

Fig. II. Reduced from originals on various scales (VAO. U 31/P 3; U 36/P 2; U 120/P 42; U 180/P 1; U 275/P 1; 0/2/P 1). The formal representation of woodland blocks has been standardised; the trees along the field margins have been exactly copied. 1-3 on the Horsmonden map are marl pits; ① on the Sutton Valence map is a divided field called in the account 'five pieces of land'.

**THE WEALDEN LANDSCAPE IN THE EARLY SEVENTEENTH CENTURY
AND ITS ANTECEDENTS**

**Thesis submitted for the degree of Doctor of Philosophy in
the University of London**

by

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1960

ABSTRACT

This study attempts to describe the historical geography of a confined region, the Weald, before 1650 on the basis of factual research; it is also a methodological experiment, since the results are organized in a consistently retrospective sequence. After defining the region and surveying its regional geography at the beginning of the seventeenth century, the antecedents and origins of various elements in the landscape—woodlands, parks, settlement and field patterns, industry and towns — are sought by retrospective enquiry. At two stages in this sequence the regional geography at a particular period (the early fourteenth century, 1086) is outlined, so that the interconnections between the different elements in the region should not be forgotten. The earliest source material used for original investigation is Angle-Saxon charters but, to complete the methodological structure, the inquiry is pursued (by summarising the research of others) to the first agricultural settlement of the area, ending with a description of the natural landscape which these first colonists saw.

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Acknowledgements

I am glad to recall help which I have received from many quarters. My supervisor, Professor H.C. Darby, tolerated a long initial period of uncertain effort, suggested several of the main themes and devoted many hours to criticising both written drafts and maps; his constructive criticisms have helped to clarify both inquiry and presentation and he is not at all responsible for any prolixity and diffuseness which remain. I have enjoyed help from many quarters in the Department of Geography, University College, London. H.C. Prince, M.A., commented on the drafts of several sections; K.J. Wass, J. Bryant and R. Geary drew some maps entirely and the lettering of many others; I have discussed with R.E. Glasscock, B.A., fellow research student, a multitude of medieval problems common to both our researches. During manuscript work, I have been helped by officials of the Public Record Office, especially E.K. Timings, M.A.; the officials of the Department of MSS, British Museum, especially P.D.A. Harvey, B.A., by Dr. F. Hull and Miss E. Melling at the Kent Archives Office in Maidstone and K.W. Dickins, honorary curator of deeds to the Sussex Archaeological Society at Lewes; the librarians of the University Library Cambridge and of Corpus Christi, St. John's and Trinity Colleges. Dr. Gordon Ward F.S.A., I.D. Margary F.S.A., and L.F. Salzman, F.S.A., read and commented on parts of the first draft; Dr. M. Clough consented to my quoting details from her Cambridge Ph.D. of 1956 on the Pelham estates before 1500 and F.R.H. Du Boulay of the Department of History, Bedford College, London supplied several valuable details from his own work in the Canterbury Archives. Assistance in interpreting the sources has been willingly given by Professor M.W. Beresford, M.A., of the University

of Leeds; T.A.M. Bishop. M.A., Reader in Paleography in the University of Cambridge; L.R.A. Grove. B.A., F.S.A., Curator of the Maidstone Museum. Information on specific subjects has been supplied by B.J.S. Moore.B.A, and J. Brandon.B.A., of the Institute of Historical Research; B.S. Furneau M.Sc, F.G.S, soil surveyor and consultant of Tunbridge Wells; R.A. Donkin. B.A. Ph.D, of the Department of Geography, University of Birmingham; C.T. Smith.M.A., of the Department of Geography, University of Cambridge; R.A. Pelham. M.A. Ph.D, of the Department of Geography, University of Southampton; E.W. Holden. Esq., of Hove; G.C. Dunning. F.S.A., of the Inspectorate of Ancient Monuments and Dr. E.M. Yates M.Sc.Ph.D, of the Department of Geography, King's College London. For knowledge of comparative European developments, I owe acknowledgement both to Dr. H. Jäger of the Institut für historische Landesforschung in Göttingen and Professor R. Dion of the Collège de France in Paris.

