

The Three-Field System of Sixteenth-Century Lithuania

By R. A. FRENCH

OF the various forms of open and common field agriculture, the three-field system was probably the most widespread over the plains and lowlands of Europe.¹ There can be little doubt then that the introduction of the three-field system was one of the major developments in agrarian history. But for all its importance there is no great abundance of documentary evidence for its establishment. In England, and in most parts of continental Europe, its spread was gradual and largely unrecorded. A special interest therefore attaches to the appearance of three-field agriculture in Lithuania. There it came comparatively late, as the result of a royal decree in 1557, which made the system mandatory on crown estates. The majority of church and noble landowners followed the royal example, with the consequence that the new regime was introduced over a wide region in a very brief period of time. Although Lithuania was in all likelihood unique in the speed of transformation to the new system, the event was part of a wider movement in the same direction throughout eastern Europe. It followed, and was derived from, similar if less dramatic processes in central and western Europe.

As part and parcel of the reform, cadastres and estate inventories were drawn up to record land, its use, tenants, and taxation. Although most such documents have been lost, those which survive form a historical source of remarkable richness and detail. They provide much information on the agrarian history of the Grand Duchy of Lithuania and on the three-field system in particular. That system has points of comparison and contrast with three-field agriculture elsewhere, points not without relevance for those interested in English agrarian history.

Agriculture in the Grand Duchy of Lithuania before the reorganization was characterized by a very high degree of intermixing of land. Holdings of individual peasants were widely scattered among holdings of other peasants from the same village, from other villages of the same estate, and from other estates. The peasant tenement was usually known as a 'service' (*sluzhba*) or as a *dvorishche*, and was worked by a family or group of families. "*Dvorishche* (in the personal sense) is the name given to a group of persons in the main linked by family unity, but allowing participation of outsiders, having a single head (who

¹ The author would like to thank Dr J. Thirsk and Mr H. C. Prince for their helpful advice in preparing this paper and Miss C. Hill, who drew the maps.

usually gives his name to the *dvorishche*) and members called *potuzhniki*. *Dvorishche* in the concrete sense was the name given to a parcel of land—house-plot, arable, or other property—in the possession of one group of persons.”¹ A large *dvorishche* might be operated by as many as two dozen families, although tax dues were assessed on it as a single unit. Thus one *dvorishche* in Konchichi village near Pinsk was worked by two named persons “with all their brothers and with their helpers from 23 households.”² Most commonly this form of holding was cultivated on a type of infield-outfield system. Beside the house or houses was the infield, known as *navoz* or *pognoy* and consisting of one or several small plots receiving manure. Further away was the outfield, or ‘simple’ (*prostoy*) field, which was not manured.³ The simple or outfield usually consisted of a number of widely scattered parcels of limited size, either intermixed with parcels of other tenements or isolated in forests and swamps. Ten to twenty such parcels were commonplace; indeed, fewer than ten were rare. In the less favourable regions of forest and swamp there were frequently twenty to forty geographically separate parcels and on occasion over sixty.⁴ Demesne lands, where they existed, were also fragmented and even where a three-year rotation of winter grain, spring grain, and fallow was practised, as it was on certain manors, it was not on three fields but on three groups of scattered arable parcels.⁵

The high degree of intermixing and dispersal of arable, the generally small size of each parcel, and the limited application of manure could hardly have been very productive. Grand Duke Sigismund I in 1514 complained that Crown manors paid nothing into the Treasury.⁶ Up to the sixteenth century, Lithuanian agriculture was primarily for home consumption, and foreign trade rested on the export of furs, honey, and beeswax from the ubiquitous forests; “the storerooms of the Treasury were filled with furs and partly with cloth from abroad, which had been exchanged for those furs; the quantity of metal coin was insignificant.”⁷ During the sixteenth century, however, there was great

¹ Vladimir-Budanov, quoted by M. O. Kosven, *Semeynaya obshchina i patronimiya*, Moscow, 1963, p. 175. Kosven himself terms the *dvorishche* “the patronymic settlement.”—*Ibid.*, p. 184.

² *Pistovaya kniga byvshogo Pinskogo starostva, sostavlenaya po povelениyu korolya Sigizmunda Avgusta v 1561–1566 godakh Pinski i Kobrinski starostoyu Lavrinom Voynoyu*. (Subsequently referred to as P), Vil’na, 1874, pt II, p. 468.

³ The division of the ‘service’ into manured and simple fields is well exemplified by the inventory of Myadel’ Bailiwick in 1545.—*Dokumenty Moskovskogo arkhiva Ministerstva Yustitsii* (subsequently referred to as DMA), I, Moscow, 1897, pp. 75–85.

⁴ Okhrimoviche *dvorishche* of Svarichevichi village near Pinsk had 64 parcels.—P, pt II, pp. 380–2.

⁵ At Radoshkovichi Castle, inventoried in 1549, nine physically separate plots entered into the three-year rotation.—DMA, I, pp. 93–4.

⁶ V. I. Picheta, *Agrarnaya reforma Sigizmunda-Avgusta v Litovsko-Russkom gosudarstve*, Moscow, 1958, p. 85.

⁷ M. V. Dovnar-Zapol’skiy, *Gosudarstvennoye khozyaystvo Velikogo Knyazhestva Litovskogo pri Yagellonakh*, Kiev, 1901, p. 318.

pressure to increase the agricultural productivity of Lithuania and of Crown estates in particular. On the one hand there was a constant drain on the Treasury to support a series of military campaigns against Russia, the Crimean Tatars, and the German knightly orders of Prussia and Livonia, and on the other hand there was a steadily growing export market for grain through Danzig, Königsberg, and Riga. Doroshenko has computed from the Oresund toll returns that between 1562 and 1620, 129,200 vessels sailed to the west from the Baltic and that 70 per cent of them came from these three ports. Their cargoes included more than 3 million *lashti*, or some 5½ million tons of grain.¹ Various decrees to crown bailiffs, exhorting them to establish demesne arable and requiring them to remit an ever larger share of manorial produce to the Treasury (or better still, cash for produce sold), did something to increase Crown income from its estates, but more drastic and thoroughgoing reform was needed.

Open-field agriculture, particularly in its three-field variety with a regular, common three-year rotation and common pasture on the fallow, was widely established in Poland proper in the thirteenth to fifteenth centuries.² This 'German Law' system in Poland derived from Brandenburg and the German lands to the west through the medium of German colonists.³ It is true that the classic form of three-field system had been introduced into Lithuania about the middle of the fifteenth century, but only in the western and largely Polish province of Podlasia, and there only in newly founded villages. In the first half of the sixteenth century Sigismund I extended the three-field system throughout Crown lands in Podlasia,⁴ but its establishment in Lithuania proper was pioneered by his widow, Queen Bona. In 1552 she had her extensive estates completely reorganized on a very regular three-field system.⁵ Each peasant holding was of standard size and consisted of a parcel of 10 *morgi*⁶ in each of the three fields; such a holding was known as a *voloka*, or in Polish *włoka*,⁷ and the new system was and still is referred to as the *voloka* system. No doubt her reform

¹ V. V. Doroshenko, 'Eksport sel'skokhozyaystvennoy produktsii Vostochnoy Pribaltiki v 1562-1620 gg.', *Yezhegodnik po agrarnoy istorii Vostochnoy Yevropy* 1963 g., Vil'nyus, 1964, pp. 179-90.

