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6. THE PRODUCTION AND MARKETING OF FRUIT AND VEGETABLES, 1850-1950

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Historians of the British diet have found it difficult to assess the contribution played in the past by fruit and vegetables. There is a lack of reliable data on amounts consumed before the early part of the twentieth century, and our knowledge of former cooking practices and their effect upon the nutritional value of consumption is scanty or based upon guesswork. Even the supply system of horticultural products has not received the attention from economic historians that it deserves as one of the most rapidly growing sectors of agriculture during the period 1850 to 1950. The aim of this paper is to describe both the changing location of production and marketing system, and thereby to throw light upon some of the factors which influenced the evolution of demand for fruit and vegetables.

Horticulture around London

An important and lasting contribution to the study of spatial patterns in the location of agricultural production was made in 1826 by J.H. von Thünen in his book Der Isolierte Staat in Beziehung auf Landwirtschaft und Nationalokonomie. This work centred on an analysis of the effect upon its land-use of a farm's distance from market and the cost of transporting its produce to the consumer. Von Thünen formulated a spatial model in which the identified concentric belts of land-use deployed around a focal point of demand, and showed directly and indirectly that the relative location of enterprise types depended among other things upon the perishability of their product, its suitability for transport, its bulk to value ratio, and the potential for a further intensification of produc-

tion(1). He predicted that market gardening would be found close to urban markets:

> Delicate horticultural products such as cauliflower, strawberries, lettuce, etc., would not survive long journeys by wagon. They can moreover, be sold only in small quantities, while still fresh ... Gardens will therefore occupy the land immediately around the town(2).

The crude economic and behavioural simplifications made in this model are such that one would not expect Von Thünen's rings to be mirrored in the land-use maps of the real world. His work does, however, provide a useful first approximation of patterns around the London of his time, given the inevitable variations in soil fertility and ease of transportation which disturbed the ideal pattern(3). One can readily identify competition for land near the city by brick-making, dairying and market-gardening, with specialization in successively more distant parishes upon hay production and intensive arable cultivation. The innermost ring was not, however, exclusively devoted to one form of land-use, but rather divided in a sectoral fashion into an area to the north and north west of the city where dairying predominated on pastures growing in clay soils, and an elongated zone of market gardens and nurseries occupying the terrace-gravels and brickearths within two miles either side of the river Thames(4). Here the soils were easier to work, better drained, and 'warmer' than the London Clay of surrounding districts. Access to the river was an important factor: fruit and vegetables were exported and the town stable and cowshed manure, so vital for conserving the fertility of the garden grounds, was imported more cheaply than would have been possible by road.

Even in the mid-nineteenth century the concentration of British market gardening in the immediate environs of London was remarkable. One writer estimated that there were over 12,000 acres devoted to the production of culinary vegetables (as distinct from vegetables produced as feed for the 20,000 cows housed in London) and 5,000 acres of tree and bush fruit close to London(5). Charles Whitehead called the area within a carting distance of fifteen miles the 'charmed circle'(6). Horticulture was attracted here for a number of reasons.

First, the perishability of the produce was a vital factor: growers were reluctant until late in the nineteenth century to take the risk of sending their fruit and vegetables from further afield because of the slowness of transport and the primitive accommodation offered by the railways. An exception to this rule was the large-scale trade by road which developed in the hardy fruits, especially apples, between Kent and London after the Napoleonic wars. Secondly, the cost of transporting manure from London rose steeply over a short distance. This was an important consideration in the cost structure of market gardening because anything up to one hundred tons per acre were applied for some crops(7). A third factor was the readily available pool of casual labour in the city. This not only facilitated the gathering of crops, but also made possible the very intensive form of spade cultivation characteristic of the market gardens around London.

The rewards could be substantial from this type of horticulture, especially where growers indulged in the speculative production of delicate luxuries like asparagus. On the other hand the costs were also considerable, because market gardening was both capital - and labour-intensive. Rents were high as a result of the competition for land around London with users of land such as cowkeepers, brickmakers, and of course builders. The majority of growers who were not owner-occupiers were unable to buy security at any price, however, because the most common form of tenurial agreement contained a 'resumption clause' by means of which the landlord was entitled to resume possession at short notice(8). The development of sites for housing, industry or other urban uses was therefore a constant threat(9). The response to these pressures market gardeners developed intensive methods of cultivation, such as the forcing of valuable vegetables and fruit with the aid of glasshouses, or grew crops which would give a rapid return on investment. In this way most derived a good income and were able to pay their rent. Their success is shown by the ability of horticulture to survive in the interstices of London's expanding urban area in the late nineteenth and early twentieth centuries.

London's market-orientated fruit and vegetable belt remained more or less intact until the final third of the nineteenth century. It is interesting to note that within this belt there was a greater

degree of spatial complexity in the land-use pattern than predicted by von Thünen. C. Whitehead noted, for instance, that around the city there was an inner circle of spade cultivation where the most delicate vegetables requiring the most attention were grown, such as asparagus, sea-kale, French beans, celery, radishes, lettuces, and mustard and cress(10). Beyond this was a zone of plough cultivation producing the more bulky and less perishable crops such as peas, beans, onions, brussels sprouts, broccoli and cauliflowers. The outermost ring was devoted to the less valuable vegetables, grown in ordinary rotations, including cabbage, potatoes, turnips, and carrots. Soft fruit was common in the outer zones, but tree fruit was less likely to be found near the city because of the long time lag between the planting and maturation of fruit trees.

