco in England is about $4\frac{1}{2}d.$ per lb. Some of the tobacco-brokers have observed that when times are good the cigar-trade 'looks up;' at such times working men frequently indulge in cigars; but when hard times supervene, the humble pipe of humble tobacco is made to suffice.

Another singular computation relates to all the narcotics—tobacco, opium, hemp, betel, and coca—concerning which it is guessed that 1560 million persons use them, consuming 6000 million lbs. annually, requiring 7 million acres of land to grow them, and paying 60 millions sterling for them. Such an estimate must necessarily rest on a slender foundation. More interesting is Professor Johnston's query,—How far is *race*, or national character, affected by the usage, during a long period of time, of particular narcotics? This query, however, takes us too far from London and its tobacco.

Of the various sorts of tobacco best known in London, Virginia is a strong common kind, Kentucky less strong, Maryland still milder, and Orinoco mildest of the four; Cuba and Columbia tobaccos are mostly used for cigars, and Manilla and Bengal for cheroots; Turkey, Levant, and Persian tobacco are more delicate in flavour and higher in price. It has been found in the United States that an acre of Maryland tobacco produces about 600 lbs. of dry leaf, that 6000 plants produce 1000 lbs. of dry leaf, and that 8 lbs. of dry leaves produce 1000 cigars of average size. Another estimate gives for the whole world $5\frac{1}{2}$ million acres of land at 800 lbs. of tobacco per acre. Not only are the Americans great tobacco-growers, but great tobacco-consumers also; for their consumption is said to reach 7 lbs. per head per annum.

It follows as an almost necessary consequence of the enormous duty imposed upon tobacco in the United Kingdom, that much adulteration takes place: even upon ordinary tobacco the duty is far higher than the actual value of the commodity itself; while on cigars it exceeds this manifold. An Act of Parliament was passed in 1842, which shows that the government suspected the practice of adulteration, consequent in a great measure on the inordinate amount of duty; for it contained a clause prohibiting all tobacco manufacturers from having on their premises any sugar, treacle, molasses, honey, malt, roasted grain, chicory, lime, sand, umber, ochre, seaweed, ground wood, moss, weeds, or leaves other than those of tobacco. The truth is that all these have been met with in some of the many varieties of manufactured

tobacco or snuff. Generally speaking, however, dishonest practices in this trade are not exhibited so much in actual adulteration as in certain by-ways and side-paths; the wrongdoers either contrive to evade the payment of duty on real foreign cigars, or they palm off British-made cigars as foreign. The duty is evaded in an endless number of ways, usually on small quantities at a time; but there is a record relating to the year 1843, of 20,000 lbs. of snuff having been imported from Holland, so packed as to pass for Dutch cheeses, and thereby evading a duty of 6*s.* per lb.! It is a common practice, in the shops of London tobacconists, to sell cigars made in London, but which—in the shape of the boxes, the words branded thereon, or the mode of fastening the cigars into bundles—may present the appearance of having been imported from abroad.

The 'Lancet' commissioners present some odd details concerning the wretched substitutes for cigars occasionally thrust upon unwary purchasers in London. An agent employed by them bought a few very 'cheap' cigars of a hawker in Whitechapel; and these, on examination, were found to consist of twisted wrappers made of thin brown paper, stuffed with hay, but containing not a particle of tobacco. Another cigar, bought at a review in Hyde Park, had a tobacco outside but an interior of hay. "About the neighbourhood of Whitechapel," the commissioners remark, "the sale of spurious cheroots constitutes a regular business. Men dressed as sailors, and appearing as though they had just returned from a long voyage, are constantly on the look-out for young gentlemen who are supposed

to have a little money in their pockets, and to be somewhat inexperienced. To such these fellows address the inquiry in a mysterious manner, as though they feared to be overheard by the police — 'Do you want to buy a box of real Manillas? I have got a few boxes "on the cross;" just come with me down this passage, and I will show you them, and let you taste them!' At the same time holding out a genuine Manilla cheroot as if taken from the box for the young gentleman to try. He, being satisfied with the quality and flavour, closes the bargain, and walks off home with a box of brown paper and hay under his arm, congratulating himself on his purchase, and anticipating the pleasure in store for him in smoking his acquisition." The mortification is here all the greater, for the 'young gentleman' cannot even ask for condolence: it is true that the hawker cheats him; but it is equally true that the young gentleman believes himself to have been cleverly aiding to cheat the revenue.

Thus may we close this chapter with these few notices of the smoky vegetable which Master Salvation Yeo, in the warmth of his admiration, calls "a lone man's companion, a bachelor's friend, a hungry man's food, a sad man's cordial, a wakeful man's sleep, and a chilly man's fire."

CHAPTER XII.

THE BEVERAGES OF LONDON.

Increase or Decrease of Beer-drinking in London, which? — Malt and Malting. — Quantities of Barley malted. — Hops and Hop-growing. — Hop-gambling. — Gradual Rise of Porter brewing. — Vastness of the London Breweries. — Manufacturing History of a Pint of Porter. — Amount of Brewing and Beer-drinking in London. — Public-houses of London. — Anomalies in the licensing System. — Oddities in the Signs of Public-houses. — Spirit drinking. — Remarkable Chemistry of Spirit-distilling. — Great London Distilleries. — Distinction between Distillers and Rectifiers. — English Gin and Scotch or Irish Whiskey. — Probable Consumption. — Wine — Causes of its small Consumption in England. — Operations of the Vintage. — Probable Quantities produced. — Names and Capacities of Casks. — Port and Sherry sophisticated for the English Market. — Quantities imported. — Great Vaults at the London Docks. — 'Tasting Orders.' — Adulteration of Wine. — British Wine. — Rise of this Manufacture in Connection with Vinegar-making.

Popular opinions require occasional revision. That London is a beer-drinking city — a city in which porter-breweries, dray-horses, draymen, beer-butts, and public-houses are especial characteristics — is in many quarters a received doctrine, a theorem not to be gainsaid.

But is this true? Will the current opinion bear the test of examination? It may be incontrovertible that our great brewers send forth a larger amount of malt-liquor than any other brewers in the world; but this is not conclusive. The inquiry is — not how much beer is brewed and drunk — but what ratio does

this quantity bear to the number of inhabitants. Now there is strong reason to think that, both in the metropolis and in the country generally, this ratio is smaller than in past times. In the Historical Sketch many passages have been quoted from writers of authority, tending to show how great was the love of 'good fat ale' and 'foaming tankards' and 'lusty flagons' in the days that are past. But the writers of the present century have become accustomed to apply a new test to such matters; they endeavour to reach the fountain-head, and to determine what have been the quantities of ingredients or materials employed.

Now Mr. Porter, Mr. Dalton, and other inquirers, have ascertained what quantities of malt were made at different periods; and, comparing these quantities with the population, it becomes unquestionable that the consumption per head was much larger in past times than in the present. Just a century ago the quantity was enormous, quadrupling that of recent years, per head of population: it is true that some of the malt may have been used in distilling spirits, or in making vinegar; but the same is equally applicable at the present day. In one of Mr. Porter's statistical tables it appears that the malt made was equal to nearly five bushels per head throughout the kingdom in 1750; but that this ratio decreased to two bushels and a half per head in 1790. At no time during the present century does the quantity appear to have been so much as two bushels; and in many recent years it has been less than one bushel. The same authority

has ascertained that the beer and ale made in England and Wales, if shared rateably among the inhabitants, would have given about 25 gallons per head per annum, in the early years of the present century; but that this quantity diminished to 21 gallons about the year 1829. The Beer tax was repealed in 1830; and since that time there have been no official means of determining the quantity of malt-liquor brewed: we only know how much malt has paid duty to the Exchequer. One curious fact elicited by Mr. Porter is this — that whatever may be the whiskey-making and whiskey-drinking tendencies of the Scotch, the taste for malt-liquor is much less strongly developed there than in England; at the time when the English average gave about 21 gallons per head, the Scotch average barely amounted to 6 gallons; and if, as seems probable, more Scotch ale is consumed in England than English porter and ale in Scotland, this latter average is reduced still lower.

Of outlandish beer, Londoners know little. The *chica*, or maize-beer of South America; the *bouza*, or millet-beer of the Crim-Tatars; the *qvass*, or rye-beer of the Russians; the *koumiss*, or milk-beer of the Turcomans; the *cava*, or pepper-beer of the South-Sea Islanders — are beverages only to be read about in books, so far as London is concerned.

Beer being brewed from malt, and malt being made from barley, the problem in reality is, how to get the sugar out of the grain; or rather, how to convert the starch into sugar? It is left for the brewer afterwards

to determine how to convert the sugar into beer. Other kinds of grain, such as wheat, oats, rye, and Indian corn, contain starch, and can be malted, but barley is better fitted for this than any of the others. The malting process does not extract the starch from the barley, but changes its character while yet enveloped within the husk. The grain is wetted and steeped; it swells, becomes heavy, and changes colour; it is spread out in a layer; it becomes drier and warmer and sweeter; its starch changes into sugar; it is kiln-dried on a perforated floor; and it becomes malt — 'pale,' or 'amber,' or 'brown,' according to the mode and degree of drying. The barley diminishes in weight, but increases in bulk, by the malting process; thus 100 *pounds* of barley produce about 92 pounds of malt, but 100 *bushels* of barley produce about 108 bushels of malt.

As to our supplies of this important item, London depends in great degree on the neighbourhood of Hertford and Ware, in which malting is carried on to a remarkable extent; some years ago, Kingston-upon-Thames took the lead above all other towns in supplying this article of London wants; but Ware is considered to occupy the first rank at present. The Chancellor of the Exchequer, whoever he may be—Protectionist or Freetrader — does not feel that he can play at hazard with a revenue of five or six millions sterling annually from malt; and thus he looks very sharply after the maltster. Indeed, the finance minister is virtually the maltster himself; for his rigorous supervision

of the maltsters is applied to the one end of producing the greatest possible bulk of malt from a given quantity of barley, — the malt-duty being estimated by bulk and not by weight.

The malt for London is not made in London; how much it amounts to, we shall see presently; but will first give a few figures relating to the production of malt as a whole. The malt account for 1854 presents itself thus: —

	Duty paid. *Bushels.*	Home Consumption. *Bushels.*
England - -	31,869,127	31,863,739
Scotland - -	3,412,950	3,411,511
Ireland - -	1,537,477	1,537,477
	36,819,554	36,812,727

Showing that nearly all the malt made in the United Kingdom is consumed at home. The quantities charged with duty were larger in 1852 and 1853 than in 1854; being respectively about 41 and 42 millions of bushels against 37 millions. As there were nearly 30 million inhabitants in the United Kingdom in 1854, the above quantity is equal to about a bushel and a quarter of malt per head per annum.

The other chief ingredient of malt-liquors, Hops, is in many respects remarkable. It is precarious as a crop; it will grow on a few soils only; it gives rise to a species of gambling from which malt is altogether exempt; and it may be dispensed with altogether,—for many other plants would impart a bitter flavour to beer, albeit not equal to that of the hop.

Whatever ratio the consumption of beer and ale in

London may bear to that in the whole kingdom, the hop-growers depend on London customers in a yet larger ratio; for London dealers purchase and sell much more hops than are needed for London brewing. However it may be in other counties, the hops from Kent, Surrey, and Sussex, are unquestionably dependent principally on the metropolitan market. It is estimated that 20*l.* to 25*l.* per annum is expended on an acre of hops, mostly as wages of labour for preparing the ground, manuring it with chopped rags and stale fish, digging, planting, weeding, poling, cutting, picking, drying, and packing in sacks or bags. It is a pretty sight in September, when the plants arrive at maturity, and when a hop-garden presents the most animated appearance: men and women, boys and girls, trudge to the gardens in considerable numbers from other parts of the country; for, when the hop is once ripe it must be picked with as little delay as possible, and hence all hands are called into requisition. The portion used by the brewer is simply the seed-pod of the plant; and the powerful properties are possessed chiefly by a yellow aromatic powder formed at the base of the flower.

There has been a rough estimate that England contains fifty to sixty thousand acres of hop-gardens; nearly half of this whole quantity is in Kent. East Farleigh is said to be the richest hop parish — a parish that claims to have had one grower who possessed 70,000*l.* worth of hop-poles! Another of the magnates of the hop-trade, in a different part of Kent,

is popularly said to possess five hundred acres of hops, and to have on some occasions employed four thousand persons during the picking-season. The hops vary from a minimum of one cwt. to a maximum of twenty cwts. per acre; and thus the grower is kept in anxiety and uncertainty concerning the profitableness or otherwise of his year's exertions. Hence arises the strange system of hop-gambling, in which two men wager upon the probable amount of the hop-duty — itself depending on the richness of the crop; it is analogous to the system of 'time-bargains' on the Stock Exchange, wherein two men strive which shall make the more correct guess concerning a future uncertain event, and agree that a sum of money shall constitute a reward given by the loser to the winner. Many a Kentish man has been ruined by hop-gambling. As to the real produce, it has sometimes been estimated that eight or ten cwts. per acre may possibly be about an average of all seasons and all soils.