Prolegomena on method

A study in historical geography which commences with the recent and proceeds steadily into the more ancient will suffer no dearth of objections. Antiquarianism; is not geography a study of the present? Are not former conditions relevant chiefly because they deepen our understanding of the present scene? If cause follows experience in our daily experience, it should surely do so in works of explanatory scholarship.¹

Yet a living discipline does not flourish in methodological straight-jackets. Historical geography has been described, by one of its most eminent practitioners, as 'géographie humaine restrospective'² and a retrospective view has several important general advantages. It safeguards the account from that most simple and specious error in historical reasoning - post hoc, propter hoc - the more dangerous because it is generally unintentional. One of the strongest advantages of a retrospective approach is that it does not abuse the facts. Researches in historical geography, especially into centuries long past,

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1. It is interesting that a philosophical forum on whether causes always precede effects provoked no agreement and had to adopt the solution of calling the factor which occurred first the cause, the second the result - Analysis 1955-6. 49-58, 104-110; 1956 - 7. 5-9, 54-63, 81-6.
 2. It must be said that R. Dion (La géographie humaine restrospective. Cahiers Internationaux de Sociologie. 1949.3-27) nowhere advocates writing from the more recent to the more ancient and described the method adopted by P. Deffontaines (see later) as not conducive to 'explication' (May 1958)

can never present interpretations as final and a search for antecedents has value ~~evidence~~ because it is but a search and it ends when the data does.

A sequential account from a past date to the present is both more attractive and more dangerous; narrative is an ideal form for describing geographical changes but its power lies in its continuity. If data thins out - as it frequently does between 500 and 1500 - the narrative must become disjointed unless fact is replaced by admixture of the 'historical imagination'. If historical geography is to 'tell a story', in Carl Sauer's sense, and the story is to flow, then scholarship must often take a back seat.¹ A continuous sequence of data is most helpful but a retrospective study does not depend on its existence; moreover, the method of presentation lays bare the facts disclosed by research, with all their deficiencies, as well as the more tenuous conclusions derived therefrom. Sir Mortimer Wheeler wrote in 1957 - 'The archaeologist, like the historian, generally prefers to jump back to the beginning - often a very nebulous beginning - and to struggle forwards to later things in the actual footsteps of time. In doing so, he is of course really going into reverse with much of his evidence. Particularly if he be a digger, he begins in actuality at the top with the latest of his materials, and gradually digs down towards the earlier stuff. And that in fact is how most of us really think'.²

1. Witnessed perhaps in the considerable body of criticism which Sauer's studies of early man in America have aroused - J. Borchert. *The climate of the Central American Grassland*. A.A.A.G. 1950.1-39; L.C. Eiseley. Am.Anthropologist. 1946, and *Man the Fire-Maker*. Sci.America 1954. 32-7; also F.E. Zeuner. The history of domesticated animals, forthcoming. 2. M. Wheeler. *Roman archaeology in Wales*. 1957.9-10

Several scholars have adopted a retrospective framework in their writings. Joseph Anderson wrote thus at the commencement of a survey of Scottish prehistory from the Early Christian period backward - 'what I may call the realistic manner ...As the investigation on which we enter is actually analagous to a journey into unknown regions, the safest way of estimating our positions as we advance will always be by reckoning back to the starting point'¹. This was in 1881; two years later Seebohm traced the openfield system of cultivation from a field map of Hitchin, drawn 1816, back to the Roman occupation of Britain.² In France Dion's study of field systems in 1934³ and the more detailed work of Déléage on settlement and field patterns in Bourgogne both⁴ adopted a regressive treatment - Dion from well-known eighteenth century conditions to classical foundations, Déléage from medieval differences to prehistoric origin. Several later essays by Müller-Wille have exploited the possibilities of a retrospective map sequence in⁵ establishing the patterns of colonisation and land-use in the Dark Ages.

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1. J. Anderson. Scotland in Early Christian times. 1881.22 (followed by Scotland in Pagan times, i. Iron Age. 1883, and ii. Bronze and Stone Ages. 1886.
 2. F. Seebohm. The English Village Community. 1883. Seebohm accounted himself an historian; a geologist has advocated and used retrospective presentation on the grounds that it interests the lay reader - G.M. Davies. Geology of London and south-east England. 1939. iii.
 3. R. Dion. Essai sur la formation du paysage rural français. 1934.
 4. A. Déléage. La vie rurale en Bourgogne jusqu'au début du XIe siècle. 1941.
 5. W. Müller-Wille. Langstreifenflur und Drubbel. Deutsch, Archiv für Landes- und Volksforschung. 1944. 9-44; Agrarbäuerliche Landschaftstypen in Nordwestdeutschland. Deutsche Geographentag Essen. 1953. 179-86.

