POLYPTYCH OF SAINT GERMAIN:
PEASANT AGRICULTURE AND COMMERCE

THE POLYPTYCH OF SAINT GERMAIN-DES-PRES: PEASANT AGRICULTURE AND COMMERCE IN THE NINTH CENTURY PARIS BASIN

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A Thesis
Submitted to the School of Graduate Studies
in Partial Fulfilment of the Requirements
for the Degree
Master of Arts

McMaster University
October 1985

MASTER OF ARTS (1985) McMASTER UNIVERSITY
(History) Hamilton, Ontario

TITLE: The Polyptych of Saint Germain-des-Pres: peasant agriculture and commerce in the ninth century Paris Basin

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NUMBER OF PAGES: 95, viii

ABSTRACT

Using the Polyptych of Saint Germain-des-Prés as a source, this study examines the nature and extent of peasant involvement in the marketplace in the ninth century Paris basin. A minority of the 1556 manses in the sample were found to be involved in commercial agriculture, paying cash rents which seem to have been raised mainly by the sale of wine. Some manses were found to have vineyards with productive capacities well in excess of reasonable domestic need, suggesting a regular and planned surplus. Involvement in the marketplace was found to exacerbate economic inequalities within the ranks of the dependent peasantry.

The author wishes to thank Dr. Alan Arthur and Dr. Robert Buck for their suggestions and criticisms, Dr. Carol Buck for her help witn statistical analysis, and Mr. Bruce Andrews for his encouragement throughout, as well as supervisors Dr. B. Kaczynski and Dr. J. Trueman.

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CHAPTER I

There are several reasons for studying the economy of the Paris basin in the Carolingian period, and in particular the agricultural economy. As one of the wealthier and more economically complex regions of the Carolingian Empire, it may have achieved a level of economic development in this period which other areas would be unable to match for several centuries. Indeed, it has been suggested that the future importance of the Ile de France can be traced to its precocious development in this period.[1] From this area are also some of the earliest documents that can be used in the study of economic history. Not only is there a sufficient quantity of evidence from this period, there is also an improvement in the quality and variety of sources.[2] Furthermore, the sources for the economic history of the Paris basin are adequate from the Carolingian period throughout the Middle Ages. This differentiates it from some other areas where the excellent Carolingian sources are followed by long gaps in the record. The quality of Carolingian documents and their relevance to the countryside are in themselves incentives to study the agricultural economy of the period. The agricultural history of northwestern Europe in the centuries before the Carolingian documents is almost

exclusively the province of archaeologists. But there is a more compelling reason to study the Paris basin in this period. The three phenomena which characterize much of later mediaeval agriculture seem first to have been experienced in this area: population pressure on the land, ever increasing reliance on cereal cultivation at the expense of animal husbandry, and the commercialization of certain aspects of agriculture.

It is this last phenomenon, the commercialization of agriculture, which is the focus of this investigation. Involvement in the marketplace by peasant agriculturists must be considered in several ways. The extent and nature of this involvement, its effect upon the relationship between the lord who holds the land and the peasant who works it, its effect upon the way in which resources are distributed in the community, and the mark it leaves on patterns of land use, are all aspects of the commercialization of agriculture. Of these there is evidence in the Polyptych of Saint-Germain-des-Prés.

The Polyptych of Saint Germain-des-Prés is one of several surviving Carolingian Polyptychs. The origin of the Polyptych, which is literally just a document with "many panels" or "many pages" has been debated. While some favour the Roman tax rolls or cadasters as the model from which the Polyptychs were derived on the grounds that they share certain similarities in form and content, this view is not

universally accepted.[3] The surviving Polyptychs are of two types: the first is only a summary of the expected revenues from a villa with the number of manses indicated. These, while sufficient for a landowner's purposes, are of limited value to historians. The second kind is replete with information, listing the location of each manse, the names and statuses of its occupants, the amount and use of the land attached to it, and the labour services, animals, manufactured goods, crops and cash owed by each manse, and the location of the manse. In addition to this wealth of information about each manse there is also a description of the mansus indominicatus, which is of particular value as it includes the information needed to calculate yields. This type of Polyptych is of great value as it can be treated, if with some caution, as a quantitative source.

There are good reasons to accept the Polyptychs as generally accurate. The historical circumstance of their redaction favour the view that they were probably accurate. Charlemagne was concerned with improving the management of royal estates. With this in mind, his officials drafted the Capitulare de Villis to correct abuses on his estates. The same urge to rationalize estate management led Charlemagne to offer his great lords a model for writing the inventory of a great estate, the Brevium Exempla ad describendas res ecclesiasticas et fiscales. Further evidence of the fiscal

zeal of the Carolingian monarchs comes from the six surveys of great monastic houses they ordered between 751 and 869. In an atmosphere of such attention to record keeping, it seems likely that the records would be accurate. This particular Polypytch was compiled by Abbot Irminon, whose concern for the management of his estates is attested to by the frequent references to improvements such as repairs to buildings, the planting of vines, and the construction of mills, on the abbey's lands during his tenure.

The Polyptych is not entirely free of errors. Two kinds of errors are obvious. Some children are not listed, for fewer names are recorded than the number of children credited to some manses. The other error involves the brief summaries at the end of each chapter of the total revenues expected by the abbey from each villa. The totals rarely tally accurately with the totals that one can obtain by adding up what all the manses on the villa owed. It is possible that in some cases this discrepancy can be attributed to the summary having being added later, as in some cases an interval of a column or more separates the last case from the summary. As it is easier to be accurate with small numbers than large numbers, it seemed most reasonable to assume that the summaries were in error and not the listings of the individual manses, as the numbers involved in the summaries were quite large. For example, 92 manses on one villa each gave between six and thirty eggs. In this example, which is

an extreme one, the discrepancy is large. The monastic compiler found a total of 2000 eggs rather than the proper sum of 990. He achieved greater accuracy with smaller numbers, for example, when he found there to be a total of 99 modii of spelt instead of the actual total of 103 modii. These errors do not constitute a sound case for rejecting the Polyptych as a source of statistical information.

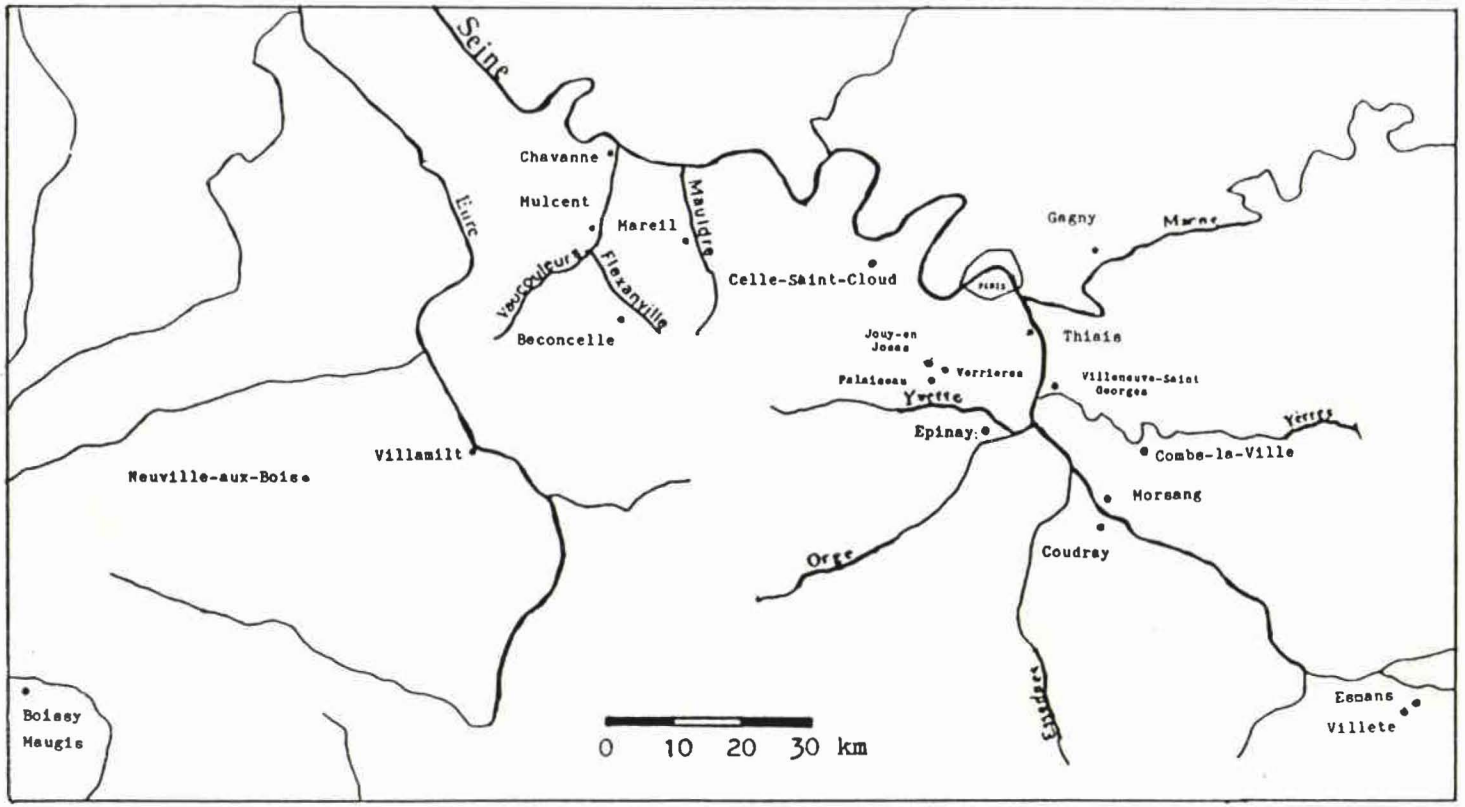
The method in the present study has been to take each entry in the Polyptych, whether it was a manse, half manse, double manse, precaria or hospicia, as a single case. Not all villas described in the Polyptych were included in the study. The two fragments and the last villa were rejected because they were incomplete. As manses were listed in an approximate order from large to small, a fragment might distort the results. Two other villas were rejected because their format was very different, suggesting a different compiler and even a different date. There remained twenty-one villas, comprising 1556 cases. All information given for each manse was coded and quantified, but not all variables were used in the analysis. Quantifying the labour services presented special problems. Some of the services were expressed in only the most vague terms. Guérard's approach to these was to estimate the duration and thus the value of these services, but this approach was rejected because of its arbitrary nature. Instead, all such vaguely phrased obligations were treated as dichotomous variables with all

manses either owing each one of these services or not. It was necessary to compress information sometimes. The variation from year to year was handled by recording the average dues over the three year cycle. This is in some ways an unhappy compromise. For example, a case where ten modii of spelt was owed every two years is not really identical to one owing five modii every year.

No attempts were made to convert ancient measures into modern with one exception. For certain analyses the modius was converted into litres and then into kilograms. This conversion was accomplished by accepting Guérard's evaluation of the modius as 63.174 litres and then taking the average of repeated weighings of this many litres of unmilled grain.[4] When arable land was recorded in units other than bunuarii and arpents, the other units were converted into these more common measures. These conversions were done using Guérard's figures of 1844 for two reasons. Guerard derived these figures for the Polyptych and to some extent from it. Secondly, his figures gain in credibility when compared with the figures derived by Guilhiermoz using a different method. It is reassuring to find two different methods producing similar figures.[5]

For some analyses, the twenty-one villas used in the study were aggregated into six larger regions, based on river systems. The villas at Celle-Saint-Cloud, Jouy-en-Josas,

Palaiseau, Epinay-sur-Orge and Vérrieres formed the first group, the Paris area villas, on the Seine downstream from Paris or on its tributaries, the Bierres and the Yvettes. The second group, at Thiais, Villeneuve-Saint-Georges, Morsang-sur-Seine, le Coudray, Combs-la-Ville and Gagny were on the Seine upriver from Paris, the Yerres and the Marne. The third group of villas at Mareil-sur-Mauldre, Mulcent, Beconcelle and Chavanne are in the valleys drained by the Mauldre on the east, and the Vaucouleurs to the west. The thirty-nine locations comprising the scattered settlements of Villamilt are on the Eure south of Dreux and smaller rivers draining into it. Neuville-aux-Bois and Boissy Maugis are in the hills of the Perche. Esmans and Villete are near the Seine upstream from Fountainbleau. The location of these places shown on Map 1 were accepted as the locations of the ancient villas following Guérard, except in those cases where the second editor of the Polyptych, Auguste Longnon, disputed Guérard's identification. 160 manses could not be located.



MAP 1-- Location of villes following Guerard's identification

CHAPTER II

CASH RENTS AND PEASANT INVOLVEMENT IN THE MARKETPLACE

Since Pirenne, scholars have engaged in serious study of the economic history of north-western Europe in the Early Middle Ages. Those features of the economic life of this early period which are clear antecedents of the economic expansion of the High Middle Ages, such as fairs and markets, silver coinage and international trade, merchant associations and fledgling industries, have received particular attention. The agriculture of the period has been studied for even longer, mostly from a geographical and technological perspective. Yet farming as a commercial activity and the economic consequences of peasant involvement in the marketplace have tended to be overlooked.

Pirenne's thesis explained northern Europe's break from the old Mediterranean world and the shift in development to the north as a result of the closing off of the Mediterranean by the Arabs. Without Mediterranean-based trade, the economy of northern Europe became closed and self-sufficient and an agricultural economy emerged that managed without an active coinage.[1] This famous thesis, presented in Pirenne's Mohammed and Charlemagne, was challenged in the

works of Alfons Dopsch. Dopsch did not share Pirenne's belief that there was a drastic break between the Merovingians and the Carolingians. Dopsch argued that the economic importance of the north antedated Islam and that long-distance trade along German routes remained important throughout the whole period. While Pirenne viewed the Merovingian period as an age of long decline broken by Islam and a shift to the north, Dopsch stressed the continuity of the Carolingian age and its outward-looking character. Renewed contact with the papacy, the conquest of the Saxons, the successful fusing of Roman and Germanic elements under the Carolingians created an Empire with its eyes turned to the sea and beyond.[2]

Neither Dopsch nor Pirenne was striving to write narrow economic history as much as to define great epochs and to chart long developments. But their critics, supporters and revisionists have generally approached the Pirenne thesis in particular with evidence from numismatics and economic history. Although himself interested in numismatics, Pirenne made little reference to the evidence of coins and coin hoards. But it became obvious that consideration of many of the problems raised in his work must be explained to include this kind of evidence. Sture Bolin compared the weight of the Arab dhinar with its Carolingian equivalent, the silver denarius, and concluded that the close correspondence in weight over the years 650 to 950 demonstrated the

importance of commercial exchanges between the two Empires.[3] Bolin's conclusions have been accepted by some historians. Maurice Lombard suggested that the Carolingians may have found themselves acting not only as Bolin thought, as intermediaries in commercial exchanges between Islam and the Varangians, but perhaps also as middlemen between the East and Islam.[4] Renée Doehard used Bolin's theory of the influence of Islam on Carolingian currency to explain Charlemagne's currency reforms of 790 and 794, viewing these reforms as responses to the influx of better Arab coins.[5]

Bolin's theory has two flaws upon which his critics were quick to seize.[6] First, it is difficult to establish the year and weight of a coin. Carolingian coins can only be dated to a reign, and even this is difficult for the coins of Charles and Louis the Pious. The weight of the coins as they are found is not necessarily the same as their weight at the time of minting. Clipping and wear and tear through use would reduce the weight of the coins, but not consistently. The second flaw in Bolin's theory is his hasty dismissal of the problem posed by the virtual absence of Arab coins in Frankish hoards. Karl Morrison, an American numismatist, dismissed both Bolin's method and logic, concluding that changes in weight of the denarius were responses to internal conditions of the Empire and that the commerce of Carolingia was "within the closed commercial structure of the Empire".[7]

The contribution of numismatists to the problem of the Carolinian economy has been somewhat limited both by the poor cataloguing of Carolingian coins and the dearth of information about their provenance. Historians, however, have generally exhibited a preference for documentary evidence over archaeological. The arguments of the numismatists have often been technical and inaccessible to those who are not in the field. Philip Grierson, who made a serious study of their work, reported to his colleagues in history in 1958 that the numismatists' "approach to the whole subject is sometimes one of singular naievety", and that archaeologists could only bring "neutral evidence" to the problem.[8]

This rather sweeping dismissal of the efforts of numismatists and archaeologists to address one of history's larger problems was indicative of a tendency to leave numismatists to grapple with only the technical details of coins and to ask the anthropologists about the significance of currency. Anthropologists of the early part of the century had discovered that currency had more than a monetary function and that gift giving had more than a ceremonial role in a society. Studies such as Mauss' Essai sur le don suggested that currency could have symbolic and ceremonial functions and that gifts could transfer and redistribute wealth. These insights were applied to history by Marc Bloch in his important essays of 1933.[9] But it was Philip Grierson who gave the most detailed account of how the alternatives

to trade may have worked.