The hop-flowers are reduced to one-fourth or one-fifth of their weight by drying. They are well compressed for the market into sacks — the finer into 'pockets' of $1\frac{1}{2}$ cwt. each, and the coarser into 'bags' of $2\frac{1}{2}$ cwts. The properties of hops in beer or ale are said to be four — to impart a tonic aromatic bitter; to increase the soporific tendency; to clarify the beer; and to delay the acidifying. So much do we, as a nation, appear to admire this adjunct, that we are supposed to grow as many hops as all the rest of the world together.

No department of railway commerce in connection with London food is more remarkable, perhaps, than the hop-trade on the South Eastern railway. As Kent is the chief county, and as September and October are the chief months, the pressure of business is sometimes enormous. This was especially the case in 1855—the richest hop-year ever known. On some days the country stations were literally choked with hops: 2000 or 3000 pockets at one station, waiting until trains could be provided for conveying them to London. The Bricklayers' Arms depôt often appeared like one vast magazine of hops; and Mr. Shaw, the goods manager, was nearly overwhelmed by this flood of bitters. The hop-salesmen in the Borough, too, were bewildered; for the arrivals were more rapid than the clearances, insomuch that their warehouses could not contain the vast stores sent up for sale. The waggons from the railway conveyed through the London streets quantities of hops scarcely credible; the company made arrangements for the reception of 40,000 pockets per week, if the salesmen could have carried them off so rapidly, which, however, was found to be by no means the case. During the season nearly 250,000 pockets, averaging 13 to the ton, or about 170 lbs. each, were thus brought up to the Bricklayers' Arms depôt; the largest conveyance on any one day was 7864 pockets, more than 1,330,000 lbs. of hops! The heaviest train brought 2600 pockets at one time. The waggons and vans that conveyed the hops from the depôt to the salesmen's warehouses, or to other railway stations, contained

from 40 to 60 pockets each; and on one particular day 7326 pockets were thus conveyed, comprising 140 monster waggon-loads. The mere bittering of our beer and ale, it will thus be seen, gives rise to a vast scene of commercial activity.

The Hertfordshire malt and the Kentish hops being, as we will suppose, brought to London, the rest devolves on the brewers. But before noticing the great porter breweries, a few words may be said concerning London beer in the second half of the last century.

About the beginning of the reign of George the Third, the price in London was 30*s.* per barrel for 'pale' ale, and 19*s.* to 22*s.* for 'brown,'—these being at that time the two principal designations; the two kinds were for the most part brewed by different parties, who emulated each other in the attempt to obtain popular favour. This emulation led to the preparation of mixed malt liquors; the brewers of brown ale, or beer, began to hop their beverage more highly, to render it more like the pale ale. Dealers were then wont to buy ales of two or three kinds, keep them some time, and mix them to form intermediate ales of different flavours, saleable at about 26*s.* per barrel: a beer called 'three threads' was produced by mixing three kinds together. The brewers next tried to imitate these intermediate ales by a kind which, being drawn entirely from one butt, became called 'entire;' and being deemed nutritious for porters and other labouring men, it also obtained the name of 'porter beer' or 'porter.' This is the explanation

given of the familiar 'entire' and 'porter' of the London breweries.

A pamphlet, published in 1795, adverted to in a former chapter, presents a very gloomy view of the morality of the metropolitan beer-trade at that time.* The pamphleteer states that the high price of malt had led the brewers to employ deleterious drugs as a substitute. In abundant times, when grain was cheap, there was but one brewery in London where the beer was sophisticated—the sophistication being made manifest by the muddling and headache symptoms on the part of the drinkers. "But now," exclaims he, in wrath, "the greater quantity of the porter consumed in this kingdom is polluted from a similar cause." He proceeds to inform us that the chief adulteration was effected with cocculus indicus, or Indian berry; and that five bushels of malt, aided by this berry, was made to do the duty of eight. "There is an Act in being which imposes five hundred pounds penalty for every twelve berries of the cocculus indicus found in any brewhouse by an exciseman; but to elude the statute, they make a strong decoction which is infused in the boiling liquor in the copper, by the head brewer, who in the dread moment of the poisonous immersion, turns all the usual assistants out of the brewhouse, and does the deed of ruin alone." The brewers seem to have been as well acquainted with 'doctoring' their beer as any of later days, according to the disclosures of this writer; for he accuses them of strengthening it with cocculus indicus, rendering it

* The Crying Frauds of the London Markets.

thirst-creating instead of thirst-allaying by means of tobacco, colouring it with Spanish liquorice, giving it a cauliflower 'head' by means of copperas, and fining it with isinglas. "Thus," he says, "all these arts and ingredients form that charming beverage called London porter, which is swilled in such immense quantities by the unconscious multitude, who gladly receive that into the stomach, as the fair issue of malt and hops, which is generally speaking innocent of both!"

The wrath of the writer has here a little clouded his judgment; for, whatever may be the case in respect of hops, London porter without malt would certainly be a puzzle. Sheridan, nevertheless, once threw a witticism at Whitbread containing such an insinuation; the two being together at Brookes's club, Sheridan is said to have let off the following squib:—

'They've raised the price of table-beer.
What's the reason, do you think?
The tax on malt's the cause, I hear;
But what has malt to do with beer?'

But let us on, and speak of the London breweries as they are at the present day.

The great brewing firms have become almost 'household words' in London. A few of the breweries are carried on by descendants of the same families which established them in the last century. The following table presents the trade of these great houses in a curious light: the trade of a brewer being measured by the quantity of malt used by him, the following were the quantities, in quarters, supplied to fifteen of the principal

brewers in the metropolis in three different years, at intervals of ten years apart:—

	1830–1.	1840–1.	1850–1.
	qrs.	*qrs.*	*qrs.*
Barclay and Co. - -	97,198	106,345	115,542
Truman and Co. - -	50,724	88,132	105,022
Whitbread and Co. -	49,713	51,482	51,800
Reid and Co. - -	43,380	47,980	56,640
Combe and Co. - -	34,684	36,460	43,282
Calvert and Co. - -	30,525	30,615	28,638
Meux and Co. - -	24,339	39,583	59,617
Hoare and Co. - -	24,102	29,450	35,000
Elliott and Co. - -	19,444	25,275	29,558
Taylor and Co. - -	21,845	37,300	15,870
Goding and Co. - -	16,307	14,631	13,064
Charrington and Co. -	10,530	18,328	21,016
Courage and Co. - -	8,116	11,532	14,469
Thorne and Co. - -	1,445	20,846	22,022
Mann and Co. - -	1,302	11,654	24,030

These immense establishments are well known, even to those who have not actually visited them, to be among the most complete manufacturing concerns in the metropolis. The famous brewery of Barclay and Perkins, standing at the head of the list, was founded, on a small scale, by Mr. Halsey, much more than a century ago; he made out of it an ample fortune, and then sold it to the elder Thrale, who in 1758 left it to the younger Thrale, the friend of Dr. Johnson; and it is among the by-gone but not less cherished glories of the place that the great lexicographer wrote a portion of his Dictionary in a room within the precincts of the brewery. When the second Thrale died, in 1781, the establishment was sold by auction, at which Johnson bustled about with an inkhorn dangling to his button-hole. A Mr. Barclay and a Mr. Perkins, clubbing their means together, purchased

the whole concern for the large sum of 135,000*l.*; and the brewery has remained for three quarters of a century nominally if not really in the hands of the descendants of those gentlemen. There is said to be a million and a half of capital sunk in this concern. With another of these great firms is connected the name of Sir Thomas Fowell Buxton, favourably known in a wholly different walk in life; while the Whitbreads carry us back to the memory of many a public event in the reign of George the Third.

When it is considered that two of the great breweries consume more than a hundred thousand quarters of malt each in a year, it may well be conceived that the working operations must be on a gigantic scale. These two are Barclay and Perkins's in Southwark, and Truman and Hanbury's in Spitalfields. The malt, the water, the hops, the fuel, the vessels — all are vast. For instance, Barclay's premises cover an area of ten or twelve acres, and have a boundary nearly a third of a mile in circuit; they require a hundred thousand gallons of water per day; they have twenty or thirty malt-bins, each as large as a moderately-sized house; they have a porter-brewing room or brewhouse very little smaller than Westminster Hall; they have five copper boilers, each of which will contain twelve thousand gallons of wort or malt extract; they require six or seven hundred tons of coals in a year; they have many thousand square feet of flooring, on which the beer is cooled; they have several square wooden vessels for the fermenting process, each of which will contain fifteen hundred barrels of beer; there is a tank, for con-

taining the beer before barrelling, that, when full, would float a large barge; there are nearly two hundred store vats, the average capacity of which is thirty thousand gallons, and of some of them more than a hundred thousand — a quantity that reduces the celebrated Heidelberg tun to insignificance; they have seventy-thousand butts and barrels and other vessels, wherein the beer and ale are conveyed from the establishment; and lastly, they have two hundred of the finest horses in the world, to drag the clumsy butts upon the clumsy drays through the streets of the metropolis — horses, draymen, butts, and drays, being worthy of each other. If the working details at Truman and Hanbury's, or at Reid's or Meux's, were similarly noticed, we should probably find some of the items still more extraordinary than those here given. Messrs. Truman are said to possess four vats that will contain 80,000 gallons each, and store-vats altogether for 3,500,000 gallons. The store in spring has even reached 4,000,000 gallons at one of these vast establishments.

The chemical niceties of porter-brewing lie beyond the scope of the present volume; but a general outline of the operations may be easily understood. The malt is of course the groundwork of the whole proceedings; it is brought from the maltsters in sacks, stored in bins until wanted, conveyed to a mill-room, and there crushed into grist by the action of steel rollers. The grist passes into a large vessel, the 'mash-tun,' where it is stirred with hot water until the water has extracted the beer-making qualities of the malt. The extract, now called wort, is transferred to a copper, where it is boiled

with hops until a sufficient amount of bitterness is imparted to the liquor. The contents of the copper, both wort and hops, then descend into a large square vessel, having a false perforated bottom; the spent hops remain in the vessel, but the liquid flows into another building where it undergoes a rapid cooling. The malt is mashed and the hops are boiled two or three times over, to extract as much as possible of their useful qualities; and when quite spent, the one constitutes grains for cattle-food, while the other is available as manure. The cooled wort undergoes the strange process of fermenting, in enormous wooden vessels; and when this process has continued to a certain stage, the wort is transferred to smaller vessels, where it frets away until the yeast has worked itself off. The wort has now become beer; and the beer is pumped or forced into enormous vats that retain it till wanted. After storing for a certain time, the beer is transferred to the butts so familiar to us in the London streets, each of which contains 108 gallons, or three barrels of 36 gallons each.

'Thirsty Soul,' and other writers to the editor of the 'Times,' maintained an animated controversy in 1853 concerning the price of London porter. Malt was plentiful and cheap, and yet the great brewers charged as highly for their beverages as in less favourable years. It was obviously a departure from the ordinary laws that regulate price; and there can be little doubt that it resulted from the enormous power possessed by about a dozen firms which monopolise the trade. The London masses *will* have London porter; the London porter

is associated with the names of only a small number of brewers; and thus the brewers have a formidable hold on the beer-drinkers. It offers a curious example — analogous to that of the 'Times' itself — of the growth of a mighty power, something akin to monopoly in aspect, yet all the time open to the influence of Free Trade.

The genuine unadulterated London beer, the brown stout, is certainly a special beverage. One drinker may prefer London ale, another the Burton productions of Bass or Allsopp, another the almost overcloying Edinburgh ale, another the ale of Suffolk or Winchester, of Alton or Llangollen, another the bottled stout of the famous Guinness; but the real London brown stout differs from them all, and has its resolute defenders and admirers. Smokers have sometimes discoursed learnedly upon the fitness of London stout for companionship with tobacco; how that 'the mucilaginous properties, which are well developed in stout, valuably neutralise the narcotic properties of tobacco' — a hypothesis which, be it good or bad, the great porter-brewers would be very glad to endorse. Concerning adulteration, it will be remembered that a great stir was made a few years ago, by an assertion on the part of a French chemist that strychnine, a bitter but poisonous herb, is employed by the Burton ale-brewers in the preparation of their 'bitter ale.' The accusation raised a ferment among the ale-drinkers, and this in its turn roused the Burton brewers; a paper-war ensued, and eminent chemists were called in to ascertain the facts of the matter. The inquiry certainly tended to show that

Burton ale is what it professes to be — a genuine product of malt and hops.