In addition to this gradation of crops with distance from market, a further element of complexity was the result of specialism by district, in response to soil type, microclimate, or simply entrepreneurship. Mortlake was renowned for its asparagus, Battersea for cabbage and cauliflowers, Deptford for onions, Mitcham for herbs, Charlton for pears, Dagenham for potatoes, and sea-kale was grown on the Jamaica Level(11).

In the final third of the nineteenth century this necklace of gardens around the metropolis was broken(12). A number of factors were responsible: the rising cost of labour which encouraged a substitution of the plough for the spade and therefore reduced the competitive advantage of the intensive small-scale growers; renewed urban pressure which forced up the rent of suitable land, especially during upswings of the building cycle; the improved facilities for the transport of perishable produce provided by the railway companies, which made the rural producer competitive in London's markets for the first time(13); and the decline in the early twentieth century of the town as a source of cheap manure. By 1900 the modified von Thünen pattern of sectors and more or less concentric land-use zones had dissolved, although substantial pockets of fruit and vegetable cultivation continued to thrive in west Middlesex, the Lea Valley, and north-west Kent(14).

Expansion away from London

The last two or three decades of the nine-

teenth century saw a rapid and unprecedented expansion of market gardening in provincial England(15). This was encouraged by the push factor of a general depression in agriculture from the mid-1870s, which forced farmers into those sectors such as dairying and horticulture which still offered some profit. The pull factor of concentrated and accelerated demand in urban areas was another important consideration.

The option of producing fruit and vegetables for human consumption was not open to all farmers. Areas distant from market, with cold, heavy clay soils, or with a short growing season were unlikely to have succeeded in what became a very competitive industry. Large tracts of the country, however, were basically suitable for horticulture, and the pattern of localization in the period 1850 to 1920 therefore requires some explanation.

Physical factors Some areas were particularly favourable for market gardening or fruit cultivation by virtue of their soil fertility. This was true for instance of north Kent between Rainham and Faversham where deep loams and brickearths were well suited to the cherry, perhaps the most demanding of all tree fruits grown in Britain. Other horticultural crops are not as sensitive to the chemical properties of the soil, especially if the grower (and consumer) is satisfied with a less than top quality product, and for them any 'tractable' soil is adequate. R.R.W. Folley defines a tractable soil as one which is easy to work, quick in drying, not subject to panning in its structure, and capable of improvement(16). Bedfordshire is a good example of a market gardening region which grew in the late-nineteenth century in spite of, rather than because of the qualities of its soil. The light hungry soils of the Lower Greensand were easily worked, but lacked organic content, and their fertility was in effect artificially created by the addition of stable manure imported by railway from London.

Climatic variation is a great deal more difficult to control, and this factor is the most significant in determining changes in yield from season to season. Freedom from frost in spring is important for fruit and for certain sensitive vegetables like cauliflower, but certain frost-free sites like sea coasts may be exposed to strong winds and therefore be equally unsuitable, or like hillslopes their degree of elevation may reduce the

length of the growing season below a desirable threshold. Light intensity is another key variable, but a high light intensity may be a mixed blessing, because in our climate long periods of sunshine are usually also periods of dry weather(17). Lack of soil moisture, causing checks in growth especially in shallow rooting crops, was a serious problem for farmers in the period before spray irrigation became possible with the technical advances of the mid-twentieth century.

At a meso-scale, climate may account for the fact that British orchards and soft fruit have a more southerly centre of gravity than is true of the location pattern of vegetables, because warm weather in spring and summer has a greater effect upon the yield of fruit trees and bushes(18). It may even be cited as evidence accounting for local pockets of horticulture, such as the glasshouse industry on the south coast, especially around Worthing where the light intensity is at a maximum, or the areas of early production such as Cornwall where the winters and springs are relatively mild and frost-free. But climatic variations are by no means a sufficient explanation of the spatial pattern of production, especially in the period after the 1890s when an increasing proportion of output has come from the controlled environment of glasshouses spread through the country.

One suspects that these physical factors, other than in a few isolated cases, were no more than 'permissive' influences upon the location of horticultural districts. If the conditions of climate and soil were right, or even slightly sub-optimal, as they were over large areas of the country, then ceteris paribus fruit and vegetable production was feasible. This was especially true in the middle of the nineteenth century when the relative advantages of particular areas were untried and farmers therefore did not know if they would be able to compete in the market successfully. By the 1930s, however, the uncertainty had been reduced and crops were increasingly grown in those localities which were able to meet their individual requirements. Several notable discoveries had been made of areas with great potential: for instance in the Isle of Ely celery was grown by then on the black fens around Littleport, and soft fruit at Wisbech(19).

Other factors One all-pervading necessary condition of production in the provinces, certainly in the

period 1880 to 1920, was proximity to a railway station. This was important for the prompt and rapid export of produce, even though there were constant complaints about the costly and often inconvenient nature of the service provided. The railway was also used for the importation of town manure until this source was cut off by the revolution in road transport in the early twentieth century. Once again Evesham was fortunate in its access to railway facilities. It had fourteen stations within a radius of five miles, and was well connected with the lucrative markets of the Midlands, South Wales, and the northern industrial cities, many of which had poorly developed local supplies of fruit and vegetables.