All these works have suffered one criticism of principle. There is an inevitable tendency, in retrogressive accounts, to assume that sixteenth century conditions resembled those of the seventeenth, unless available data specifically contradicts this; when writing narrative from past to present, some allowance for tradition and geographical inertia is permissible but such allowance has no basis in regressive studies because later events never effect those before. In practise this means that retrospective searches for original forms often overemphasise the antiquity of the subject under enquiry and neglect the extent and rapidity of change in later centuries; Dion himself has written since - 'bien des traits, la plupart peut-être, n'ont ni la haute antiquité ni la fixité qu'on leur avait tout d'abord pr¹etées'. All these four works concentrated part or all of their enquiries on field systems and in this context, while the criticism is just, a constructive alternative is missing; accurate understanding of field systems must be based on maps, which begin on large scales in the sixteenth century, and studies of earlier periods cannot proceed without this basis. Gray wrote in 1915 - 'this method of trying to ascertain certain conditions largely through the use of later evidence is not without danger and from its ill effects neither Seebohm's nor Meitzen's works are free', but he then continued - 'Yet there seems to be no other way of

1. Réflexions de méthode à propos de 'La Grande Limagne' de Max Derruau, Ann. de Geog.1951.27. For critics and a belated defence of Seebohm, H.P.R. Finberg, Roman and Saxon Withington.1955; H. Mortensen. Die mittelalterliche deutsche Kulturlandschaft und ihr Verhältnis zur Gegenwart. Viert.für Soz. und Wirtschaftsgeschichte. 1958. 34-5, points out the deficiencies, especially the morphologic bias, in Müller-Wille's Fluranalyse.

approaching clearly the subject in hand (i.e. English Field Systems), whilst it is often only by the aid of late survivals that the earlier phenomena can be interpreted at all¹.

Two studies have used a retrospective framework to trace the antecedents not merely of field systems but of the present geographical pattern as a whole. Deffontaines experimented with this approach in an urban study of Montauban in 1929 and used it on a broader canvas in his regional study of the Moyenne Garonne, published in 1932.

Unfortunately, the larger study only reproduced on a broader canvas, the deficiencies visible in the first. There was an irregular and incomplete coverage of sources, which rendered the account much more interrupted than was necessary, ^{and} this was exacerbated by the principle, accepted by Deffontaines, that retrospective enquiry should be limited to that data directly needed to explain present conditions² - some elements in the landscape must be traced back seven centuries, others only fifty years. Moreover Deffontaines frequently inserted narrative accounts of development within any period of one century; genuine retrospective writing was little and discontinuous.³

1. H.L. Gray, English Field Systems. 1915. 16: M. Bloch (Les caractères originaux... 1.2nd. ed. 1955. xii) cites Fustel de Coulanges denying the existence of openfield in the Dark Ages from the absence of mention in contemporary sources on North France, neglecting the archaeologic and field data.
2. P. Deffontaines. Les hommes et leur travaux dans les pays de la Moyenne Garonne. 1932. 29.
3. Criticisms were voiced on matters of principle by A. Dangeon. Ann. de Géog. 1933. 640-3; D. Faucher. Ann. du Midi. 1933. 321; H. Ormsby. GJ. 1933. 545-6; but I suspect they were primarily provoked by the internal inconsistencies of the work (cf. pl57-60, retrospective, 109-116 narrative). The 1929 study is Montauban, étude de géographie urbaine. Ann. de Géog. 1929. 460-9.

Deffontaines' work was not, to his mind, a study in historical geography; it thus stands contrasted to the shorter essay of Dörries¹ on part of the Alpenvorlande. In his account, Dörries first presented the natural landscape (Naturlandschaft), the basis onto which the following account of the contemporary Kulturlandschaft succeeded; then came an analysis of past differences and variations (Wandlungen), firstly modern, secondly medieval, finally prehistoric. (Dörries described them as Wandlungen advisedly; he objected rightly² (as did Breek shortly afterwards) to the unfortunate implications -post hoc, propter hoc, among others—of studies of development, Entwicklung.) The study was not completed by a dissertation on method, simply the statement that the desired end had been achieved — Dörries had traced the occupation of the area back to the Stone Age.

