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## Some characteristics of a growing suburban region.

By Viggo Hansen

### Abstract

*A rapidly developing suburban area to the west of Copenhagen is studied. The migration in and out of the area as well as the composition of the population is discussed, and it is shown how the adoption of a town plan leads the local development along certain fixed lines.*

The growth of the Danish capital outside its municipal boundaries has at various times followed different lines, and the purpose of this paper is to show how development took place in an area covering about one hundred square kilometres to the west of the city and extending from four to fourteen kilometres from the previous line of walls.

The history of the modern growth of Copenhagen begins after 1850, when the fortifications from Mediaeval times were demolished and restrictions against building outside the walls cancelled. As the crowded city for many years had felt the urgent need for more space, the result was the rapid growing up of the so-called »bridge-quarters« (Vesterbro, Nørrebro, Østerbro, Sønderbro), which to begin with extended only to a normal walking distance from the City, even after the first horse-drawn street cars had appeared in 1865.

But all this happened much nearer to the City than can be shown on the four maps, fig.s 1-4 (A-D). From fig. 1 (A) it is evident that the City at that time (1855) had made no mark on the area to the west, even if a railway has been built in 1847 from Copenhagen to Roskilde. The settlements in this area were purely rural, mostly in the form of green villages, surrounded by flat and fertile land. Sixty years after enclosure the farms still lay in villages as a result of the farmers' preference for drawing the boundary lines between their possessions like spokes in a wheel. Only a few farmers had broken away from village life and moved into the middle of their fields. Scattered farms were also to be seen on the land of the former dismantled village of Islev.

While the years previous to the First World War had seen a

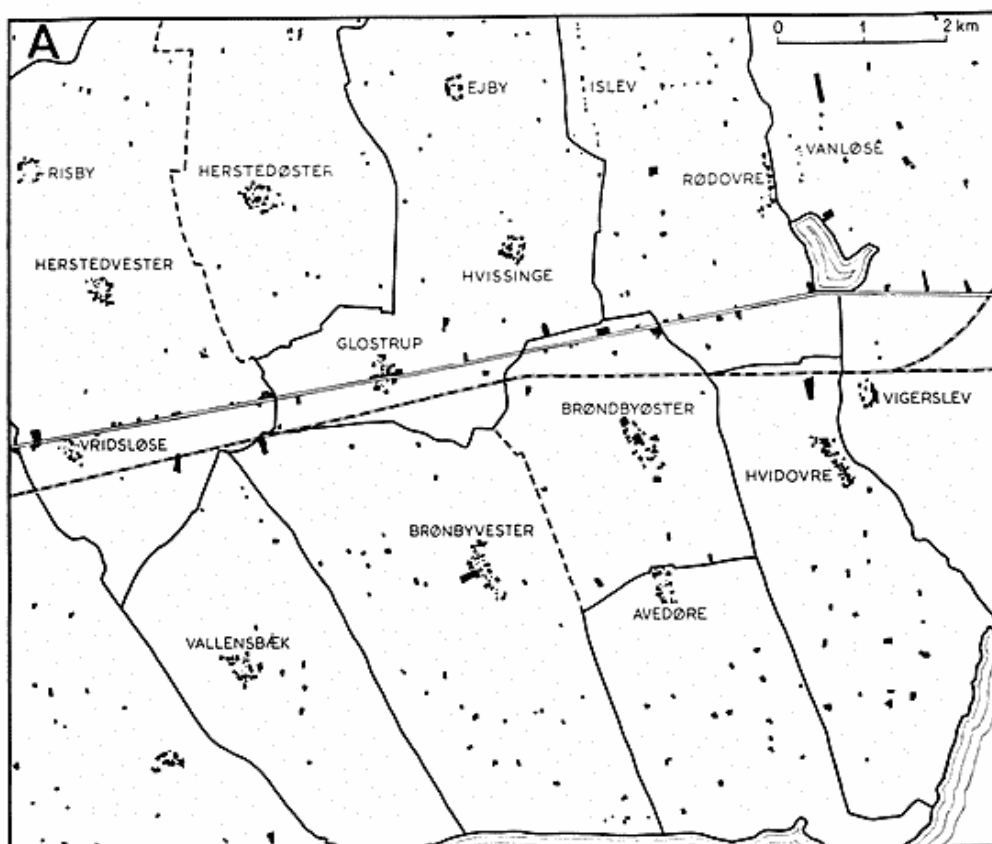


Fig. 1. In 1860 the villages west of Copenhagen are still quite undisturbed by the expanding capital.