² See, for example, M. Kielczewska-Zaleska, 'L'ancien morcellement des champs avant la séparation au XIXe siècle dans la Poméranie de Gdansk', *Géographie et Histoire Agraires*, Nancy, 1959, pp. 343-52.

³ J. Burszta, *Od osady słowiańskiej do wsi współczesnej*, Wrocław, 1958, pp. 46-7.

⁴ M. K. Lyubavskiy, *Ocherk istorii Litovsko-russkogo gosudarstva do Lyublińskiej Unii vklyuchitel'no*, Moscow, 1910, p. 226.

⁵ A cadastre has survived, detailing the reorganization on Queen Bona's Pinsk and Kletsk estates: *Pistovaya kniga Pinskogo i Kletskogo knyazhestva, sostavlenaya Pinskiim starostoyu Stanislavom Khval'chevskim v 1552-1555 g.*, Vil'na, 1884 (subsequently referred to as PK).

⁶ A *morg* was an areal measure of approximately 1.8 acres.

⁷ Contemporary documents were compiled in either Belorussian or Polish; for the sake of uniformity all terms and proper names are here given in their Belorussian forms, transcribed into Latin alphabet.

proved successful, for five years later her son, Sigismund August, issued his *Voloka Decree* (*Ustava na Volok*) extending the reorganization to all crown estates.¹

The first step was to consolidate the intermixed estates and this was achieved by compulsory exchange of land. Those who yielded land to the crown were recompensed by equal areas elsewhere. If poorer land was given in compensation, extra had to be added, in the ratio of 1 good land to 1½ medium land to 3 bad land, or alternatively 1 arable to 2 hayland. Estates were thus converted into compact blocks of territory. Within the new boundaries of each estate the scattered parcels of arable were thrown together into three fields, normally all of the same size. This often meant the inclusion within the new fields of intervening tracts of woodland, which had to be cleared—"Since in the simplification of the boundaries of the territory of Zaborovtsy much still unploughed oakwood and pinewood was included, therefore in order to plough that oakwood, to them all (i.e. the peasants) is remitted one third of the tax payment."² Each field was subdivided into parallel strips;³ the boundaries between the strips apparently consisted of deep furrows, as the fields were described as "measured out by plough."⁴ Each peasant holding was allocated one strip in each field, in marked contrast to the usual open-field systems of western Europe, where one holding generally consisted of a number of scattered parcels in each field. The decree fixed the size of the strip at 11 *morgi* (as against the ten of Queen Bona's reform), giving tenements of 33 *morgi* or some 60 acres.⁵ If however the soil was of low quality, swampy, sandy, or stony, the overseers of the reform were permitted to enlarge the holding, without any increase in the dues for which it was liable. These tax-free additions were usually made by enlarging the size of the strips or alternatively by granting extra plots of arable in outlying fields, beyond the fences of the three main fields.

Up to the reform the bulk of agricultural produce acquired by the Treasury came from peasant lands under the jurisdiction of the Crown manors.⁶ Despite official exhortation to extend demesne arable such lands were limited in size and many manors had none at all. As part of the reorganization the amount of demesne was greatly increased and a number of new manors were set up. Again in contrast to general west European practice, demesne and villenagium were usually separate, although there were occasional exceptions where peasant and

¹ The decree is transcribed in full in *Russkaya Istoricheskaya Biblioteka* (subsequently referred to as RIB), xxx, Moscow, 1914, cols. 542-85.

² P, pt 1, p. 326.

³ The Lithuanian 'strip' (*rez*), although undoubtedly strip-shaped, was of a vastly different order of magnitude from the English open-field strip.

⁴ PK, *passim*.

⁵ *Ustava na Volok*, Article 29, RIB, xxx, col. 570.

⁶ The word 'manor' is used here as a translation of *dvor*; its nature is described subsequently, but it should be stressed at this point that the Lithuanian 'manor' is not a precise equivalent of an English medieval manor.

manorial arable lay together in the same three fields.¹ Generally the manorial demesne had its own three fields, and for them the best land was chosen. Before the reform, according to Picheta, "the dimensions of manorial arable were extremely small."² In fact there are few surviving inventories from the pre-reform period and it is impossible to determine an average size. The 1549 inventory of Radoshkovichi Castle gave a total of 290 *bochki*³ of demesne, or about 522 acres.⁴ Dovgialishki Castle in its 1553 inventory had some 412 acres, excluding fallow,⁵ but these two castles may well have been larger than the average manor. Their four subsidiary manors were much smaller, with 295, 317, 277, and 175 acres. Vornenskiy Manor, inventoried in 1547, had about one *bochka* of kitchen garden, 34 *bochki* of manured field for spring grains, and sowed 17 *bochki* of winter rye each year, presumably on unmanured 'outfield';⁶ this represented about 94 acres cropped annually, with an unknown quantity of fallow 'outfield'.

Compared with these figures, the post-reform demesne was considerably larger. The surviving cadastres of Crown estates covered twenty-four manors with demesne attached and their average size was 563½ *morgi*, or 1,014 acres. The largest, Cherevachichi Manor in Kobrin District, was almost 2,000 acres.⁷ However, even under the reform, not every manor had demesne fields allotted to it. Those located in towns served only as the residences of the Crown representatives, the 'holders' (*derzhavets*) or bailiffs (*uryad*). Some of these urban manors had subsidiary farms outside the towns, where demesne could be established.⁸ Other manors lost their previously held demesne in the process of reorganization, because the quality of the land was poor. Thus Druzhilovich Manor in Pinsk District "from ancient times had arable of his Majesty, but since there was no use whatsoever to be had from it, it was left for the use of the neighbouring subjects."⁹ But if a number of unproductive manorial farms were weeded out in this way, far more new ones were set up on lands graded 'medium' and 'good'. For example, Krasnik Manor in Grodno District was "measured out from the lands of the lesser nobility and various subjects of Skidel

¹ Out of twenty-four royal manors with demesne, described in surviving cadastres, only four were in the same fields as the peasant holdings.

² Picheta, *op. cit.*, p. 145.

³ A *bochka* (or *solyanka*) was a capacity measure and a *bochka* of land the area on which that amount of rye could be sown. The preamble to the document PK stated it to be equal to one *morg*, or 1·8 acres.—PK, p. 3.

⁴ DMA, I, pp. 93-4.

⁵ *Ibid.*, I, p. 121.

⁶ *Ibid.*, I, p. 86.

⁷ *Reviziya Kobrinskoy ekonomii, sostavlennaya v 1563 godu korolevskim revizorem Dmitriyem Sapegoyu* (subsequently referred to as K), Vil'na, 1876, pp. 105-6.

⁸ For example, Dobuchin Manor in Kobrin District.—K, pp. 206-8; Mosty and Novyy Dvor Manors in Grodno District.—*Pistovaya kniga Grodnenskoy ekonomii, izdannaya Vilenskoyu komissiyeyu dlya razbora drevnikh aktov* (subsequently referred to as G), Vil'na, pt I, 1881, pp. 187-91 and 252-7.