This study in historical geography was pursued to the earliest occupation of the area; this logical approach has not gone unquestioned. Deffontaines' limitation appears at first sight to be repeated in Dion's comment that a 'géographie humaine retrospective' must go back as far as is necessary³ to explain that variety of forms with which human labour has imprinted the soil³. The statement is clear, but its

1. H. Dörries, Zur Entwicklung der Kulturlandschaft im nordostschweizerischen Alpenvorlande. Mitt. Geog. Ges. Hamburg, 1928, 180-202.

2. J.O.M. Breek. The Santa Clara Valley, 1932, 10

3. R. Dion. Géographie historique, 183, in G. Chabot, R. Clozier and J. Beaujeu-Garnier (eds.) La géographie française au milieu du XI^e siècle, 1957; Dion elsewhere wrote that in Europe this meant going back to the retreat of last Ice Sheet, i.e. the first human settlement—La géographie humaine retrospective, *op.cit.*, 3-27.

boundaries in practise difficult to draw; is an explanation merely an account of the immediate precedent of a phenomenon, or does it seek the first embryonic appearance of something which bears a vague resemblance? Any distinction between original and immediate causes, between ultimate and proximate, is difficult and, since geographic changes are effected generally by groups of factors rather than single factors, incomplete. There is no need for an historical geography to be bounded by the limit of Deffontaine¹ since, as Juillard has pointed out, this restriction marks the distinction between a geographic study (as Les hommes et leur travaux...) and a study of historical geography sui generis. If in some areas lack of data forbids a retrospective study to reach back to first settlement, this reflects on the deficiency of the sources, not the validity of the principle.

Such are the practical problems of retrospective studies, as previous writings have revealed them, but a method is judged finally not on the weaknesses of practical writing, nor the problems of bounding the sphere of inquiry, but by general principle. The logic of retrospective enquiry and presentation - its practicality, its subservience to facts and scholarship - has never been expressed better than by Marc Blech; 'the natural progression of research is from the best (or least badly) understood to the most obscure. The most illustrious among us have occasionally made strange mistakes through having neglected to pursue a prudently retrogressive method whenever

1. E. Juillard. Aux frontières de l'histoire et de la géographie. Rév. Hist. 1956. 273.

and wherever it was indicated'.¹ Earlier he had commented 'la méthode inverse...bon gré mal gré, finit toujours par s'imposer, en quelque manière, à l'historien. N'est-il pas inévitable que, à l'ordinaire, les faits les plus reculés soient en même temps les plus obscurs? et comment échapper à la nécessité d'aller du mieux au moins bien connu?...L'historien ... sous peine de ne pouvoir épeler le grimoire du passé, il leur faut, le plus souvent, lire l'histoire à rebours'.²

1. The Historian's Craft, trans. P. Putnam, 1954. 45-6.

2. Les caractères originaux de l'histoire rurale française. 1931. (reprint 1955). xii.

THE PAYS

Andred...se wudu is estlang westlang hund twelftiges
mila lang oppe lengra þritiges mila brad.

Parker Chronicle (MS A of the Anglo-Saxon
Chronicle) sub 893.

The existence of a clearly defined, distinctive Wealden district was recognized by the topographers of the early seventeenth century - 'the Weald of Kent, which (after the common opinion of men of our time) is contained within very streight and narrowe limits, notwithstanding that in times past it was reputed of such exceeding bignesse, that it was thought to extend into Sussex, Surrey and Hamshire, and of such notable fame withall, that it left the name to that part of the Realme, through which it passed'.¹ In truth it did extend into Surrey and its largest portien lay in Sussex, not Kent; Camden described the Weald of Sussex as 'the hithermost and northern side of the country' in 1610.²

Recognition of the Weald as a pays did not originate with the revival of topographic observation and description under Elizabeth. In 1441 part of the deanery of Storrington, including Horsham, was 'in le Welde';³ in 1323 the manor of Sellinge owned woodland 'in le Waelde';⁴

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1. W. Lambarde, 1596 ed. 189. (The first edition was 1576; the MS, written 1570, is now KAO. U 47/48 and a copy of this first edition with corrections by Lambarde is Bodl. MS 4^o Rawl. 263)
 2. 1695 edition. 166. This is the edition by E. Gibson, printing the original in a new, reliable translation with additions from other authorities; on the various editions see S. Piggott. 1951. 199-218.
 3. Chichester MSS: Episc. Reg. E f 79.