The exploratory process of trying new crops in areas which had no previous experience of intensive cultivation was responsible for some unusual locational developments, especially in the nineteenth century. An example of this was the rhubarb industry of the West Riding, which developed in the 1820s in the country between Leeds and Wakefield. It grew from the initiative of a few farmers for whom forcing rhubarb was a sideline to their main enterprise, and by 1950 about 5,000 acres were devoted to this one crop. The nature of the cultivation was entirely artificial, because the rhubarb was forced in sheds on a free draining and acidic soil created by the addition of substantial quantities of ashes and soot(20).

Once a local specialism of this sort has become established it may persist even if the initial locational advantages are gone. Growers will be reluctant to write off the capital they have tied up plant, or the local skill in cultivation, harvesting and marketing which is acquired. A good quality product will bring the region a reputation and possibly favourable connections in the city markets where quality and reliability are at a premium. These accumulated advantages may even be sufficient to give an advantage over competitors with lower costs who may find it difficult to become established in the face of an existing monopoly. Examples of specialized areas that have survived for decades in this way include the Lea Valley (glasshouse tomatoes and cucumbers) and Bedfordshire (brussels sprouts)(21), while fruit growing has persisted for centuries in Kent.

Another factor worthy of consideration is the nature of the entrepreneur responsible for the diffusion of fruit and vegetable growing in

provincial Britain. In the late nineteenth and early twentieth centuries he was typically a smallholder, and often a former farm labourer, who wished to make the maximum use of the limited resources of land and capital at his disposal. This he did by the substitution of a heavy input of labour, often including that of his own family, but rarely with any hired help. Such an enterprise may have started as a part-time use of the cottage garden and subsequently grown to a fully fledged market garden. The available evidence suggests that this process was common in several districts in the late nineteenth century, notably in the Vale of Evesham (asparagus), south Hampshire (strawberries), and Wisbech (soft fruit), and in other areas where the crop did not require a heavy initial outlay of capital. The provision of additional smallholdings by County Councils in the twentieth century was the result of the Small Holdings and Allotments Acts after 1892, especially that passed in 1908.

Emergence of specialized districts

By the outbreak of the First World War several horticultural districts had emerged to challenge the traditional supremacy of the London region and Kent. The Vale of Evesham in Worcestershire was the most important single concentration of market gardening outside the south-east, specializing in plums and asparagus(22), but other substantial contributions were made by Bedfordshire (onions, and brussels sprouts)(23), Cornwall (broccoli)(24), the Channel Islands (new potatoes, and tomatoes)(25), south Hampshire (strawberries)(26), and Wisbech and Cambridgeshire(fruit)(27), with smaller pockets scattered throughout the country(28). Complementary to these specialist districts there developed in the first half of the present century a large scale horticultural industry based upon the use of glasshouses, for instance around Worthing and in the Lea Valley. This required substantial capital investment, but made possible the cultivation of fruits and vegetables such as grapes, tomatoes and cucumbers, whose yields were uncertain when grown in the open air(29).

After the First World War a new pattern of horticultural production began to evolve. Vegetables which hitherto had been the exclusive concern of the market gardener were increasingly grown in arable rotations by farmers whose main commitments were not in intensive cropping. The eastern

counties, especially Norfolk, Suffolk and parts of Lincolnshire, along with the Lancashire mosslands, were the main beneficiaries of this trend. A major contributory cause was the increasing use of the motor lorry, which for the first time freed the grower from the constraint of needing to be close to a market or a railway station. Other factors were the innovation of mechanical planting, cultivating and harvesting aids which reduced the necessary labour input, and the spread in the 1930s of canning, bottling and other processing plant to these promising new producing areas. This latter development encouraged a greater degree of localization in the way that jam-making factories had for soft fruit in the 1880s, and quick-freezing plant was to do for peas and beans in the 1950s(30).

It was the cheaper and bulky vegetables which increasingly came to be produced extensively by arable farmers. They tended to specialize in one or two crops and were able to compete successfully with the market gardener whose unit costs were greater. In consequence the specialist horticultural districts were forced to concentrate on growing the more valuable and perishable crops such as lettuce, salad onions, radishes, celery, rhubarb, leeks and runner beans(31). Ironically the growers of the London region had suffered a similarly painful transition in the 1870s and 1880s when competition from produce imported by rail had become severe.

By the mid-twentieth century a number of highly-localized specialisms had emerged as a result of the search for suitable locations, the competition between arable and market gardening districts, and the development of new marketing structures. For instance, approximately three-quarters of the celery grown in England and Wales came from within twenty miles of Littleport in the Isle of Ely; two-thirds of the carrot supply originated in the Isle of Ely and adjacent parts of Cambridgeshire, Huntingdonshire, west Norfolk and Suffolk; two-thirds of the country's home-grown cauliflowers were from small coastal pockets of land in Lincolnshire, Kent and Cornwall; and over half of our brussels sprouts come from farms within a fifteen mile radius of Biggleswade.

In fruit-growing there was a similar although less significant trend of extensive cultivation in soft fruits such as blackcurrants. Moreover a shift eastwards in the centre of gravity of orchards and soft fruit growing has been discernible

in the twentieth century. This has been due in the case of apples and pears to the increased popularity amongst growers for high quality dessert fruits rather than the coarser vintage fruits which were concentrated in the orchards of farmers in West Country counties such as Devon, Somerset and Hereford.

Marketing

The marketing of fruit and vegetables was a relatively simple operation so long as market gardening was concentrated in the immediate vicinity of the large urban centres. In 1850 about 80 per cent of London's supply came from a short distance by road and water(32), and even in the 1880s a fair proportion of sales in Covent Garden were by the growers themselves(33). But as the suburban grower was pushed further from the centre of the city by the spread of the built-up areas, and as provincial horticulture began to compete, so there developed the need for one or more intermediaries between producer and consumer. This need was felt first in London, where as early as 1839 there were 80 specialized commission salesmen in Covent Garden alone(34).