So far as regards London porter, any sophistication is likely to be practised rather, perhaps, by the publicans in low neighbourhoods than by the brewers; for the 'Barclay' or the 'Meux' at one house is frequently a very different beverage from that sold at another. Chemists assure us that cocculus indicus, a very bitter drug, often serves as a substitute for hops; that it gives a fulness and thickness and inebriating quality to beer, gaining for that beverage the reputation of being 'strong;' and that hence arises a temptation to tamper with the liquor, by lessening the quantity both of malt and hops. The beer-drinkers are in part to blame here, for thinking that the darkness and clammy thickness are necessarily indicative of strength.

In round numbers, the malt consumed in the United Kingdom, by private families as well as by public brewers, is about 40,000,000 bushels or 5,000,000 quarters annually, with which about 15,000,000 barrels of ale and beer are brewed, equal to 540 million gallons. At the average estimate of 50*s.* per barrel, the value amounts to nearly 40,000,000*l.* annually.

It is with London only, however, that we have here more particularly to do. Some computers have guessed that there are 1,200,000 barrels of beer and ale consumed in London annually; while another computer has set down 2,000,000 barrels as the probable quantity brewed in London; and a third has named about a thousand million 'tumblers' as a probable quantity— estimates but little accordant, and tending to show

how difficult it is to arrive at correct results on such a subject. If, as there seems not much doubt, the two great breweries send forth 50,000 gallons per day each, the magnitude of the trade is rendered sufficiently apparent.

It may be convenient, while speaking of quantities in respect of malt liquor, to bear in mind that, although beer and ale are usually estimated in barrels of 36 gallons each, there are six kinds of casks wherein the products of the London breweries are contained: viz. butts, puncheons, hogsheads, barrels, kilderkins, and firkins, containing respectively 108, 72, 54, 36, 18, and 9 gallons — all multiples of the firkin or 9 gallons.

Numerous minor facts present themselves for notice in connection with London beer. So far as the malt is concerned, beer is made from high-dried malt, which renders it dull, dark, and bitter; while ale is made from low-dried malt, whence it obtains the characteristics of being brisk, light, and sweet. While an excise duty was imposed on beer, 'strong beer' was considered to be that which sold for 16*d.* or upwards per gallon, while 'table beer' was at lower prices. There was an attempt made by the legislature to encourage the brewing of a third kind, called 'intermediate;' but this attempt, embodied in an Act passed in 1823, did not meet with ultimate success. Brewers can obtain more good wort from a bushel of low-dried malt than from an equal quantity of high-dried; but as the beer thus resulting would not be so dark or bitter as ordinary London porter, the brewers are tempted to add certain chemical ingredients to

bring about the darkening process. Strong Scotch ale is rich both in malt and in hops — there being, it is said, four or five bushels of the former, and four or five pounds of the latter, to a barrel. The 'four-penny ale,' at the beer-shops (as distinguished from the public-houses) contains from three to four bushels of malt, and two pounds of hops, to the barrel, and is bought from the brewers at 36*s.* or 38*s.* per barrel.

Will the inhabitants of London ever carry their beer in their pockets? A question, this, not so strange as at first may appear; for a Moravian, M. Rietsch, has invented a mode of making what may be termed solid beer. He brews a malt-extract; he bitters it with hops and sweetens it with sugar; he concentrates it by heat; he pours the thickened mass into wooden boxes lined with tinfoil; and he sells it in this form. The purchaser, when inclined for a draught of beer, takes some of the concentrated extract, dissolves it, ferments it, and — lo! the beer appears. It is obvious that the only question here is — not whether such beer can possibly compete with draught beer where brewers and malt and hops are plentiful — but whether it may not be a valuable addition to the commissariat stores of travellers or sojourners in distant and ill-provided countries; since the concentrated extract is suited for keeping. The substance is called 'bierstein' or beerstone. A company has been established for manufacturing it at Bömish-Rudoletz in Moravia.

The PUBLIC-HOUSES of London, as distinguished from hotels, inns, chop-houses, eating-houses, and cof-

fee-rooms, have undergone great changes within the last few years. They have been transformed from dingy pot-houses into splendid gin-palaces, from painted deal to polished mahogany, from small crooked panes of glass to magnificent crystal sheets, from plain useful fittings to costly luxurious adornments. The old Boniface, with his red nose and his white apron, has made way for the smart damsels who prepare at their toilettes to shine at the bar. The comfortable old landlady is less seen than formerly, ensconced behind and amongst her rich store of cordials and compounds and liqueurs; she, too, must pass under the hands of the milliner before making her daily appearance in public. Even the pot-boy is not the pot-boy of other days; there is a dash of something about him that may almost be called gentility; his apron is cleaner than were the aprons of pot-boys twenty years ago; and the tray filled with quarts and pints of dinner-beer, carried out to the houses of the customers, seems to have undergone some change, for it is less frequently seen than 'in days of yore.'

The great porter-brewers, as is generally known, are the owners or lessees of a large number of public-houses: indeed, much of the enormous capital of these firms is sunk in this way. Their object is, not to obtain a very large return as landlords, but to ensure the custom of the house; for the publican of a 'brewer's house,' whether he be a mere agent or servant, or has some little stake of his own in the concern, is expected to purchase his beer and ale of that particular brewer. We rarely or ever see any change in the name of the

brewer who supplies a particular house; the inscription 'Barclay, Perkins, & Co.'s Entire' adorned the front of the 'Red Lion' twenty years ago, as it does now, and will probably do twenty years hence; 'Truman, Hanbury, & Buxton' cling to the 'Lord Nelson' year after year; and 'Henry Meux, & Co.'s Entire' has been the beverage supplied at the 'King's Head' for a generation past. During a turmoil in London a few years ago, one of the great brewers offended the working classes concerning some political question; it was determined to desert the public-houses that obtained their supply from that brewery; and the result soon became so serious, that the brewer thought it best to 'eat humble pie,' and beg for a return of favour to the hostelries under his control.

Mr. Lawson draws attention to a few facts that strikingly illustrate the defects of the public-house licensing system in past years. It was found in the year 1817, by a Parliamentary Committee, that the ordinary mode of obtaining a license in the metropolis was to give the beadle of the parish a bribe of a few shillings, whereon he produced the signature of the 'clergyman of the parish,' or of the other persons whose recommendation was essential. Public-house licenses were obtained in various other ways, with a scandalous disregard to public necessity, and merely by the influence of builders, landlords, and others, who had an object in enhancing the value of property. At the period in question, in High Street Shadwell, there was one public-house to every twelve other houses; in New Gravel Lane one to eight; in Lower Shadwell one to

six; in Norton Folgate there were twenty-four public-houses to 1752 inhabitants, being one to every 73 persons; in Whitecross Street, within a length of 300 yards, there were 23 public-houses.*

This licensing, whether intended as a source of revenue or as a measure of moral police, extends throughout the malt-liquor trade. There must be a license for a public brewer, a license for a victualler or publican, a license for one who sells beer 'to be drunk on the premises,' a license for one who sells beer 'not to be drunk on the premises;' and in addition to these there are licenses for spirit-sellers and for wine-sellers. The whole number thus amounts to something considerable — not less than 270,000 licenses in the United Kingdom, granted to these dispensers of beverages. In 1830, a change was made, whereby the excise could grant licenses as well as the magistrates; hence arose the beer-shops, and hence the establishment of new ale-breweries, and hence the brewing of ale by the great porter-brewers.

In relation to the metropolis only, the number of public-houses is of course enormous — intended, as they are, to supply malt-liquor to two million and a half of drinkers. In London, the licensed victuallers are probably about 4500; while the beer-sellers are somewhat over half this number — very likely 7000 altogether, equal to one in about every 45 houses, or one to 350 inhabitants.

The public-houses of London are as motley an assemblage as can well be imagined — so far as *signs*

* Merchant's Magazine, 1853.

are concerned. We find among them about 70 royal dukes—'Cambridge,' 'Clarence,' 'Cumberland,' 'Gloucester,' 'Sussex,' and 'York'; a few royal duchesses; 60 or 70 'Georges' and 'George the Fourths'; 'Victorias' and 'Royal Alberts' in great abundance; 80 'Crowns' and 20 'Crown and Anchors'; 70 'King's Arms' and 90 'King's Heads'; 20 'Queen's Arms' and 50 'Queen's Heads.' Next comes a menagerie of extraordinary animals,—30 'Green Men,' with or without 'Stills,' 'Bells,' and 'French Horns'; 120 'Lions'—red, white, blue, or black; 25 'Black Horses,' and 45 'White'; 70 'White Harts'; 55 'Swans,' black or white as the case may be—and so forth. Then we have a series of couplets—55 'Coach and Horses'; 25 'Horse and Grooms'; 55 'Rose and Crowns'; and numerous 'Ships,' combined in an extraordinary way with 'Blue Balls,' 'Blue Coat Boys,' 'Punchbowls,' 'Rising Suns,' 'Shears,' and 'Shovels.' The system of numeration has been carried out by the licensed victuallers more fully than they themselves, perhaps, are aware; for we shall find 'One Tun,' 'Two Bells,' 'Three Suns,' 'Four Swans,' 'Five Pipes,' 'Six Cans,' 'Seven Stars,' 'Eight Bells,' 'Nine Elms,' 'Ten Bells,' and 'Twelve Bells': let any enterprising publican hit upon 'Eleven' something—'Cricketers,' 'Virgins,' or what not—and the duodecimal system will be complete. Some numbers are great favourites, especially number three, which developes itself in all the varieties of 'Three Brewers' and 'Three Colts'; three each of 'Compasses,' 'Cranes,' 'Cups,' 'Doves,' 'Elms,' 'Foxes,' 'Goats,' 'Hats,' 'Herrings,' 'Horseshoes,' and 'Johns'; 'Three Jolly Bakers,' 'Three Jolly Butchers,' and

'Three Jolly Gardeners'; 'Three Kings,' 'Three Loggerheads,' and 'Three Lords' (three loggerheads between three kings and three lords might appear sarcastic, were not the order of the alphabet alone responsible); three 'Mariners,' 'Merry Boys,' 'Neats' Tongues,' 'Nuns,' 'Pigeons,' 'Spies,' 'Sugar-loaves,' 'Stags,' 'Suns,' 'Swedish Crowns,' and 'Wheat Sheaves.' A wonderful display of tapsters' ingenuity occurs in such signs as 'Blade Bone,' 'Coffee-pot,' 'Essex Serpent,' 'Knave of Clubs,' 'Lilliput Hall,' 'Naked Boy and Woolpack,' 'Old Centurion,' 'Pickled Egg,' 'Prospect of Whitby,' 'Tippling Philosopher,' 'Widow's Son,' 'Valiant Trooper,' 'Sun in Splendour,' 'Running Footman,' 'Experienced Fowler,' 'Good Man,' 'Kentish Wag,' and 'World Turned Upside Down.'

If the drinking of GIN in Hogarth's time, mentioned in the Historical Sketch, can be relied upon as an indication, the consumption of ardent spirits in London in those days must have been larger than at present, relatively to the population at the two periods. Indeed there seems much reason to believe that the besotting influence of beer, and the cankering effects of gin, were both fearfully great at that time. We are in the dark concerning the distilleries of the last century; they are seldom mentioned by topographers or other writers; and it is doubtful whether they were, as at present, few in number but great in magnitude, or whether there were a large number of small distilleries. A probable circumstance is, that—in so far as excise duties were

levied on spirits—there were more illicit stills in those days than at present,—stills whereof the world knew nothing, but not the less influential in sending forth gin and whiskey into the market.

The extraction of fierce burning spirit from mild wholesome corn is one of the wonders of chemistry. Many well-wishers to mankind would be glad to think that the process were not only wonderful, but impossible: they look around at the misery produced by intemperance, and they wish that no such thing as ardent spirit were obtainable. But chemistry is not responsible for the evil; the process remains as beautiful as before, however grossly man may abuse it; and if distillation were forcibly repressed by law, there are multitudes of hot exciting liquids which a depraved appetite might employ as substitutes.