uniform and continuous spreading of the capital until it had reached the easternmost parts of the map area, where the old villages Vanløse and Vigerslev had been incorporated in the municipality of Copenhagen, the changes outside the new boundaries were still only few by 1913, fig. 2 (B). Two new railway towns had grown up on the great western railway, Glostrup and Vridsløse. Of these two only Glostrup (2231 inhabitants in 1911) had some suburban traits, while Vridsløse had grown up round a state prison. The other habitations were mostly unchanged except for a certain filling up of the villages by small houses. Agriculture was still the main occupation, but market gardening was beginning to spread into the area, influenced by the rapid growth of industrialization in Copenhagen.

By 1930, fig. 3 (C) the areas inside the municipality of Copenhagen are built up with only a few exceptions, some of which are in horticulture. From here the continuous built-up areas have spread into the neighbouring parishes (Hvidovre and Rødovre). As often happens these new outer areas grew up as week-end gardens with a



Fig. 2. In 1910 the suburban development has reached the boundary of the parishes mentioned in the paper. A small town has grown up round Glostrup railway station. Market gardening (grey) is gradually spreading in the area.

semi-permanent housing, where people lived during week-ends or even through the whole summer. By 1930 a great part of these suburban settlements still had a semi-permanent character and were only served by a few and infrequent bus lines. The same semi-permanent housing characterizes the habitations along the coast (Brøndbystrand), here partly in connection with new market-gardening areas that now had spread still more over the whole area, the lorries having replaced the horse-drawn cars.

This spread of market-gardening is perhaps an important reason why the old village structure is preserved as soon as we are off the main roads, besides of course the lack of transport facilities in the same area.

The most notable feature is the urbanization of Glostrup, and of that habitation alone, by now with more than 4000 inhabitants. But this development is only partly suburban. Local industries have grown up, while at the same time its function as a local service and



Fig. 3. In 1930 suburban development has penetrated into the area, mostly along the eastern boundary, at the coast and at Glostrup. Market gardening (grey) and week-end gardens (dotted areas) are growing.

trade centre is of some importance. The trains now run daily at an interval of one hour, but in the rush hours every half hour.

The last map, fig. 4 (D) shows how the continuous built-up area has spread far beyond the municipality of Copenhagen. Not only have new housing areas completely filled up the two nearest parishes (Hvidovre and Rødovre), but have also crossed the boundary into the neighbouring parish of Brøndbyerne and stretch uninterrupted to a distance of 8,5 kilometres from Copenhagen. But there is a marked difference in housing before and now. Until 1930 and partly up to the Second World War most outlying areas were built with small private houses in gardens of their own, while now, after the war, most building activity has become company building, often tall blocks of 12-16 storeys, mingled with small tenement houses of 2-3 storeys and with park area and greens between.

Outside the fully built-up areas building activity is mostly concentrated upon only two parishes, Glostrup and Brøndbyerne. Only



Fig. 4. In 1960 the eastern part of the area is fully developed, Glostrup is growing rapidly and has got extensive industrial areas (coarse hatching) while the outer zones more and more turns into market gardening (grey).

these two suburbs show an accelerated growth, mainly after the opening in April 1953 of a new suburban railway line from Copenhagen to Glostrup, the consequences of which are shown in the population figures. Thus Glostrup grew from 13,490 in 1952 to 18,288 in 1958, and Brøndbyerne from 6,402 in 1952 to 13,014 in 1958. Now Brøndbyerne is really two suburbs. One is centered round the railway station of Brøndbyøster, while the other one, Brøndbyvester, forms part of Glostrup railway town, and more correctly said Brøndbyøster has about 8000 inhabitants, and Glostrup (including Brøndbyvester) has 25,000 inhabitants.