By 1900 a sophisticated trade had developed, centred mainly on London, and specialized not only in the type of produce sold, but also in the sorts of transaction. It is the purpose of the following paragraphs to outline the great variety of marketing channels which developed in the period 1850-1950(35).

Assembly

Many provincial growers, whether they sold their output to London or some other city, dealt directly with the wholesale market. This was likely where it was practicable to deliver by road in the grower's own transport, or where there were well-established links with individual wholesale traders. Small-scale producers in districts remote from the consuming centres, however, found it increasingly convenient in the twentieth century to dispose of their goods locally. As the scale of the industry grew, so it became feasible for buyers to tour market gardens and orchards contracting for produce sufficient to meet the predicted demand of urban consumers. Many merchant buyers were able to operate on their own account and,

if their capital allowed, offered services such as the provision of empty packages and skilled harvesting gangs. On occasion they even bought a growing crop. Buyers who lived and worked in one district frequently acted as agents for town-based wholesalers and were required to supply regular and pre-specified quantities. In this way they were able to provide a certain link between the producer and his market above and beyond their nominal function of bulking. In some areas, Bedfordshire in particular, a small number of market gardeners extended their operations into the wholesale of the vegetable output of their smallholders colleagues(36). This was a development of the 1930s when the motor lorry gave a greater degree of flexibility to collection rounds.

Another form of rural assembly available from the early twentieth century was the local auction market, whether privately owned or operated by a producers' co-operative. By 1927 there were 17 in the west Midlands alone, handling between a quarter and a third of all the fruit and vegetables sold in Worcestershire and adjacent counties(37). This area was also in the forefront of the development of horticultural co-operative societies, of which twenty were affiliated to the Agricultural Organization Society by 1911(38). These organizations provided valuable assistance to their members in the bulk purchase of necessary inputs, but many were also geared to the collection and marketing of produce. Their mixed success, however, was a function of the high basic costs inevitably involved in a large number of small transactions, and the difficulty of enforcing regulated marketing processes, such as uniform packing and grading, upon a large and disparate membership of smallholders. By the 1950s several of these co-operative societies had become large and efficient wholesale businesses selling in the traditional markets or direct to supermarket chains(39).

Wholesale distribution

A fundamental difficulty in describing the wholesale trade in fruit and vegetables is that a large proportion of wholesale traders perform more than one function. The classification adopted here should not, therefore, be regarded as more than a convenient way of describing the broad structural outlines of the trade.

Commission salesmen, who operated in all the whole-

sale fruit and vegetable markets from a very early date, were a vital link in the marketing chain. They sold produce, especially for the growers who had no opportunity to visit the market themselves, on a commission which varied between 5 and 10 per cent, depending on whether they provided empty packages. These salesmen, located as they were in the consuming centres, were in a position to provide several useful services to the grower. First, they had regular and extensive contacts with wholesale merchants and retailers in the area served by the market. They were thus well informed about market conditions and could usually arrange a quick and advantageous sale. This role was enhanced in some cases by salesmen specializing in particular commodities such as Evesham asparagus, or Eastern Counties celery, and their skill was therefore highly refined. Secondly, they were able to deal with large quantities of produce, and usually had warehouse accommodation in or near the market, where stocks could be held for a steady rate of disposal(40).

The basic role of the commission salesmen was that of urban-based assembly. He often drew his supplies from a large number of growers, and it seems that the majority of the long-distance trade was carried on in this way. In the 1950s 68 per cent of Bedfordshire produce passed through the hands of commission agents, a proportion which in west Cornwall was 71 per cent, in the Wisbech area 70 per cent, and in the Lea Valley 88 per cent(41).

Wholesale merchants operated in more markets than commission salesmen. Their function was concerned less with the assembly of goods than with the subdivision and dispersal of the precise quantities required by retailers, hotels, restaurants and other purchasers of fruit and vegetables(42). In order to meet the regular and fluctuating demands of their customers, wholesalers needed widespread contacts, and bought from brokers, commission salesmen, and the various forms of rural assemblers described above. Their trade involved considerable risks in view of the often dramatic fluctuations of supply and demand, and the investment of capital was therefore necessary to enable the holding of stocks. A wholesaler's day to day overheads were also substantial because of the administrative and clerical costs of dispersing of produce in

relatively small quantities to a large number of customers.

Commission buyers were mostly based either at Covent Garden or the port auctions. They acted as agents for provincial wholesalers who were unable to attend these markets, and relied for a living upon their specialized knowledge of where and when to buy most cheaply on behalf of their principal.

The import trade was largely in the hands of brokers, whose function was to receive the produce and dispose of it either by auction or private treaty at the port of entry, at Covent Garden, or the London Fruit Exchange in Spitalfields. They acted on behalf of overseas shippers at a 5 per cent commission, or imported on their own behalf. The international connections of the trade were such that in 1926 it was reported that brokers were competing with each other for the produce of foreign growers by making advances to them for packing and transport, and by employing agents in the producing areas to protect their own interests(43).