Wonderful, we may well say, is this transformation. Wheat, barley, oats, rye, maize, rice—all these, and many other kinds of vegetables, will yield spirit. They contain starch; the starch may be changed into sugar; the sugar may yield a wort or sweet liquor; and this sweet liquor may yield a spirit by distillation. Gin, whiskey, hollands, rum, brandy, however they may differ, all spring primarily from the sugar contained in fruits or vegetables, or from the starch convertible into sugar; and the same may be said of the intoxicating beverages common in Russia, India, China, and other countries. The list of vegetable substances is almost countless, from which spirit may be obtained: of the kinds best known in England, however, gin, whiskey, and hollands are produced from corn, either raw or

malted; rum, from the molasses of the sugar-plantations; and brandy from wine, itself a product of the grape.

The metropolitan distilleries, of which the number is small, are establishments of considerable magnitude, necessitating a large supply of capital; indeed the capital required is one of the reasons why they are few in number. The revenue raised by the excise duty on British-made spirits is very large; and as the money must be paid before the spirit leaves the distilleries, there is always a large amount of capital thus locked up: indeed some of the great metropolitan distillers pay as much as three or four hundred thousand pounds a year each to the government. This money is of course refunded by the purchaser, in the form of an enhanced price for the spirit.

Gin, the ardent spirit chiefly made in London, is produced in greater part from raw barley; but wheat, rye, oats, and malt may be mixed therewith, as any of the five will suffice: it is chiefly the market price that determines the selection. The corn is ground, and the malt is crushed; the grist thus produced is stirred up with hot water in a mash-tun; the hot water extracts a sweet liquor or wort from the grist; the wort is cooled, fermented with yeast, and converted into a lighter liquid called wash; this wash is distilled two or three times over, until gin or spirit results from it; and thus does bland corn become caustic spirit. Meanwhile the exciseman is busying himself in everything; he has keys to most of the vessels and stills; he gauges and measures whenever he pleases; he knows and marks every vessel throughout the establishment; he, or his

co-officers, are constantly within the premises day and night; he knows the number of openings in every vessel; he controls the days and hours when the distiller may carry on his spirit-producing operations; he will not allow spirit to be made from the wash on the same day in which wash is made from the grist — in short, the exciseman is virtually the master within the distillery. It is certainly an extraordinary system, due to the great value of the revenue derived by the government, and to the necessity that the distiller should pay duty on all the spirit made, in ratio to its strength.

One statement in the above paragraph, however, needs correction. The spirit made is not gin. Gin is a complex 'doctored' beverage; whereas the spirit just described is a crude, rough, unpalatable product. All the spirit goes from the distiller to the rectifier, before it reaches the consumer in the form of gin; for the distiller must not rectify his own spirit — another item in the excise supervision. We have few spirit-distillers in the metropolis, but many spirit-rectifiers or gin-makers. Whether we require 'spirits of wine,' 'British brandy,' 'cordial gin,' 'peppermint,' 'cloves,' or 'aniseed,' the rectifier prepares them from the raw spirit purchased in large quantities from the distilleries. In rectifying, the spirit is heated in a still; the vapour, flowing into another vessel where it cools, condenses into a spirit more pure than before; and this rectified spirit is again distilled in company with certain herbs, berries, and seeds, which impart to it any flavour desired. Juniper-berries are understood to be among the ingredients that impart flavour to gin.

Whiskey, the favourite spirit in Scotland and Ireland, is purer and stronger than gin; it imbibes a peculiarity of flavour from circumstances connected with the distilling, and receives (or ought to receive) no 'doctoring' after it leaves the still. Although whiskey is so much stronger than gin, however, it does not contain half its bulk of pure alcohol; wine has only from 12 to 25 per cent.; while beer, ale, mead, perry, and cider vary from 4 to 10 per cent. Scotch distillers are said to produce about 12 gallons of proof whiskey from 6 bushels of malt.

The quantity of gin rectified in England is not exactly known; it has been estimated at about 100,000 puncheons of 100 gallons each, or 10 million gallons, annually, worth probably 4,250,000*l*. If nearly all the gin is consumed in England and Wales (Scotland and Ireland, having their own whiskey, consume very little gin), and if, as some computers think, about three eighths of the whole quantity finds its way down the throats of Londoners, this would give a London consumption of nearly 4 million gallons.

Mr. Porter endeavoured to estimate the quantity of home-made spirits consumed, per head of population, at different periods. The quantity which paid duty in the United Kingdom rose from 9 million gallons in 1802 to 23 millions in 1849. Now if this were divided among all the inhabitants at the time, it would yield an average of about 4½ pints per head in 1802, and 6 pints per head in 1849. If this be correct, and if no allowance be made for illicit distillation, it seems to show that spirit-drinking is more prevalent now than

at the beginning of the present century—whatever may have been the case a hundred years ago.

That the Irish drink more spirits per head than the English, and the Scotch more than the Irish, is known both from popular observation and from excise returns; while it is unquestionable that the English drink more beer than the Irish or Scotch. A startling accusation was brought against Scotland two or three years ago, concerning the quantity of spirits consumed therein within a year; but it was afterwards found that large errors had crept into the estimate; and it is better to pass in silence over any doubtful numbers, than draw from them inferences unfavourable to a whole nation.

The spirit trade at present, so far as regards the three kingdoms, appears thus in the excise returns for the year 1854:—

	Duty paid. Gallons.	Home Consumption. Gallons.
England - -	11,138,047	10,889,611
Scotland - -	6,569,730	6,553,239
Ireland - -	8,440,734	8,443,734
	26,148,511	25,886,584

The 'home-made' spirits, mentioned above, are of course exclusive of rum, brandy, and hollands—all of which are under the tender care of the customs instead of the excise. In 1854 there was duty charged on about 5 million gallons of these three kinds of spirits; and the quantities were about the same in the two preceding years.

If the reader would see on what basis estimates of consumption are formed, he may take the spirit entries

for the year 1854. About 26 million gallons of British spirits, and 5 million gallons of foreign spirits, were divided among 29 million inhabitants in the United Kingdom; giving an average of a little more than a gallon of spirits per head per annum. If foreign spirits be smuggled, and if British spirits be illicitly distilled, these constitute two additional items, concerning the amount of which we are of course quite in the dark. Twenty gallons of beer per head per annum, one gallon of spirits per head per annum — these, if not quite correct, are sufficiently near correctness to form a useful memento on the subject. But caution must be observed in applying any such formula as this to the metropolis alone; for it is certain that London gin-drinking goes beyond it, although means are wanting for estimating the real quantity.

Professor Johnston looks more deeply into this subject than most writers; for, in relation to spirit-drinking, he takes account of this spirit in more forms than one. Spirit or alcohol is contained in beer and in wine as well as in gin and in whiskey; the ratio is small, it is true; but then the amount of beer and ale drunk is enormously greater than that of gin and whiskey, insomuch that we take, he estimates, twice as much alcohol in the former state as in the latter. These chemical results have led him to the following curious comparison — that England drinks so much more beer than Scotland and Ireland, relatively to the population, as to render Englishmen spirit-drinkers in a greater ratio than the natives of the sister countries. Taking spirits, beer, ale, and wine, collectively, he calculates that the English consumption of

alcohol per head per annum is $3\frac{4}{9}$ gallons, the Scotch $2\frac{17}{18}$ gallons, and the Irish $1\frac{1}{2}$ gallons — not enough to intoxicate if taken equally by all; but unfortunately some obtain more than their share, and then become lower than the brutes.

The desolating glories of the gin-palace are among the most painful sights in London. If the gorgeous display of plate-glass, polished mahogany, gilding, and gas-splendour were associated with anything that really contributed to the comfort of the people, there might be points to admire in the artistic arrangements of some of these places; but degraded wretchedness brings more money to the gin-palace than working-class respectability; and the drinkers, at every visit, rivet the chain that already binds them to the thriftless and impoverished part of the community.

Is it not to be regretted that the Londoners, in common with the rest of the nation, should be debarred by fiscal arrangements from the power of obtaining good and cheap Wine? Let the Temperance question be handled as it may; let men, in candid discussion, arrive at what conclusions they may concerning it — the truth still remains, that the easy acquisition of wine at a reasonable price in England is hampered and checked, not by any tender anxiety on the part of the legislature in relation to the morals of the people, but by injudicious treaties made with Spain and Portugal, and by taxation. So much encouragement has been offered to the drinking of heavy port, in comparison with light French or German wines, and

so much does this port undergo sophistication to adapt it to the popular English taste, that foreigners are prone to deny to us any power of really appreciating good wine. Our gin is fiery, our beer is heavy; and instead of obtaining light wine to alternate with these, we submit to heavy port. Four fifths of all the wine we drink are port and sherry. It is impossible to touch upon the subject without regretting that matters should have been brought into so artificial a state; for sobriety, honesty, good sense, economy, cannot have fair play when liberty of selection is supplanted by arbitrary official preference.

The vintage of sherry may be taken as a fair representative of wine-making generally. Those who have witnessed the process describe it as follows: — The grapes, picked about the middle of September, when perfectly ripe, are allowed to remain exposed to the sun for a few hours, and carefully turned at intervals. They are thrown into shallow wooden vessels, each containing about enough grapes to make a butt of sherry. Three or four men, shod with heavy wooden shoes, enter the vessel, and perform a violent dance among the grapes — a 'pas de quatre' in sabots, it may be; this expels much of the juice from the fruit, and breaks the skins; but the chief effect is produced by a ponderous hand-worked screw, which presses all the must or juice from the grapes: the must flows into other vessels placed beneath, from which it is poured into butts. The skins or husks are not yet quite exhausted; they are again thrown into the press-trough; they have water added to them; they are

again subjected to the powerful action of the screw; and a weaker must exudes from them, destined to form an inferior kind of wine. The must changes itself into wine, rather than yields to the manipulative processes of the wine-maker; yet much delicate care is required. The must ferments in casks, and gradually gives up its sweetness in exchange for the vinous quality. Old sherry, as well as old wine of any other kind, is better than that more recently made; and therefore at Xeres, the head-quarters of the sherry trade, the birthdays of the respective vintages, so to speak, are well recorded. The vast cellars contain wine of all ages from one year to fifty. The casks of very old wine are never emptied; only a little is drawn out, to mix with a larger bulk of newer wine; and the deficiency is immediately made up from casks of the next succeeding year's vintage. A cask of good sherry, as brought to England, may contain portions of twenty or thirty vintages: indeed it is stated that under no circumstances is the very old sherry sold without admixture with vintages of later date.

Port wine, it is pretty generally known at the present day, is not port wine, but a mixture of many things with a wine which may (or may not) have come from Portugal. At Oporto, the wine-manufacturers are said to mix elder-juice, apple-juice, sloe-juice, logwood decoction, and many other liquids with port wine, to accommodate it to the purses of their respective customers. The real wine of the Douro scarcely reaches England at all; and foreigners are astonished that we still continue to purchase an adulterated substitute. Nor do

the Spaniards tamper less with our sherry than the Portuguese with our port: both nations consider that the English taste for wine is vitiated, and moreover, that we are easily victimised on this subject. It was stated before the Committee on the Wine duties, in 1852, by Mr. Forrester, an extensive wine-grower in Portugal, that no port is brought to England with less brandy in it than 3 gallons to a pipe of 115 gallons; that the ratio varies from this minimum of 3 up to a maximum of 17 gallons; and that if it contained no brandy, or less than 3 gallons to a pipe, the English would not purchase it. In so far as concerns brandy, the wine-growers and merchants of Oporto and Xeres are perhaps justified in yielding to vitiated English taste; but when elder-berries are introduced into port to dye the wine, and other ingredients as substitutes for the wine itself, the temptation to dishonesty becomes great. A pipe of port rises remarkably in value during its successive stages; its value varies from 5*l.* to 17*l.* when in the grower's hands; this 17*l.* becomes 27*l.* at Oporto; after which are added the English charges.

Mr. Laurie, in his evidence before the Committee, gave a useful table, showing how variable are the contents of wine-casks, and how indefinite the exact measure of a cask known by a particular name. In some kinds of wine, such as sherry and muscat, it is customary to measure the quantity by the 'butt,' which is considered to hold 108 gallons. In others the 'pipe' is adopted; a pipe of Madeira or of Cape being 92 gallons, of Marsala or of Bronti 93, of Canary or of Sack 100, of Mountain or of Malaga 105, of Port or of Masdeu

115, of Lisbon or of Bucellas 117. In respect of Claret and Burgundy, a 'hogshead' of 46 gallons is the usual measure; while Hock and Moselle are measured by the continental 'aum' of 30 gallons.