The opening of a new suburban railway is often seen to influence a much larger area than immediately adjacent to the railway itself, but this is not the case here because of the acceptance of a city plan for the suburban parishes. According to these plans only so-called »Inner Zones« are allowed to be developed. Inner Zones are areas that, besides being technically fully equipped, have a public system

of transport means which give a rapid and frequent service of great capacity direct to the centre of Copenhagen. »Middle Zones« are areas that are reserved for future development, while »Outer Zones« are not supposed to be developed. The Outer Zones comprise purely agricultural land including villages and similar old habitations which will always lie as green »islands« between separate suburbs.

The adoption of this great zonal division has a marked effect in many ways. Among the immediate results is the rapid growth of the market-gardening areas in the Outer Zones, even if this growth is also affected by the latest enlarging of the Copenhagen airport (Kastrup) on the flat lands of Amager, where market-gardening has been a traditional occupation for hundreds of years. Another effect is the establishment of new colonies of week-end gardens on leases limited in time. These are situated in the Outer Zones as well as in the Middle Zones, where they will be surrendered in time of development.

The old village structure is still mostly intact, partly because the villages lie in the Outer Zones and partly because the old farm houses can be used unchanged by the gardeners, who now have succeeded the farmers in most places.

The adopted boundaries between Inner and Middle Zones, and between Middle and Outer Zones, are liable to change, but normally it may be said that areas wanted for the Inner Zone must lie within »Walking distance« from a railway station, which in practice will mean »Cycling distance«. This condition has been made in order to avoid a net of bus lines with terminals at the suburban railway station.

*Industrial development.* Copenhagen has always been the manufacturing and industrial centre of Denmark, and up to 1940 it was still possible to find suitable industrial areas in the town itself. But since 1945 vacant lots for new industries have no longer been available, and industry had to seek out areas outside the municipality, either in the suburbs or somewhere else in the country where facilities were present. As a result of this demand for more space new industrial areas were laid out in some of the suburbs, where transport facilities were already at hand or could be supplied. Glostrup became a natural choice, because it had a big railway area, where more trails could be added if required, and besides the town had an industrial tradition even if on a smaller scale, and it had a rather large population to satisfy the demand for an additional number of hands; and if this should prove insufficient, then there was a satisfactory train

service to Copenhagen to bring workers to and from. In less than ten years Glostrup grew from a merely trade and service centre to an industrial town. Among the new industries are some very big ones in metals and in electric equipment, like a factory for making coin metals, one for making cables and wires, a telephone factory and another for office machinery (typewriters), and the manufacturing includes such divers commodities as chocolate and automobiles.

Only a few of the establishments, mostly among the smaller ones, are newly founded firms, the greater part being more or less branches or extensions of already existing companies, which circumstances have forced to move from their old sites in Copenhagen.

The question has often been asked why they did not move into the country, where land is cheaper and the number of hands more stable. The answer has newly been given in an interrogation of a sample of 155 enterprises of different kinds. From this it seems obvious that nearness to the customers, especially with regard to semi-manufactured or consumers' articles, is of great importance; next: abundance of educated and qualified workers, and thirdly: better transport facilities by sea and air, in the interest of foreign customers and wholesale tradesmen.

On the other hand, no one mentioned raw materials as a location factor, which is quite reasonable, because neither raw materials nor power can possibly influence location when they are not present anywhere in Denmark, while it is stressed that transport facilities by sea are still of importance (Copenhagen is the most busy seaport in Denmark). New is the information that a busy airport is something to reckon with, because traffic by air brings the salesmen and the foreign customers nearer. For these reason it is obvious that Copenhagen has an advantage over other Danish towns, and the suburbs must be reckoned as parts of Copenhagen in this sense.

*Population.* The general increase of population in the six suburban parishes is shown in the following table for the last 25 years.