Grierson, in dismissing the numismatists' narrow view of coins as the tools of commercial exchange, argued that the very presence of coins in hoards suggests those coins were not being used in trade.[10] Ransoms, political payments, diplomatic intercourse and tributes could account for larger transfers of bullion than could trade, and would explain coin hoards being unearthed in areas not lying along logical trade routes.[11] "Gift and countergift, plunder and theft could also be workable alternatives to true commerce".[12] Grierson amassed abundant evidence illustrating the magnitude of early mediaeval gifts. He concluded by stating that the evidence of the Dark Ages points away from trade, and that the onus of proof is on those who still think otherwise.[13]

By the 1950's, Pirenne's thesis, in its original form had been discarded by most historians, including his students, although the problems he raised were not solved to the satisfaction of all historians. By then historians had achieved, if not a consensus about the nature of the Carolingian economy, at least positions along a single continuum. Grierson, at one extreme, maintained that commerce was of negligible importance. Doehard, and then Hodges in England, argued that the northwest of Europe at least had an economy in which trade figured prominently.[14] The views of those historians not participating directly in the fray have been aptly summarized

by Grierson when he wrote:

> The net result by now, thirty-five years after the opening of the great debate, is the very widespread impression that Pirenne and his critics were almost equally wrong. Commerce in the Dark Ages was much more considerable in volume than has generally been allowed, even if less highly organized than it was to be in later centuries.[15]

Grierson's theory of trade alternatives was adopted by Georges Duby and considerably refined. In his Early Growth of the European Economy, Duby accepted Grierson's and Bloch's emphasis on mental attitudes.[16] The symbolic purpose of minting coins to enhance the authority of the ruler, as well as the importance of the alternatives to trade are both recognized as critical to an understanding of how the early mediaeval economy worked. But Duby also allows that coins played an economic role in commerce. By paying much closer attention to changes over time, Duby was able to reconcile the views of Grierson with the views of those whom Grierson castigated in 1958. Where Grierson argued that the alternatives to trade were more important than trade for a very long time, drawing evidence from as late as 1043, Duby discerns a break in the eighth century. Up to the seventh century he saw a contraction in the role of money in commercial exchanges. But in the eighth century the growth of mints under state control fostered the regular use of a silver coin. This led Duby to write:

> During and after the eighth century, and step by step from the romanized parts of the West, the

> denarius was accepted as the most convenient means of effecting the transfer of assets.[17]

Duby's sketch of the early phases of the European economy has been confirmed and amplified by further archaeological work, studies of markets, ports and land transport.

However, long distance trade is only one aspect of any economy, and the particular items whose exchange has been most closely followed: slaves, papyrus, silk and oil for example - may represent only the carriage trade of the period. The trade over long distances of a few precious luxury goods may have enriched the lives of a small number of people, provided a livelihood for a few more and is of great interest to historians, but the short travels of less rarified commodities should not be neglected. The sources of evidence for local trade are admittedly scarce. The two single references to markets in the Capitulare de Villis, the edict requiring a listing of new markets, edicts on prices of necessities all indicate local trade without revealing its nature and extent.[18] It is understandable that a barrow of produce taken to a local market would only be recorded under the most exceptional circumstances, whereas the magnificent gifts exchanged by kings, nobles, and prelates are more likely to have left some trace in the record.

Historians have tended to dismiss local trade in a summary fashion, even though most acknowledge it did exist. Dopsch allowed that:

> the produce of rural districts was not all consumed on the spot in self-sufficing households. In part, at least, it was brought to market and carried into the towns to be sold there.[19]

Ganshof attached greater significance to this surplus production, noting that:

> It was in the districts where urban markets most easily absorbed the produce of the countryside, such as the region around Paris and Beauce, that the enfranchisement of the rural population by purchase was earliest and most widespread.[20]

Ganshof drew the conclusion that "the sale of country produce had really enriched the peasantry and enabled them to accumulate capital reserves".[21] Grierson dismissed the sale of local surplus produce as being of no economic importance and argued that while "raising the standard of life of the participants", it rarely served "as a stimulus to increasing output and to savings and investment".[22] Duby agreed with Grierson and thought that the surplus product of the countryside appeared only rarely and exceptionally in the market.[23] Doehard, however, cautioned against underestimating local fairs and suggested that under particular circumstances they could "aquérir une signification économique".[24]

With the exception of Ganshof, these writers use little evidence to support their statements, which are delivered as asides to discussions of general economic questions. Despite the difficulty posed by the lack of explicit source material, there are ways to investigate the degree and nature of peasant involvement in the marketplace. One such way is to

examine the cash rents paid by the dependent peasant farmers of Saint-Germain-des-Prés.

Cash payments were exacted for a variety of reasons. A personal head tax, the capiticum, was the most universally collected cash payment and usually consisted of a payment of a few denarii. It seems likely that this small sum had always been collected in coin, as no alternative payments in kind are given. Another obligation, incumbent upon the manse itself rather than upon the occupants, was the military burden, the hostilitium and the carnaticum. These payments were owed by free manses although on three villas, Buxidum, Villamilt and Bisconcella, servile manses were also required to pay one of these taxes. Guérard believed that the hostilitium and the carnaticum had by the ninth century become a single payment.[25] The hostilitium, which he thought to be originally a payment in cattle, and the carnaticum, which he considered to have been a payment in sheep, were in the process of becoming the single payment ad hostem. Combining these obligations resulted in a bewildering biennial or triennial system, in which the payments the first year were heavier than in the second and third years of the two or three year cycle. For example, Frotgrimus, a colonus at Siccavalle sive Foreste, paid one year half a cow, in the second year, two sheep and in the third year, a one year old hen.

Although this payment for military purposes was orign-

ally in animals, by the ninth century the prevailing method of payment was by cash amounts that reflected the value of the various animals paid under the old system. Usually four solidi were paid the first year and two solidi the second. Mixed methods of payment were common, either cash one year and animals or goods the next, or a choice of cash or animals in both years. The trend appears to have been towards payments in cash, silver coins, with payments in animals the exception. It has been suggested that the figures in the Polyptych listing payments in cash were no more than a kind of bookkeeping, and that, in fact the payments were in animals worth the sums listed. This seems most unlikely. The fact is that there are cases where it is very clear that cash is only mentioned as a measure of value, suggesting that in all other cases, when cash was mentioned, cash was paid.[26]

Other obligations that were often paid in cash were payments for the rights to use pasture land, the herbaticum, the rights to fish, the pastio, and the rights to use the woods, the lignericia. For these, the method of payment seems to have reflected the custom of the manor, as there is no case of one manse paying cash for these rights and a neighbour on the same villa paying in kind. These lesser dues are all, individually, rather small, each amounting to no more than three to six denarii, payable either triennially or biennially.

All cash obligations have been considered in this study as a single payment because from the perspective of the dependent farmer it would only be the total sum that mattered, not the reasons for which it was being exacted. The payments have been averaged to provide a single annual sum for each manse.

The frequency of each level of cash payment is shown in Table 1. These cash amounts must be regarded as minimal, as in all cases where the tenant had the option of not paying in cash, it was assumed for this analysis that he did not pay in cash.

TABLE 1. -- Frequency of each level of cash payments.

Payment in denarii	No. of manses	% of manses	Cumulative %
0	543	36.0	36.0
1-4	265	18.0	54.0
5-8	51	3.5	57.5
9-19	82	5.4	62.9
13-16	36	2.3	65.2
17-20	52	3.4	68.6
21-24	56	3.7	72.3
25-28	1	.0	72.4
29-32	28	1.6	73.9
33-36	59	3.9	77.8
37-40	0	0	77.8
41-44	53	3.5	81.3
45-48	42	2.7	84.0
49-52	39	2.5	86.5
53-56	9	.6	87.1
57-60	85	5.6	92.7
61-64	110	7.2	99.9
64+	2	.1	100.0
Total	1513	100.0	

The first characteristic of this distribution which must be noted is that a majority of cases fall into the low-

est two categories of cash obligations, with a third paying no cash rents at all, and a fifth paying only one to four denarii. The second characteristic of interest is that the distribution is bimodal, with a second, smaller, peak at the highest levels of cash payments. Such a distribution is very poorly summarized by the mean of 18 denarii; the median payment, 4.7 denarii is less affected by the few, high cash paying manses. The best summary of the data in Table 1 would be to consider the manses as falling into three categories: a majority of manses unencumbered by significant cash payments, a minority of very heavily obligated manses, and a large group whose obligations are distributed fairly evenly over an intermediate range.

Identifying the factors that lie behind this distribution is of some importance. Other information about each manse from the Polyptych offers a set of variables, whose effect upon the size of the cash payment can be analysed statistically. The Pearson correlation coefficient which measures the strength and direction of an assumed linear relationship, approaches zero if there is no relationship, +1 if there is a perfect positive relationship and -1 if there is a perfect nagative relationship. The probability that an observed correlation coefficient has arisen by chance is expressed as p. A moderately strong negative correlation exists between the distance at which a manse lay from Paris and the amount of cash it paid. ($r = -.28$, $p = .001$)

Pearson's r, when squared estimates the amount of the total variance which can be explained by the variable under consideration. Thus eight per cent of the variance in the amount of cash paid can be attributed to distance from Paris. When those manses with the option of paying in cash or in kind were reclassified as paying cash instead of livestock, there was a large increase in the strength of the relationship, but no change in the direction ($r = -.45$ $p = .001$). The explained variance had increased from eight to twenty per cent.

These summary statistics suggest that proximity to Paris affected the economic relationship between the abbey and the peasants. It seems possible that the peasants in the Paris area were taking advantage of the opportunity offered by markets in Paris to redeem their obligations in coin rather than in goods and labour.

It is not possible to attribute this relationship to a greater value of land near Paris. If this were the case it would be expected that the peasants in the Paris area would have greater total obligations than those living further away. Although this is very difficult to measure accurately because it involves making assumptions about the relative value of the different animals and services to obtain a single figure, it is possible to examine the levels of payments of certain other key labour and livestock dues over distance from Paris. The number of _pertica_ ploughed each

season increased with the distance from Paris. Closer to Paris, peasants paid less in sheep and pigs and did less daily works. This suggests that the burden imposed on the Paris area peasants was not so much greater as it was different than that which was levied upon the more distant manses.

If the relationship between the distance from Paris and the amount of cash owed is to be explained by the proximity of Paris markets, there must be a cash crop in the Paris area. Confirmation of this is suggested by the positive correlation between the amount of cash paid and the number of arpents of vineyards associated with a manse. Manses with more vines appear more likely to be paying cash rents ($r^2 = .36$ $p = .001$). There is other evidence to support this. Wine and verejuice are mentioned in the edicts governing the price that can be charged in the market for common necessities. The mansi indominicati produced wine in greater quantities than the abbey could have consumed. Renee Doehard estimated that the abbey received from its mansi indominicati and the rents of its tributary manses 15,000 modii of wine, of which 13,000 would be surplus.[27] The abbey of Saint-Denis is known to have sold its own wine as early as the end of the eighth century. Is there any reason to doubt that the production and sale of wine and verejuice would be practised by the dependent cultivators of Saint Germain on a much smaller scale?

There is convincing evidence of expertise in every

aspect of the cultivation, harvesting, production, storage and transport of wine on the peasant's holding. Vine dressing and pruning were regular obligations. Many manses produced barrel hoops and staves, suggesting that cooperage was a domestic art not a specialized craft. Transportation of most of the abbey's own wine was performed by the peasants. On many villas, the greater part of the whole viticultural operation was carried out from start to finish by peasant families under a kind of sharecropping arrangement with the abbey. Widespread knowledge of wine production underlay the ability to undertake small viticultural operations.

An examination of the 30 manses at Villanova with the largest vineyards, three to eight arpents, suggests that a surplus must have regularly existed on many of the manses, even after the modest rent of either three or four modii is deducted. The number of consumers would have a direct effect upon this surplus. All inhabitants have been included as consumers, thus the amounts of wine given in column 6 are conservative, and if children could be pro-rated the numbers for some manses would be larger. The production figures are calculated using the yield given at the beginning of each chapter in the Polyptych of 10.9 modii per arpent. The conversion from modii to litres follows Guérard's estimate of 63.174 litre to a modius.[28]

TABLE 2. -- Wine Production per capita of manses at Villanova having 3 or more arpents of vineyards.

manse	vineyard in arpents	no. of people	annual production after rent (litres) total	per capita	litres per capita, daily
49	8.0	8	5383	673	1.84
40	7.0	3	4694	1564	4.28
47	6.0	6	4006	668	1.83
20	5.0	10	3317	332	.90
38	5.0	5	3317	684	1.80
54	5.0	2	3317	1658	4.54
55	5.0	3	3317	1106	3.03
43	4.5	13	2972	229	.62
44	4.5	7	2972	425	1.16
3	4.0	8	2628	328	.90
4	4.0	6	2628	438	1.20
42	4.0	8	2628	328	.90
50	4.0	5	2628	526	1.44
52	4.0	10	2628	263	.72
7	3.5	3	2284	761	2.08
17	3.5	2	2284	1142	3.13
23	3.5	9	2284	254	.69
53	3.5	3	2284	761	2.09
89	3.5	6	2221	370	1.01
9	3.0	2	1934	967	2.65
19	3.0	3	1934	645	1.77
24	3.0	2	1934	967	2.65
25	3.0	2	1934	967	2.65
36	3.0	14	1934	138	.38
51	3.0	4	1934	484	1.32
56	3.0	5	1934	387	1.06
60	3.0	6	1934	322	.88
62	3.0	5	1934	387	1.06
63	3.0	9	1934	215	.59
82	3.0	4	1877	469	1.28

Viticulture cannot have been the only means of raising cash payments, as there were some villas where little wine was produced but where some of the manses owed cash

rents. There is a modest positive correlation between the amount of cash paid and the size of the meadowland associated with the manse ($r = +.27$ $p = .001$). This suggests that the products of the meadow, hay and the animals it can feed, may have been a source of cash for the peasant. It is also possible that those who had more meadowland than their neighbours were in a better position to obtain higher yields from their cereal crops, as it is generally agreed that the peasant of this period faced his fields with animals weakened by too little feed, and that his soil suffered from a chronic shortage of manure.[29] This relationship between the cash owed and the meadowland is of considerable interest when it is considered that no such relationship exists between cash payments and the amount of arable land held by the manse ($r = +.05$ $p = .011$). In other words, while the extent of a manse's vineyards and meadows appear to have affected the cash rents, the amount of arable land did not. In a subsistence economy this would be most unusual, for it is usually upon the arable that the rent is calculated.[30] The absence of a relationship between cash rents and the amount of arable land persists in the face of attempts to control for other factors which might obscure such a relationship. Since the size of the arable generally increases with distance from Paris while cash rents decrease with distance, it seemed worthwhile to control for distance. This failed to uncover any relationship. It is possible that there was a

non-linear relation, but none emerged when allowance was made for non-linearity by introducing quadratic terms into the correlation analysis.

The physical characteristics of a manse that best predict its level of cash obligations are its distance from Paris, the size of its vineyards and the amount of meadowland. These can jointly account for a considerable share of the variance, but there are other non-physical characteristics of the manse to be considered as well. It was to be expected that the number of people living on the manse would be of some importance in determining how much cash it paid because one part of the total cash payment was the head tax, and this was the case. It was also expected that servile manses would pay less cash than free manses because they were not liable for the military taxes. This was confirmed. Less obvious was the finding that certain elite manses paid more cash rents. Of the twenty-four villas described in the Polyptych, six concluded with a list of names of men who were designated as "isti juraverunt". By tracing these names back in the chapter, it was possible to name "juring manses". These manses owed significantly higher cash payments on five of the six villas.[31] Such manses on the sixth villa were not different in this respect, but this villa was so small that the twelve "juring manses" accounted for half the manses. If these manses were held, as one would expect, by the most solid and favoured of the tenants, it is inter-

esting that they paid more in cash. This suggests that cash payments, while of possible economic advantage, probably carried greater prestige and were less a nuisance than paying in livestock and labour. This is confirmed by the cash rents paid by another elite group, the servants of the abbey: stewards, mayors, foresters and cellarers. This group, when compared to the colonate population from which it was drawn, was found also to pay significantly higher cash payments.[32] Where one third of the ordinary coloni paid 36 denarii or more, three quarters of the abbey's servants were paying at this level.

The involvement of the tenants in the marketplace, using cash rents as an indicator of market involvement, varied greatly. While at one extreme some tenants appeared to have neither the need to raise cash for rents nor the capacity to produce for the market, at the other extreme were tenants who were exploiting the commercial possibilities open to them. Those tenants producing quantities of wine in excess of their domestic requirements are examples of peasant proprietors well integrated into a market economy. Not only was their surplus production planned for rather than fortuitious, it was depended upon to meet certain obligations. Furthermore, the sacrifice of time and labour required to plant vines would not be undertaken lightly and may be considered an investment in agriculture. Between these extremes lay the majority of the dependant peasantry studied. These

families had not structured their relationships with the abbey so as to make market involvement essential nor had they reallocated the resources of the manse on a semi permanent basis to suit the marketplace. Surpluses were probably sold as they arose, perhaps even planned for on an annual basis, for example by extending meadowlands to produce more hay, either to sell or fatten livestock for sale.

The degree of involvement in the marketplace varied regionally and according to the resources of the manse. It must not be forgotten that the sample provided by the Polyptych includes those who were nearly servile. Their holdings were often so small as to preclude any involvement in the marketplace. The proportion in the rural population from which the tenants of Saint Germain were drawn of such marginal farmers is unknown, but it is likely to have been lower rather than higher. If anything, therefore, the market involvement of the agriculturists of the Paris basin was greater that has been found in this sample.

The nature and extent of peasant involvement in the marketplace is only one aspect of the question. It is also necessary to investigate the effect of such an involvement on the patterns of landholding and the distribution of wealth in the rural community.