Of all the wine made in Europe, the quantity of which can perhaps hardly be estimated, there is supposed to be about 60 million gallons exported annually from wine-producing countries to other countries. We, in England, obtain a very humble portion of this. The Committee gave a table of the quantity of wine imported into the United Kingdom for a period of about ninety years, viz., from 1697 to 1785 — a table remarkable as exhibiting the almost stationary nature of the wine-trade during a period when most other departments of commerce advanced rapidly; the quantity never varied far from 2,000,000 to 3,000,000 gallons annually. Another table exhibited the imports from 1786 to 1851, a period of sixty-six years, both inclusive; the quantity varied from 4,000,000 to 11,000,000 gallons. The Portuguese wines maintained an ascendency over Spanish until about the year 1830; since which time the balance has been rather the other way. During the last quarter of a century, the quantity entered for home-consumption, as distinguished from the quantity imported, has never varied far from the average of the whole, which is about $6\frac{1}{4}$ million gallons.

Cape wine, almost the only wine brought from our own colonies, began to figure in the customs' books about the beginning of the present century. During the last few years Marsala, a Sicilian wine, has been growing in favour in England; it is better than Cape,

and cheaper than sherry or Madeira, and has a flavour somewhat resembling that of sherry.

It may be convenient to record here the average quantities of the different kinds of wine brought to England annually for the last quarter of a century (1830 to 1854). They were about as follow: —

	Gallons.
Spanish	3,300,000
Portuguese	3,000,000
French	500,000
Cape	400,000
Madeira	230,000
Canary	220,000
Rhenish	70,000
All other	480,000
	8,200,000

This relates to the total quantities imported; the proportion retained for home use has been about three fourths. The quantities imported in the last three years, omitting distinction of kinds, was as follows: —

	Gallons.
1852	6,793,304
1853	11,029,568
1854	10,877,272

The 'home consumption,' however, remained nearly equal throughout these three years — about 7 million gallons annually. 'Red' wines and 'white' wines reach us in about equal quantity.

The St. Katherine's Dock Company made a return to the Wine Duties Committee of the kinds and quantities of foreign wine warehoused by the company from the time of its establishment till 1852. This list is interesting, in so far as it presents the names of

thirty-two kinds of wine consumed in London :—Barsac, Burgundy, Canary, Cape, Champagne, Claret, Constantia, Figueira, French, Frontignac, Hock, Italian, Lisbon, Madeira, Malaga, Marsala, Masdeu, Mountain, Moselle, Pontac, Port, Red Wine, Rhenish, St. Peraz, Sack, Sauterne, Sherry, Sicilian, Sillery, Spanish, Teneriffe, and White Wine. The designations 'French,' 'Italian,' 'Red Wine,' 'Sicilian,' 'Spanish,' and 'White Wine,' are given conventionally to groups of wines, the quantities of which, or the quantities of the respective kinds in each group, were too small to be noted individually.

The wonders of the 'East Vault,' at the London Docks, are known to most who have obtained a 'tasting order.' The metropolis is the great port of entry for foreign wines; and the London Docks are the chief place to which the wine-ships arrive, although the St. Katherine's Docks have a fair share of the trade. The wine is mostly consigned by mercantile houses at Oporto and Cadiz to English firms; and it remains in the vaults at the docks until the duty is paid. The ship arrives; it disburdens itself of its vinous cargo; the casks are rolled along railways into the vaults beneath the warehouses; and there they lie, in their rotund immensity, diffusing a peculiar odour throughout their subterranean dwelling-place. However much reliance a buyer may place on the honesty of a seller, the quality of the wine cannot be known without trial; and hence 'tasting-orders' are frequently given by the owners of wine in the docks, empowering the wine-coopers to draw, in behoof of the favoured

holder of the order, sundry glasses of wine from any or all of the casks belonging to that particular owner.

Armed with such an order, a visitor descends a dozen or more steps into the formidable East Vault, where twelve acres of wine is diffusing its aroma. The order is examined and ratified at a counting-house, and its holder is placed in the care of a wine-cooper. On one side is a Genius of the Lamp — a functionary whose office is to supply trimmed and lighted lamps, one for each visitor, the lamp being fixed to the end of a long stick or handle. Each Aladdin, with his wonderful lamp, then roams along the miles of passages — for miles they are, literally and truly. He follows the footsteps of his leader, drinking in wine-odour in the midst of darkness visible. There are casks on his right hand, casks on his left, casks along every main avenue, casks along every side avenue, casks upon casks, and casks behind casks, casks little and casks big. Every avenue is bounded by bays or ports, vaulted recesses extending back a few feet, and heaped up with casks to the roofs. Suspended lamps afford a glimmering light along the avenues; and at a few far distant spots may be seen a speck of daylight, marking the doorways where the casks descend from the world above by means of steep little railways. There is a mixing vat somewhere at hand that will contain twenty thousand gallons; but Aladdin has naught to do with this: he follows his conductor. Over-head is a truly remarkable fungous growth, consisting of strange weedy-looking fantastic forms depending from the vaulted roof, and developed in some way by the vinous fumes of the place. Under-

foot is an earthen pathway, laid with iron rails to facilitate the rolling of the casks. Once now and then a group of men will be discovered, pursuing — not knowledge, but wine — under difficulties; they have to bring forth to the light of day a cask which is buried behind or beneath several others; and the space for working being very limited, no little tact is required to extricate the imprisoned cask without setting a dozen others rolling about the vault. Every cask has certain cabalistic marks upon it, — a mystery to the uninitiated, but conveying to those concerned all the required information respecting ownership, quality, quantity, and so on. Aladdin, mindful of the tasting-order, follows his leader to the casks from which he is privileged to taste. The cooper, provided with a few tall wine-glasses and a sort of auger or gimlet, bores a small hole in the selected cask, and out pours a ruby or an amber stream, which is received in a glass; a small peg, speedily hammered into the orifice, stops the wine-current. The privileged visitor then enjoys the object of his search, the 'taste;' and according as he is or is not a man of good sense, so does he stop in time, or appeal from cask to cask until the lights and the casks all dance around him; or it may be that he leaves his subterranean saloon, and is not conscious until reaching the open air that the vinous fumes as well as the wine itself have tended to make him a giddy-brain. The East Vault, if visited simply in a wine-bibbing spirit, teaches the visitor little that is worth knowing; but, viewed rationally, it is full of instruction — illustrating the effect of import duty in keeping wine in enormous

store until the duty is paid, the rigorous measures taken by the customs to control the admission and delivery of wine at the docks, the care and cleanliness observed in the various arrangements of the dock companies, and the commercial dealings between the companies, the sellers, and the buyers.

London can scarcely be said to have a wine-market. The neighbourhood of Mincing Lane, Mark Lane, and Trinity Square is that in which the wholesale firms connected with the wine-trade are chiefly to be found; but there is no such place as a wine-market proper. The vast vaults at the docks are bonded warehouses, not a market.

In London, and in the United Kingdom generally, there are two circumstances greatly affected by the existence, and the peculiar adjustment, of the wine-duty — viz., the extent of adulteration, and the limited range of consumption. The duty on Cape wine—favoured because of British colonial growth — is 2*s.* 9*d.* plus 5 per cent. per gallon; and on all other wines 5*s.* 6*d.* plus 5 per cent. If we assume that there are about six average bottles of wine to a gallon ('imperial quarts' are of course, in this case, out of the question), this would show that every bottle of foreign wine incurs a duty of about $11\frac{1}{2}d.$, and every bottle of colonial wine a duty of $5\frac{3}{4}d.$; consequently the English duty alone amounts to more than the whole value, per bottle, of much of the wine consumed in France — a circumstance which, in itself, would amply account for a wide difference between the wine-drinking of the two countries.

Alas for the fine old 'crusted port!' It appears, from the revelations occasionally made, that glass-makers as well as wine-makers are clever in producing this so-called 'crust.' Mr. Warrington stated, at one of the meetings of the Chemical Society, that some green glass bottles had been sent to Apothecaries' Hall for examination, on account of a certain unpleasant flavour they were supposed to impart to wine contained in them. He found, on close scrutiny, that the inner surface was very rough and opaque, and that the glass contained an unusually large proportion of lime and other bases readily acted upon by tartaric acid. He ascertained that a considerable quantity of wine had been put into bottles made of this glass, and that one merchant alone had bottled three hundred dozens: the motive being — that in these 'improved' bottles the crust of port wine will form earlier, and adhere more firmly to the glass, than in the ordinary bottles.

The extent to which adulteration of wine is carried in England was never distinctly set forth until the Wine Duties Committee made their investigation. Foreign wines, it is now known, are 'doctor'd' by dishonest dealers to an astonishing extent; oak bark, turnsole, elder, privet, beet, Brazil root — all are used; cudbear and red saunders wood are employed to aid the colour; catechu is added to give a 'fine old crust;' and for certain objects, the ends of the bungs and corks are dipped in a solution of Brazil wood and alum. Mr. Redding mentioned a circumstance to show that no kind of wine is safe from the adulterant:—"I remember an instance that occurred in Carlton House, told me by

Colonel M'Mahon. The Prince of Wales had a small quantity of remarkably fine wine, and his household chose to drink it out. The Prince ordered some for the table, and none could be got: there were only two bottles left. The man who had the management of the wine went to the city to a merchant, and stated what he wanted. The dealer said —'Send me a bottle of what remains; and what *I* send must be drunk immediately; I can imitate it.' The trick was successful, and was repeated three or four times."

Recipes for making port wine seem to be abundant enough, and to be known to many persons who were certainly not intended to be in the secret. Thus, Mr. Redding stated, in his evidence before the Committee, that the following is one mode of manufacturing surreptitious port in London: —

			£
230	gallons of	Beni Carlos - - - -	76
230	„	Figueiras - - - - -	90
137	„	Cape - - - - - -	48
165	„	Good Port - - - - -	109
115	„	Common Port - - - -	63
20	„	Mountain - - - - -	11
26	„	Brandy-cask washings, colouring liquid, &c. - - -	trifling
		About - -	£400

There would thus result 8 pipes, or 920 gallons, which would have cost about 8*s.* 8*d.* per gallon, or 1*s.* 6*d.* per bottle; and if sold as 'fine old crusted port' ever so many years 'in bottle,' there might obviously be a very handsome profit made out of the juggle. Another recipe recorded is — 12 gallons of strong port,

6 of rectified spirit, 3 of brandy, and 42 of rough cider; making 63 gallons of imitative 'port,' which would cost the knave about 1*s.* 6*d.* per bottle to produce. Mr. Porter mentioned an instance in illustration of one among many modes of sophistication adopted in our own country:—"A friend of mine who invented, some years ago, a substitute for corks, made with india-rubber stuffed with wool, was asked if he could make some to resemble champagne corks; and he undertook to do so, and was desired to make a small quantity by way of trial;" he found ten days afterwards that the corks were to be used in bottles filled with 'champagne' made in London. A sophistication of port is said to be performed in the cellars of many of the London public-houses where 'genuine wines' are sold:—8 gallons of port, 6 of brandy, 45 of cider, and 2 lbs. of sloes stewed in 2 gallons of water. In 1842 an action was tried at Birmingham in respect to the sophistication of a pipe of wine; a price had been paid adequate to the value of port of fair quality; and yet it was proved that the wine had been made by mixing 50 gallons of cider, 60 of pontac, and 5 of British brandy — not a drop of port in it!

All this is very sad. The rascality of adulteration is bad enough at all times; but it is doubly grievous when a temptation is held out to such malpractices by the operation of Customs' duties. If there were not a shilling per bottle levied on wine in the form of duty, the price would be moderate, and the moderate price would lessen the temptation to adulterate and sophisticate. It is especially on low-priced wine that the

duty presses heavily, because it is not a per-centage on value. The French are not encouraged to send their wines hither, for the duty tells against them; and we really are not in a position to determine at what price French wine of moderate quality might be procurable in England. Mr. Porter made a statement before the Wine Committee which brings the cheapness of French wine to a point hardly believable: — "I have wine in my own cellar, which I have had seventeen years in bottle; a better wine I would never wish to drink: it came from the south of France, and cost me in that country 5 sous, or $2\frac{1}{2}d.$ per bottle."

Our wine-drinking has fallen off very decidedly. Mr. Porter estimates that, a century and a half ago, the consumption was about a gallon per head per annum throughout the kingdom; towards the close of the last century it was about half a gallon; whereas for many years past it has been under a quart. In France the consumption is set down at so high an average as 19 gallons per head per annum — nearly eighty times as much as in the United Kingdom! A knotty question lately discussed by the economists is — whether there would not be an actual increase of revenue by lowering the duty, on account of the great increase of consumption which would follow; Sir Emerson Tennant is at issue with the economists on this point; while other advocates insist on the propriety of a change on sanitary and moral grounds, based on the belief that wine would be a more desirable stimulant than spirits, and a less muddling beverage than beer. A small retail wine-trade is springing up, but it is only small,

in London; there is an establishment near London Bridge, and another near the Royal Exchange, a third in Holborn, and a sprinkling in other localities, where a considerable quantity of port and sherry is sold 'over the counter' at fourpence or sixpence per gill glass; but these exceptional cases only show the more strongly what is the ruling custom.