⁹ P, pt II, p. 2.

and Kotra bailiwicks."¹ Polovets Manor of Berest'ye (modern Brest) District was so new that at the time of the survey its buildings were still to be put up.²

In addition to the demesne, the manors had 'kitchen gardens' (*ogorody*), which were usually located around the manor house and its outbuildings. These plots ranged in size from about one-sixth of an acre to about 15 acres. The documents frequently distinguished them as vegetable gardens, where cabbages, turnips, onions, beets, parsnips, and parsley were grown, and 'spring' gardens. The latter were generally much the larger; they were manured and were no doubt sown to the more valuable spring crops, wheat, barley, and flax. Many manors had in addition small orchards of apples, pears, cherries, and plums. One at least had a small vineyard.³ The manors usually had mills attached to them, although not infrequently these were rented out. The mills were always water-driven and were most numerous on the smaller streams, not used for navigation. As a result, some were only spring mills. In Poles'ye bailiwick of Berest'ye District the mills "grind not unceasingly, but only in spring and autumn at times of flood water."⁴ More commonly there were a dam and mill-pond. The millers were given *voloka* holdings for their work, but since the mills usually stood on their own, away from manor or village, these holdings were for the most part in separate outlying fields near the mill.

To operate the new demesne, the manors needed a greatly increased labour force. Up to 1557, the principal work-force of the manor consisted of its slaves (*batraki* or *parobki*), who lived at the manor and received subsistence rations. These *servi* were now given free status as *ogorodniki*, or 'gardeners',⁵ and received small land-holdings of 6 *morgi* each. These tenements were either arranged in three fields on their own, or attached to the three demesne fields. The work obligation for the 'gardeners' was two days per week; their wives owed twelve days a year to help with the weeding and harvesting. The wives were also under obligation to produce linen from flax grown on the farm. On some farms these tied servants were required to work three days a week and their wives eighteen days a year, but in such cases they were given larger plots of 9 *morgi*. The *ogorodniki* looked after the kitchen gardens and livestock and did day to day work about the manor, but they were too few in number to cope with the major operations of working the demesne and hay-cutting. Even the largest manors had fewer than 30 *ogorodniki*, some had only half a dozen. Belousovskiy manorial farm in Kobrin District had over 1,600 acres of demesne, but only ten tenements were set aside for *ogorodniki* and none of them, apparently, was occupied.⁶

¹ G, pt I, p. 514.

² DMA, I, p. 441.

³ G, pt I, pp. 390-1.

⁴ DMA, I, p. 328.

⁵ There is a close parallel here with the 'gardeners' of fourteenth-century Brandenburg manors, with plots of three *morgen* each. The word used in Lithuania for a manorial farm or subsidiary farm, *fol'vark*, derived from the German *Vorwerke*.

⁶ K, p. 208.

Inevitably the bulk of manorial labour requirements was met by peasants from the villages within the manor's jurisdiction, in return for which they received their new *voloka* holdings. This system of land-holding in return for labour, known as *tyaglo*, had existed in Lithuania from the beginning of the sixteenth century, but it was now greatly extended. Seven peasant tenements were allocated for every *voloka* or 30 *morgi* of demesne.¹ The amount of labour was fixed by the decree at two days per week, being remitted for three weeks of the year at Mid-Lent, Easter, and Christmas.² The decree also fixed the hours of work as sunrise to sunset, with three hours rest for those working with draught animals, "before dinner," "at midday," and "before evening." Those not working with livestock had three half-hour rest periods. The peasants themselves had to provide the necessary horses and oxen. To see that the peasants presented themselves for work and fulfilled their obligations, the bailiff appointed petty officials or reeves, called *voyty*, from among the peasants. Each *voyt* had several villages under his supervision and was assisted by other peasants, known as *lavniki*.

Tenements surplus to the needs of the demesne, or located inconveniently far from the manor, were given out in return for money payments, the *osada* system. *Osada* peasants owed four days a year boon-work (*toloka*) on the demesne, but this could be commuted for 12 *groshi* in cash. The royal decree laid down precisely the dues in money and kind from every holding, the amounts varying with the quality of the soil (TABLE I). Four land categories were recognized—good, medium, bad, and very bad. Dues of rye, oats, and hay could be commuted for cash at fixed rates and the duty of carting these products for the Crown could similarly be commuted. *Statsiya* was a special levy in kind or money equivalent for the sustenance of the King or his officers, when in the district. In kind it consisted of a hen and ten eggs from every holding, a goose from every five holdings, a ram from every fifteen holdings, and a cow from every thirty holdings.

The great majority of holdings were *tyaglo* or *osada*, on labour or payment, but there was also a third class, tenements held in return for special services and activities. They were usually free of other dues, or carried greatly reduced taxes. Such tenants included priests, the *voyty*, smiths, carpenters, and other craftsmen, woodwards, hunt servants, and the *boyare putnyye* (a kind of yeomanry, higher in status than the peasant, owing military service in time of war). In general about 10 per cent of holdings were allotted for services of this kind, but in Grodno District the presence of a royal palace and extensive Crown hunting forests raised the proportion to 15 per cent. Some villages were in-

¹ The *voloka* as a unit of peasant holding was 33 *morgi* in area; the *voloka* as a unit of areal measurement was always 30 *morgi*.

² DMA, I, p. 242.

habited solely by people on some special service, palace cooks, huntsmen, kennel-men, or the like.

TABLE I
DUES IN GROSZ FROM EACH HOLDING

(A) HOLDINGS FOR LABOUR—TWO DAYS WORK PER WEEK, PLUS:				
	<i>Quality of land</i>			
	<i>Good</i>	<i>Medium</i>	<i>Bad</i>	<i>Very bad</i>
<i>Chinsh</i> (land tax)	21	12	8	6
<i>Statsiya</i> , in kind or	6	6	6	6
Right to fish	2	2	2	2
Hay, 1 cartload or	3	3	3	—
Cartage of hay or	2	2	2	—
Oats, 2 <i>bochki</i> or	10	10	(1 <i>bochka</i> or) 5	—
Cartage of oats or	10	10	5	—
<i>Total</i>	54	45	31	14
(B) HOLDINGS FOR MONEY—AS ABOVE, PLUS:				
<i>Osada</i>	30	30	30	30
<i>Gvalt</i> , 1 <i>bochka</i> of rye or	10	10	10	10
Boon-work, 4 days or	12	12	12	12
<i>Total</i>	106	97	83	66

To carry out the terms of the *Voloka* Decree, nobles were appointed as overseers or commissioners. To assist them in the task they had surveyors, who measured the arable, and clerks, who recorded in detail the layout and dimensions of the new fields, the names of tenants, and assessments of taxation, with all other relevant information.¹ The precision of these cadastral descriptions is such that from them one may reconstruct the patterns of fields, parcels, and settlements. The overseers aimed at achieving a completely standard layout. The three fields were to lie side by side, all of the same size, all with the same number of parallel strips; every strip was to be of identical length, breadth, and area. The village was to be resited in a single line of houses, one house at the end

¹ Of the cadastres so compiled for every district, only four have survived, covering Crown estates in the districts of Grodno, Pinsk, Kobrin, and Berest'ye. Transcripts of these have been published in references G, P, K, and DMA, I, pp. 205-448. In addition, there is a cadastre for the towns of Bryansk and Sarazh with a small group of villages (G, pt II, pp. 317-528). There is also the earlier cadastre of Queen Bona, transcribed in PK.

of each middle field strip, with a street in front of the houses and a threshing barn opposite each house (FIG. I).