in 1018 land in Ticehurst was described as in 'Andredeswealde'.¹
 When Lambarde wrote 'there can be assigned none other certaine boundes
 thereof, than such as we have before recited out of the Auncient
 Hystories'² he meant the description of Andred in the Angle-Saxon
 chronicle, within the entry for 893, as a great woodland extending
 120 miles inland from Lympne and with a breadth of thirty miles,³
 a statement copied by Asserius in the late ninth century⁴ and by
 Henry of Huntingdon between 1125 and 1130.⁵ The forest was mentioned
 earlier in the Chronicle as Andred, sub 755, and as the wood called
 Andredesleage, sub 477.⁶ The earliest appearance of the Weald in
 other documents occurred in a charter of 762 - 'in saltu Anderede'.⁸

4. CIPM. vi. 242.

1. Ordnance Survey. Facsimilife of Anglo-Saxon documents, iii. 39.
 Other variants are le Walde 1330, the Welde 1290, PN. Sx. i. 1.

2. *op.cit.* 192.

3. C. Plummer and J. Earle (eds.). 1892. 84-5.

4. Rebus Gestis Aelfredi, sub 892; W.H. Stevenson (ed.) 1904. 140.

5. Historia Anglorum, sub 893; T. Arnold (ed.) 1879. 149.

6. *op.cit.* 47.

7. *ibid.* 14; Andredesleige in Henry of Huntingdon (*op.cit.* 44).