The curious sort of guess-work that sometimes stands in the place of statistics could not be better illustrated, perhaps, than by a recent attempt to determine the extent, or rather the distribution, of wine-drinking in this country.* If any reader should deem the estimate fanciful, this can hardly be a reproach to the theorist, for trustworthy data are sadly deficient. The question sought to be solved is — In what proportion do the different classes of the English community drink wine? The computer studied the income tax returns, the census returns, the Board of Trade tables, the peerage list, and the Ecclesiastical Commissioners' reports, with a view to enable him to classify English families in regard to position and fortune. Having done this, he proceeds to distribute our imported wine among 29 million inhabitants in the United Kingdom. He gives his reasons for thinking that there are about 3 million persons in a position to take wine occasionally. If the whole community share the wine equally, there would be the trifling quantity of a bottle and a half each in the whole year, taking the quantity entered for home consumption in a year at $6\frac{1}{2}$ million gallons. Allowing this number one bottle per week each, averaging the

* Lawson's Merchant's Magazine, Oct. 1852.

ages and the sexes, it would require four times as much wine as we actually import, and would even then leave no wine whatever for the remaining 26 millions of the population. The computer hypothetically gives a trifle to all of these, as follows: —

3 millions,	at 1 bottle per week,	26,000,000 gall.
2 „	„ 1 bottle per month,	4,000,000
24 „	„ 1 glass per month,	4,000,000
29 millions		34,000,000

whereas only 6 or 7 million gallons are entered yearly for home consumption. The object of the estimate is to show that, even for such a humble distribution as this, the imports must increase five-fold to supply such a total consumption.

The British Wines, and the 'liqueurs' and 'cordials' that take part in the preparation of mixed beverages, are not a little formidable in number. There are gooseberry, grape, raisin, red currant, white currant, black currant, damson, raspberry, mulberry, blackberry, brambleberry, apricot, orange, quince, ginger, parsnip, cowslip, &c. Then there are others which, honestly or surreptitiously, are intended to imitate Champagne, Constantia, Madeira, Malaga, Frontignac, Hock, and other foreign wines. Next come the group, for which it is not easy to find a general name, comprising mead, ginger beer, spruce beer, lemonade, orangeade, orgeat, sherbet, currant water, raspberry water, &c. Then there are the liqueurs that undergo some kind of distillation, such as cherry brandy, usquebaugh, Maraschino, spirit of cloves and of orange, and the whole

French family of 'parfait amour,' 'crême de rose,' 'crême de café,' 'liqueur de quatre fleurs,' 'nonpareil,' 'admirable,' and a host besides. To these must be added the ratafias or infusions of cherry, orange, gooseberry, raspberry, rose, noyau, peach, &c.; and the cordials of citron, peppermint, aniseed, caraway, cinnamon, and ginger; and the miscellaneous list comprising badiane, liqueur au bouquet, Rossolis, capillaire, eau douce, milk punch, curaçao, nectar, noyau, rum and other shrubs, cherry and other brandies.

Sweets and nectars of the above numerous kinds are better known in France than in England; and such among them as are familiar in our own country are more frequently the handiwork of some Lady Bountiful, some housewife more than ordinarily clever in domestic economy, than of the manufacturers who prepare them for sale. British wines, ginger beer, and soda-water are perhaps exceptions; they are largely manufactured for sale, especially in London. There is one firm in the metropolis which is said to produce 10,000 gallons of 'British port,' and about an equal quantity of 'British sherry,' annually. If the word 'British' be honestly and persistently used here, there is no dishonesty, for we have in that case an acknowledged substitution instead of a concealed sophistication.

Notwithstanding the little resemblance between British wine and vinegar, it happens that their manufacture in London is connected in a way that may merit a little notice. The late Mr. Henry Beaufoy, proprietor of the extensive vinegar works at South Lambeth, and distinguished by his munificent contributions

in aid of education, communicated to the author of the present volume, a few years ago, some curious information on this point, as follows: —

The rise of the British wine trade dates back to about a century ago. At that time — as Hogarth's print of 'Gin Lane' amply attests — the scenes of drunkenness witnessed in the metropolis had reached a fearful extent. The Legislature, endeavouring to give a healthy turn to the public taste, held out strong inducements for the manufacture of 'sweets' or home-made wines for sale. For many years, however, although sweets had been reckoned among excisable articles ever since 1696, the manufacture continued utterly insignificant. It happened about that time that Mark Beaufoy, a member of the Society of Friends, at Bristol, who had abandoned his original trade of a distiller from conscientious scruples, went to Holland to learn the process of malt-vinegar making; and on his return established a vinegar-factory on the site of the once celebrated Cuper's Gardens, near the present southern end of Waterloo Bridge. The works grew in extent and in fame, and were visited many years afterwards by Pennant, who described them in his 'London.' Mark Beaufoy had to encounter a great difficulty, in the want of 'rape' (raisin stalks and skins) wherewith to construct the filters to fine and flavour his vinegar, as was done by the vinegar-makers in Holland. He was constrained to purchase raisins, and after steeping them for the purpose of extracting the saccharine and mucilage of the fruit, the liquor was thrown away, and the rape alone (comprising all the solid parts of the

raisin) reserved for use in the vinegar manufacture. It happened, however, that Dr. Fothergill, the Quaker physician, became acquainted with this waste of raisin-juice; and after demonstrating how wine might be made from it, advised Mark Beaufoy to commence it as a branch of manufacture. He did so, and entered his name at the Excise as a 'maker of sweets,' about a century ago. From that time the raisin-wine trade rose into distinction and importance.*

Raisin-wine is the best of those receiving the general designation of British wines. The raisins are grapes which have been dried either by the sun or by an oven. Arrived in England, the raisins are removed from their baskets or boxes, thoroughly soaked and softened in water, and pressed by hydraulic presses until all the vinous and saccharine elements are driven out of them; the water, thus brought to the state of a kind of sweet juice, is allowed to ferment slightly; and then repeated rackings, together with fining and sweetening, bring it to the state of raisin-wine. As to the manifold 'sweets' made from English fruits, their name is legion. Chemically considered, they are very humble productions, in which sugar artificially introduced plays a considerable part.

We have mentioned Vinegar, in this matter. Vinegar is a London manufacture, as well as beer and gin; and — strange as it may appear to many persons — all three liquids are produced from nearly the same substances. Corn or malt, sugar or molasses, wine or beer, cider or perry — all can be made into vinegar; and

* Penny Magazine, 2nd Series, No. 679.

therefore the manufacturer of this useful acid has a wide range to choose from, and can adapt his arrangements to the country in which he lives, or to the exigencies of particular seasons. A considerable portion of the London vinegar is made from malt. The malt is ground into meal; the meal is mashed or stirred with hot water, which then becomes wort; the wort is cooled in a refrigerator; the cooled wort is fermented to a greater extent than if for producing beer or wine, and is brought to the state of a slightly acid liquor called gyle; the gyle is converted into vinegar, either by exposure to the temperature of a highly-heated room, or to two or three months' action of the open air; the vinegar is clarified or refined, by filtering through a thick layer of raisin stalks; and the vinegar is finally barrelled in casks for the market.

The 'Lancet' commissioners found that vinegar is no more exempt from the taint of adulteration than other articles of food or beverage. To increase the quantity, vinegar is often watered considerably; and to restore the hot acid quality thus diluted, sulphuric acid, chilies, grains of paradise, mustard seed, or long pepper, are added; while a dark rich colour is produced by burnt sugar. It is said that at some of the street stalls, where oysters are dispensed in liberal pennyworths, the so-called vinegar contains no vinegar whatever: being composed of water in which a few drops of sulphuric acid and a little burnt sugar have been introduced. Luckily, the oyster itself cannot very easily be sophisticated.

CHAPTER XIII.

REMARKABLE ASPECTS OF FOOD-RETAILING IN LONDON.

Food Advertisements in the Newspapers. — Retailers of Food in London. — Bazaar Principle observable in London. — Dining-rooms and Cooks' Shops. — Old Taverns. — Chop-houses and Coffee-houses. — West-End Clubs, considered as Restaurants or Dining-rooms. — Street Purchases on a Saturday Evening. — Itinerant Dealers in minor Articles of Food.

A RAMBLE through the London streets will teach us much concerning the retailing of London food. The untiring activity; the hours early and late; the display of taste in one place, and splendour in another; the temptation to the wealthy bon-vivant; the earnest attempts to provide 'bargains' for those who regard a penny as something not to be squandered: the groups that throng the busy thoroughfares on a Saturday evening; the open-air trade carried on by the itinerant dealers; the glittering tea-mart in one spot, and the mouldy chandler's shop in another — all are elements concerned in the food-history of London.

The newspapers, too, among their miscellaneous advertisements, do not fail to furnish episodes in that history. The columns of the 'Times' being consulted, we shall find that 'wild boars' heads from Troyes' are obtainable at a certain esstablishment, together with 'truffled Perigord pies,' 'Strasburg patés,' and 'Russian caviare;' that 'Hampshire bacon,' and 'fine breakfast

bacon,' and 'foreign hams,' are in full excellence; that wines of all kind are abundant; that brandy, rum, whiskey, gin, and Hollands, were never better in flavour; that pale ale and famous stout have now adopted 'imperial measure;' that 12 lbs. of codfish and a barrel of oysters will be forwarded in exchange for a post office order for 10*s*.; that a hundred fine Yarmouth bloaters will be sent carriage-free for a few shillings; that Jersey pears are just in season; that East Lothian potatoes have just arrived; that farinaceous food is infinite in variety and cheap in price; that portable mock turtle can be purchased at so much per quart; that a case containing five pounds of choice tea is obtainable for one sovereign; that a similar sum will ensure for us a hamper filled with sundry bottles of wine and spirits,—these are some of the many advertisements that almost daily meet the eye, telling of the wondrous food-supply for the metropolis.

The supply of food gives origin to a formidable number of distinct trades and avocations. Taking them alphabetically, we shall find in London, arrow-root dealers, bacon driers, bakers, beer retailers, brewers, butchers, chandlers' shop keepers, cheesemongers, coffee roasters, coffee-room keepers, confectioners, dining-room keepers, dairymen, distillers, egg merchants, fishmongers, fruiterers, greengrocers, grocers, ham and tongue dealers, hotel and inn-keepers, market-gardeners, millers, mustard manufacturers, orange merchants, orange and lemon-peel cutters, pork-butchers, poulterers, potato dealers, provision merchants, rice merchants, salesmen at Billingsgate and the other great marts of trade, salt merchants,

ship-biscuit bakers, ship butchers, sugar brokers, sugar refiners, tea brokers, treacle boilers, tripe dressers, vinegar makers, wine merchants, wine fining manufacturers, wine brokers, yeast merchants. These form a body of 24,000 strong, all master-tradesmen or manufacturers, and having 24,000 shops or places of business in the metropolis. Besides these, are numerous merchants and traders whose dealings in food are combined with dealings in many other commodities. The highest numbers in the above list are, — 4400 publicans, 3000 grocers and tea-dealers, 2550 bakers, 1750 butchers, 1500 greengrocers and fruiterers, 1450 beer retailers, 1300 dairymen, 1150 coffee-room keepers, 950 cheesemongers, 950 wine merchants, 700 pastrycooks. There was a rough guess some years ago, that there are 70,000 shopkeepers, and 30,000 stall-keepers and costermongers, employed in selling food in London; but the former estimate can only be correct under the supposition that shopmen and errand-boys are included. Another estimate, founded on census returns, presents a list of 19,000 persons engaged in various ways in selling and distributing animal food; 31,000 in relation to corn, bread, fruit, and vegetable food; and 50,000 in respect of beverages or their materials, whether of the breakfast and tea class, or of the dinner and supper class. The total presents a round number of 100,000 persons in London engaged in the trade in creature comforts.

Many indications of the bazaar principle are observable in the distribution of trades in London: that is, the congregation in one spot of many dealers engaged in one trade. Of about twenty such bazaar-groupings, we

shall find several relating to food; such as the hop dealers in the Borough, the wholesale grocers in Mincing Lane, the orange merchants in Botolph Lane, the provision merchants in Lower Thames Street, the potato merchants in Tooley Street, the wholesale wine merchants about Crutched Friars, the sugar refiners near Goodman's Fields, the granary keepers near Horsleydown; besides the obvious congregation of salesmen, or factors, or brokers, near the public markets.