Urban wholesale markets

The fruit and vegetable markets of London lost their importance as centres of retail distribution early in the nineteenth century. By 1850, at the beginning of our period, the wholesale trade dominated the major markets of Covent Garden, the Borough and Spitalfields, and later spread to local markets such as Greenwich and Brentford, and to markets set up on railway premises at Kings Cross (L.N.W.R., 1865), Stratford (G.E.R., 1879) and Somers Town (M.R., 1892)(44).

In the main these markets were complementary in function. Their relative location, for instance, arranged around the central city core ensured a degree of local spatial monopoly: Covent Garden served inner west London, the Borough satisfied the needs of south London, and Spitalfields was orientated towards the East End. Even the type of produce sold was not identical in each market, as shown in 1851 by Mayhew (Table 6.1). The Borough and Spitalfields specialized in the heavy, cheaper vegetables suitable for the poor districts in which they were situated. Farringdon and Portman were small markets which had developed an expertise in a limited range of fruit and vegetables such as broccoli, watercress, cucumber and nuts. Covent

Garden was the major centre of distribution for 24 out of the 36 times listed by Mayhew.

Covent Garden market had been chartered in 1670, and from its earliest days had been the most successful of London's horticultural markets(45). In 1850 it was responsible for about 45 per cent of London's wholesale fruit and vegetable turnover, more than double that of its nearest rival Spitalfields. In the period 1850 - 1950 Covent Garden developed four main types of trade, all but the first of which were also to be found to some extent in London's other markets.

1. Scarce and exotic fruits and vegetables, often unobtainable in other markets. Such was the renown of Covent Garden for high-quality luxury produce that supplies were re-consigned to markets in provincial cities.
2. Produce of the market gardens around London: mainly for consumption in London itself.
3. The main crop from provincial market gardening and farming districts.
4. Imported produce, especially fruit.

In the second half of the nineteenth century Covent Garden attained a national reputation amongst growers and salesmen which was enhanced by the centrality of London in the railway network and the rapid dissemination of information about prices and available supplies made possible by the telegraph and later the telephone.

Marketing developments in provincial cities were years or even decades behind those of London. This was a function not only of retarded technical innovations of organization, but also of the limited possibilities available for local entrepreneurs in areas where concentrations of demand were small. In consequence, growers saw the London market as their main hope of a substantial and sustained demand, and the inevitable result was an over-concentration of produce in already overcrowded markets like Covent Garden, causing periodic gluts in London when at the same time markets in other cities were poorly supplied.

The salesmen based in London's markets did not discourage this 'market-chasing', as it was called. They benefited in fact, because by 1900 an efficient re-distribution trade had developed in which produce surplus to the requirements of the capital's needs was sent back to the provinces. Gradually London became the principal node

Table 6.1: The Quantities of Home Grown Fruit and Vegetables sold in London's Wholesale Markets, 1851

(Quantities in tons, unless otherwise stated)

Fruit	Covent Garden	Borough
Apples	9,000	625
Pears	5,750	250
Cherries	482	241
Plums*	2,325	388
Gages*	50	8
Damsons*	495	79
Bullace+	45	41
Gooseberries	3,500	655
Red Currants*	438	94
Black Currants	281	75
White Currants	24	19
Strawberries	285	147
Raspberries	10	2
Mulberries	8	26
Hazel Nuts	1	-
Filberts	99	32
Total	22,792	2,681
Vegetables		
Potatoes	72,000	21,600
Cabbages	30,000	17,143
Broccoli and Cauliflowers	4,018	8,438
Turnips	25,179	6,429
Turnip Tops	670	1,116
Carrots	5,357	701
Peas	2,411	446
Beans	893	179
French Beans	938	64
Veg. Marrows	145	43
Asparagus	161	48
Celery	335	107
Rhubarb	161	1,071
Lettuces	328	482
Radishes	46	289
Onions	12,500	9,950
Spring Onions	16	5
Cucumbers	1	5
Herbs	48	64
Watercress (thou.bunches)	1,578	180
Total (excl. watercress)	155,205	68,181

Notes: * not all home grown + wild plums

Sources H. Mayhew, London Labour and the London Poor vol.I (1851) 80-1; B. Poole, Statistics of British Commerce (1852) 167 & 309.

Table 6.1: (Contd.)

Spitalfields	Farringdon	Portman	Total
6,250	875	400	17,150
2,075	500	250	8,825
80	64	60	928
1,125	75	500	4,413
38	25	13	133
113	225	30	941
10	14	14	123
2,288	300	175	6,918
469	38	56	1,094
281	38	25	700
94	19	13	168
177	7	66	682
1	2	1	16
3	8	10	54
–	2	–	4
19	64	17	231
13,022	2,254	1,629	42,379
28,800	10,800	5,400	138,600
10,714	7,500	14,707	80,064
6,429	11,875	1,219	31,978
6,429	4,688	1,002	43,725
1,339	558	446	4,129
1,071	670	244	8,043
893	125	36	3,911
89	21	9	1,191
80	335	64	1,481
48	6	24	266
14	19	19	262
134	67	134	777
643	54	107	2,036
926	58	212	2,006
241	121	193	890
10,000	240	4,550	37,240
10	10	6	47
11	5	17	39
63	52	26	254
180	12,960	60	14,958
67,934	37,203	28,416	356,939

of articulation in the national distributive network, although this was a development not necessarily in the interests of efficiency for two reasons. First, it was not until the twentieth century that cross-country consignments were made on a large scale. Most goods that were not sold in local markets before this were sent to London, adding to the eventual cost to the consumer. Secondly, some provincial wholesalers found it easier to import produce from London than to persuade local farmers to grow fruit and vegetables. In 1880 J.Page noted that vegetables that could well have been grown near Manchester, such as rhubarb, lettuce, runner beans, and brussels sprouts, were all imported via London(46). In the subsequent two decades, however, it is interesting to note that Manchester, in common with several other British cities, did develop its own autonomous links with market gardens in other parts of the country, and local growers were encouraged to expand their output to satisfy the substantial demand of the urban-industrial belt of southern Lancashire. Only the choice and early produce was sent from London in 1897(47).