CHAPTER III

PEASANT HOLDINGS AND THE MARKET ECONOMY

The principle peasant landholdings on the estates of Saint-Germain-des Prés were the manse, about which Marc Bloch wrote "there is no more mysterious institution in all agrarian history".[1] Part of that mystery is the meaning of the term manse and the origins of this institution. The problem of determining what is meant by a manse can be demonstrated by the variety of contexts in which the term is used in the Polyptych. Its most common use is to describe the holding and its arable land, meadows, vineyards and pasture as though the manse were simply a family farm. It is also used to describe an extra allotment of arable land held jointly by nine men in addition to their manses,[2] a unit of land measure that like normal measures can be multiplied[3] or divided,[4] a basic fiscal unit against which abnormally small manses could be compared and their dues prorated,[5] and even a tenure over which the abbey has no control.[6] Guérard's simple definition of the manse as the farm or rural habitation to which was attached in perpetuity a determinate and invariable amount of land is at best, a partial truth, and at worst, misleading.[7]

The confusion about the meaning of the term is related to the problem of the origins of the manses. It is

generally conceded that the manse had both Germanic and Roman antecedents. The practice of hutting slaves in the Empire, the parcels of land held by coloni, the land granted to squatters in North Africa, suggest kinds of tenures that embody many features of the manse. The form of land tenure in clan villages also had much in common with the manse. But the process by which the manse became the main form of tenure over much of Western Europe is not clearly understood. The heyday of the manse seems to have passed by the time it appears most clearly in the Carolingian Polyptychs; indeed some historians have considered the Carolingian manse as a decadent form. Guérard noted that "dès le IX^{e} siècle, le système des manses était en décadence rapide"[8] O. Tulippe concurred:

> le manse semble être une institution en décadence, abâtardie, comme ayant subie une évolution qui en a modifié considérablement la physionomie originelle.[9]

C. E. Perrin, in a study of four of Saint Germain's villae concluded that "Le manse dans la région parisienne... apparaît comme une institution abâtardie et menacée de ruine."[10]

Implicit, and at times explicit in their discussion of the manses is a contrast between the Carolingian manse and the manse as it must have been in some earlier time. This seems to be a somewhat circular approach, arguing that the Carolingian manse is decadent by contrast with its

earlier form, the nature of which is deduced from the same Carolingian manse, but the arguments are not without merit. The manse as a fiscal unit must have at one time been the holding of one family and must have included lands, if not of comparable extent, at least of comparable value. This, it is argued, is because manses of the same legal status on the same villas pay the same rents, as indicated by the concluding statements of each manse's entry "solvit similiter". The situation on the abbey's estates, where manses hold more than one family, even as many as six households and where manses of different value owe identical obligations is therefore a decadent situation. Ganshof subscribed to the view that in its more primitive state, the manse was a tenure of a fairly standard size. Noting that manses in the Low Countries were of a more uniform size than their Parisian counterparts, he wrote:

> If the variations in size between mansi on a single estate in the latter region may be taken as a sign that the breakup of the mansus had already begun, it is clear that this process had not gone nearly as far in the future Low Countries.[11]

Perrin develops this theory the most fully, using four of the villas described in the Polyptych. Arguing from the premise that primitive equality was once the norm, he then rates the four villas from archaic to evolved according to three variables: the number of manses, their area and the number of households. The villa at Epinay has "un caractère

archaïque très prononcé" because it has the largest land allotment per manse and the lowest number of multiple households. The villa at Verrières which for the opposite reasons, has small average holdings and many multiple households, is the most evolved.[12]

The explanation that he offers for this evolution is a slowing down of the work of bringing land under the plough, a reduction in the pace of creating new tenancies and a decline in the capital of the tenants that forced small holders to combine their dwindling resources. At the same time, buying and selling of land allowed larger cultivators to increase their farms' sizes at the expense of the smaller cultivators.[13] This explanation is not completely satisfactory. These factors should have been operating in all four villas since they are all within a small area. Perrin does not offer any suggestions of why conditions within a small area would favour evolution in one villa and not in an adjacent one.

Marc Bloch also considered the Carolingian manse to have been disintegrating, but he presented the reasons for this disintegration and the process itself somewhat differently from Perrin and Tulippe. Bloch did not think that manses started out equal in value. The manse as a patriarchal, multiple-hearth family farm antedated the attempts of lords and governments to use it as a fiscal unit, and such farms, Bloch emphasized, were not of equal size. The

problem over which Perrin agonized, the equal burden imposed upon unequal manses, Bloch dismissed:

> The patriarchal family being the primitive cell of rural society, each owed the chief the same weight of dues - or, if you like, of presents - and the same amount of work.[14]

The cause of the distintegration of the manse was not inequality but rather the splitting of this primitive cell. When a manse became divided among several households, a fiscal system that persisted in identifying it as a single manse "could only be preserved by a great effort, an effort that was almost bound to fail in the long run."[15] Bloch cites an increasing population as the cause of the subdivision of manses but unfortunately, he does not suggest how this would promote subdivision, nor is it clear how several households living on a manse differ from a multiple hearth family farm.[16]

Another sign of decay noted by all who studied the Carolingian manse, from Guérard to more recent scholars, involves the legal status of the manses and the legal status of the peasants. In theory, the legal status of the holders of a manse should correspond with the status of the manse itself. By the ninth century there were numerous exceptions to this rule. On every villa described in the Polyptych, there was an insufficient number of people of servile status to occupy all the servile manses of the villa. It is not surprising to find, therefore, servile manses held by people

of colonate status. This shortage of servi makes it more difficult to understand why free manses would be occupied by men of servile status. As can be seen in Table 3, the correspondence between personal status and the status of the manse is not perfect. One in every twenty-five free manses was occupied by a servus. On individual villas the discrepancy was sometimes quite marked. For example at Buxidum, only 61 per cent of the manses were occupied by men of the correct status.

TABLE 3. -- Percentage distribution of the status of the first-named male householder for each status of manse.

	status of manse n = 1166		
status of householder	free n = 978	lidile n = 23	servile n = 165
free	3	0	1
colonus	92	74	33
lidus	1	22	8
servus	4	4	58
total	100	100	100

This blurring between the old distinctions in legal status had another manifestation: marriages between partners of different statuses. Of the 1421 marriages examined where the status of both partners could be determined, eighty-five per cent were between equals, ten per cent were marriages in which the man had a lower status than his wife,

and five per cent where the man had a higher status. Whether these mixed marriages resulted from a deliberate policy of the peasantry to elevate the status of each succeeding generation, as has been suggested,[17] or merely reflects the declining significance of these old distinctions, is a moot point.

Bloch suggested that these departures from ancient practice troubled the ninth century Polyptych compiler's sense of what was fitting. That is why, he argues, the status of some manses was not described in terms of legal status, but rather, according to what those manses owed in rents and services.[18] Ganshof viewed this tendency to identify manses by particular obligations as a further step in the gradual disintegration of the classic manor. The manses so designated would become special and in a sense removed from the life of the villa.[19]

A radically different approach to the problem of the ninth century manse was taken by Ferdinand Lot. Using nineteenth-century statistics describing farm size and ownership, he demonstrated that neither the proportion of arable land held by great proprietors nor the most common size of single family farms had changed since the time of the Polyptych. In the ninth century, as in the nineteenth, the closer a farm was in size to ten hectares, the more likely it was to be the farm of a single family.[20] While Lot's argument is based on some shaky numbers, including Guérard's figures, his approach is worth considering. The ten hectare

farm may have persisted in the Paris Basin because it was the best size for a single family farm.

Herlihy approached the problem of the Carolingian manse in a novel way. After a discussion of the documentary sources for the manse, Herlihy attributed the spread of the manse over most of Europe to its suitability. In a time when colonization of the soil was difficult to encourage, no other system of exploitation could have worked so well. The supply of labour of the family and the inducement of hereditary tenure were the characteristics which ensured its success. Herlihy concluded that:

> The separation of the two aspects of ownership; use and inheritance of land won by the effort of cultivation and lordship, or the right to tax land arising from the lord's ultimate ownership was a feature of the regime of the manse which encouraged the assimilation of tenure among the Romans and the Germans into a single system.[21]

In discussing the decay of the manse in the Carolingian period, most authors have emphasized population pressure. Overpopulation of the manses has been cited as a problem facing the manse and following Lot's demographic analysis this explanation has been accorded considerable respect.[22] Failure to continue the clearance of new land has also been blamed for intensifying population pressure on the manse.[23] There can be no doubt that this was a problem, but the relationship between land and its population is complex. The percentage of strangers in the population of the

villa and the percentage of newly created holdings, hospicia, should be an indicator of overpopulation. It would be expected that the more land there was in a villa the more likely it would be to welcome strangers and carve out new holdings. The data in Table 4 show this not to be an invariable rule. Palaiseau and Boissy Maugis had similar densities of population and yet one had no strangers and the other included six percent strangers in its population. The only pattern which emerges is that regions generally either encouraged or allowed strangers and created hospicia or they did not. That which should have been a reflection of population pressure appears to have been a reflection instead of local custom.

Much more threatening to the regime of the manse than simple population growth would be a real, if modest growth in the Carolingian economy. The "rough equality of the single family farm under the regime of the mansus" attributed by Herlihy, Lot, Guérard, Tulippe, Perrin and Ganshof to the primitive manse is a feature of strict subsistence agriculture.[24] A situation in which there were some living well above the subsistence level, and some living well below, in which land was inequitably distributed and in which an outmoded system of rents and services allowed some to advance their interests at the expense of others was beginning to emerge in the Paris basin in the ninth century with serious consequences for the regime of the manse.

TABLE 4. -- Percentage of strangers among the tenants for villas ranked by population density within regions.

	bunuarii of arable per person	% strangers	% hospicia
Paris			
Jouy-en-Josas	2.40	0	41
Epinay-s-Orge	1.54	0	16
Palaiseau	.74	0	1
Seine			
le Coudray	2.04	0	0
Combs-la-Ville	1.84	0	10
Morsang-s-Seine	1.43	0	2
Thiais	1.01	1	5
Gagny	.83	0	0
Villeneuve-Saint-Georges	.74	0	0
Mauldre			
Mareil-s-Mauldre	1.89	5	8
Chavannes	1.47	10	4
Mulcent	1.36	5	5
Beconcelle	1.25	4	18
West			
Neuville-aux-Bois	1.36	0	0
Boissy Maugis	.89	6	0
Villamilt	1.80	5	2
Upper Seine			
Nogent l'Artaud	1.08	0	0
Celles-les-Bordes	1.37	0	0

Departures from subsistence agriculture would not only weaken the system of land tenure, but would reduce the significance of the old divisions among the dependent peasantry, based on degrees of legal servitude, and create new divisions based on wealth.

It is a given of subsistence agriculture that there is a point at which any extra units of either land or labour become liabilities rather than assets. This point varies, of course with the nature of the agriculture being practised and the size and composition of the family. Chayanov expressed this as a dictum that "the degree of self-exploitation is determined by a peculiar equilibrium between family demand and satisfaction and the drudgery of labour itself".[25] This point of equilibrium is very flexible. Clark and Haswell's studies of subsistence agriculture have shown that the introduction of cash crops and cash greatly increase the amount of land required and the amount of labour that people are willing to devote to working the land.[26] Once cash crops are introduced these authors argued that:

> We must carefully distinguish this definition of the area 'required' by each man, as between the amount of land he would like to have in order to earn an economic living, and the area 'required' to produce his subsistence.[27]

Evidence from the Polyptych of peasants holding land well in excess of subsistence requirements would suggest that cash crops were beginning to have an effect. Determining the ability of a manse to meet the subsistence requirements of its inhabitants is a complex matter. The Food and Agriculture Organization of the United Nations (F.A.O.) has adopted the system of grain equivalencies first used by Buck in China.[28] This system takes into account the different components of the local subsistence economy. Crops and

agricultural products are poorly represented by cash values since only a small and unrepresentative portion is actually marketed. Therefore another way of measuring their value must be used. The F.A.O. uses the rate at which other items are exchanged for wheat in local markets. Their accepted subsistence figure for temperate regions is 300 kilograms of wheat equivalent per person per year, of which about 230 is required for caloric sustenance. The other 70 is for fuel and clothing, repairs and equipment.[29] One problem which arises when applying this system to the Polyptych is that neither the amount nor the value of certain non-grain agricultural products of manses is known. Such items as acorns, berries, honey, wood, fish, chickens and garden vegetables would certainly be important in the manse's economy. But it was the cultivation of cereals that was the focus of agriculture and the consumption of bread that was the most important item in the diet.[30] This and the fact that these lesser components of the subsistence economy were, by their very nature, more or less equally available to all, made the decision to focus on the grain producing capacity of the manse possible. Some allowance has been made for the contribution of the lesser items by taking as the minimum subsistence figure the lower figure of 250 kilograms of wheat equivalent per person per annum, rather than the F.A.O.'s figure of 300 kilograms. This definition of the minimum for subsistence is higher than that employed by Graeme Barker and

Derrick Webley in their study of a Somerset villa.[31] They allowed a pound per day per person, or only 165 kilograms a year. This seems too low as it would provide only 1450 calories a day.[32]

Yields are difficult to determine. The evidence of the royal granary at Annapes is almost the sole source for reckoning the yields of cereal crops in the Carolingian era. These figures are low, ranging from a return of 2.2 modii on each one sown for barley to the return on rye of one to one. These yields may be unrepresentative because they are from a royal demesne and reflect only a single year's crop. It has been suggested that it may have been a particularly bad year because the inventory includes a list of grain left from the previous year's harvest. If all years were as bad as the year upon which the yields are calculated, such a surplus would not be likely to remain from the previous harvest.[33] It is also possible that peasant proprietors wrung more from their own soil than they did from the demesne's. The ploughing services owed by the tenants of Saint-Germain-des-Pres are inadequate for the size of the demesne on those villas where ploughing services were fixed rather than customary. At Villamilt, for example, the tenants were only responsible for ploughing 280 pertica in the spring and 544 in the fall. This constitutes under a fifth of the demesne of 466 bunuarii of arable land, suggesting that the demesne may have lacked the labour to extract optimum yields.

Accepting these very conservative estimates of a twofold return on the seed sown, the base yield for a manse has been calculated as twice the grain sown, of which half would be available for consumption. The amount of grain sown per bunuarius is taken from the descriptions of each mansus indominicatus which precedes the description of the villa's tributary manses. For the five villas where no description remains, the seed sown on the closest villa has been used as a substitute figure.

The base yield does not take into consideration the labour available to a manse. The best general estimate is that adding an extra unit of labour to the same unit of land increases the product by a factor of 0.4.[34] The addition of a third labour unit to the same land unit thus yields 1.4 x .4. The addition of further labour units adds a sharply diminishing extra product to the base yield. If a manse was found to have less than the average number of units of labour per unit of land for that villa the yield was adjusted by the same formula in reverse.

Labour units were defined for each villa based on the total amount of labour available and the total amount of arable land in the villa. The total arable divided by the total labour equals one land-labour unit. If for example, the land-labour unit on a villa was 3, a manse of 12 bunuarii would require 4 labour units to obtain the base yield. The labour contribution of women and children was included, but

prorated. Following the conclusions of anthropologists Cain, Nag, White et al. children were rated as equally four-tenths of an adult male worker regardless of their sex.[35] Women were rated as half of a male worker.

Two examples from Villamilt may make this clearer. The base yield at Villamilt was 3.36 modii per bunuraii, and the land-labour unit was 3.38. On the eighth manse there dwelt four men, two women, and seventeen children. This equals 11.8 labour units: (4 x 1.0) + (2 x .5) + (17 x .4) = 11.8. As the manse had twelve bunuarii of arable land, there was 1.017 bunuarii for each labour unit: $^{12}/11.8 = 1.017$. This is 3.32 times the land-labour unit for the villa as a whole $^{3.38}/1.017 = 3.32$. This manse had for each bunuarius 2.32 extra workers. By applying the formula one can determine an estimate yield: 12(3.36 + (.4 x 3.36) + .4(.4 x 3.36) + (.4 x 3.36)(.4(.4 x 3.36)) = 12(3.36 + (1.344) + (.5376) + (.0691))

= 12 (5.31)

= 63.72 modii

A second example illustrates the opposite situation of a large farm with a labour deficit. The fifteenth manse also had twelve bunuarii of arable land, but had only 3.1 labour unit, a man, his wife and their four children. This means there were 3.87 bunuarii of arable land for each labour unit, which can be expressed as .87 labour units per land unit: $^{3.38}/3.87$. The formula suggests the following yield:

12(3.36 - (.4(1 - .87)

12(3.36 - (.052)

12(3.308)

= 39.696 modii.

If one assumes that women and boys each consumed 80 per cent of what a man ate, and girls consumed 75 per cent, then there were the equivalent of 18.8 adult male consumers on the first manse. Given a conversion ratio of 64 kilograms per modius, this manse then produced about 218 kilograms for each adult male consumer equivalent. For the second manse this figure is 502 kilograms. While they are based on data from studies of other periods and other peasant societies and must therefore be regarded with some caution, these adjustments are conservative. With no adjustments made to the yield to reflect the compositon of the manse's work force or the age and sex structure of the manse as consuming households, the first manse produced 113 kilograms per capita and the second 430 kilograms each year.

The picture which emerges is one of rural misery at the one extreme and considerable affluence at the other. On all villas a sizeable proportion of the manses is too small to sustain the populations they carried, while at the other extreme a small portion of the manses had grain producing capabilities well in excess of the subsistence requirements of the occupants.