The shops for the retail sale of provisions in the ordinary state, such as butchers, poulterers, fishmongers, cheesemongers, bakers, grocers, fruiterers, greengrocers, and the like, are simply means of distribution; they afford the opportunity for selling in small quantities food that has been purchased wholesale. But there is much of a curious character associated with those places in which food is brought to a state ready for the hungry stomachs of the consumers, and supplied — it may be — all hot and steaming. In the mighty world of London there are always thousands who, either from necessity or inclination, take many of their repasts at places other than their own firesides; men who 'dine in public,' in fact, or breakfast, or tea, or sup, in public, and for whose accommodation much provision is made.

When a poor hungry mortal is gazing into one of the numerous cooks' shops the London streets exhibit, and is sniffing the savoury odour of roast meat, he might, if he were a reader, call to mind Charles Lamb's 'Dissertation on Roast Pig;' in which the 'crisp, tawny, well-watched, not over-done crackling,' and the 'cream and quintessence of the child-pig's yet

pure food called fat,' are discoursed on in such droll fashion; it is in this essay that Lamb propounded his theory of the 'Origin of Roast Pig' — a theory that certainly beats hollow all that Beckmann has done in the history of inventions and discoveries. The visitors at cooks' shops, however, are likely to know very little of Charles Lamb and his theory; they know much more concerning the art of applying their penny or few pence to the purchase of a dinner. In some of the thickly inhabited districts an enormous trade is carried on in these shops; the meat purchased is cheap and common, often bad; the soups and puddings are of questionable character; the charges made are exceedingly low; and the demand, about twelve or one o'clock in the day, is immense.

One of the remarkable contrasts in London is between the eating-house and the dining-room — a difference of designation wholly conventional. The whity-brown apron and the paper cap take their meal at an 'eating-house;' but the black coat and the silk hat abjure this as vulgar — they will have nothing lower than the 'dining-room.' And it is worthy of remark, too, that many of these cleanly kept dining-rooms are nearly as economical as the dirty and unsavoury eating-houses or cooks' shops. Let any one look around him in the neighbourhood of Cheapside; he will there see the dining-rooms of which we are speaking. The large warehouses in the drapery and other trades employ vast numbers of shopmen and clerks, who do not return home until an hour too late for dinner, and whose homes are too far distant for a dinner visit during business hours. For the accommo-

dation of such dining-rooms have been established, supplied with a succession of hot dishes from twelve at noon till six in the evening, to suit the convenience of different relays of diners. The business transacted at these places is immense; the provisions are uniformly good; the cookery and serving are fairly managed; and yet the charges are so low that nothing less than a daily stream of diners for several hours would yield an aggregate return sufficient to pay all expenses.

At some of these commercial dining-rooms — in themselves a characteristic of the middle-class respectability of our times — an attempt is being made to break down the old-fashioned system of 'fees to waiters.' Whether it will succeed is still a problem. The waiter seems to be a member of society apart from all others; if he did not receive his fee he would not be such an oddity; and if he were not such an oddity, we should never have had Leigh Hunt's picture of him:— "He has no feeling of noise, but as the sound of dining; or of silence, but as a thing before dinner. Even a loaf with him is hardly a loaf, it is so many 'breads.' His longest speech is the making out of a bill *vivâ voce* — 'Two beefs, one potatoes, three ales, two wines; six and twopence' — which he does with an indifferent celerity amusing to new comers who have been relishing their fare, and not considering it as a mere set of items. . . . . He would drop one of the two syllables of his 'Yes, Sir,' if he could; but business and civility will not allow it, and therefore he does what he can by running them together in the swift sufficiency of 'Yezzir.' 'Thomas.' 'Yezzir.'—'Is my steak coming?' 'Yezzir.'—'And

the pint of port?' 'Yezzir.' — 'You 'll not forget the postman?' 'Yezzir,' — for in the habit of his acquiescence Thomas not seldom says 'Yezzir' for 'No, Sir,' the habit itself rendering him intelligible." * It is evident that Thomas belongs not to the commercial dining-rooms of the present day; he is part of the furniture of the old-fashioned taverns, where wine is a recognised accompaniment to the dinner table.

The old taverns and coffee-houses of Fleet Street were briefly noticed in a former page as connected with a past phase of London life; they still continue, however, to maintain a reputation among their own diners and drinkers. There are certain so-called coffee-houses further east, which are rather taverns, frequented by merchants engaged in particular departments of commerce; such as the 'Jamaica,' the 'North and South American,' the 'Jerusalem,' the 'Baltic;' and in past days, the 'Levant,' the 'New York,' and the 'Virginia' — names which, in part, indicate the class of merchants frequenting these coffee-houses.

There was an anonymous poem published in 1785, which, albeit its poetry is of a very sorry kind, places us in possession of a few curious facts connected with dining-rooms and taverns in London seventy years ago.† While descanting on the creature comforts of London, the poet tells us that behind the Royal Exchange —

> 'There stands a steak-house of distinguish'd fame,
> The sign the Cock—Threadneedle-street's the name."

The merits of the steaks are duly versified; and the

* The Seer. † The Art of Living in London.

poet next declares that at the Spread Eagle in the Strand, and at the Dog in Holywell Street, we can "dine in quiet," and be "serv'd with decency at small expense." We are advised not to —

> "Indiscreetly stray
> Where Giles's ruins mark the broaden'd way;
> Where, for what end most obviously appears,
> The knives are chain'd, and ladder forms the stairs;
> Or to Moorfields, where wretched paupers ply
> Round clothless tables in an open sky."

As evening approaches, we are advised to resort to some noted porter-house, of which there are said to be many, "alike in goodness and alike in fame." The Strand, we are told —

> "Her Spread Eagle justly boasts,
> And Maiden-lane exhibits her Blue Posts.
> Nor think the Cock with these not on a par,
> The celebrated Cock of Temple Bar,
> Whose porter best of all bespeaks his praise —
> Porter that's worthy of the poet's lays."

Many of the taverns handed down to fame in this poetical effusion are still in existence; and some of them have a character distinct from all the dining-rooms hitherto noticed; they are chop-houses, in which city men take a hasty luncheon at mid-day, and return to business. A butcher in Threadneedle Street stated before a committee of the House of Commons, a few years ago, that he frequently cuts up a hundred saddles of mutton in a day into chops, to be cooked at the neighbouring-chop houses. Some of the city taverns have a specialty about them; such as Simp-

son's at Billingsgate, where 'fish dinners' have acquired celebrity, on account of the reasonableness of the charge, and the unquestioned excellence of the fish. The 'whitebait' taverns are almost beyond the limits of London; but the epicure can nevertheless find evidence, at Blackwall and Greenwich, of the importance attached to a dish of tiny fish, and the expenses into which the indulgence may very easily lead him. The pages of 'Notes and Queries' contain a curious history of the origin of the ministerial whitebait dinner, which takes place every year at the close of the parliamentary session. Another specialty is the 'turtle' class of taverns; at one of these, two or three hundred turtles are kept alive at once in stone vaults; and turtle-soup has given fame to the house.

May we include the West-end CLUBS among dining-rooms? A few details will enable the reader to decide this for himself.

The club system of London commenced at the 'Mermaid' in Fleet Street, in the brilliant Elizabethan days; Sir Walter Raleigh was its founder, and the wit of Shakspeare, Ben Jonson, Beaumont, and Fletcher threw a halo around it. A second club was founded by Ben Jonson, and held at the 'Devil,' another of the Fleet Street taverns: rare old Ben was here in his glory, in an apartment to which the dignified name of the 'Apollo' was given. Clubs, as meetings for wit and mirth, we do not however touch upon: it is under another aspect they are here regarded. The battle of Waterloo was in one sense the cause of the present club system. When the cessation of war

threw so many soldiers 'out of work,' the officers, accustomed to mess together when on duty, and appreciating the advantages of economy (for military and naval officers are anything but wealthy as a class), established a club, mainly with a view of making their slender incomes carry them on as comfortably as might be. Hence originated the 'United Service,' the 'Junior United Service,' the 'Navy,' the 'Guards,' and the 'Army and Navy' clubs—the great success of the first-named having acted as an incentive to the others. The dignitaries of the church, the clergy, and university professors, observing how well the military and naval men were served, and wishing to share the advantage, established the 'United University' and the 'Oxford and Cambridge' clubs. Then arose the 'Athenæum,' for judges, barristers, physicians, authors, philosophers, artists; the 'Travellers,' open to those who had 'seen the world,' by penetrating a certain number of miles beyond the limits of England; the 'Oriental,' chiefly for old Indian officers; the 'Carlton' and the 'Conservative,' for politicians of a certain hue; the 'Reform,' for politicians of opposite stamp; and others of lesser celebrity. They are now nearly thirty in number.

In the more important of these clubs there are certain characteristics in common—such as the grandeur of the building, and the arrangement of the interior into morning-room, coffee-room, dining-room, drawing-room, &c. In the *restaurant* department, the only characteristic for which the clubs are noticed here, the coffee-room and the kitchen are the localities most nearly concerned. The coffee-room, here as at most

English hotels, is the general dining-room. It is furnished with rows of small tables, laid out for breakfasts and luncheons until about 4 o'clock; after which hour the arrangements are made suitable for dinners. A 'carte de jour,' or bill of fare, is prepared each day; from this carte the diner selects according to his taste; a butler, waiters, and clerks expedite both the serving and the making out of the bill; and the diner pays individually for his refection: the clerk of the kitchen and the clerk of the coffee-room conduct their accounts with all the regularity of a commercial house. But the kitchen is the grand centre of food-operations. Whether the achievements of M. Soyer at the Reform club house have been since excelled elsewhere may perhaps be doubted; but from the eighteen pages devoted by that celebrated 'chef-de-cuisine*' to a description of the Reform club kitchen, it would appear that an effective culinary establishment is quite a chemical laboratory. A suite of rooms measuring 110 feet by 40 — a kitchen, a cold-meat larder, a sauce larder, a pastry room, a butler's pantry, a plate closet, a boucherie, a game larder, a vegetable kitchen; slate-dressers, ice-drawers, pickling-tubs, slate-wells for soaking hams, boxes for storing vegetables, slate and marble slabs, suspended frames, safes, mortars, tin-lined drawers, steam-heated drawers, French charcoal stoves, steam closets, racks for spits, rails for moulds and coppers, steam-boilers, gas-stoves for made dishes, broiling stoves, 'bains-maries' or sand-baths for delicacies that require a

* Gastronomic Regenerator.

definite temperature, hot plates and hot closets—the apparatus is, indeed, formidable; and the roasting fire-place is quite a triumph of heat-saving philosophy.

It appears that many of the clubs pique themselves on the superiority of their 'chef-de-cuisine' and that some of them, indeed, owe their chief celebrity to their cooks. The select committee of members for managing the club consists of the most veteran diners and practised wine-drinkers of the fraternity: on them devolves the important duty of selecting the viands and tasting the wines; and as their responsibility is great, their experience is of course commensurate. In general, the viands are provided by first-rate tradesmen.

The gastronomic glories, however, are hardly those on which the distinguishing character of London clubs mainly depends. These clubs may be said to have brought economy into fashion: an excellent dinner at a club costs no more than a mediocre dinner at a tavern or a dining-house. Moreover, clubs have aided in abolishing the once fashionable vice of drunkenness; and indeed so much is this the case, that an intemperate man stands a close chance of being ejected altogether. Mr. Walker, who wrote his 'Original' about twenty years ago, and who devoted one of the essays to an account of the London clubs, says:— "Clubs, as far as my observation goes, are favourable to economy of time. There is a fixed place to go to; everything is served with comparative expedition, and it is not customary or general to remain long at table. They are favourable to temperance. It seems that when people can freely please themselves, and when they have an opportunity

of living simply, excess is seldom committed. From an account I have of the expenses at the 'Athenæum' in the year 1832, it appears that 17,323 dinners cost, on the average, 2*s.* 9¾*d.* each; and that the average quantity of wine for each person was a small fraction more than half a pint." From another source it appears that, in 1839, the 29,527 dinners served at the 'Junior United Service' cost on an average about 2*s.* 3*d.* each, exclusive of wine. Organised thus into large families comprising from 500 to 1500 members each, and providing their twenty or thirty thousand dinners each in the course of a year — it must be admitted that these clubs, exclusive though they be, take rank among the dining-houses of London.