Retail distribution

The perishability of most fruit and vegetables and the poorly developed system of distribution meant that retail sales were highly centralized in most British cities in 1850. Producer-retailers held sway in the trade outside London until late in the nineteenth century when middlemen developed a recognizably separate function for the first time and retail shops challenged the monopoly of the central retail markets. In London the retailing function of the major horticultural markets was negligible by 1850. Several attempts were made to establish non-specialist retail markets in various parts of London, the most notable of which was the Baroness Burdett Coutts' Columbia Market in the East End, but none were particularly successful.

Table 6.2 shows the proportion of produce sold by street traders in 1851. Overall, this amounted to approximately half of the city's fruit requirements and a fifth of its vegetables. Costermongers seem to have concentrated their efforts at the cheap and bulky end of the market, selling chiefly potatoes, cabbages, onions, apples, pears and turnips, although they were willing to buy anything in the wholesale markets that was in season

Table 6.2: The Percentage of London's Fruit and Vegetables sold by Costermongers, 1851

Home-grown potatoes	6.7	Home-grown apples	50.0
Imported potatoes	50.0	Imported apples	87.5
Cabbages	33.3	Home-grown pears	50.0
Broccoli and cauli-flowers	5.0	Plums	6.7
		Damsons	3.3
Turnips	10.0	Gooseberries	75.0
Carrots	3.3	Strawberries	50.0
Pears	50.0	Raspberries	5.0
Asparagus	2.5	Pineapples	10.0
Celery	12.5	Oranges	25.0
Rhubarb	10.0	Lemons	1.0
Cucumbers	12.5	Coconuts	33.3
Onions	33.3	Grapes	6.7
Watercress	46.0		

Source: H. Mayhew (1851) op. cit., 80-1.

and inexpensive. Some street traders, especially women and girls, specialized in selling one line, such as oranges or watercress. It is impossible to be certain how many street traders were involved in this trade, because the job was typically a casual form of employment. Numbers fluctuated from year to year with the vagaries of unemployment during the trade cycle, seasonally with the availability of cheap supplies of fruit and vegetables, and daily. Mayhew reported that Saturday was the costermonger's busiest day, when as many as 2,000 donkey-barrows, and over 3,000 women with shallows and head baskets visited Covent Garden alone(48).

In 1850 Spitalfields was the main market used by costermongers for purchasing their supplies, suggesting that their retail trade was largely concentrated in London's East End, where the demand for cheap vegetables was to be found, and where the development of fixed shops was retarded in the mid-nineteenth century. Evidence from later periods, however, indicates that street sales of fruit and vegetables were widespread throughout the city, both from stalls in street markets and from itinerant barrows. The relatively high proportion of fruit and vegetables sold in London's streets in 1850 dropped gradually in the late nineteenth and early twentieth centuries due to vigorous competition from the fixed shops of greengrocers and fruiterers. The numbers of these shops through time is shown in Table 6.3, where it can be seen that there were fluctuations in the shop/population

Table 6.3: London's Fruit and Vegetable Salesmen, 1817-1950

	Wholesalers (Enterprises only)	Greengrocers Central London	
		Enterprises	Branches
1817 (1)	62	–	–
1829 (2)	42	–	–
1832 (3)	131	1,147	3
1840	134	–	–
1840 (4)	79	–	–
1840 (5)	146	–	–
1845	172	–	–
1850	179	–	–
1855	214	1,116	8
1860	194	1,134	4
1865	183	1,374	18
1870	180	1,694	21
1875	204	1,723	31
1880	247	1,770	23
1885	281	1,569	21
1890	340	1,559	24
1895	400	1,477	29
1900	438	1,425	22
1905	436	1,265	21
1910	435	1,229	20
1915	444	1,112	10
1920	445	1,057	13
1925	612	1,305	20
1930	567	1,291	19
1935	554	2,227	23
1940	538	1,983	27
1945	448	1,382	27
1950	523	2,131	41

Notes:
1. Johnstone's London Commercial Guide & Street Director (1817);
2. Robson's Classification of Trades and Street Guide for London 4th ed. (1929);
3. Pigot & Co.'s National, London, & Provincial Commercial Directory for 1832-3-4 5th ed. (1832);
4. Robson's London Directory... 20th ed. (1840);
5. Pigot and Co.'s Royal National, Commercial, and Street Directory of London, for 1840 (1839);
6. 1872 data;
7. 1876 data;

Table 6.3: (Contd.)