It should be noted that on villas with larger mean holdings, the pattern of agriculture suggests less intensive cultivation. On five of the six villas with a mean arable of over six bunuarii, less than three modii of seed was sown per bunuarius. None of the villas with a mean arable of under five bunuarii sowed less than four and a quarter modii per bunuarii. It may be that the holders of very small manses gained additional product by sowing more thickly. The benefits of this practice would be rather short term, however, as without regular fertilization the soil would be quickly depleted. Some of the smallest holdings may also have increased their production by growing wheat in gardens as well as in the fields. Yields from the gardens of a manse would be much higher than from the fields because it would be possible to aerate, manure and weed more thoroughly.

All villas, with the exception of Buxidum, had the capacity to grow enough grain to maintain all at the subsistence level or higher. Buxidum appears to have been more dependant upon animal husbandry than the other villas since its manses had, on average, the largest average meadow holdings of all the villas. Villanova and Theodaxium, both of which were wine producing villas, were rather close to the subsistence level of grain production, if their residents were entirely dependent on the harvest of grain. On other villas grain was still of enormous importance. Yet despite the theoretical ability of all the villas to meet subsistence

requirements, there is no villa without manses below the subsistence level. The extremes of affluence and poverty suggested by the data in Table 5 suggest that resources within the peasant community were so inequitably distributed as to be inconsistent with strict subsistence agriculture and that a departure from subsistence agriculture was under way.

Land rather than labour appears to have been the most critical problem facing the tenants of Saint Germain. While there were many manses with acute labour shortages, many more lacked the land needed to grow enough food, even after allowing for the extra yield gained by the extra labour. Land was the key to wealth and its inequitable distribution is a problem of considerable interest. The extent of the arable associated with each manse varied significantly from region to region. Table 6 shows the effects of region on the size of arable land holdings. It is evident that manses in the Paris region tended toward smaller arable holdings while those further from Paris had larger holdings. The reasons for this would include different soil conditions as well as population pressure, length of settlements, and reliance upon other agricultural activities, but it is impossible to portion the effect of region among these various factors. Region is clearly of importance when trying to determine which factors governed the distribution of land. The ETA statistic, which measures how dissimilar the means of the

TABLE 5. -- Percentage distribution of subsistence levels by manse and mean grain for villas.

	mean grain per person per annum (*modii*)	subsistence category[36]				
		I	II	III	IV	Total
Paris						
Verrieres	4.05	68	16	10	6	100
Epinay-s-Orge	5.26	34	36	20	10	100
Palaiseau	4.62	47	28	18	7	100
Celle Saint Cloud	6.67	33	31	17	19	100
Seine						
le Coudray	7.42	25	25	33	17	100
Morsang-s-Seine	8.42	24	22	35	19	100
Thiais	3.76	58	31	9	2	100
Villeneuve-Saint Georges	3.81	65	24	10	1	100
Cagny	4.87	48	32	10	10	100
Mauldre						
Mareil-s-Mauldre	4.48	55	24	12	9	100
Chavannes	3.41	71	19	6	4	100
Mulcent	4.42	54	25	8	12	
Beconcello	5.08	49	31	10	10	
West						
Boissy Maugis	2.74	79	15	5	1	100
Villamilt	6.27	15	36	23	26	100
Celles-les-Bordes	4.58	55	26	15	4	100
all villas	5.73	38	34	16	12	100

Subsistence categories

I 0-3.9 *modii* per person per annum
0- 250 kilograms per person per annum

below subsistence level

II 4-6.9 *modii* per person per annum
252 -442 kilograms per person per annum

at and above subsistence level, but unable to use oxen efficiently

TABLE 5 (continued)

III 7-10 *modii* per person per annum
450-650 kilograms per person per annum

above subsistence level; draught animals efficiently employed, but mainly fed on by-products

IV over 10 *modii* per person per annum
over 650 kilograms of grain per person per annum

above subsistence level; draught animals efficiently employed; grain set aside for livestock.

TABLE 6. -- Percentage distribution of size of arable holdings by region.

size of holding (in *bunuarii*)	region					
	Paris	Seine	Mauldre	Upper Seine	Eure	Western
0 - 2.9	26	22	11	15	2	5
3 - 5.9	45	50	30	26	13	28
6 - 8.9	18	17	36	12	4	29
9 - 11.9	7	4	13	6	12	12
12 or greater	4	7	10	41	69	26
total	100	100	100	100	100	100
mean arable	4.5	4.8	6.3	10.1	13.1	8.3
no. of manses	315	335	372	82	239	92

$x^2 = 643.8$ p .001

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dependent variable, the amount of arable land, are within the categories of the independent variable, region, is .56. This statistic, which is 0 when the means are identical and approaches 1 when the means are very dissimilar, can be

squared to determine the amount of variance in the size of the arable holdings which can be attributed to region. ETA^2 of .32 suggests that region is strongly related to farm size and that its effects must be considered in the final analysis of the determinants of land holding size.

The legal status of the tenures would be expected to be of importance in determining the size of the manse's arable holding. It would be expected that the size of the holdings would decrease at each lower level of status. Those on servile manses, encumbered by more labour services, would have less time to spend on their own plots. There is an association between the status of the manse and its size as seen in Table 7 although this relationship could be obscured by the concentration of lidile manses in areas where larger

TABLE 7. -- Percentage distribution of tenure status by the size of arable landholdings

size of arable (in bunuarii)	free	lidile	servile
0 - 5.9	48	8	80
6 - 8.9	37	60	18
9 or greater	15	32	2
Total	100	100	100
no. of manses	1050	25	186

$x^2 = 89.9$ p .0005 eta = .25

holdings are the norm. The breakdown of the arable holdings of the manses by region and tenure status, Table 8, shows that in all regions the average size of manses declined as one moved from free to servile status. In all regions hospicia had the smallest holdings, and varied the least from region to region. It is interesting to note that no fixed

TABLE 8. -- Mean size of arable holdings by region and tenure status in bunuarii.

			free	4.89	n = 269
	Paris	4.63	servile	2.67	n = 22
			hospicia	.41	n = 7
			free	5.41	n = 273
	Seine	5.01	servile	3.44	n = 53
			hospicia	1.00	n = 6
			free	7.46	n = 276
	Mauldre	6.63	servile	5.03	n = 38
			hospicia	1.46	n = 33
all regions 6.45	Upper Seine		free	11.47	n = 70
			servile	3.36	n = 11
			free	13.83	n = 61
	Eure	10.39	servile	4.34	n = 27
			hospicia	1.20	n = 5
			free	10.21	n = 31
	Western	9.62	lidile	9.90	n = 25
			servile	8.76	n = 29

ratio describes the relationship between manses of different status. In the region of the Seine, the average servile is about two-thirds the size of the average free manse, in the Eure region it is closer to one-third in size. Thus within some regions the status of the manse was more important in

determining its size than within others.

Since the status of the manse's occupants no longer necessarily coincided with the status of the manse itself, the effect of personal status upon the size of the arable land was considered. It seemed theoretically possible that in cases where the status of the manse differed from that of its occupants, the size of the arable would reflect the direction of the mismatch. That is, free men holding servile manses would have held larger servile manses, and servi holding free manses would have held smaller free manses. Table 9 shows the distribution of arable land across the four main levels of personal status. While it is apparent that men who are free tended to occupy larger manses than *coloni* and *servi*

TABLE 9. -- Percentage distribution of the legal status of the first-listed male householder by the size of the arable holding.

	legal status			
arable land (in *bunuarii*)	free	*coloni*	*lidi*	*servi*
0 - 5	22	37	32	59
5.1 - 10	35	35	40	34
10.1 +	43	28	28	7
total	100	100	100	100
no. of men	40	1160	43	148

tended to reside on the smaller manses, there is the same percentage of *coloni* and *lidi* in the highest category of

land size. While the distribution of men by status is somewhat more even across the regions than is the case with the distribution of tenure status, region could still be obscuring the relationship between personal status and the amount of arable land. It is appropriate therefore to perform a multivariate analysis of the pattern of landholding using all three variables: region, personal status and tenure status in the analysis.

As none of these variables can be measured at a higher than nominal level, it has been necessary to use dummy variables in the regression equation.[37] Each original variable is represented by a 'construct' which consists of as many dummy variables as there are categories of the original variable less one category against which all the others are compared. For region, tenure status and personal status, the reference category is the Seine region, the free manses and men of colonate status respectively. The reference category in each case was chosen by two criteria; (1) the size of the arable land, the dependent variable, was the least extreme in that category, and (2) the category had the largest proportion of the total cases in the study.

The results of the multivariate analysis are shown in Table 10. If, in the multivariate analysis, the p value for a component of a construct is significant, this means that the component differs significantly from the reference

category, after allowing for the influence of the other construct variables. Thus while the Paris region is not significantly different from the Seine region, all other regions are. Servile manses differ from free manses, lidile

TABLE 10. -- Step-up multiple regression analysis of size of arable holdings by region, tenure and personal status.

	standard regression coefficient	change in R^2	p	multiple R^2
step 1-region				
Paris	-.61	.06	.36	.05
Mauldre	+1.40	.01	.00	.07
Eure	+8.09	.01	.00	.07
Western	+5.01	.19	.00	.25
Upper Seine	+5.07	.01	.00	.27
		overall F 112.9 p = 0		
step 2-tenure status				
servile	-3.24	.03	.00	.30
lidile	-.53	.00	.64	.30
		overall F 94.3 p = .00		
step 3-personal status				
libertus	-3.39	.01	.09	.31
lidus	-.19	.00	.81	.31
servus	-.99	.00	.04	.31
extraneus	-.22	.00	.84	.31
		overall F 60.8 p = .00		

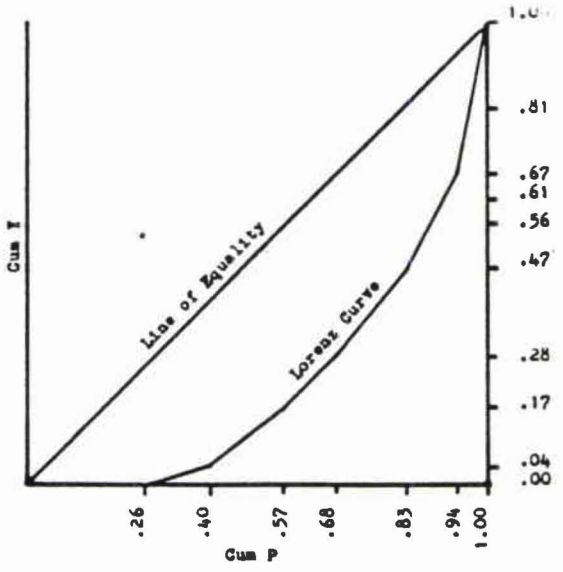
manses do not. The only category of personal status which differed significantly from coloni was the free men. Lidi, servi and strangers did not have significantly different

amounts of arable land. Overall, each construct was significant at less than the one per cent level, making it legitimate to compare components of each construct with their reference category. These three constructs jointly explain 31 per cent of the variance in the amount of land held by the manse. However, the independent contribution of the last two constructs, tenure status and personal status, is small compared with region. Their importance in the univariate analysis came from their strong correlation with region. Thus, personal status and tenure status, while of some value in predicting the amount of arable land held by a manse, are overshadowed by the main determinant which is region.

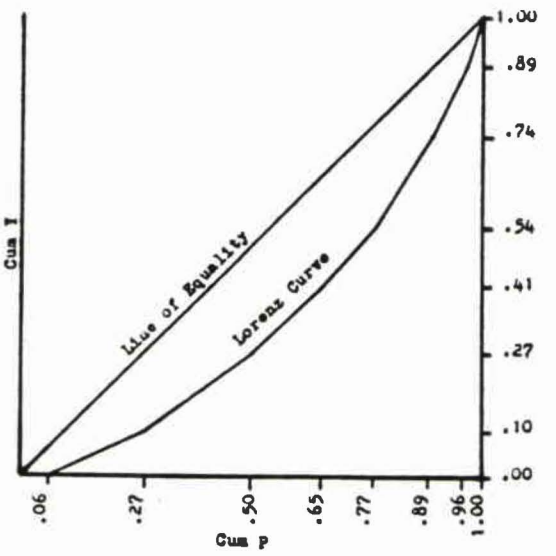
There is, in addition to the problem of the distribution of arable land over all the lands of the abbey, the problem of the inequitable distribution within each villa. Region explains some of the differences in the arable land holdings, but by no means all. Within each villa the arable land is inequitably distributed. The Lorenz curve in figures 1 through 21 depicts the degree of inequality. The diagonal line of equality is the line that would depict a perfectly equitable land distribution, that is five per cent of the manses would have five per cent of the arable, forty per cent of the manses would have forty per cent of the land and so on. The further the curve lies below the line of equality, the more unequal is the distribution. The degree