	1930	1935	1940	1945	1950	1955
Hvidovre	6523	8499	12014	14208	23163	32688
Rødovre	5836	9233	12443	14780	18704	27007
Glostrup	4877	6184	7581	9056	11731	15884
Brøndbyerne	2967	3340	3635	3941	6355	12505
Herstederne	2554	2708	2294	2458	3096	3291
Vallensbæk	550	615	676	717	856	1184
<b>Total</b>	<b>23307</b>	<b>30579</b>	<b>38643</b>	<b>45160</b>	<b>63905</b>	<b>92559</b>



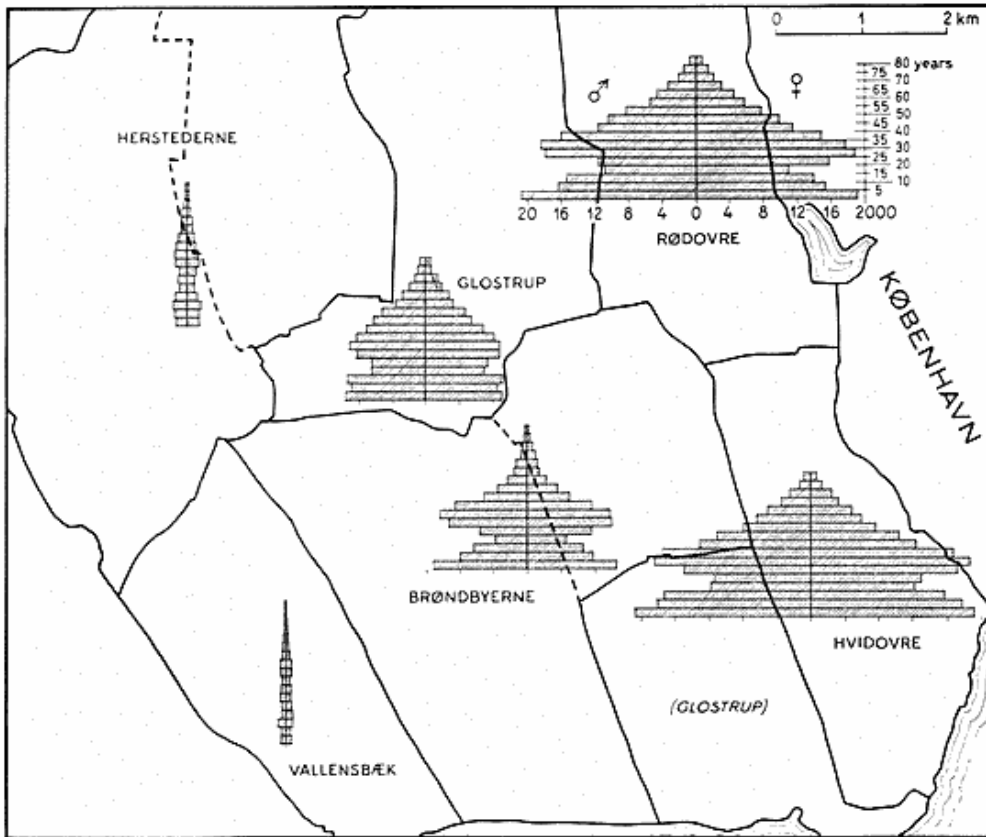


Fig. 5. The age-and-sex pyramids illustrate the characters of the different suburban developments.

While the six parishes in 1930 had only 23,307 inhabitants, this figure by 1955 had grown to 92,559, nearly four times as much. In 1958 the total population had passed the hundred thousands and was 103,423.

The rapid growth of these suburbs of course began in the ones nearest to Copenhagen (Hvidovre and Rødovre). A little later they were joined by Glostrup, while the increase in population in Brøndbyerne only began after 1945. Details of this population increase are shown in fig. 5. In Hvidovre the increase seems to have passed its maximum speed, meaning that the parish is filled up. Another group comprises Glostrup and Brøndbyerne. Being a railway town for more than a hundred years has favoured Glostrup with an earlier population increase, but after 1952 (the new suburban railway came in April 1953) Brøndbyerne shows a more rapid growth, and there are no indications that these two new towns will stop growing for the first ten years. The third group, containing Herstederne and Vallensbæk, seems completely unaffected by the presence of a mil-