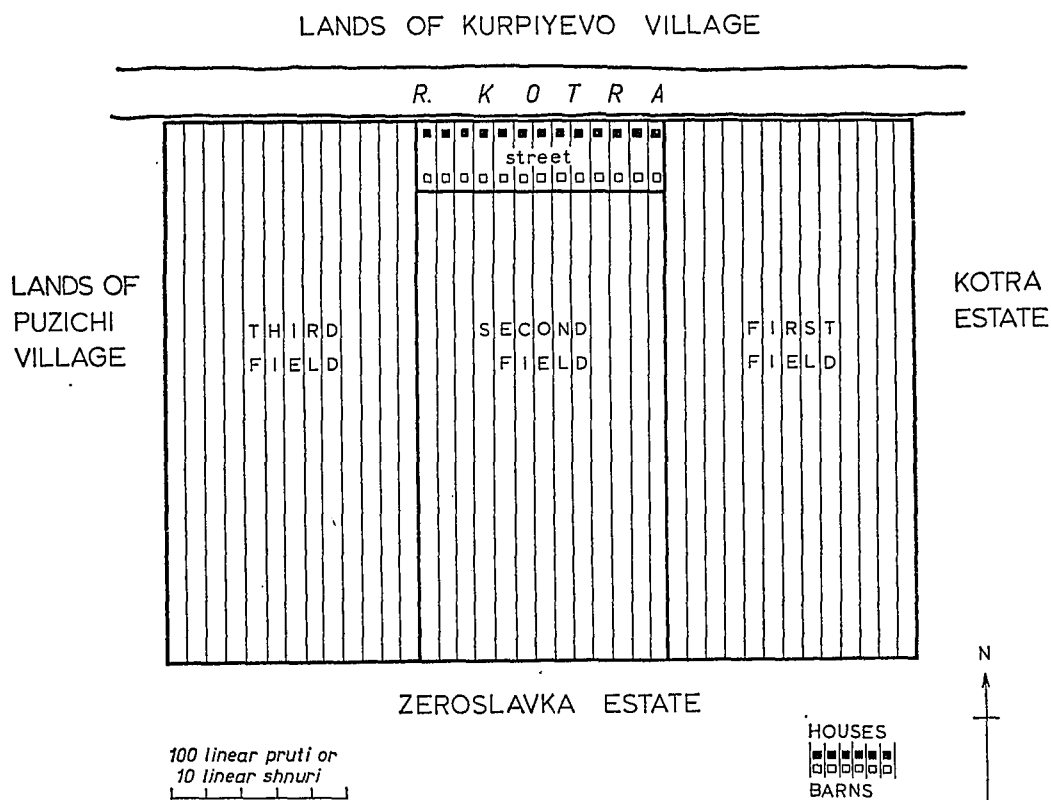


FIG. I

STANDARD PATTERN OF THE VILLAGE AND ITS FIELDS—PLAYSKOYE VILLAGE OF GRODNO DISTRICT

In most cases the overseers achieved exactly this pattern. Altogether the surviving cadastres covered 535 villages; 28 of these lack a full description, usually through damage to the manuscripts, and a further 71 were not reorganized on the *voloka* system. Of the remaining 436 villages, no fewer than 292 (67 per cent) conformed precisely to the standard blueprint. The only variations between the villages were in the number of holdings and in the length-width ratios and areas of the strips. Most other villages displayed only minor variations from the desired layout. Fourteen had the strips of one field at right angles to those of the other two, instead of being parallel. In a few cases the new settlement could not be placed at the end of middle field strips and was put at the end of one of the other fields, or even of two fields; this was usually for better access to water supply. Another 18 villages operated a 'twin' form of the usual pattern, with six fields arranged and worked in two sets of three; such villages had their

houses in two facing lines across the street. Yet other villages had their fields laid out side by side, but they were not rectangular, as the fences had to be accommodated to physical impediments, such as a river or swamp. These fields were "measured in *morgi*," that is to say the strip parcels were all of different lengths and widths (FIG. II). Sometimes all three fields were "measured in

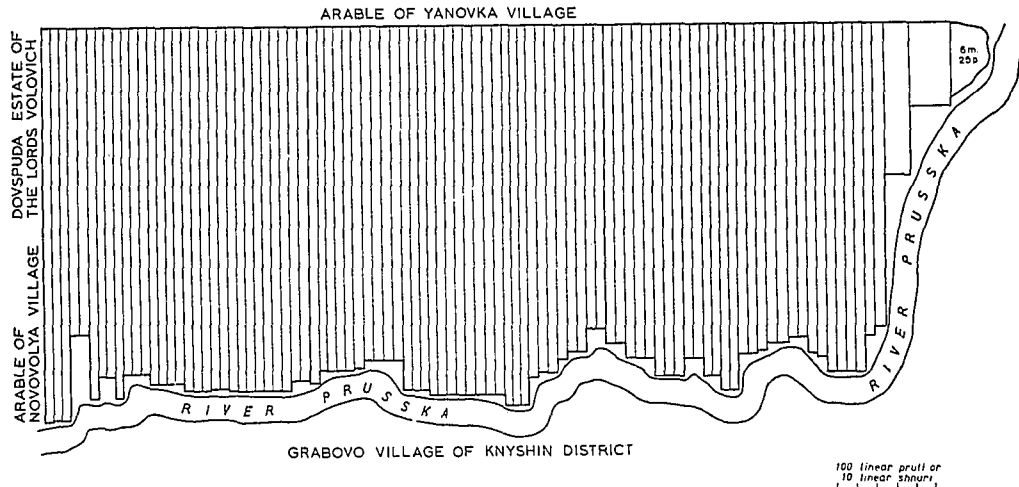


FIG. II

FIELDS "MEASURED IN *morgi*"—PRUSSKA VILLAGE OF GRODNO DISTRICT

morgi," at others only one or two fields; sometimes only a few strips of one field were affected, due to some boundary irregularity.