Retailers					
Greengrocers		Fruiterers & Greengrocers			
Suburbs		Central London		Suburbs	
Enterprises	Branches	Enterprises	Branches	Enterprises	Branches
-	-	22	0	-	-
-	-	330	1	-	-
-	-	259	1	-	-
-	-	343	1	-	-
-	-	868	0	-	-
-	-	181	0	-	-
-	-	1,121	4	-	-
-	-	1,131	9	-	-
-	-	847	10	-	-
-	-	675	9	640	0
-	-	620	11	862	1
-	-	656	21	1,389 (6)	1
-	-	612	20	1,569 (7)	5
-	-	584	33	2,097	16
-	-	581	32	2,278 (8)	17
-	-	544	35	2,728 (9)	24
-	-	563	32	3,041 (10)	32
-	-	586	40	2,957	27
-	-	605	53	1,274	24
-	-	622	49	1,309	40
870	15	627	49	391	14
817	14	685	38	336	8
841	11	796	51	423	17
860	7	744	76	452	43
-	-	1,312	118	-	-
-	-	1,163	139	-	-
-	-	684	66	-	-
-	-	841	92	-	-

8. 1884 data;
9. 1888 data;
10. 1894 data.

Source: Post Office London and Suburban Directories, except where otherwise stated.

ratio. Further work is required to explain these temporal fluctuations, the evolution of the spatial pattern of outlets, and their organizational structure.

Pattern of consumption

It would be an exceptionally difficult task to estimate the demand for fruit and vegetables in the period before the First World War, requiring a full essay in its own right. The space available in this paper will be devoted to a few issues.

Supply estimates of demand are made hazardous by the intractability of the agricultural statistics. A select list of problems encountered in using this source will illustrate the point:

1. One cannot be sure before the 1920s what proportion of the vegetable crops recorded were sold for human consumption.
2. Market garden produce was recorded as a group between 1872 and 1896, but thereafter the individual crops were not listed in some cases until 1935(49).
3. Orchards were first returned in 1871, but as a double entry under both the tree crop and the under-crop. No distinction was made between dessert, culinary and vintage fruit.
4. Small-fruit statistics were collected from 1888, but were not reliable before 1897(50).
5. No record was made of the many commercial small-holdings less than one quarter of an acre in size 1869-1891, and less than one acre from 1892(51). The produce grown on allotments and in private gardens was ignored.
6. It was not until the first Census of Production in 1908 that any attempt was made to assess yields per acre. It is unsatisfactory therefore to base any discussion of fluctuations in productive capacity through time and space upon acreage statistics alone.

Demand estimates, based upon family budget information or other contemporary literary sources are similarly beset with difficulties. Fruit and vegetables are simply not mentioned in many of the budgets collected in the nineteenth century, and one cannot be sure whether this is a true indication of an absence of consumption. Allotment produce and perquisites seem to have been excluded in some cases as too infrequently available to

be worth recording in the 'average' annual diet. Indeed the consumption of fruit and vegetables, at least in the period before 1914, was subject to a number of variabilities which make it difficult to quantify.

Seasonal variations in demand are well-known. They were of course especially noticeable before the era of canning and freezing dawned in the twentieth century when relatively cheap supplies of preserved fruit and vegetables became available throughout the year. The degree of seasonality can be inferred somewhat indirectly from Table 6.4 which shows the variation in monthly revenues produced by Covent Garden market.

Daily variations in the demand for food have received little attention from historians of diet. In the case of fruit and vegetables a large proportion, perhaps even the majority, of consumption was concentrated into a few meals at the weekend, well into the twentieth century. This was especially the case with fruit used in puddings and the fancier vegetables served with cooked meals.

Table 6.4: The Monthly Revenue from Covent Garden, 1870

	Rents (£)	Tolls (£)
January	629.45	308.14
February	520.50	277.82
March	548.08	362.55
April	643.80	408.77
May	560.10	402.89
June	564.55	777.30
July	669.40	1,086.71
August	555.60	803.34
September	541.55	638.49
October	629.40	505.71
November	528.88	396.83
December	637.38	369.75

Source: Greater London Record Office (London Records): E/BER/CG/E/10/52.

Most fruits and many of the choicer vegetables were considered luxury items by consumers throughout the period 1850-1950. This helps to explain the upsurge of demand in the late nineteenth century as the standard of living of the mass of the people improved with increased real wages. It also suggests

that there is likely to have been a high income-elasticity of demand on the more expensive produce. We have very little evidence before the First World War to confirm this, however, beyond the sort of crude aggregate data portrayed in Table 6.5, and this means that any estimates of 'average' demand cannot adequately take account of the wide range of demand among different socio-economic groups.

Another area of neglect in British dietary history has been the regional variability of food intake. It is true that data are scanty and unreliable, but we should at least ask some pertinent questions of the information that is available. Table 6.6 is a compilation of the sort of data that must be pressed into service if regional variations in preferences for individual items within the broad category of fruit and vegetables are to be described.

A final variability that demands attention is secular change through time in the population's dietary habits. Mayhew's London data show a fruit and vegetable diet biased towards the less perishable bulky commodities, but we know that tastes changed in the period 1850-1950 because we can make a comparison with the results of the National Food Survey. Table 6.7 indicates that by the late-twentieth century there had been a dramatic reduction in the quantity consumed of heavy vegetables such as cabbage, turnips, cauliflowers and onions, and a correspondingly sharp increase in purchases of peas, beans, cucumbers, lettuce, apples and grapes. Some items were new to the list, including pineapples, tomatoes, bananas and brussels sprouts.