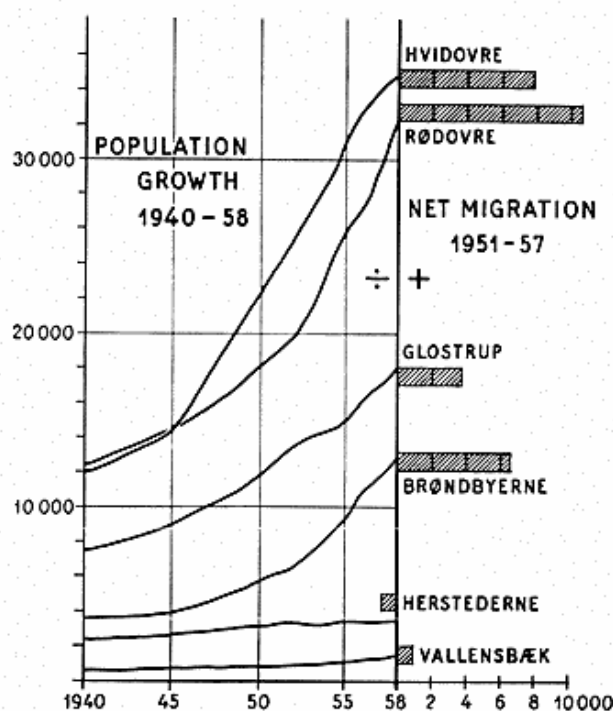


Fig. 6. Population development 1940-1958 in the six parishes and (to the right) the migration 1951-1957 for the same communities.

lion-town less than 15 kilometres to the east. Herstederne has even a slightly decreasing population. But this condition will not last much longer (see below). Vallensbæk shows signs of a slow waking from its magic sleep, after it has become the junction of two main roads. But in a few years two new suburban railways will be built, one of which will pass through Vallensbæk, following the coastline to the southwest, while the other one will be an extension line to the west of Glostrup. That the latter one will affect Herstederne has been foreseen: a detailed town plan has been made for some years and the new town has even got its name (Albertslund).

Fig. 5. also gives the net migration figures in the six suburban parishes for the years 1951-57, showing once more the rapid immigration in the upper four, while it is only small for Vallensbæk, and Herstederne even has had a surplus emigration. The gross migration figures for the same period show for Rødovre an immigration of 25.831 persons against an emigration of 15.281, for Hvidovre an immigration of 29.768 against an emigration of 21.869 persons, while the respective figures for Glostrup are 13.581 and 9.850 and for Brøndbyerne 13.011 and 6.813.

While the yearly emigration does not deviate much from 10 per

cent. of the actual population in any of the four parishes, the immigration has so far been more or less directly proportional to the distance from Copenhagen. The only exception to this rule is Hvidovre, and only for the last year (1957), when immigration and emigration balanced each other, this being another sign that the parish is nearly built-up. In Hvidovre 64 per cent of the population increase is still due to migration. This figure seems rather high, but not in comparison with Brøndbyerne, where immigration amounts to nearly 80 per cent of the population increase.

Even if only a lesser share of the increase is due to surplus births, the birth rate is still very high in relation to all Denmark. The number of live-births per thousand inhabitants for the years 1951-57 varied from 28 to 33 for Brøndbyerne and from 20 to 22 for Glostrup. The rate is increasing in Rødovre, but decreasing in Hvidovre.

Many of the variations get their explanation from the age-and-sex pyramids (fig. 6.). These give the different age groups superimposed in layers, each layer representing five years, beginning with the age group 0-5. Males are represented to the left of the centre line, and females to the right. The length of each horizontal layer expresses the total number of the age groups in hundreds.

The four bigger pyramids (Rødovre, Hvidovre, Brøndbyerne and Glostrup) are representative of communities affected by immigration towards a town. The profiles swell in the middle, meaning an immigration of young adults, but as most of the immigrants are married couples, the predominance of females over males is not pronounced, as might have been expected. The many young married couples are also responsible for the swelling at the bottom of the pyramids because of many small children. This last swelling is not so distinct for Glostrup because of a different age composition, wherein the great share of the older adults reflects its past as a railway town. The pyramid does not narrow so much towards the apex, as is the case with the other three bigger parishes.