In villages where the three fields could not be established side by side, a "2 × 1" layout was adopted, with two fields side by side and the third at the ends of the first two (FIG. III). Strips in the third field might be parallel to, or more rarely at right angles to, those of the other fields. This pattern occurred in 47 villages (10.8 per cent). Only a tiny minority of villages were not laid out on either of these two basic patterns. Almost always the reason was a physical difficulty of the terrain. In a dozen villages one field had to be detached from its fellows across a river; just occasionally the presence of swamp enforced a wholly irregular field layout. Swamps were extremely extensive in the area of the Grand Duchy, particularly in the south in the basin of the River Pripyat. There they covered many hundreds of square miles and the only dry sites for settlements and fields were tiny 'islets' of sand. Such hostile conditions completely frustrated the overseers; in these great swamps lay the 71 unreorganized villages, with their arable scattered about as of old in dozens of minute plots, perched on higher 'islets' of dry ground. In these villages the *dvorishche* remained as the unit of land-holding and the pre-reform scale of tax assessment

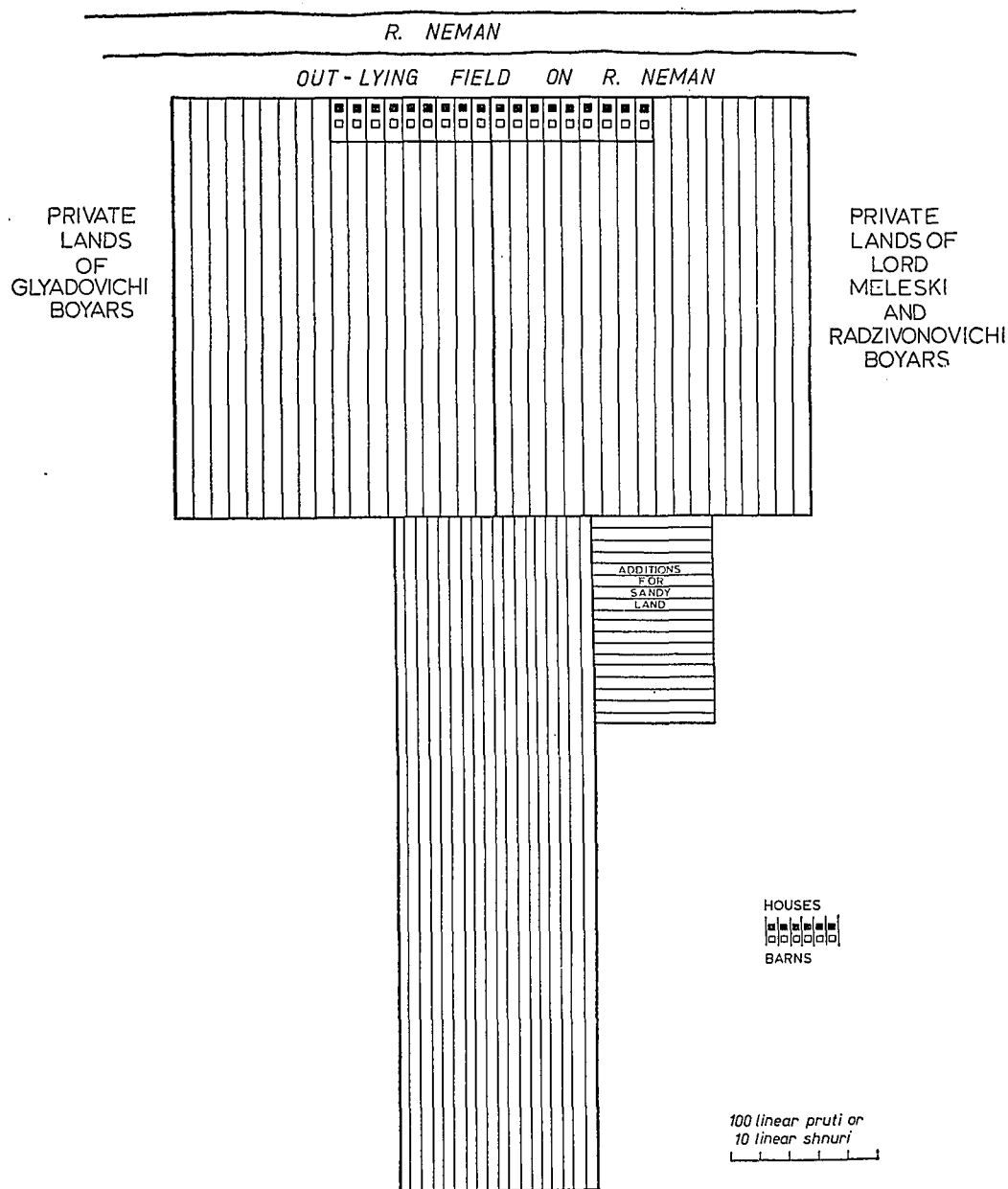


FIG. III

FIELDS ARRANGED ON A "2×1" PATTERN—KUZMICH VILLAGE OF GRODNO DISTRICT

was continued. Needless to say, in such conditions no attempt was made to establish demesne.

Although the *Voloka* Decree prescribed the size of one holding at 33 *morgi*, eleven in each field, the discretionary additions for poor quality land could be

very substantial. At Kamenoye village in Kobrin District there were great tracts of swamp within the fields; each strip was therefore enlarged to nearly three times the norm.¹ Where quality varied within a field, the individual strips were compensated with varying amounts of additional land. The tax obligations remained the same, regardless of these additions; it was clearly an attempt to achieve fairness between one holding and another.

The number of persons recorded as tenants of a particular holding varied. Frequently only one holder was named, but holding by a group of persons was also common. Occasionally six or more named holders were recorded, but this was rare; more usually two or three persons worked a holding jointly. Presumably each named person represented a family unit. Often only one man was named as holder, but he was noted as working his holding "with his sons" or "with his brothers" or yet again, "with his helpers (*potuzhniki*)."² The distinction between unnamed 'helpers' and named holders is not clear. Holding in severalty or otherwise varied markedly between districts. In Grodno District only 7 per cent of tenements were in the name of a single person; in Kobrin District the proportion rose to 30 per cent.

As well as the standard *voloka* holdings and the additional lands in compensation, many villages had 'outlying fields (*zastenki*).'³ These lay beyond the main field fences and represented either plots too distant to be incorporated into the new three fields, or areas newly cleared and cultivated after the reform. In intensively settled regions, such as central Grodno District, one set of main fields usually marched with its neighbours and there was little land in between where outlying fields could be established. In more heavily forested parts most villages had a number of such parcels, scattered deep in the forests and swamps. Dovechorovich village of Pinsk District had no less than 82 outlying fields in addition to its main fields.² These plots were generally small, not over a few acres in extent, and were cultivated by those peasants who wished to do so, in return for a cash payment over and above the normal taxes on the *voloka*. The tax was assessed on the area and quality of arable in the outlying field. In the post-reform period, some villages were very active in carving such new fields out of the forest. Kobrin District was inventoried in 1597, some thirty years after its cadastre was compiled; during that period a majority of the villages had increased their acreages of outlying fields, in one case by twenty times.³

The uniformity with which the three-field system was introduced into Lithuania was remarkable, as was the wholesale nature of the reform. Arable and villages alike were transformed, in what must have been an upheaval of considerable scale. Indeed this uniformity has imprinted itself on the present-

¹ K, p. 36.

² P, pt I, pp. 356-76.

³ *Akty izdavayemyye Vilenskoy arkheograficheskoy komissiyey dlya razbora drevnikh aktov* (subsequently referred to as AVK), Vil'na, xiv, 1888, p. 590.

day landscape, in the regular 'street' village pattern. In some parts, which are now in Poland, the sixteenth-century field patterns survive almost unmodified. No less remarkable was the speed with which the reform was accomplished. By 1569, twelve years after the *Voloka* Decree, the work was apparently complete in the three principal provinces of Lithuania.¹ In the conquered Russian provinces to the east, the system was gradually brought in during the late sixteenth and early seventeenth centuries; there, however, the field patterns were far less regular.