Conclusion

This paper has sketched the outline of the production and supply system of the horticultural trade from 1850 to 1950. No attempt has been made to estimate the supplies of fruit and vegetables available for consumption in this period for a number of reasons. First, several estimates have been published at the aggregate level of the nation which do not require repetition here(52). Second, a great deal more detailed research into the agricultural statistics, changing yield patterns, and import/export data is necessary before refinements are possible at this national scale. Thirdly, the present author is sceptical anyway of the utility of estimates of this sort because of the variabilities in consumption patterns with social

Table 6.5: The Variability of Demand for Fruit and Vegetables with income

(a) Board of Trade Survey of 1944 urban working-men's families in Britain (1904):

Average weekly income (shillings per family)

Weekly expenditure per family (d)	0-25 (d)	25-30 (d)	30-35 (d)	35-40 (d)	40< (d)
Fruit and vegetables	4.69	6.85	10.09	11.76	15.53
Potatoes	8.64	9.62	10.30	10.15	9.98

(b) 1152 family budgets (1932-5):

Average weekly income (shillings per head)

Weekly expenditure per head (d)	0.10 (d)	10-15 (d)	15-20 (d)	20-30 (d)	30-45 (d)	45-< (d)
Fruit	2.4	4.6	6.6	9.5	13.0	20.0
Potatoes	2.5	2.9	3.0	3.0	3.1	3.0
Other vegetables	1.5	2.6	3.9	5.2	6.5	8.5

Source: (a) Board of Trade, Second Series of Memoranda, Statistical Tables and Charts ..., Parliamentary Papers 1905 (Cd. 2337) LXXXIV, pp. 15-44;

(b) J.B. Orr, Food, Health and Income (2nd ed, London, 1937), p. 74.

Table 6.6: Regional Demand for Various Canned Fruits and Vegetables as Demonstrated by the Percentage of Shops in Each Area Carrying Stocks (1931-2)

(a) Fruit (Survey of 1343 retail grocers)

	London and South (%)	Mid-lands (%)	Lanca-shire (%)	York-shire (%)	Glasgow (%)
Peaches	100	100	100	100	100
Pears	99	100	100	100	100
Apricots	97	98	94	98	75
Fruit Salad	83	87	68	89	81
Loganberries	44	55	18	30	8
Strawberries	21	52	25	56	18
Plums	28	48	23	25	11
Damsons	4	17	21	8	-

(b) Vegetables (Survey of 583 retail grocers)

	London (%)	Birming-ham (%)	Liver-pool (%)	N.E. Coast (%)
Baked Beans	99	99	100	100
Peas	97	100	94	96
Tomatoes	92	99	97	98
Asparagus	46	23	19	24
Sweet Corn	17	2	8	8
Spinach	10	2	6	11
Carrots	3	-	3	4

Source: (a) Empire Marketing Board, The Demand for Canned Fruit (London, 1931), p. 12;

(b) Empire Marketing Board, The Demand for Canned Vegetables (London, 1932), p. 10.

Table 6.7: A Comparison of the Demand for Selected Fruits and Vegetables in London in 1851 and 1978

(Quantities in lbs per head per annum)

Fruit	1851* (lb)	1978+ (lb)
Apples	15.48	26.78
Pears	7.96	3.12
Oranges	7.34	12.97
Bananas	-	12.55
Stone Fruit	5.68	3.64
Grapes	0.50	1.66
Soft fruit, other than grapes	8.22	2.37
Rhubarb	1.74	1.76
Nuts	4.22	1.76
Dried fruit	17.99	3.51
Vegetables		
Potatoes	148.64	130.39
Cabbages	68.33	21.03
Broccoli and Cauliflowers	27.29	8.71
Turnips and Swedes	40.84	2.31
Carrots	6.87	11.28
Peas	3.34	15.67
Beans	2.28	18.56
Lettuce	1.71	5.53
Onions	31.82	13.20
Cucumbers	0.04	4.32
Tomatoes	-	18.82
Brussels Sprouts	-	8.52

Notes: * Allowing 10 per cent for wastage in wholesale markets and in retailing, and assuming that no fruit and vegetables were exported from London at this date.

\+ Fresh produce only, except for preserved and processed potatoes, nuts, dried fruit, peas, beans and tomatoes, all of which are included.

Source: H. Mayhew (1851), op.cit.; Ministry of Agriculture, Household Food Consumption and Expenditure: 1978. Annual Report of the National Food Survey Committee (1980), pp. 45-7.

class and region discussed above.

Emphasis was put rather upon geographical and structural evolution of the trade, in the hope that future work may build upon this foundation and elucidate the link between the availability of supplies and changing patterns of demand. London had the country's most sophisticated supply system in 1850, and benefited most rapidly from the technical and organizational improvements of the late Victorian period. The result, one suspects, although no reliable confirmatory evidence is to hand, was a very different dietary pattern in terms of fruit and vegetables, and possibly also other foodstuffs, from the other cities and rural areas of Britain(53). The question arises, therefore, whether the regional variations in consumption observable in the past, and in many cases surviving to the present day, were mainly a result of the differing pace at which local areas were able to develop the production of their own fruit and vegetables, or the creation of the structures necessary to import the produce of other regions. An answer must await the results of the regional studies of relationships between local conditions of production, supply and consumption which are urgently needed.

NOTES

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15. Fruit and vegetable production in Wales and Scotland never reached a level of national significance except, perhaps, for soft fruit at Blairgowrie.
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17. Ministry of Agriculture and Fisheries, Horticulture in Britain, Part 1: Vegetables (1967), p. 13.
18. R.R.W. Folley (1973), op.cit. p. 78.

19. K.M. Round, 'Celery Growing in the Fens', Agriculture, 67 (1960), pp. 189-91.
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53. The diet of 'the average Londoner', however, probably masks as great a variation of consumption due to socio-economic and ethnic differences as does that of 'the average Briton'.