Contrary to the above pyramids, the ones for Herstederne and Vallensbæk show a constriction in the middle and at the bottom. In these small communities there are fewer small children and fewer young adults, while the age groups 35-50 years and again 10-20 years dominate, a very common profile for rural areas with an emigration of young adults. From this it is evident that the composition of the population in Vallensbæk and Herstederne is not suburban at all.

No exact statistics are available to show where the immigration into the suburbs originated, except that about two thirds came from

the metropolitan area and only one third from the rest of the country, but it would not be erroneous to suppose that many of the immigrants came from all over the country, but stopped for some years in Copenhagen before they married and settled in the suburbs. The reason for believing this is the difficulty for young married couples to get hold of an apartment in Copenhagen, because the town favours its own. Most Copenhagen apartment are occupied by middle aged and older people who have no wish to move from their old and cheaper apartment to live in a more modern, but also more expensive one, the rent of which will often require that both man and wife have a regular income.

The immigrants into the suburbs fall into two groups: I. Those who live in the suburbs, but have their income in Copenhagen, and II: those who have their income from their new municipality of domicile. The proportion between the two categories differs somewhat from one parish to another. In 1948 60 per cent. of the taxpayers in Rødovre had an income from Copenhagen, but in 1957 this share had fallen to 57 per cent. The same figures were for Hvidovre 68 per cent and 59 per cent respectively. If one goes from these older suburbs to the newer ones, there is a marked difference. While only 24 per cent of the taxpayers in Brøndbyerne had their income from Copenhagen in 1948, this figure in 1957 had risen to 54 per cent., thus showing a typically residential town. For Glostrup once again its past as a railway town is evident from the source of the income. In 1948 38 per cent of the taxpayers had their earnings from Copenhagen, and the corresponding figures for 1957 show hardly any alteration (39 per cent). This rather low portion of earnings from Copenhagen is of course owing to the increase of manufacturing industries in Glostrup.

On the other hand there is a considerable number of people who are taxpayers in Copenhagen but have their income in the suburbs. This is the case for 3.560 persons in Rødovre, 2.800 in Hvidovre, 1.770 in Brøndbyerne and 1.560 in Glostrup, totalling about 10.000 people who live in Copenhagen, but work in the suburbs. This seems rather peculiar, until it is made clear that many of the newly erected factories in Glostrup used to lie in Copenhagen, where also the employees lived. When the factories moved to Glostrup, the employees remained in their old and cheap apartments, because this was cheaper, even if they had to pay the daily fare to their work.

The total number of taxpayers in the six parishes with an income from Copenhagen amounts to about 30,000, and if we add another

10.000 people who have their income in the six suburbs but live in Copenhagen, we get a total of about 40.000 people who are forced to travel twice the day between their homes and their place of work. To these may be added some thousands of children and young people who must travel to and from Copenhagen for educational purpose.

This of course means an enormous traffic on roads and streets and a similar pressure on the public means of transport, particularly in the rush hours. Those who live in Hvidovre and in the southern part of Rødovre have easy access to Hvidovre suburban railway station from where they can use cheap urban railway fare. For these journeys no figures are available, but from the other four parishes it is possible to get the number of journeys to and from the suburban stations of Brøndbyøster and Glostrup. They amount to 1,8 million journeys (1957/58) for Brøndbyøster and 2,4 million for Glostrup, or totally 5.000 respectively 7.000 journeys every day. If each person travels twice a day it means that 6.000 people use the suburban railway, and this is a little more than half of the people in Brøndbyerne and Glostrup who have to travel to and from the same parishes on account of their daily work. The other half then must make use of buses or private means of conveyance (car, motorcycle, bicycle). This is why the town planning committee has insisted on the building of more suburban railways in order to avoid more pressure on existing roads and streets and to lead the daily stream of people along the narrowest possible channels.

Another way out of the traffic dilemma was of course an interchange of people between Copenhagen and the suburbs, in order to make the municipality of domicile also the municipality of income; but this would require an equalization of the level in rent, which is hardly possible. Besides, only a minor part of the dwellers in the suburbs are manual workers, while most of them are engaged in public services or are office personnel or shop assistants, for whom there are no means of income in the suburbs.

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