The decree applied only to Crown estates, but the landowners of the nobility and clergy were involved willy-nilly in the exchange of land. Often they too ended with consolidated estates and "began, following the government's example, to introduce the *voloka* economy on their lands."² Inventories of private estates from the late sixteenth century show that the *voloka* system was widely practised. The Rusota estate of Yuri Volovich was inventoried in 1556, before the new system came in;³ by 1581, when a new inventory was taken, the estate had been divided into *voloki*.⁴ The Ponevezh estate of Prince Oginskiy was organized on the new system by 1563,⁵ and the Telesnitsa estate of Pavl Kokhanovskiy by 1576, when he sold it to Lavrin Voyna.⁶

On the reorganized fields of manor and village alike, a three-year crop rotation was introduced. The demesne fields were usually referred to as "three-year fields"—"The arable of this manorial farm is established for three years, 12 *voloki*, that is for each year 4 *voloki*."⁷ The first year the field was sown to winter grain; this was always rye, the principal crop in Lithuania, both before and after the reform. The spring grains of the second year were more varied; oats were the most important, but occasionally barley was sown in fair quantity. Wheat, spring rye, buckwheat, and peas were sown in small amounts, if at all. By a decree of 1529, all manors were required to sow an unspecified area to flax,⁸ but the quantities were very small and probably confined to the 'spring gardens'. Sometimes there were small acreages of hemp.⁹ The relative importance of the various crops on a number of manors, for which inventories have survived, is shown in TABLE II. The range of crops grown on the peasant holdings was smaller. Winter rye and spring oats were cultivated everywhere and were required as dues to the Crown. Occasionally very small amounts of

¹ Picheta, *op. cit.*, pp. 226-42.

² M. V. Dovnar-Zapol'skiy and D. Z. Shendrik, 'Istoricheskiye sud'by Verkhnego Podneprov'ya i Belorussii i kul'turnyye ikh uspekhi.' In V. P. Semenov (ed.), *Rossiya: polnoye geograficheskoye opisaniye nashego otechestva*, ix, *Verkhneye Podneprov'ye i Belorussiya*, St Petersburg, 1905, p. 85.

³ AVK, xiv, pp. 20-3.

⁴ *Ibid.*, pp. 227-31.

⁵ *Ibid.*, pp. 77-9.

⁶ *Ibid.*, pp. 185-9.

⁷ P, pt 1, p. 112.

⁸ *Akty otnosyashchiyesya k istorii zapadnoy Rossii, sobrannyye i izdannyye Arkheograficheskoyu komissiyeyu*, St Petersburg, II, 1848, p. 196.

⁹ *Arkheograficheskii sbornik dokumentov otnosyashchikhsya k istorii Severo-Zapadnoy Rusi*, Vil'na, IV, 1867, p. 231.

TABLE II
CROPS SOWN ON CROWN MANORS
(Amounts in *bochki*)

Manor	Date of Inventory	Winter Rye	Spring crops					
			Rye	Wheat	Barley	Oats	Buckwheat	Peas
Vornenskiy	1547	70	6½	6	5½	16	—	—
Oshmentsi	1547	30	—	4	5	10	—	½
Kozinets	1547	39½	1½	3	3	11½	—	1
Vidinishki	1547	38	1	3	4	12½	6	—
Dovgyalishki	1553	120	4	5	4½	75	20	—
Seniskiy	1553	65	—	2	4	64	19	—
Teykini	1553	52	2½	—	5	29	9	—
Bryansk	1558	288	3	6	28½	291	38	—
Sarazh	1558	89	—	4	7	89	6	2
Ponevezh	1563	56	—	7	6	40	10	2
Cherevachichi	1596	224½	4	6	15	65	15	6
Vezhetskiy	1596	108	7	2½	10½	49	12	3
Belousovskiy	1596	32	8	1½	8	22	6½	1

buckwheat were sown.¹ The peasants of Myadel Bailiwick had, before the reform, given flax to the bailiff,² but there is no evidence of flax being cultivated on peasant holdings after the reform.

The third year of the rotation was fallow, used on the village lands for common pasture. "On those fields which they do not plough, grass grows and a sufficiency of stock may be kept."³ The documents provide little evidence of the grazing of common pasture, but the practice has continued to the present time in those villages of Białystok province of Poland where the three-field system has persisted unmodified since the sixteenth century.⁴

The yields naturally varied greatly from place to place and from year to year. The 1570's experienced disastrous harvests—"In the time of King August there was so great a famine that people died of hunger and especially in Lithuania and Poles'ye. . . That famine lasted six years in succession and ended in 1576."⁵ Some inventories recorded harvests, giving details of the threshing; where threshing had not yet taken place, the inspectors made an estimate of yield from a test threshing. The numbers of returns (TABLE III) are too few to provide more than an indication, but suggest that yields were much the same as elsewhere in medieval Europe.

¹ AVK, xiv, pp. 28-9.

² DMA, i, p. 84.

³ *Ibid.*, p. III.

⁴ W. Biegajło, 'The Ways of Transition from the Three-field system to modern farming as currently observed in Poland's underdeveloped region of Białystok', *Geographia Polonica*, II, 1964, p. 53.

⁵ I. Ye. Buchinskiy, *O klimate proshlogo russkoy ravniny*, Leningrad, 1957, p. 87.

TABLE III

YIELDS

<i>Crop</i>	<i>Manor</i>	<i>Bochki sown</i>	<i>Bochki yielded</i>	<i>Ratio</i>
Winter rye	Cherevachichi	224½	604	1:2·7
	Vezhetskiy	108	468	1:4·3
	Belousovskiy	32	82½	1:2·6
	Chakhchi	28	54½	1:1·9
	Bryansk	228	1215	1:5·2
	Sarazh	89	303	1:3·4
Oats	Cherevachichi	65	133	1:2·0
	Vezhetskiy	49	125	1:2·6
	Belousovskiy	22	38½	1:1·75
	Chakhchi	8	22	1:2·75
	Bryansk	291	1154½	1:4·0
	Sarazh	89	403	1:4·5
Barley	Cherevachichi	15	75	1:5·0
	Vezhetskiy	10½	39	1:3·7
	Belousovskiy	8	13½	1:1·7
	Chakhchi	2	7½	1:3·75
	Bryansk	28½	230½	1:8·1
	Sarazh	7	40	1:5·7
Spring rye	Cherevachichi	4	15½	1:3·9
	Vezhetskiy	7	8¼	1:1·2
	Belousovskiy	8	4	1:0·5
	Chakhchi	2	3½	1:1·75
	Bryansk	3	6	1:2·0
Wheat	Cherevachichi	6	2¼	1:0·4
	Vezhetskiy	2½	3½	1:1·3
	Belousovskiy	1½	1½	1:1·0
	Bryansk	6	36	1:6·0
	Sarazh	4	21	1:5·25
Buckwheat	Cherevachichi	15	48	1:3·2
	Vezhetskiy	12	37	1:3·1
	Belousovskiy	6½	13½	1:2·1
	Bryansk	38	221	1:5·8
	Sarazh	6	3	1:0·5
Peas	Cherevachichi	6	18	1:3·0
	Vezhetskiy	3	11	1:3·7
	Belousovskiy	1	3	1:3·0
	Chakhchi	4	6	1:1·5
	Bryansk	7	68	1:9·7
	Sarazh	2	10	1:5·0

Bryansk and Sarazh—harvest of 1558; others 1596.