FIGURES.1 to 21.-- Lorenz curves depicting the distribution of arable land

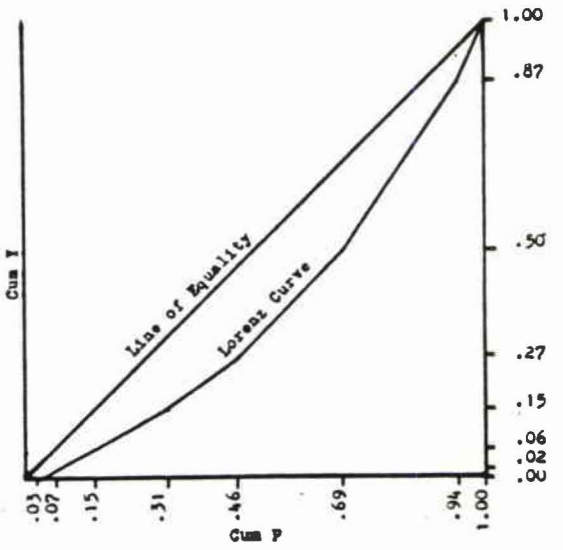
1. Jouy-en-Josas
G= .567



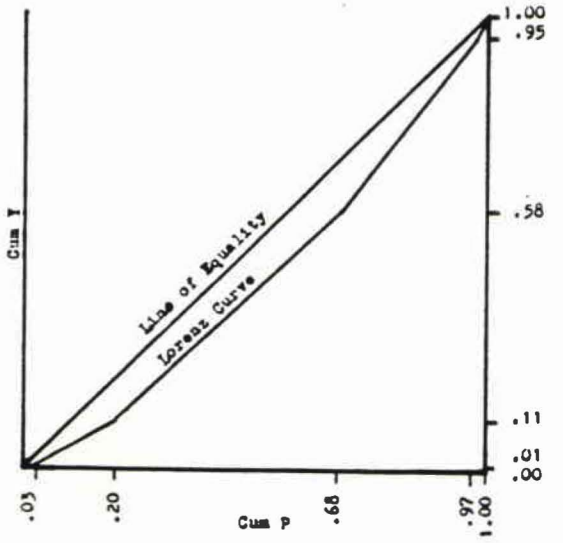
2. Palaiseau
G= .338



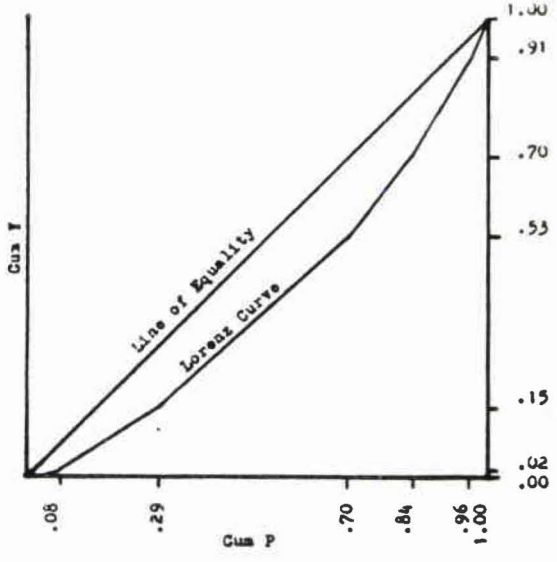
3. La Celle-les-Bordes
G= .262



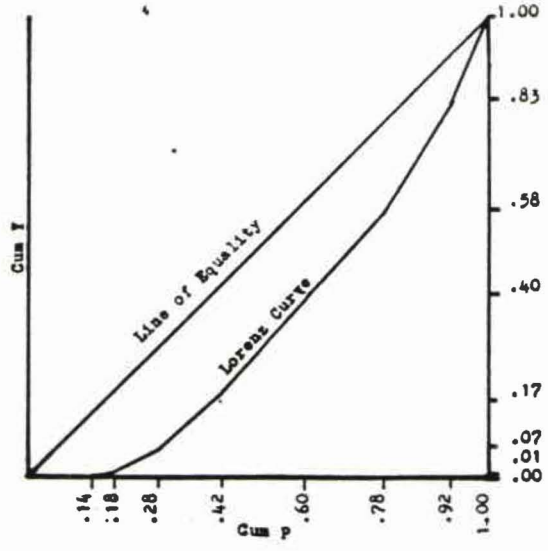
4. Gagny
G= .148



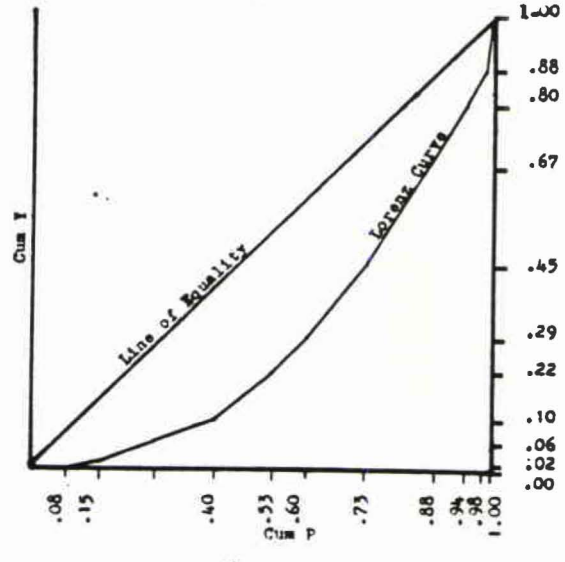
5. Vérrieres
G= .243



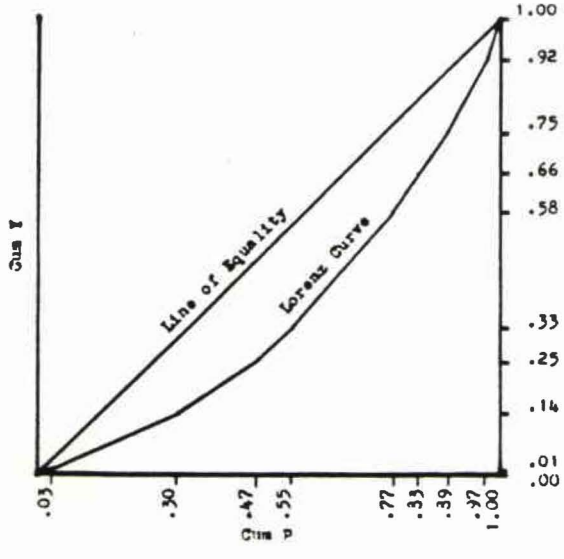
6. Epinay-sur-Orge
G= .344



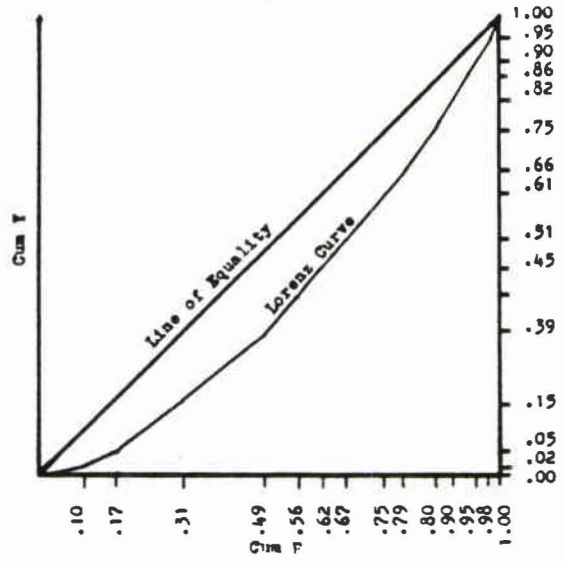
7. La Celle-Saint-Cloud
G= .457



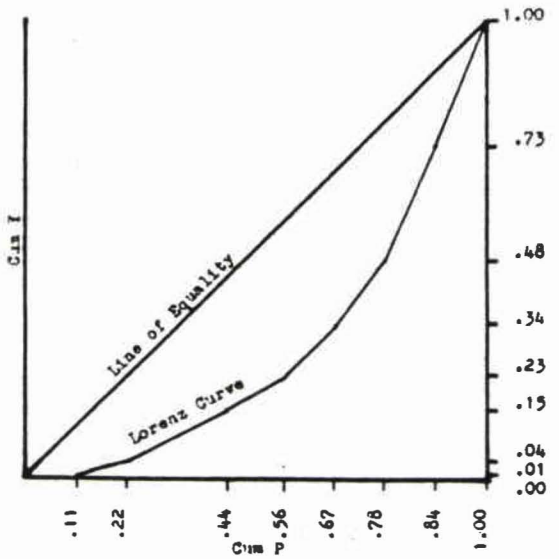
8. Nogent L'Artaud
G= .335



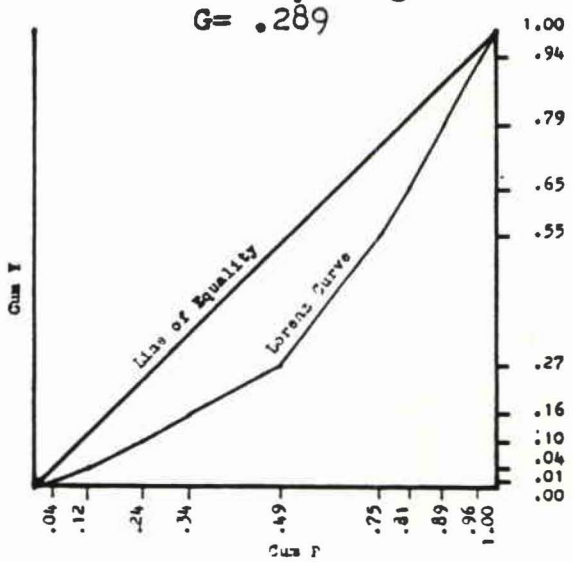
9. Villemeux
G= .222



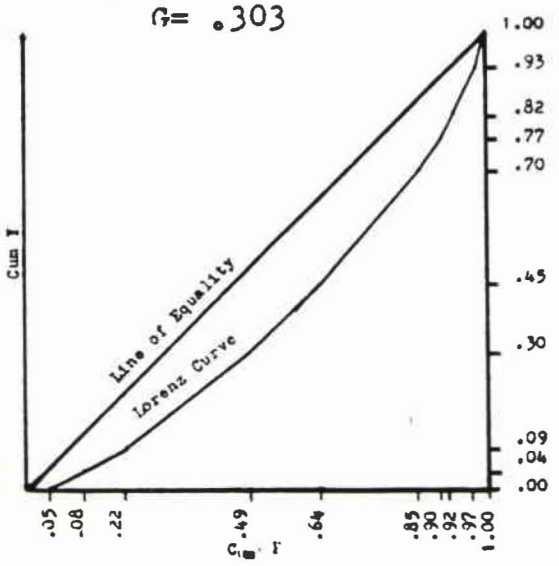
10. Neuillay-les-Bois
G= .434



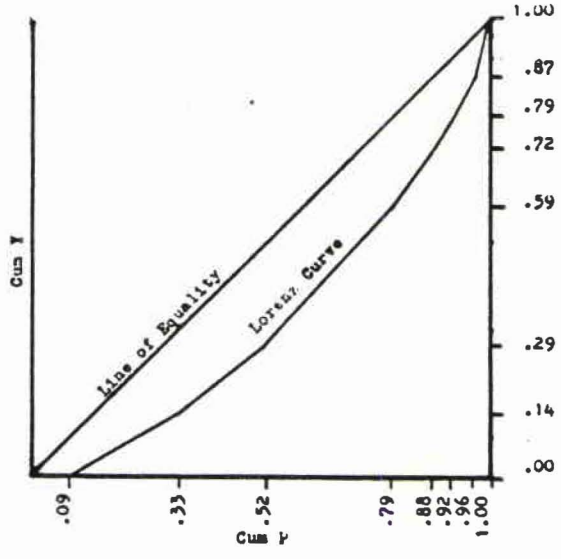
11. Boissy Maugis
G= .289



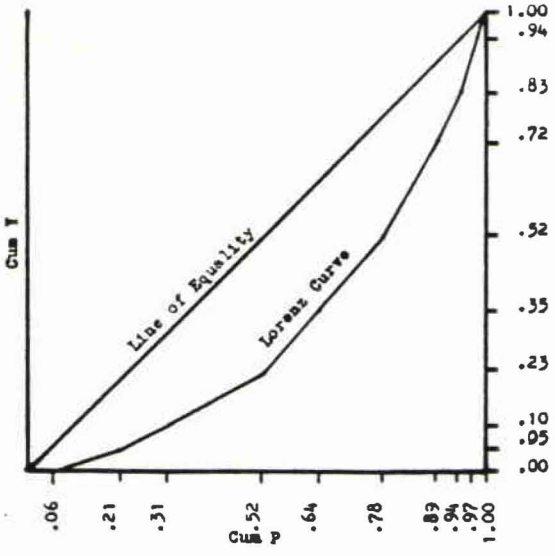
12. Thiais
G= .303



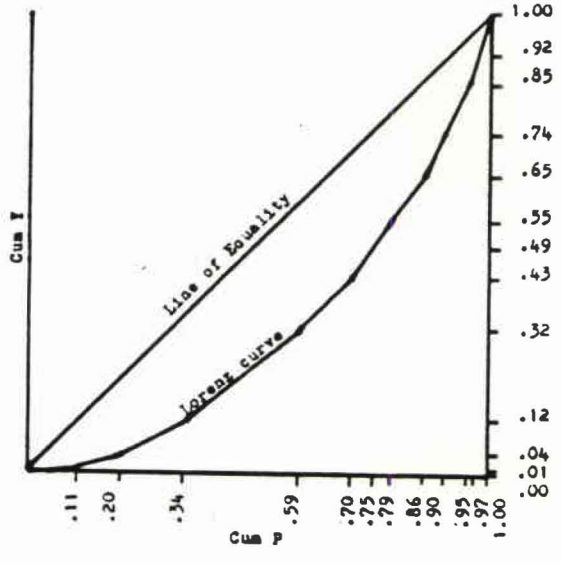
13. Villeneuve-Saint-Georges
G= .325



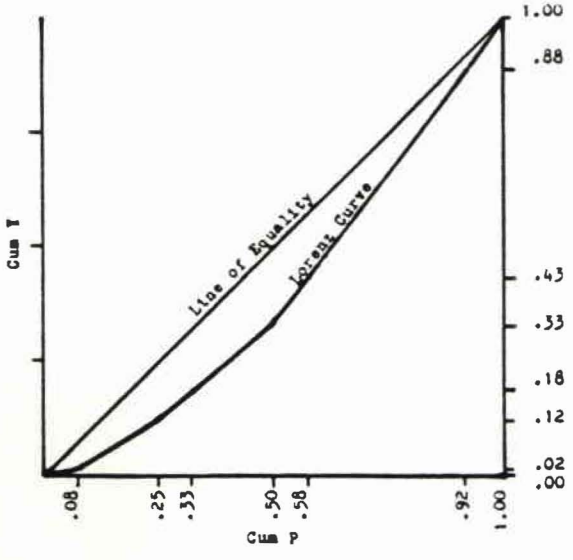
14. Combs-la-Ville
G= .396



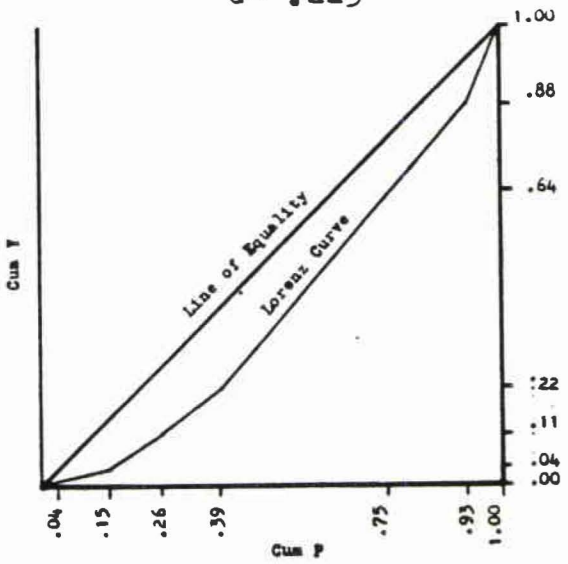
15. Morsang-sur-Seine
G= .297



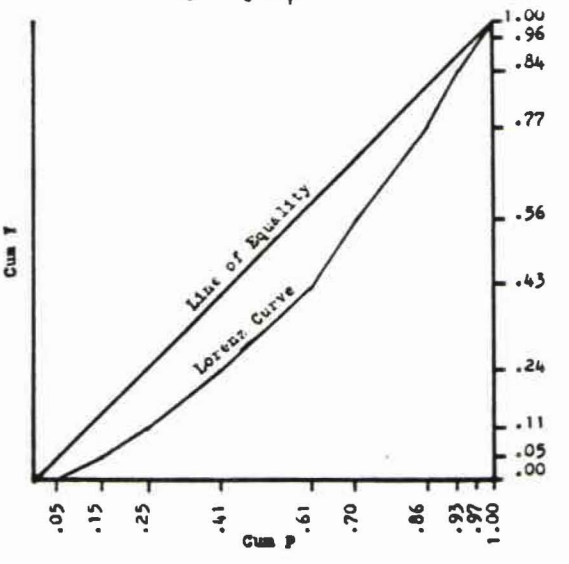
16. Coudray
G= .212



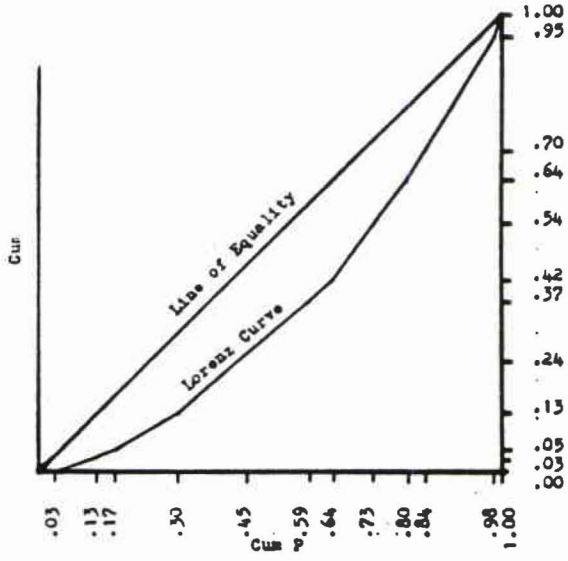
17. Esmans
G= .223



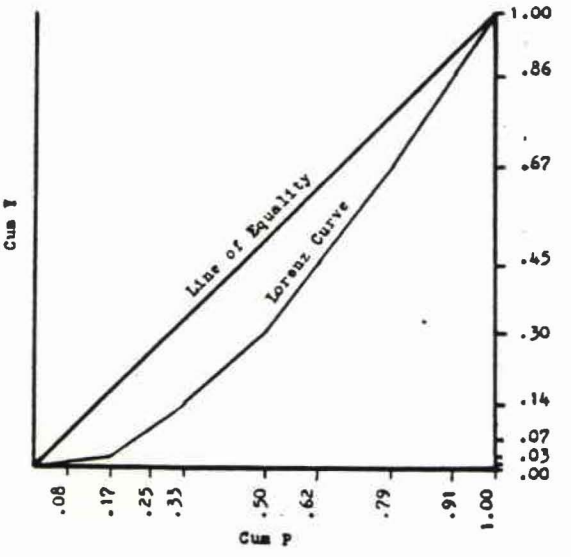
18. Mariel-sur-Mauldre
G= .241



19. Saint Germain-des-Secqueval
G= .297

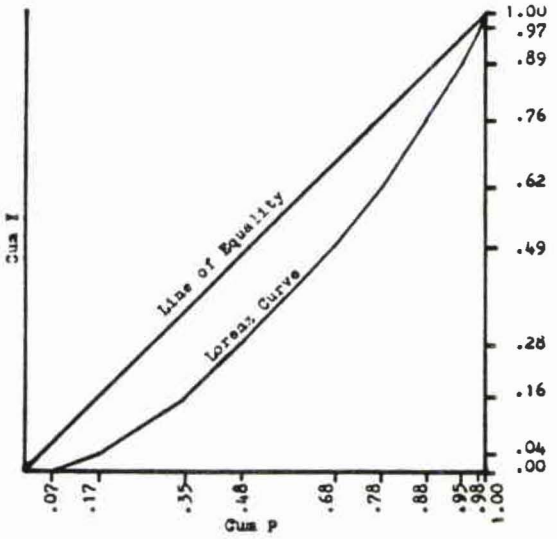


20. Chavannes
G= .277

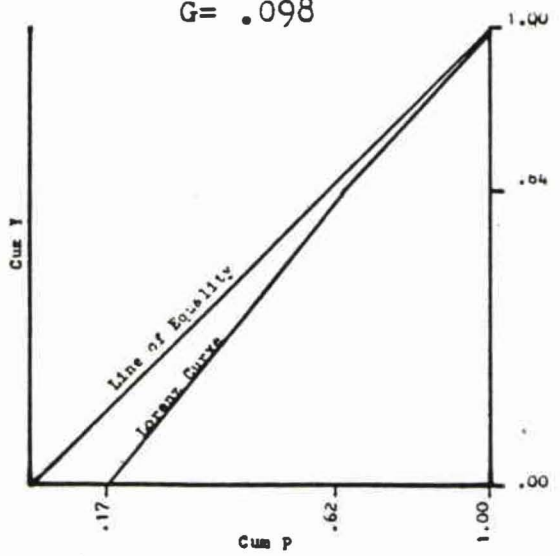


FIGURES 22-32.--Lorenz curves illustrating the distribution of vineyards in villas with mean vineyards of 2 arpents or more