The clubs, hotels, old-fashioned coaching-inns, commercial dining-rooms of the city, chop-houses, old taverns of the Fleet Street district, humble 'cook's shop' — are all distinct from the 'coffee-shop' familiarly so called, and one of the modern creations of London society. These were, in their origin, breakfast and tea houses for working men, who, on various grounds, could not conveniently enjoy those repasts at their own homes. But, by degrees, the coffee-shops have extended their range of business; they manage to provide simple dinners for such as are willing to take coffee instead of malt-liquor as a beverage; while in the evenings they are reading rooms, convenient to thousands of persons who have not the comforts of domesticity at home. The good fire, the bright light, the supply of newspapers and magazines, and the cup of simple beverage, are obtainable for a few pence; and

there can be little question that these places conduce to sobriety and general intelligence.

Numerous as have been the examples of retail food-supply treated in this chapter, they have hitherto left quite unnoticed one great and very remarkable class — open air trading in those commodities.

Whoever would know how the working classes spend their earnings on a Saturday evening in London, should pass an hour in any one of about half a dozen localities graphically described by Mr. Mayhew. One of these is Shoreditch, near the church; another is the New Cut in Lambeth; a third is Whitecross Street; a fourth is the line formed by Skinner and Brewer Streets, Somers Town; a fifth is Tottenham Court Road and the lower part of the Hampstead Road; a sixth is Leather Lane, Holborn. As the hour approaches when artisans receive their weekly wages, so do the itinerant dealers take their stand in these and similar busy localities. There is occasionally a battle of opinion with the police concerning the propriety or otherwise of this open-air trading; and in some cases where the higher class of shopkeepers deem their dignity offended by the vicinage of the humbler traders, an explosion of feeling may perchance occur; but the retail shopkeepers and the kerb-stone stall-keepers generally agree pretty well: the influx of customers is so vast that there is trade for all.

It would be impossible to name all the wares exposed for sale at these places on a Saturday evening, say from six till twelve. The wife of the journeyman, as soon as a portion of the week's earnings is

placed in her hands, bethinks herself of the Sunday's dinner; and the theory of these people's bazaars is, that every thing that may be wanted can be obtained near at hand. Certain of the commodities are not sold by the humble stall-keepers; butchers' meat, bacon, and grocery are rarely to be seen on the stalls; nor do bread and flour make their appearance there: the shops occupied by butchers, bakers, grocers, and cheesemongers, experience very little rivalry from the stalls. Cheap poultry sometimes finds its way thither; but cheap fish much more largely. How many 'fine fresh mackerel' we may obtain for a shilling; how many 'fresh herrings' for a groat (a groat, curiously enough, is never mentioned by a London dealer except in connection with herrings); how many 'pairs of live soles,' or platefuls of sprats, or pounds of eels, or quarts of mussels, or measures of periwinkles, for a few pence, would astonish housewives whose means enable them to make their marketings in other localities. True it is, that the odours are not quite satisfactory, revealing the fact that the fish have been out of water for rather a serious length of time. Vegetables are in unquestioned abundance. Potatoes in their dirty jackets, cabbages of monster size, greens in straggling bunches, onions in arm-long strings, peas and beans and scarlet runners, if they be in season and cheap enough; parsley and celery, mint and sage, carrots and turnips, rhubarb, brocoli, cauliflowers, asparagus (or, in cockneydom, 'sparrowgrass'), chickweed and groundsel (that the bird may have a Sunday's dinner as well as his master)—all are sold so cheaply, that we may reasonably wonder

how such articles, many of them bulky, can return any profit to those who have had to trudge with them from Covent Garden or other markets. The cheaper kinds of fruits are sold by these stall keepers in immense quantity. Apples, pears, oranges, nuts, walnuts, chestnuts, cherries, plums, damsons, currants, gooseberries, disappear from the stalls with great rapidity. Nor is there any want of the humanizing influence of flowers, if the season be such as to bring flowers within the range of cheapness.

Then, as provision is made for the Sunday meal, so are the means of cooking it not forgotten. The stall keepers, with candles in paper lanterns, candles on the end of sticks, links, torches, and a sort of self-generating gas lamp, display, in a flickering glittering light, all sorts of spits, ovens, roasting-jacks, gridirons, frying-pans, bachelors' kettles, toasting-racks, toasting-forks, footmen, trivets, saucepans, stew-pans, tea-kettles, crocks and pots, baking dishes, pie-dishes, pudding-basins, sugar-basins, plates, cups and saucers, salt cellars and pepper-casters, iron skewers, cabbage nets — all of these may be met with, or such of them, at least, as can possibly be made at a cheap price. A joint of meat, a huge cabbage, a quartern loaf, and a saucepan, sometimes march off in procession, under the care of different members of a working man's family.

Not the least remarkable among these Saturday evening traders are those who deal in little savoury knick-knacks that may serve for a supper, or for a penny treat to the errand-boy who has just received his weekly wages. At one point is the 'baked 'tato' man, with his

brightly polished, hot and steaming, tripedal or quadrupedal apparatus, redolent of large potatoes and strong butter. Near him is the vendor of hot pies — mutton, eel, veal, beef, kidney, or fruit — all at a penny. A little farther on is a table decked out with saucers, containing hot stewed eels, sold in pennyworths, or even still smaller quantities. The periwinkle man is near at hand, with his half-pint measure of doubtful capacity. The stall of another dealer displays certain meat-like attractions, which prove to be pig's chaps and pig's pettitoes; and probably sheep's trotters are there likewise. Baked chestnuts appear to have come somewhat into favour lately in London; and the oven or stove of the vendor of such comestibles may very likely be met with in these street bazaars. It is just possible that a coffee-room *al fresco* may present itself to notice. Innumerable varieties of confectionary and 'sweet stuff' are spread in tempting array before the boys and girls, the chief customers for such things. The ginger-beer man, either with his penny bottles or his majestic apparatus on wheels, is ready to supply the wants of thirsty souls.

There have been occasional instances in London in which small articles of food have been purchased in large quantities, not so much for their excellence, as for more extraneous reasons. Such, for instance, were the 'Chelsea buns' of past days. Mr. Timbs* states that the Chelsea bun-house was in favour as much as a century and a half ago; sometimes 50,000 persons were known to visit it on a Good Friday; and the members of George the

* Curiosities of London.

Third's family were wont to make frequent visits thither. Another instance of special purchase of food was that connected with the Great Exhibition in Hyde Park, in 1851, when 75,000*l.* was spent in refreshments, averaging 525*l.* per day for the 144 days during which the exhibition was open, or averaging three-pence per visitor for six million visitors; when nearly two million buns were purchased and eaten, and a hundred thousand pounds weight of patés and biscuits, and a hundred thousand loaves of bread cut up into slices, and four hundred thousand pounds of meat; and when these solids were washed down with a million bottles of aërated beverages, sixty thousand quarts of milk and cream, and the drinks prepared from twenty thousand pounds of coffee, tea, and chocolate.

To return, however, to our open air food-dealers.

There has been a remarkable change in the 'hot pie' trade of London. It is sometimes asked, 'What has become of the pieman?' We certainly do not now see him as he was wont to be seen in past days. Penny pies are eaten in enormous quantity; and if the itinerant pieman does not sell them, who does? In Hogarth's days the penny pieman was in his glory: we meet with him in numberless prints and books; he was a wag, with a dash of shrewdness in him, and a fondness for pitch-and-toss with his customers. Whether flour became too dear, or whether piemen became less honest, it appears that hot penny pies first deteriorated in quality, and then gradually disappeared, or nearly so, from among the street viands. They have been replaced by the pies of regular shopkeepers, men who make a formidable

display, and boast of plate-glass windows. The modern commercial system has been adopted to its fullest extent; the pies are sold at a price yielding an almost infinitely small profit on each, and, therefore, a large sale and an efficient management are requisite. Such pie-shops are now numerous in London — not only in the humbler streets, but in the leading thoroughfares where a high rental must be paid. The little tin dishes, as bright as silver, receive a constant round of pies from the forenoon of one day to two or three o'clock on the next morning.

In our own day the out-door orange trade has put on new features. The Jews, who buy oranges in lots of a few cases each from the merchants around Botolph Lane, retail them to street dealers; their depôts are in the dirty fusty regions of Duke's Place, where even the fragrance of the oranges can hardly kill the compound of villanous smells arising from other causes. "The open-air shops," says an eye-witness, "piled up with ripe, luscious, radiant fruit, are duplicates of the Indian bazaars we have walked through in our eastern travels, though without their sunshine. The handsome nut-brown, dark-haired daughters of Israel, jewelled and ribbon'd, and smiling, seen dimly amidst the shadows of these murky spots, appear like breathing pictures of a master hand. All day, and every day, Saturdays alone excepted, these busy fruit-wives ply their avocations; whilst their lords and masters are out on weighty matters, attending fruit-sales at the brokers', inspecting and valuing cargoes of newly-landed oranges and nuts, or gathering information, or bartering. . . . . Fridays

and Sunday mornings are the great fair days of orange and nut dealing in this quarter. At such times it presents a busy aspect, with the motley crowd of men, boys, and women from all parts of the metropolis — the 'costers' of London, and who are said to number about four thousand. Carts, hand-barrows, flats, baskets, sacks, all are ready for their destined loads; and so active are these people, that in a few hours all will be quiet again: the business of the day is done: and it is not an unusual thing for one of these Duke's Place merchants to handle between one and two hundred pounds within a very brief space of time." * For some reason or other, the Irish have supplanted the Jews in the street-sale of oranges in London; the Jew orange-boy was a well-marked feature some years ago, but ragged urchins from the sister-isle now in great part engross the trade.

Pies and oranges are only two among many varieties of the street-dealer's commodities, in past and present days. The sellers of fruit, or costermongers or costardmongers, have been an undying fraternity for many ages. We may find mention in Beaumont and Fletcher of—

"A rude costermonger,
That schoolboys had cozen'd of his apple;"

but we fancy it would take a very sharp school-boy to cozen a costermonger in 1856. At the time when Defoe wrote, the street-dealing system seems to have been in full work. "It is ordinarily said, that there are thirty thousand higglers and travelling market folks, as we call them, about this city; a poor sort

* Household Words, No. 210.

of people that are employed to bring butter, eggs, pigeons, fowls, chickens, &c., to London market, and bring veal and pork, and smaller things, up and down from house to house; and every one of them has a horse, some more, some carts. Some of them come forty or fifty miles."* This number appears very large; but the hawkers named are such as are seldom seen now in London; our poultry is not brought to market by hawkers, nor are veal and pork hawked from door to door.

It is hard to tell whether the 'tea gardens' should be included among the means for the retail distribution of food; but, at any rate, tea and beer, bread and butter, buns and biscuits, have been dispensed at those places for a century past, combined more or less with open-air pleasures or with concert-room music. Many of those named in a former page are extinct. Maw-worm was wont to go into the country to the 'Three Hats' at Islington on Sundays, in his unregenerate days; but Islington is no longer in the country. Such old gardens are gone—in most cases because their sites have been required for new houses and new streets in the ever-increasing London. Successors to them have sprung up in the belt of debateable ground, which scarcely knows whether to regard itself as town or country.

Changed, too, are the days for the old coaching inns, those establishments in which the provision of food and drinks was subsidiary to that of means for travelling. The glory of the 'Belle Sauvage' and its companions

* Complete Tradesman, ii. ch 4.

has departed; for though all or nearly all of these old inns may still be kept up, they have become virtually 'railway offices,' and are the humble servants of the seven railway termini. And as for their refreshment departments, people live in so great a hurry now-a-days that they have no time to make lengthened sojourns in these inns. A Manchester man, bound for Paris, would in the old coaching days have stopped at least one day at his inn in London to rest and refresh; but now he is just as likely to hasten over from Euston Square to London Bridge to catch the 'tidal service' train bound for Folkstone.

Here we finish. It is not inappropriate that a railway train should have the last word in connection with the 'Food of London:' the relation between them being so intimate and momentous. It cannot have escaped the notice of the reader, during the perusal of these pages, that among the various aspects under which this large and interesting subject has been presented, that of statistics is the least definite and determinate. The prescribed space has not permitted anything beyond a rapid glance, — whether at the past history, the growth and culture, the manufacture and preparation, the means of conveyance, the market arrangements, the wholesale dealings, or the retail distribution, of the Food of London: still, if fuller treatment had been consistent with the plan, available materials are abundant; but when the subjects of enquiry are the *quantity* and *value* of this wondrous mass of sustenance, then are the data found to be insufficient. Our national statistics have not

yet risen to the level of this subject: men are groping in the dark in relation thereto; and perhaps the present volume, if it have any merit, may assist in showing —not only the links whereby the great food question is connected with so many other subjects of daily commerce, reading, and thinking — but also the narrowness of the limits that bound the sources of information concerning parts of the topic. It is wholesome occasionally for us, as a nation and as individuals, to become conscious how little we know.

THE END.

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26

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