Livestock numbers on the Lithuanian manors were not very great, compared for instance with those of medieval England (TABLE IV).

TABLE IV
NUMBERS OF LIVESTOCK

<i>Manor</i>	<i>Date</i>	<i>Horses*</i>	<i>Cattle*</i>	<i>Sheep</i>	<i>Pigs</i>	<i>Goats</i>	<i>Geese</i>	<i>Hens</i>
Radoshkovichi	1549	1	14	16	14	5	9	22
Kostyushkovichi	1549	—	8	3	—	—	7	30
Kamenetskiy	1549	17	9	17	6	3	5	19
Dovgyalishki	1553	24	20	—	13	—	19	—
Seniskiy	1553	—	16	34	30	—	9	—
Teykini	1553	—	16	11	13	7	20	—
Rusota	1556	30	55	39	20	—	36	80
	1581	—	43	24	19	7	10	9
Ponevezh	1563	4	3	—	—	—	35	—
Ros	1569	—	51	13	21	8	34	31
Telesnitsa	1576	5	45	42	24	5	11	—
Cherevachichi	1597	29	54	—	14	—	23	—
Vezhetskiy	1597	—	100	—	26	—	29	12
Belousovskiy	1597	—	58	—	—	—	—	—
Kobrin Castle	1597	—	51	—	—	—	—	—

* including draught animals.

The cadastres did not record stock, but the inventories usually did. In particular there were very few draught horses and oxen for working the demesne. However the peasants who owed labour on the demesne had also to supply animals to pull the ploughs. The cadastres for Grodno and Pinsk Districts enumerated the draught livestock on each holding; numbers varied very greatly, averaging about five per tenement, with oxen outnumbering horses by seven to four. Altogether in the two districts 19,181 animals were recorded, of which 12,229 were oxen, on 3,781 holdings. These figures included holdings on money payment and on service; the 1,800 holdings on labour had over 9,000 draught animals to work nearly 13,000 acres of demesne, in addition of course to the tenements themselves. Ploughs were drawn by teams of two oxen; an inventory of Rechitsa, taken in 1565, enumerated 120 oxen and summarized the total as "60 ploughs of oxen."¹

Other livestock in peasant hands was very seldom recorded; a notable exception was the 1599 inventory of Oreshkovo.² In that village the 28 households held between them 21 horses, 15 mares, 18 foals, 34 plough oxen, 44 cows, 67 young cattle, 72 sheep, 34 goats, and 47 pigs. If this village was at all typical, it

¹ DMA, I, p. 158.

² AVK, XIV, pp. 643-4.

indicated fairly substantial numbers of animals on the peasant holdings. There was, as might be expected, considerable variation from household to household, from the village elder with 24 animals to a poor peasant, who had three goats "and has nothing more."

Both manor and village required a fodder supply for the livestock. The amounts of hayland attached to the manors varied considerably, from about 40 to 700 acres. There was little correlation between the extent of demesne and the quantity of hayland. Some manors with no demesne at all had substantial areas of hayland and it seems probable that these were primarily stock-farms. Thus Stytychevo manorial farm near Pinsk had arable only for the bailiff's sustenance and no demesne, but it was recorded as established "for the keeping of stock in better pastures."¹ The amount of hayland in the use of the peasants similarly bore no relationship to the number of holdings; indeed only a minority of villages had any recorded hayland. However, hayland was assessed for taxation, separately from the arable holdings. The great majority of Crown peasants could meet their hay needs free of charge, by exercising their right of entry to the Crown forests to cut hay and pasture animals. Also the extensive grass marshes, which occurred everywhere, were cut for fodder. As a result, hayland, for which payment had to be made, was usually to be found only in those villages located in densely settled areas, where there was no closely adjacent forest. Similarly, needs for pasture could nearly always be met by the wide expanses of swamp, forest, and scrub, on which no taxation was imposed. Whereas in medieval England meadow was more valuable than arable,² in Lithuania the converse held good; in the compulsory exchange of land, hayland was rated at half the value of arable on soil of comparable quality.

The forests indeed played a major part in the economy of manor and village. Timber exploitation in all forests was a Crown monopoly and hunting was the privilege of King and nobility, but the manors and their peasants enjoying the right of entry to the forest had a number of benefits. In addition to rights of hay-cutting and pasture, dead timber could be collected for fuel, building, fencing, and "domestic needs, but not for sale."³ Live timber was very strictly protected. Women and children were allowed to gather mushrooms and "all forest fruits."⁴ Other valuable perquisites of the right of entry were fishing and the keeping of bee-trees, that is trees with a natural or artificial hollow for bees' nests. The Oreshkovo peasants had between them 950 pine and 94 oak bee-trees, with 99 swarms.⁵ Half the honey collected had to go to the Crown. These rights were of long standing and were confirmed to the inhabitants of Crown estates by the *Voloka* Decree. Sometimes the cadastres specifically recorded

¹ P, pt II, p. 178.

² H. C. Darby (ed.), *An Historical Geography of England before 1800*, Cambridge, 1948, p. 198.

³ K, p. 101.

⁴ RIB, xxx, col. 576.

⁵ AVK, xiv, pp. 644-5.

the continuation of the rights: "And all these inhabitants of the village Gorodishche may enjoy now as they did formerly their rights of entry to the forest, haycutting, fishing, bee-tree, and other rights."¹

The system of three-field agriculture introduced by Sigismund August had obviously many features in common with the system found in other countries. Of the four principal open-field characteristics defined by the Orwins, three were found in Lithuania—large arable fields, fallow every third year, and common grazing in the arable fields.² The fourth feature, holdings scattered in small strips through the fields, was not present, since each holding had only one parcel in each field, even though that parcel was undoubtedly strip-shaped. It would be unrealistic to maintain that the Lithuanian agrarian practice was not therefore open-field agriculture, and one might reasonably argue that division into parcels rather than necessarily into strip bundles was a distinctive characteristic. At the same time the Lithuanian example had a number of important differences from, say, the English midland systems. Above all, its authoritarian origin provides many points of contrast. Its introduction was swift and the new regime was quite remarkably uniform over the country. The pattern of fields and settlements was very regular, the size of holdings and the work norms and dues imposed on them were standardized.