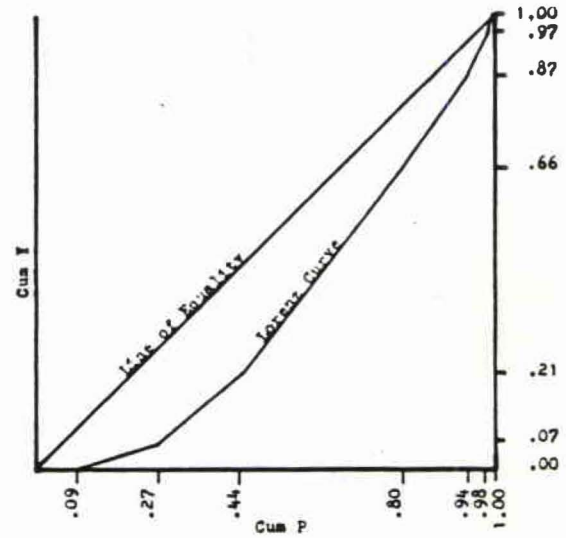
21. Péconcelle
G= .290



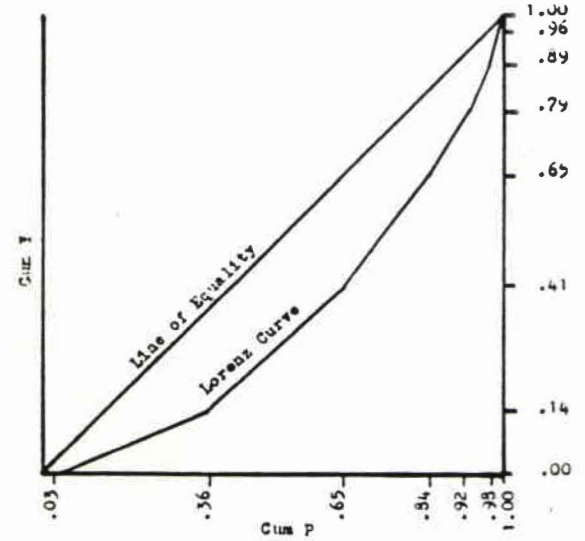
22. Nogent L'Artaud
G= .098



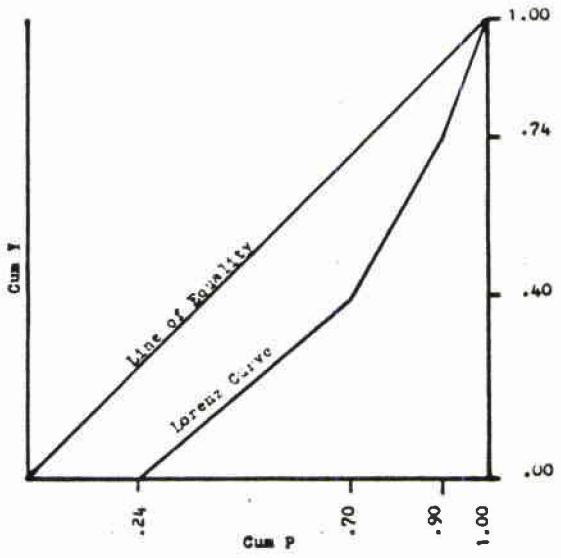
23. Thiais
G= .299



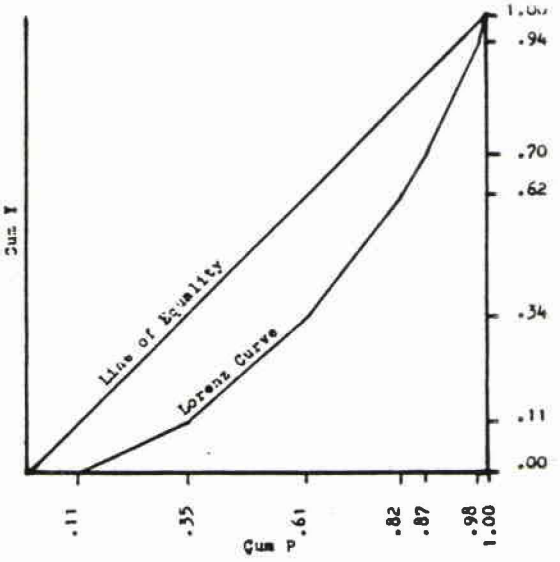
24. Villeneuve-Saint-Georges
G= .383



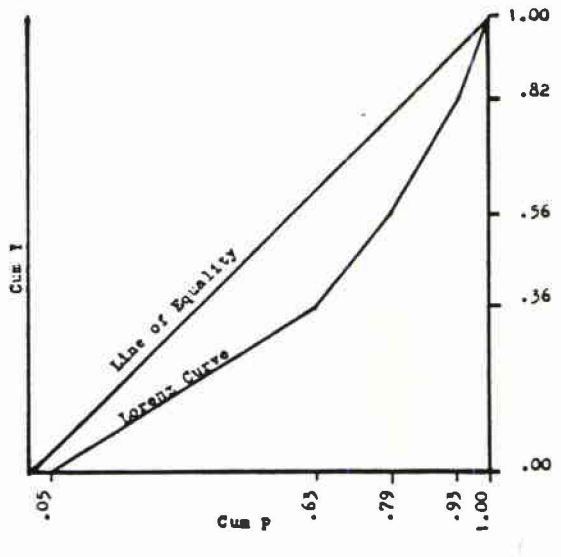
25. Combs-la-Ville
G= .414



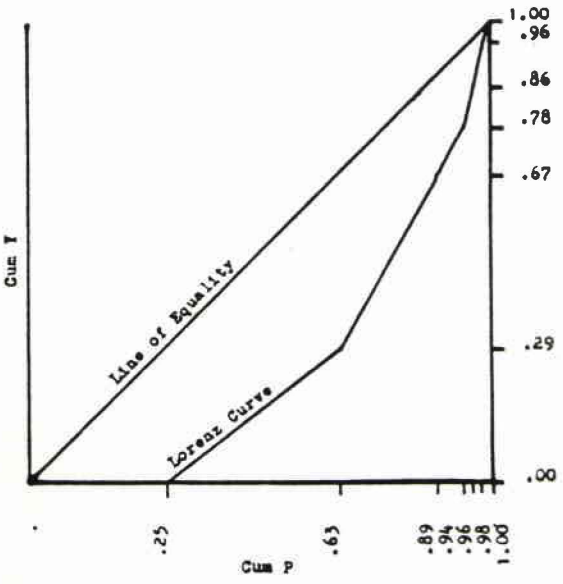
26. Esmans
G= .381



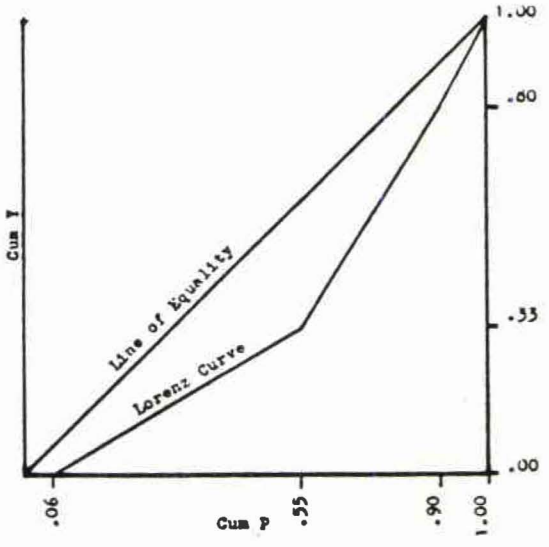
27. Morsang-sur-Seine
G= .323



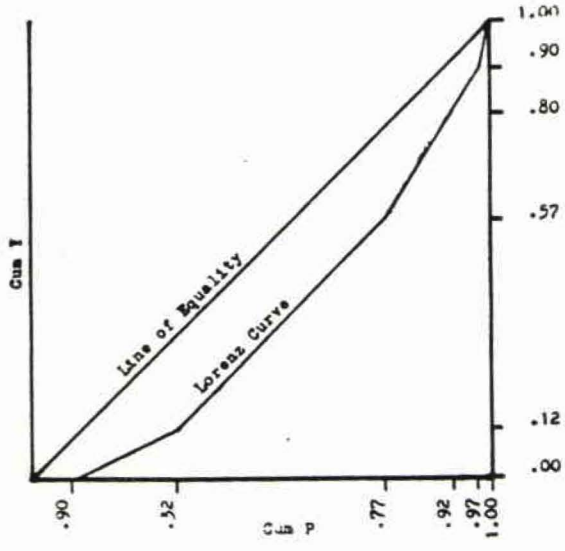
28. Palaiseau
G= .458



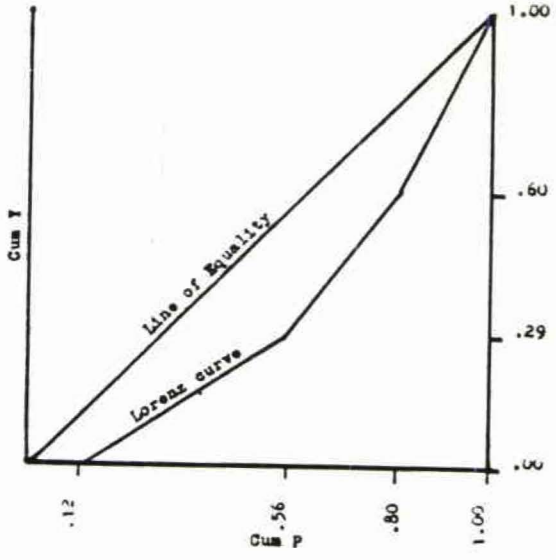
29. Gagny
G= .263



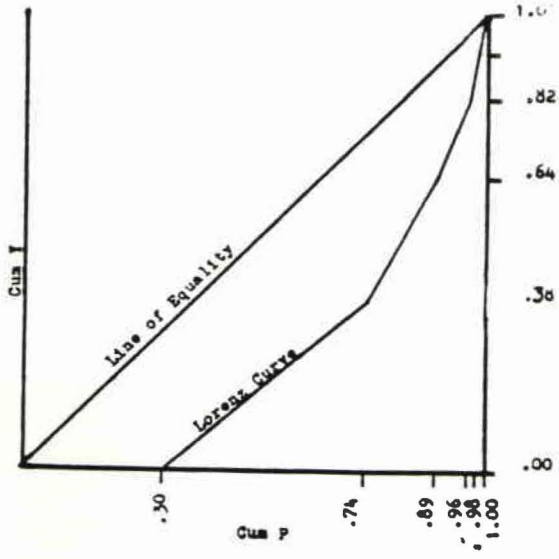
30. Verrieres
G = .314



31. Epinay-sur-Orge
G= .339



32. La Celle-Saint-Cloud
G= .505



of inequality depicted by the curve is summarized by the Gini statistic. The Gini coefficient is 0 when there is perfect equality and 1 when there is complete inequality. It is evident that not all villas are the same in this respect. At Gagny the distribution was fairly close to equitable, at Jouy-en-Josas the distribution was far from equitable. The data for non-nucleated settlements of the West, Eure and Mauldre may be unreliable, as on these villas the manses belonging to Saint Germain-des-Prés may well have been only a few of the manses at each scattered site and each site would have its own, unknown pattern of land distribution. For this reason it is safer to consider only the nucleated settlements such as Villeneuve Saint Georges and Palaiseau, where the concentration of manses belonging to Saint Germain was high enough to establish a pattern of land distribution.

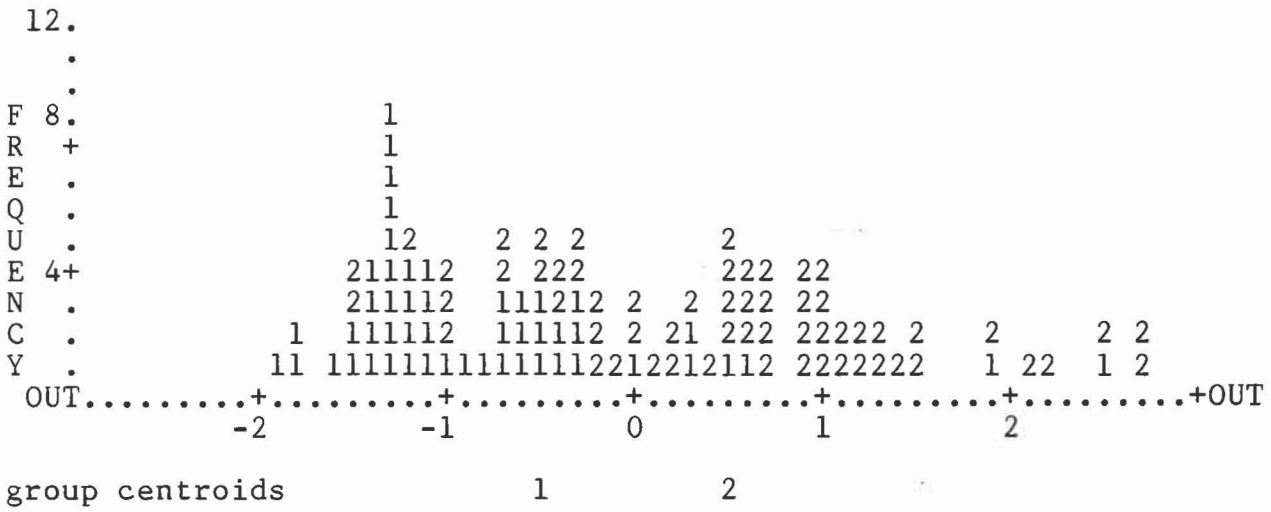
Within these two villas there were two other kinds of landed wealth to be considered along with arable land: vineyards and meadowland. There are three possibilities. First it is possible that the manses well endowed with one of these forms of wealth were also rich in the other two, and vice versa, the manses poor in one respect were poor in all respects. Second it is possible that manses that were poor in one or two respects compensated for this by disproportionate wealth in the third; for example a manse with only a tiny allotment of arable land might have had meadow-

land. The third possibility, of course, is that there is no relationship among the amount of arable land, meadowland and vineyards.

To examine these three possibilities, a discriminant analysis was applied to the data for Palaiseau.[38] Each manse was put into one of two groups based on the size of the manse's vineyards. The first group had less than 1.2 arpents of vines, the second had 1.2 arpents or more. The groups were compared to see if they differed more in the amount of meadowland and arable than would be expected by chance. The discriminant function analysis predicts the group membership of each manse based on the discriminating variables, arable and meadowland. Figure 33 shows the results of the discriminant analysis. It is clear that the third possibility, that arable and meadowland are not linked can be rejected.

The second possibility of compensatory variations can also be rejected. The signs of both standardized discriminant function coefficients are positive, indicating that both arable and meadowland are making positive contributions to the function. One or both signs would have to be negative if the possibility of compensatory variation is likely. The prediction of the membership of a manse in one of the groups leaves only a small number of manses misclassified. A manse classified as most likely to belong to the first group when it actually belonged to the second vineyard-rich group, is a manse that had less meadowland arable than would be expected

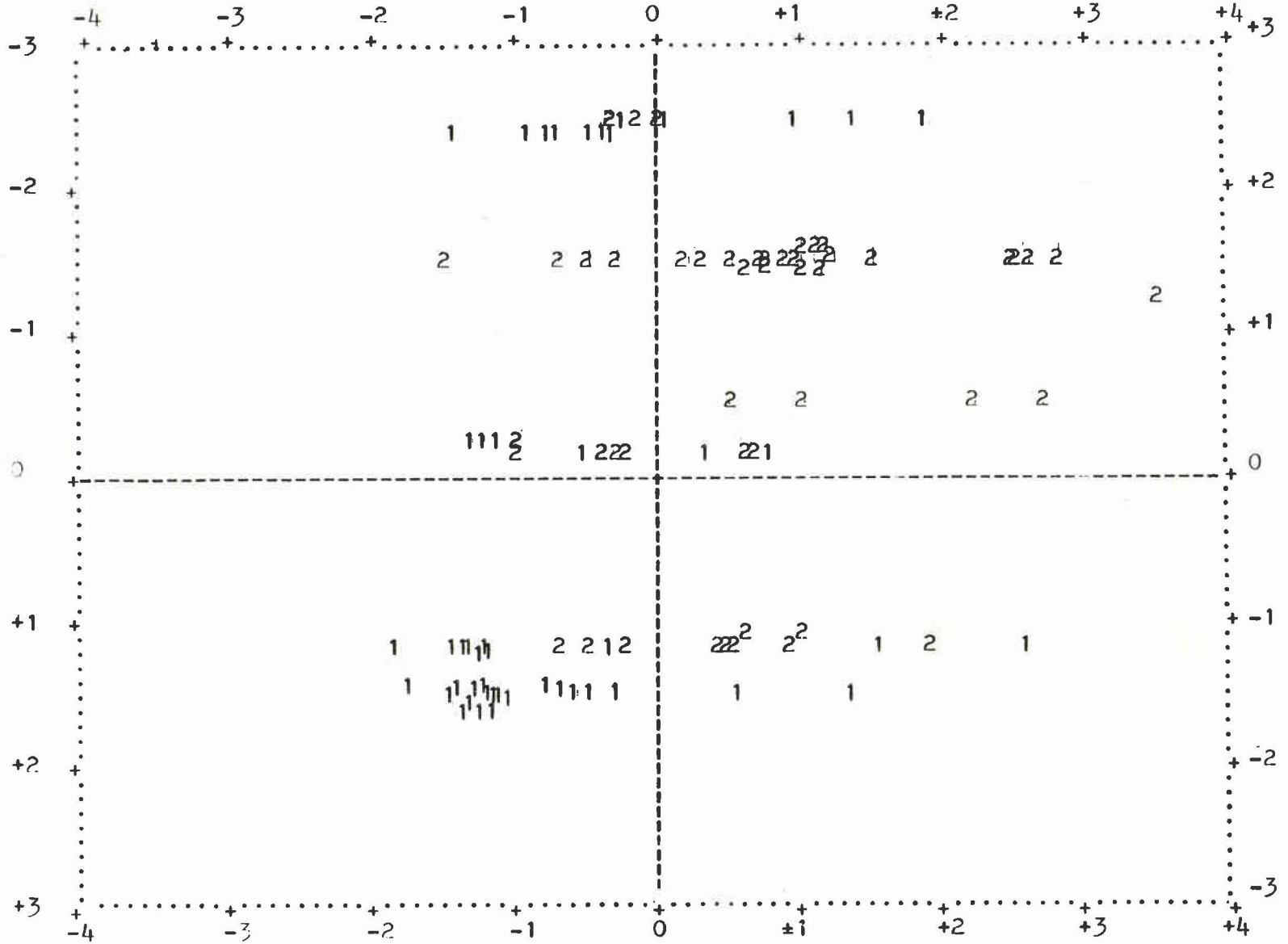
FIGURE 33. -- Stacked Histogram of scores of groups defined by the amount of vineyards on function derived from arable and meadowland at Palaiseau.