Authoritarianism also characterized the working of the three-field system. If medieval England saw a gradual, but fairly steady decrease in the feudal dependence of the peasant, medieval Lithuania saw the yoke of serfdom firmly fixed on his shoulders. Up to the *Voloka* reform the peasants had rights of land ownership and could buy and sell land. For example, a peasant called Andrey Vakolich was recorded as buying 10 *pruti*³ of land from another peasant for 40 sheaves of rye.⁴ Now, under the new dispensation, land ownership was vested in the Crown and if a peasant left his *voloka* holding, the bailiff could allot it to another. In the words of the historian Yurginis, "The agrarian reform of Sigismund August . . . finally deprived the peasants of rights to landed property, wiped out survivals of allodial rights, and turned the peasant lands into fiefs."⁵ In the eyes of the Crown, "the peasant and all his property is Ours."⁶ The process of enserfment was completed in the Third Lithuanian Statute of 1588, which revoked the peasant's right of transfer from one person's estate to another's, and provided for the return of runaways.⁷

¹ P, pt I, p. 168.

² C. S. and C. S. Orwin, *The Open Fields*, 3rd ed., Oxford, 1967, pp. 64-5.

³ An areal *prut* was a thirtieth part of a *morg.*, i.e. about 0.06 acres.

⁴ P, pt II, p. 572.

⁵ Yu. M. Yurginis, 'Krest'yanskoye zemlevladieniye v Litve do sere diny XVI v.', *Yezhegodnik po agrarnoy istorii Vostochnoy Yevropy* 1963 g., Vil'nyus, 1964, p. 156.

⁶ Lyubavskiy, *op. cit.*, p. 232.

⁷ P. I. Lyashchenko, *History of the National Economy of Russia to the 1917 Revolution*, New York, 1949, p. 260.

The result was a stable system which persisted, first under Poland-Lithuania and later under the Russian Empire, until the Emancipation of the Serfs in 1861. The period following the reform did indeed see the presentation of a large number of 'petitions' from the peasants to the Crown, but the burden of their complaints was the incidence of taxation. Most sought relief on the grounds of war damage or other calamity, or because the peasants thought their land quality had been overrated in the reform. The only protest the peasant could make against his altered status was to "vote with his feet." Four villages of Grodno District, lying right on the Prussian border, were granted specially reduced taxes because their inhabitants, rather than work the holdings, "took flight across the border of Prussia."¹

The remarkable stability of the regime initiated in 1557 is demonstrated in a number of villages of present-day Białystok province of Poland. In these villages not only has the field layout remained unaltered, but the fields are still cultivated in common on the same three-year rotation. Only the strips within the fields have undergone subdivision. If the *voloka* holding was 60 acres, the average size of a holding in Białystok province today is 24 acres. Moreover the normal holding is now a bundle of parcels in each field, as opposed to the one large strip parcel of the reform period.²

If the rigid and close control, the "bureaucratism of the reform,"³ was in contrast to the normal English situation, the documents of Sigismund August throw not unimportant light on the establishment and operation of the three-field system in general. The Lithuanian experience had, not surprisingly, its closest parallels in eastern Europe and in particular in Poland, whence it was derived. Grossman has described a very similar situation in the Leżajsk District of south-east Poland in the sixteenth and seventeenth centuries.⁴ Equally there are similarities with the open-field agriculture of Germany and points in common with the 'solskifte' system of Sweden.⁵ Eastwards, the sixteenth century saw the three-field system becoming widespread in Russia proper.⁶ In essence however the agrarian regime set up by Sigismund August existed in one form or another and at one time or other in most countries of Europe. But as Professor de Planhol has commented, "bien des détails et des processus restent

¹ G, pt 1, p. 423.

² W. Biegajło, 'Borysówka, Grodzisko and Hruskie villages in the north-eastern undeveloped corner of Poland,' *Geographia Polonica*, vol. v, Warsaw, 1965, pp. 29-60.

³ Picheta, *op. cit.*, p. 412.

⁴ Yu. M. Grossman, 'Polozheniye krest'yan Lezhayskogo starostva (vtoraya polovina XVI—nachala XVII v.)', *Materialy po istorii sel'skogo khozyaystva i krest'yanstva SSSR*, v, Moscow, 1962, pp. 21-60.

⁵ D. Hannerberg, 'Solskifte and older methods of partitioning arable land in Central Sweden during the Middle Ages', *Géographie et Histoire Agraires*, Nancy, 1959, pp. 245-59.

⁶ See, for instance, M. N. Tikhomirov, *Rossiya v XVI stoletii*, Moscow, 1962; G. E. Kochin, *Sel'skoye Khozyaystvo na Rusi kontsa XIII—nachala XVIv.*, Moscow-Leningrad, 1965.

obscurs.”¹ Dr Thirsk has pointed out that “discussion has now moved on to the most basic question of all, namely the origin of the common-field system.”² The relatively late date of the Lithuanian reorganization, if reducing its value in this context, has meant however the survival of more documentary evidence for the commencement of the three-field system than is usual in most countries. The detailed information thus available may serve to illuminate the system in such countries, among which we may number Great Britain.

¹ X. de Planhol, ‘La genèse des paysages agraires Européens au symposium de Vadstena’, *Revue Géographique de l’Est*, 1, 1961, p. 236.

² In the Preface to the 3rd edn of C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1967, p. xiii.

Notes and Comments

THE PRESIDENT’S HONORARY DEGREE

The Society wishes to congratulate warmly its President, G. E. Fussell, on the conferment of the degree of D.Litt. upon him at Exeter University in July this year.

DEATH OF T. W. FLETCHER

The Society deeply regrets the death earlier this year of a former member of its Executive Committee, Mr T. W. Fletcher. He was an enthusiastic supporter of the Society, a very gay person, and the author of some important articles on the Great Depression in agriculture, including one on ‘Lancashire Livestock Farming during the Great Depression’ which was published in this REVIEW in volume IX, part 1, 1961.

1970 WINTER CONFERENCE

The Executive Committee has decided to revive on a trial basis the Society’s Winter Conference which was discontinued three years ago for want of support. The Conference will be held on Saturday, 28 November 1970 at the Department of Geography, University College London, and be centred around the theme, ‘Agriculture and the history of the environment’, demonstrating how changes in landscape, farming systems, and methods of pest control have affected wild life populations. Details of the Conference and an application form have already been circulated in the

supplement to this REVIEW (Professor Finberg’s Festschrift), which was issued in September. Further copies of the programme may be had from Mr E. J. T. Collins, Museum of English Rural Life, Reading.

THE 1971 ANNUAL CONFERENCE

The 1971 Conference will be held at the University of Leeds from 5 to 7 April. Further details and application forms will be circulated in the next issue (vol. 19, pt. 1) of this REVIEW.

THE 1970 ANNUAL CONFERENCE

The Annual Conference was held at Hereford College of Education from Monday, 6 April to Wednesday, 8 April 1970. Papers were presented by Mr C. C. Dyer (Demesne leasing on the estates of the bishopric of Worcester in the later Middle Ages), Dr Ross Wordie (English farm sizes in the eighteenth and nineteenth centuries), Miss Meryl Jancey (Archival sources for agricultural history), and Dr George Ramsay (The Merchants of the Staple and the English wool export trade). On the afternoon of 7 April Miss Jancey led an interesting excursion to the Leominster area, visiting the woodlands at Dinmore Hill, the Home Farm of the Hampton Court (Arkwright) Estate, and the field systems and watermeadows of the Lugg Valley.

(Continued on page 160)