for a manse with as much vineyards. There were eighteen of the manses wrongly classified in this direction. The other kind of misclassification was to predict that a manse would be in the second group when it was actually a vineyard-poor manse. This arose when it had more arable and meadowland than would be expected for a vineyard-poor manse. This kind of error was much less common; only seven were wrongly predicted to be in the poor class when they actually belonged in the richer group. The remaining 88 were correctly classified. This suggests that the first possibility is the most likely: wealth in one resource is likely to be accompanied by wealth in the others. The Lorenz curves and Gini coefficients des-

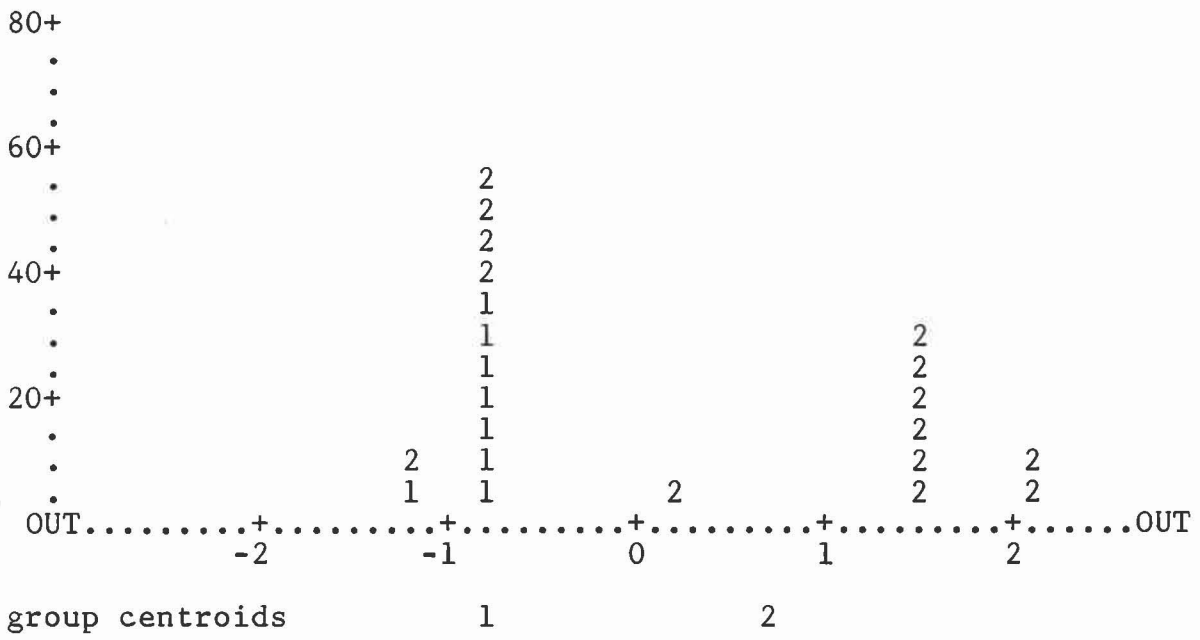
cribing the distribution of wealth measured by vineyards for the other villas where viticulture was important suggest that this other important kind of wealth was generally as inequitably distributed as the arable land of the villa. (Figures 22-32)

Not all of the manse's labour and product was its own. The rents and services owed by the tenants must also be considered. It would be expected that the groups defined by the size of the manse's vineyards could be distinguished by their rents and services. If such a distinction is possible, that is if the two groups differed significantly in what they paid and how much they paid, it would be expected that the second group endowed with greater resources would have paid more than the first. Not all forms of rents and services owed could be included in the list of discriminating variables because some were frequently not sufficiently specified. The initial analysis included cash, cows, wine, sheep and pigs, the number of task works with a plow or by hand, the cutting of trees and the biannual ploughing services. Of all these, only cash payments, cows and sheep owed, tree cutting and biannual ploughing differed significantly enough to be used in the discriminant analysis. Figure 34 is a histogram of the scores derived for each manse on this function. The number of correctly classified manses is the same using this function as was the case using the first function. However,



GRAPH 1.-- Plot of scores from discriminate analysis of manses at Palaiseau
1st function (horiazontal) : resources- arable land and meadow.
2nd function (vertical): obligations- cash, cows, sheep paid, caplim and ploughing performed.
group 1: manses with less than 1.2 arpents of vines
group 2: manses with more than 1.2 arpents of vines

FIGURE 34. -- Stacked histogram of scores of groups defined by the size of the manse vineyard from discriminant functions using cash, sheep and cow payments, tree cutting and ploughing services.



the pattern of misclassification manses was different. There was a slightly greater tendency to predict that a manse belonged in the poorer category from its dues than the size of its vineyards would actually place it. (Table 11)

The conclusion suggested by this analysis is that the dues and services owed from the manses did indeed reflect the resources of the manse, at least in a general way. It is also clearly evident from the histogram that the rents and dues of the manses did not vary as widely as did the resources of the manses. It follows that manses of quite different

TABLE 11. -- Classification results of discriminant functions.

actual group	no. of cases	predicted group membership: 1st function (resources) group 1	1st function (resources) group 2	2nd function (rents) group 1	2nd function (rents) group 2
1) less than 1.2 arpents of vineyards	51	44	7	47	4
2) 1.2 arpents of vineyards or more	62	18	44	22	40
pencentage of cases correctly classified		77.88		77.19	

resources within the two groups paid exactly the same.

When the scores derived from the discriminant analysis for each manse are plotted, it is apparent that there were some peculiar combinations of rents and resources. The manses located in the upper right quadrant and the lower left quadrant of graph 1 were the typical manses. They were, respectively, well off manses paying more substantial dues and poorer manses paying lesser dues. The other two quadrants represent typical manses that paid dues disproportionate to their wealth.

The system of rents and services, whether originally based, as Perrin and others believed, on equally endowed

tenures, or as Bloch maintained, on customary gifts to chiefs, clearly put some manses at a greater advantage than others. Those in the bottom right quadrant were in a position where, with good fortune, some capital accumulation would have been possible. Holding as much land as many of the more highly taxed manses, they paid and worked for the abbey as little as the smallest, most poorly endowed manses of Palaiseau. Conversely, the manses in the upper left quadrant were in a poor position, having high rents and less land.

There is some indication of another means by which some manses achieved greater prosperity than others. Comparing the land resources of office holders with non office holders, it is evident from Table 12 that the former was a richer group of peasants. While they paid significantly more cash than did non office holders, they paid less of everything else except pigs and cows. The difference between their livestock payments and those of the general population were not statistically significant. Office holders were as a group more prosperous than non office holders. It cannot be determined whether their greater prosperity is due to their position as office holders, the commutation of payments into cash, or whether they had been chosen as office holders because they were more prosperous to begin with.

Manses with a resident oath taker were also, generally speaking, larger and better endowed. In five of the six villas where oath takers could be identified and juring

TABLE 12. -- Percentage distribution of arable land by office holding.

size of arable land	office holders (n = 58)	non office holders (n = 1361)
less than 6 bunuarii	15	39
6-9 bunuarii	29	32
more than 9 bunuarii	56	29
total	100	100

$x^2 = 13.4$ p = .0012

manses designated, the manses with the oath taker had significantly more land. In this sense they can also be considered to be elite manses. (Table 13)

TABLE 13. -- Mean arable land of juring and non-juring manses.

	no. of manses		mean arable in bunuarii		
villa	juring	non-juring	juring	non-juring	p
Palaiseau	13	101	4.4	3.2	.04
Thiais	11	71	8.1	4.7	.01
Boissy Maugis	26	65	13.2	7.5	.03
Villemeux	24	216	15.4	12.9	.03
Epinay-s-Orge	12	38	6.7	5.1	.16
Chavannes	11	14	8.0	4.4	.00

Patterns of landholding were changing in this period. Land was becoming more important as a resource than the people

living on it. Pressures leading to the disappearance of the manse in this part of France, were also creating divisions among the peasantry. These new divisions were no longer based on the degrees of legal servitude, but rather upon wealth. Subsistence, for many still the way of life, was beyond the reach of some peasants forced to rely on their small parcels of land. Other peasants had passed the level of mere subsistence and the kind of agriculture they were beginning to practise was aimed at creating a surplus. Although it was not to the abbey's advantage to encourage this process of widening the gap between the richest and poorest peasants, it was effectively doing so by fossilizing the dues, rents and services without recognizing the disparities this would cause. In the increasingly commercial agriculture of the Paris basin, this allowed some peasant families a greater opportunity to take advantage of markets and emerge as an elite group among the peasantry.

CHAPTER IV

CONCLUSION

While it would be dangerous to generalize from a small and perhaps unrepresentative sample such as that provided by the Polyptych, some conclusions may be offered. Cash rents were more than token payments. As early as the ninth century in an area such as the Paris basin, which was favoured by special circumstances, the payments made by some of the dependent peasantry for the use of the land and to meet military obligations were cash payments. The evidence indicates that cash was raised by offering produce on the market. Of the many commodities produced on the manse, wine was the one most likely to be a cash crop. In its favour were a high price relative to its bulk and imperishability. As a cash crop it had another great advantage in those areas where the pressure of population had reduced the size of the manse: vineyards were labour rather than land intensive and the kind of labour required in the vineyards and the cellar was the kind least usefully employed elsewhere on the farm: the young, the aged and women. Not all the manses paying cash rents relied on wine as their cash crop. It is likely that many of the same articles produced by the tenants for the abbey, such as poultry and cheese, linen and wool, buckets, barrels and shingles were also sold in the market.

Unlike wine production, which is reflected in the records of vineyards, the production of these articles depended on resources which were not enumerated in the Polyptych. Some peasants with no vineyards paid large cash sums, reinforcing the suggestion that other farm products were sold.

Wine and the other products were all fairly easily brought to market, even markets lying at some distance. Grain, on the other hand, would present transportation problems and it seems unlikely that the grain from the manses regularly left the village. Apart from the problem of transporting grain there is another reason to suspect that it stayed close to its source. The majority of farmers appear to have been producing what would amount in good years to an occasional surplus and what was needed in average years. But the few really large producers on each villa were more than matched in number by small farmers producing less than enough to meet their families' needs. The data presented in Table 5 suggest that the average grain production for most villas was just above the subsistence level, or, that if there was some means by which grain was redistributed in the community, there would be about enough for all. This suggests that there were in fact two levels of markets, an immediate, local system of exchange for grain and a secondary, regional system of exchange for market goods. Richard Hodges in his study of the Dark Age economy identified two lower strata of markets, crowned in the Carolingian period by a

third, international level.[1] At the lowest market level, the village, the exchange of grain may not have involved cash. The larger producers were generally labour deficient whereas the subsistence farmers more often had a labour surplus, suggesting that even dependent peasants may have found it necessary to recruit labour from those of their own village. Much later evidence, from one of Saint Germain's villas, Esmans, showing 'bondsmen' keeping maids and servants, suggests this may be likely.[2]

Mindful of the great gulf separating the dependent peasantry from their betters in this period, some historians have given greater emphasis to the shared plight of the early medieval peasant. Duby, for example, wrote: "the prime concern in those days was the feeding of the peasant population, a population constantly on the verge of famine".[3] Yet most writers have also recognized that the peasantry itself became divided into at least two levels, based not on legal status but on other criteria. For Duby, there were two classes:

> This infamous class of men seemed so clearly beneath the rest that the fundamental social distinction apparent in rural France as early as the tenth century finally split the peasantry into two distinct groups: those that had to work the land by hand, and vastly superior to them, labourers, those rich enough to possess a plough team.[4]

Bloch contrasted the minute holding of a peasant at Thiais, Badilo, with the much larger endowment of his neighbour, Doon and asked "Are we really to believe that Badilo and his neigh-

bours regarded themselves as social equals?"[5] It was not only the possession of plough teams which distinguished the better off peasants for Bloch. Although less tangible, "the eminence conferred by the power and dignity of service under the lord"[6] also divided the peasantry. Ganshof divided the peasantry into three groups, pointing out that:

> There existed above and below this prosperous middle rank of the peasantry two groups, one poorer and the other getting richer, both of whom tended to remain apart from the village community.[7]

Fustel de Coulanges thought inequality was rooted in the process of creating the colonate:

> The great inequalities of the colonate system were rooted in the distinction between those who became coloni of their own free will and received better conditions and those who became coloni by force and under harsher conditions.[8]

One recent writer gives this gulf within the peasantry even greater importance:

> Thus it could well be the case that some of the most prosperous peasants, though inferior socially to those we may term the lesser gentry, were nonetheless economically superior.[9]

These distinctions among the peasantry and their economic rather than legal origins were apparent even as long ago as the days when Henri Sée wrote:

> il est certain aussi qu'entre paysans appartenant à la même condition sociale, il existe souvent des grandes différence de situation réelle.[10]

While many writers recognize these distinctions and are agreed that the gap grew over time, there is no general

accord over its timing and causes.

In the Paris basin, the stratification of rural society clearly occurred very early. The situation Ganshof described as "the most marked change in the structure of peasant society during the period of agrarian expansion in its final phase in the thirteenth century"[11], existed in this region by the ninth century. This is not surprising when it is considered that the conditions so characteristic of later mediaeval agriculture in other areas were to be found on the lands of Saint Germain-des-Prés in the ninth century. Indeed, cerealization and population growth were almost spent forces here by this time, and the commercialization of certain aspects of agriculture was underway. Most population studies of the Paris basin in the Carolingian period have found that population levels were stabilizing after a period of some expansion. Cerealization, which A. M. Watson suggested both encouraged and responded to population growth was nearly complete.[12] Meadowlands and pasture, which Slicher van Bath suggest should ideally have been 50 to 75 per cent larger than cultivated lands, accounted for less than 10 per cent of the arable on all villas.[13] It is of course possible that wasteland which was used for rough grazing was not counted in the Polyptych, but as both pasture and the much more valuable meadowland were listed, this cannot be assumed. It is evident from Table 14 that the very low percentage of

meadowland and pasture to arable land was not only a feature of the tributary manses but of the abbey's own lands as well.

TABLE 14 -- Meadowland and pasture as a percentage of the total arable lands of tributary manses and of *mansi indominicatii* in each region.

region	total arable (hectares)	total meadow (hectacres)	total pasture (hectacres)	meadow and pasture as percentage of arable	total arable (hectacres)	Total meadow (hectacres)	meadows as percentage of arable
Paris	2049	29	47	3.42	749	24	3.15
Seine	2098	87	0	4.14	950	52	5.46
Mauldre	1965	42	0	2.16	744	10	1.22
Villamilt	4039	4	78	2.02	572	10	1.74
Western Upper Seine	943	39	28	7.10	298	11	3.79
	869	5	0	0.57	390	9	2.30
Total	11963	200	153	2.95	3703	107	2.88

Population growth, greater reliance on cereal crops and the commercialization of agriculture worked jointly to widen gaps in peasant society which may have antedated these changes. The improvements made to the medieval plough, while increasing the aggregate production of food also threatened the subsistence farmer of the period. With the increasing importance of cereal crops the stigma of not having a plough team was, as Duby and Bloch pointed out, considerable. The obligations of the peasants holding free manses almost uni-

versally included performing ploughing with one or two animals. Thus both rural tradition and the exactions of the abbey encouraged the widespread use of animal labour. This contributed to the impoverishment of the small holders. De Vries' work on subsistence farmers suggested that draught animals become economically viable alternatives to human labour only after a production level of 500 kilograms of grain per person per annum is reached, and they only stop competing with humans for food at around 750 kilograms. Furthermore, he found that this did not deter peasants from using draught animals even when they were less efficient than human labour.[14] Table 5 has shown that there were many farmers whose holdings could not have produced 500 kilograms of grain equivalents per person per annum. Smaller holdings were viable with the cultivation of such land-efficient crops as rye and spelt but there came a point where the methods of cultivation would have to reflect the limits of the small holding. Despised as they may have been, Duby's "infamous class of men" had made the necessary adjustments, and were probably better-off without a team on small holdings than were their neighbours whose holdings were only fractionally larger, but who clung to the dignity of a team. Cerealization may have allowed manses to shrink, improved ploughs may have increased labour's efficiency, but the farmer who could benefit most from these changes was the farmer with the larger holding.

The dependent peasant who entered this transitional period with a larger holding benefited from the other change that was beginning to reshape the economy of the countryside, the introduction of cash crops and cash in his dealings with the lord. The elite of the peasantry, the abbey's servant and jurors were leading the trend from commutation of services and payment in kind to payments in cash. This worked to the benefit of the peasant with a larger holding who could be more or less certain of a planned and regular surplus. The smaller producers stood to lose from the commutation of services. The time gained would be of little value on a holding that was already saturated with labour and which had no marginal product to offer. Some of the peasants lost in other ways. Those who had been assured of food and drink while working for the abbey lost this benefit. Others, who had a kind of sharecropping arrangement with the abbey, had benefited from a system where the abbey had provided working capital in the form of seed and vines that were beyond the resources of the manse. Payment in cash transferred the risks of production and the risks of the market from the abbey to the peasant as well as transferring the opportunities.

The inequitable distribution of wealth and the regressive system of rents and obligations encountered on the lands of Saint Germain were the result of several forces that had been operating for centuries. As Fustel de Coulanges noted, the legal status of the original manse holders which had

become transferred to the manse itself was one important way in which rural inequality arose. In individual cases other mechanisms were at work, gradually redistributing existing wealth and creating new resources. Fortuitous events, such as inheritances and marriages resulting in fractional or double manses and such simple but statistically intangible factors as individual enterprise in clearing new land or encroaching on another's, even such minor events as the alienation of part of a holding by a family for any number of reasons could cumulatively and over generations produce deviations from an approximately equitable distribution of wealth. But these inequalities acquired a special significance as the tenants became involved in the marketplace. Growing dependence on cereal crops and population growth worked jointly to put pressure on holdings, but without some commercialization the size of holdings would only shrink until a new subsistence level had been reached that took into consideration the more intensive cultivation. Commercialization, by favouring cash rents, larger holdings and greater use of animal labour could only come about at the expense of the small subsistence farmer.

While the effect of market involvement upon marginal farmers must have been painful, the longer term consequences for those in the countryside would have been generally beneficial. Some peasant families were on the verge of becoming

rural consumers, a tendency which would allow the emergence of some rural specialization.

The slowly increasing stock of rural capital partly hoarded for such purposes as the purchase of exemptions from the lord's authority and partly invested in the productive capacity of the land was a consequence of market involvement of considerable importance.

NOTES

CHAPTER I

METHOD, PROBLEM AND SOURCE

[1]Norman J. G. Pounds, "Northwest Europe in the Ninth Century: Its Geography in Light of the Polyptychs," Annals of the Association of American Geographers 57 (1967): 461.

[2]James Westfall Thompson, "The Statistical Sources of Frankish History," American Historical Review 40 (1935): 625-645.

[3]Charles H. Taylor, "Note on the Origin of the Polyptychs," Melanges d'histoire offerts à Henri Pirenne, 2 vols., (Brussels: Vromant and Cie., 1926) 2:479.

[4]Guérard's edition of the Polyptych, Polyptique de l'Abbe Irminon, ed. Benjamin Guérard, 2 vols. (Paris: Imprimerie Royale, 1844) is no longer available, Longnon's edition of the Polyptych, which included a condensed version of the first volume of Guérard's edition, his famous Prolegomenes, has been reprinted recently. Polyptique de l'Abbaye de Saint-Germain-des-Prés, ed. Auguste Longnon, 2 vols. (Paris: Chez H. Champion, 1895; reprint ed. Geneva: Megartiotis Reprints, 1978) 1:232.

[5]P. Guilhiermoz, "L'equivalence des anciennes mesures," Bibliotheque de l'Ecole des Chartres 74 (1913): 267-328. Although such scholars as Charles Perrin have accepted the similarity between the estimates of Guérard and Guilhiermoz as reassuring, a dissenting opinion is to be found in Lucien Musset, "Observations historique sur une mésure agraire: le bonnier," Mélanges d'histoire du Moyen Age dédiés à la mémoire de Louis Halphen (Paris: Presses Universitaries de France, 1951): 539. Musset rejected a statistical approach to the Polyptych which rested on Guérard and Ghilhiermoz's calculations, writing that "leurs calculs sont d'une parfait inanité, sans base logique admissable".

CHAPTER II

CASH RENTS AND PEASANT INVOLVEMENT IN THE MARKETPLACE

[1]Henri Pirenne, Economic and Social History of Medieval Europe," trans. I. E. Clegg (New York: Harcourt, Brace and World, 1933) pp. 1-15.

[2]Alfons Dopsch, "Agrarian Institutions of the Germanic Kingdoms from the Fifth to the Ninth Centuries," in Cambridge Economic History of Europe, vol. 1: The Agrarian Life of the Middle Ages, ed. M. M. Postan 2nd ed. (Cambridge: Cambridge University Press, 1966) p. 180.

[3]Sture Bolin, "Mohammed, Charlemagne and Ruric," Scandinavian Economic History Review 1 (1953): 5-39.

[4]Maurice Lombard, "Mahomet et Charlemagne: le problème économique," Annales: économies, sociétés, civilisations 3 (1948): 197.

[5]Renee Doehard, "Les reformes monetaires carolingiennes," Annales: économies, sociétés, civilisations 7 (1952): 18-20.

[6]Harry Miskimin, "Two Reforms of Charlemagne? Weights and Measures in the Middle Ages," Economic History Review 2nd. ser. 20 (1967): 40.

[7]Karl Morrison, "Numismatics and Carolingian Trade: A Critique of the Evidence," Speculum 38 (1963): 432.

[8]Philip Grierson, "Commerce in the Dark Ages: a critique of the evidence," Transactions of the Royal Historical Society, 5th ser., 9 (1959): 130.

[9]Marc Bloch, Land and Work in Medieval Europe: Selected papers by Marc Bloch, Chap. 7: "The problem of gold in the middle ages," pp. 186-229, Chap. 8: "Natural economy or money economy: a pseudo-dilemma," pp. 230-243, trans. J. E. Anderson (Berkeley and Los Angeles: University of California Press, 1967)

[10]Grierson, "Commerce in the Dark Ages," p. 130.

[11]Ibid.

[12]Ibid., pp. 137-139.

[13]Ibid., p. 140.

[14]Renée Doehard, "Au temps de Charlemagne et des Normands: ce qu'on vendait et comment on le vendait dans le bassin Parisien," Annales: économies, sociétés, civilisations 2 (1947): 260-280: Richard Hodges, Dark Age Economics: the origins of towns and trade A.D. 600-1000, (London: Duckworth Press, 1982).

[15]Grierson, "Commerce in the Dark Ages," p. 124.

[16]Georges Duby, The Early Growth of the European Economy: warriors and peasants from the seventh to the twelfth century, trans. Howard B. Clarke (London: Weidenfeld and Nicolson, 1974).

[17]Ibid., p. 70.

[18]J. W. Thompson (James Westfall Thompson, "The Commerce of France in the Ninth Century," Journal of Political Economy 23 (1915): 857-887.) Suggested that many sources not usually considered by economic historians could be used as indicators of the level of economic activity. Using such unusual evidence as the Life of Anslear, Charlemagne's letters to Offa and ninth century efforts to improve the coastguard, Thompson drew a portrait of the Carolingian economy as both flourishing and international. Most of his attention was devoted to the long distance trade.

[19]Dopsch, "Agrarian Institutions," p. 203.

[20]Francois Louis Ganshof, "Medieval Agrarian Society in its Prime: France, the Low Countries and Western Germany," in Cambridge Economic History of Europe, vol. 1: The Agrarian Life of the Middle Ages, ed. M. M. Postan 2nd ed. (Cambridge: Cambridge University Press, 1966) p. 339.

[21]Ibid.

[22]Grierson, "Commerce in the Dark Ages," p. 126.

[23]Duby, The Early Growth of the European Economy, p. 107.

[24]Doehard, "Au temps de Charlemagne," p. 275.

[25]Polyptique, vol. 1: 123-125.

[26]This was the view held by Postan, who wrote "The whole argument that the use of money and coins for reckoning came sooner or easier to the primitive man than the handing over of coins in payment is not borne out by either archaeological or anthropological evidence, and is a piece of a priori reasoning....The onus of proof belongs to those who believe that obligations, though expressed in money, were discharged in other ways." (M. M. Postan, "The Rise of a Money Economy," in The Economic Foundations of Medieval Society: Essays on Medieval Agriculture and General Problems of the Medieval Economy. (Cambridge, Cambridge University Press, 1973) p. 32.

[27]Doehard, "Au temps de Charlemagne," p. 276.

[28]Polyptique, vol. 1: 232.

[29]Marc Bloch, French Rural History: An Essay on its Basic Characteristics, trans. Janet Sondheimer (Berkeley and Los Angeles: University of California Press, 1966) pp. 23-25.

[30]This is something of an oversimplification. Clark and Haswell point out that, according to the Ricardian Theory of Rent, rent is equal to the difference between the costs of production on a given piece of land and the costs of production on marginal land. Nevertheless, this formula still presumes that the extent of the land should be a factor in determining the rent it commands. (Colin Clark and Margaret Haswell, The Economics of Subsistence Agriculture, 3rd. ed. (London: Macmillan and Co., 1967) pp. 110-111.

[31]Oneway Analysis of Variance Tables for Villas with Juring Manses.

Villemeux

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	126.5	1	126.5
Within groups	9769.1	237	41.2
total	9895.7	238	

F = 3.07 Significance = .08

Palaiseau

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	.97	1	.97
Within groups	41.59	112	.37
total	42.56	113	

F = 2.60 Significance = .10

Chavannes

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	45.3	1	46.3
Within groups	597.6	23	25.9
total	642.9	24	

F = 1.78 Significance = .19 (not significant at 10% level)

Boissy Maugis

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	7.9	1	7.9
Within groups	97.0	50	
total	104.9	52	

F = 4.08 Significance = .048

Thiais

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	12.3	1	12.3
Within groups	129.8	80	
total	142.1	82	

F = 7.60 Significance = .0072

Epinay-sur-Orge

	Sum of Squares	Degrees of Freedom	Mean Square
Between groups	33.1	1	33.1
Within groups	444.7	46	9.6
total	477.8	47	

F = 342 Significance = .07

[32]Office holding by cash payments

male householders	Cash payments 1-36 den.	37 + den.
office holders	4	12
non office holders	584	325

corrected x^2 = 8.83 with 1 degree of freedom Significance = .0030

CHAPTER III

PEASANT HOLDINGS AND THE MARKET ECONOMY

[1]Marc Bloch, "The Rise of Dependent Cultivation and Seignorial Institutions," in Cambridge Economic History of Europe, vol. 1: The Agrarian Life of the Middle Ages, ed. M. M. Postan 2nd. ed. (Cambridge: Cambridge University Press 1966) p. 277.

[2]Polyptique, vol. 2 IX:201.

[3]Ibid., IXI:3; XXI:3; XIV:3: etc.

[4]Ibid., XXI:86.

[5]Ibid., II:36.

[6]Ibid., XXII:95; IX:246; IX247.

[7]Polyptique, vol. 1:86.

[8]Ibid., p. 100.

[9]Omer Tulippe, "Le manse à l'époque carolingienne," Annales de la Société Scientifique de Bruxelles, sér. D, sciences économiques 56 (1936): 241.

[10]Charles Edmond Perrin, "Observations sur le manse dans la région parisienne au début du IX^{e} siecle," Annales d'histoire sociale 8 (1945): 51.

[11]Francois Louis Ganshof, "Manorial Organization in the Low Countries in the Seventh, Eighth and Ninth Centuries," Transactions of the Royal Historical Society, 4th ser. 31 (1949): 46.

[12]Perrin, "Observations sur le manse," p. 47.

[13]Ibid., p. 48.

[14]Bloch, "Dependent Cultivation," p. 281.

[15]Ibid., p. 279.

[16]Ibid., p. 280.

[17]Emily Coleman, "Medieval Marriage Characteristics: a Neglected Factor in the History of medieval Serfdom," in The Family in History: Interdisciplinary Essays, eds. J. K. Raff and R. I. Rotberg (New York: Harper and Row, 1971) pp. 14-15.

[18]Bloch, "Dependent Cultivation," p. 242.

[19]Ganshof, "Medieval Agrarian Society in its Prime," p. 318.

[20]Ferdinand Lot, "Le Jugum, le manse et les exploitations agricoles de la France moderne," in Mélanges d'histoire offerts à Henri Pirenne, (Brussels: Vrmant and Cie., 1926) p. 318.

[21]David Herlihy, "The Carolingian Manse, "Economic History Review, 2nd. ser. (1960) p. 89.

[22]Ferdinand Lot, "Conjectures démographiques sur la France au IX^{e} siècle," Le Moyen Age 30 (1921): 14.

[23]Perrin, "Observations sur le manse," p. 45.

[24]Herlihy, "Carolingian Manse," p. 89.

[25]Alexander Vasilevich Chayanov, On the Theory of Peasant Economy, American Economic Association Translation

Series, vol. 2 eds. Daniel Thorner, Basile Kerblay, R. E. F. Smith, trans. Christel Lane, (Homewood, Ill.: Richard D. Irwin, Inc., 1966) p. 6.

[26]Clark and Haswell, Subsistence Agriculture, p. 127.

[27]Ibid., p. 128.

[28]Ibid., pp. 53-78.

[29]Ibid., p. 54.

[30]Duby, The Early Growth of the European Economy, p. 18.

[31]Cited in Hodges, Dark Age Economics, p. 136.

[32]Clark and Haswell rejected the F.A.O. caloric requirements as being considerably higher than they should be. Their own figures were much lower. For an adult male, working in a temperate climate for four hours a day, they suggested 1673 calories. (Clark and Haswell, Economics of Subsistence Agriculture, p. 15.)

[33]Duby, Early Growth of the European Economy, pp. 197-198.

[34]Clark and Haswell show that under special circumstances, this figure may be much lower, even zero, or much higher. But these special cases to which they refer are modern cases where changes in agricultural technology and the special conditions of modern economics have increased the marginal product, or where chronic underemployment on the land raised the average product so high that there was no marginal product left. The normal figure of .4 they cite is derived from a variety of research projects the results of which are summarized in Clark and Haswell, Economics of Subsistence Agriculture, pp. 94-109.

[35]Mead T. Cain, "The Economic Activity of Children in a village in Bangladesh," in Rural Household Studies in Asia, eds. Hans P. Binswanger and others (Singapore, 1980): 218; Monir Nag, Benjamin White, R. Creighton Peet, "An Anthropological Approach to the Study of the Economic Value of Children

in Java and Nepal," in Rural Household Studies In Asia, p. 248. Also Eva Mueller, "The Economic Value of Children in Peasant Agriculture, in Population and Development, ed. Ronald G. Ridker, (London, 1977).

[36]Ernst De Vries, "Report of the 3rd session of the 2nd World Population Conference, 23-25 Sept., 1964 Belgrade Yugoslavia." General Series U.N. 19.

[37]For a non-technical discussion of the application of this kind of analysis and the necessary cautions to be observed, see; L. Polissar and P. Diehr, "Regression Analysis," in the Health Services Research: The Use of Dummy Variables." Medical Care 20 (1982): 959-966.

[38]The classic example of the application of this kind of analysis to historical data with an introduction to the procedure is found in William Klecka and T. W. Heyck, "British Radical M.P.'s, 1874-1895, New Evidence from Discriminate Analysis," Journal of Interdisciplinary History 4 (1973): 161-184.

CHAPTER IV
CONCLUSION

[1]Hodges, Dark Age Economics, pp. 162-179.

[2]The rebellion of 1246 is referred to in G. G. Coulton, The Medieval Village (Cambridge: Cambridge University Press, 1926) p. 139. It is interesting that one of the reasons why the peasants of Esmans were discontented was that the abbey was interferring with the sale of wine in the village by re-instituting its ban on wine, which it had allowed to lapse for a time.

[3]Georges Duby, "Medieval Agriculture 900-1500," in The Fontana Economic History of Europe, vol. 1: The Middle Ages, ed. Carlo M. Cipolla (London: Fontana Books, 1972 p. 186.

[4]Ibid., p. 187.

[5]Bloch, French Rural History, p. 190-191.

[6]Ibid., p. 191.

[7]Ganshof, "Medieval Agrarian Society in its Prime," p. 339.

[8]Fustel de Coulanges, "Le colonat romain," in Recherches sur quelques problèmes d'histoire, pt. 1 (Paris, Hachette and Cie., 1885; reprint ed. New York: New York Times, Arno Press, 1979) p. 162.

[9]Richard Roehl, "The Patterns and Structure of Demand: 1000-1500, in The Fontana Economic History of Europe, Vol. 1: The Middle Ages, ed. Carlo M. Cipolla (London: Fontana Books, 1972) p. 119.

[10]Henri Sée, Les classes rurales et le régime domanial en France au Moyen Age, (Paris: n.p., 1901; reprint ed. Geneva: Slatkine Reprints, 1980) p. 548.

[11]Ganshof, "Medieval Agrarian Society in its Prime," p. 339.

[12]Andrew M. Watson, "Towards Denser and More Continuous Settlement: New Crops and Farming Techniques in the Early Middle Ages," in Paper in Medieval Studies, vol. 2: Pathways to Medieval Peasants ed. J. A. Raftis (Toronto: Pontifical Institute of Mediaeval Studies, 1981) p. 77.

[13]B. H. Slicher van Bath, The Agrarian History of Western Europe: A.D. 500-1850, trans. O. Ordish (London: Edward Arnold, 1963) p. 22.

[14]De Vries, "World Population Conference."

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