8. BCS 191. This charter only exists in copies of the original.

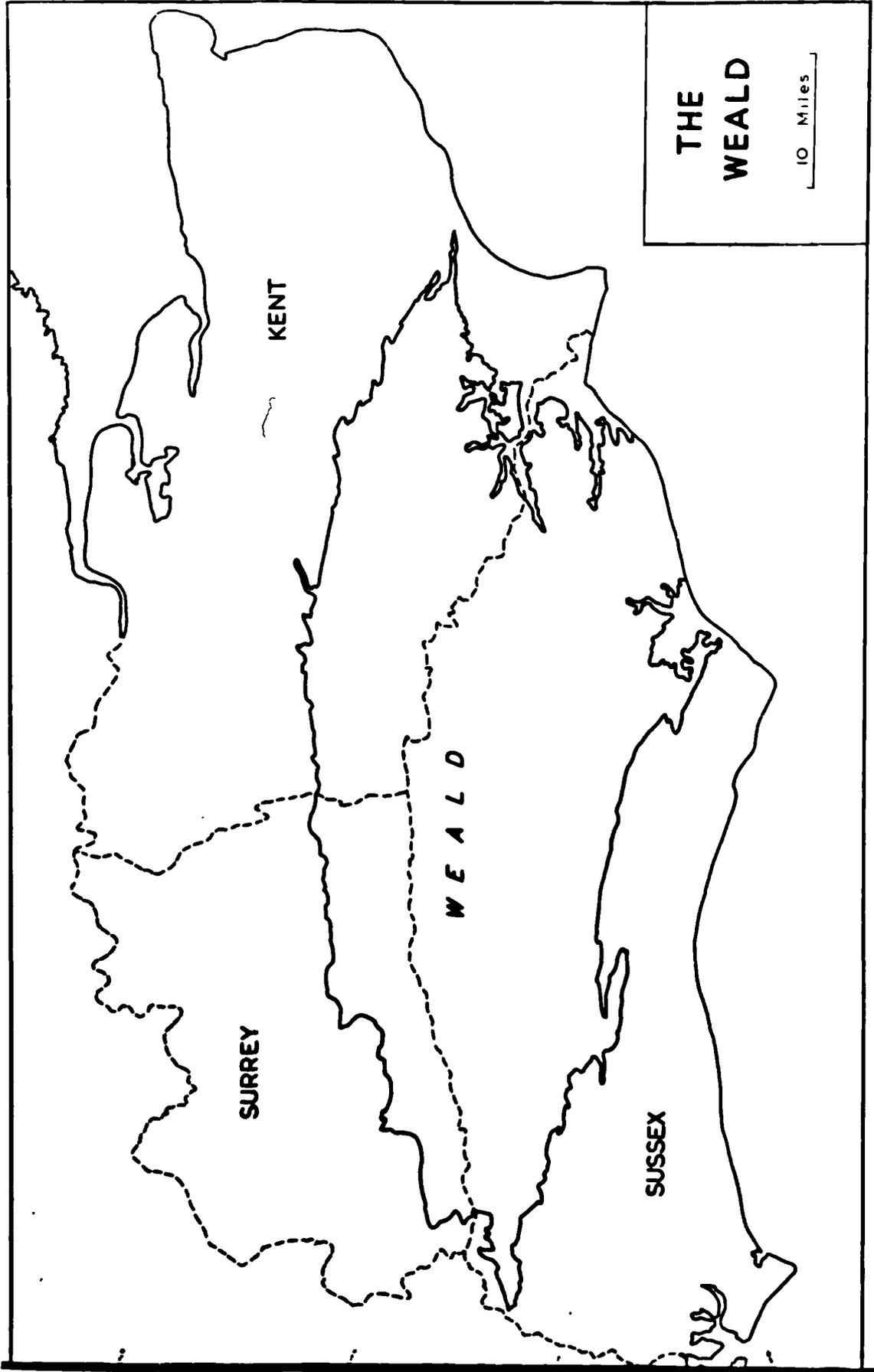


Fig. I.

1

The Saxon definition of the Weald was vague and Lambarde, after remarking that differences of opinion existed, excused his lack of more precision as the just position for a student brought up outside even its most generous margins.² Hasted was first to outline the northern boundary of the Kentish Weald in print, in 1778 - it ran along the crest of the Lower Greensand scarp assisted, where this physical feature was more subdued, by positions of various churches which lay very near it.³ In the east the boundary with Romney Marsh was clearly defined by lithology, stratigraphy, relief and tradition. Hasted's boundary corresponded almost exactly to the geological division between the Weald Clay and the Lower Greensand (Fig I), a change which generally occurred at the base of the Lower Greensand scarp.⁴ Dearn in 1814 decided that the most reliable opinions placed the Wealden boundary along this scarp, and that this definition was justified by the important differences in settlement history between the areas it separated.⁵ In 1871 Furley took, as boundary of the

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1. Its chief difficulty lies in its length of 120 miles, which extends into Hampshire. Another Angle-Saxon reference, in the Chronicle sub 755 (G.N. Garmonsway (ed.) 1953.47) refers to part of northeast Hampshire as in the Weald but this extension has never been followed by recent county or local historians.
 2. 1596. 190-2.
 3. E. Hasted. I. 1778. cxxxiv.
 4. Differences, rarely of more than a mile, occur by (a) the inclusion of the scarp, and the Atherfield clay outcrop below it, in the Weald. This last is stratigraphically in the Lower Greensand, but lithologically very similar to the Weald Clay, which it immediately adjoins. (b) the highest hills of the Lower Greensand ridge are not always on its southern margin, especially near the Medway gap.
 5. T.D.W. Dearn. 1814. vi-x, lii. He supports this view with

/contd.

Kentish Weald, the northern margin of Andredsweald as mapped by Charles Pearson,¹ a line almost identical with that chosen by Hasted - his list of parishes in, and partly in, the Weald, agrees with a² boundary at the Lower Greensand.

Variant opinions, however, have a considerable antiquity. A small manuscript treatise on the Weald of Kent written by Sir Roger Twisden between 1620-1650 mentioned the definition later printed by Hasted, but quoted some who extended the Weald as far north as the foot of the Chalk Scarp of the Downs, and he forbore from expressing any personal³ decision. Similar indecision appeared in Sussex, where fewer topographers had paid any serious attention to the boundaries of the Weald. Pearson took the southern margin of Andredsweald as far as the base of the South Downs, including the Greensand formations (Upper and Lower) and the Gault. Topley in 1872 wrote that the Weald had

reference 5 continued

considerable vehemence, yet on page lii says that Kentish Rag is dug within the Weald. Since this stone is derived from the Hythe Beds, Dearn must be misapplying the term to the small sandstone beds within the Weald Clay (see p.14-16).

1. R. Furley. i. 1871, 207, following C. Pearson. 1869.5.
2. R. Furley. ii. 1874. 833-6.
3. R. Discourse concerning the Weald of Kent. 46 pp., written between 1620 and 1650; Twysden MSS, KA0.

formerly described the area within the scarp of the Lower Greensand, but that its meaning had recently been extended to embrace all the district within the chalk scarp,¹ including the very extensive Greensand outcrop in western Surrey and Sussex. His geological successors,² primarily Edmunds, have continued this connotation.

Wooldridge suggested that if the Weald be characterized as a former wilderness, settled much later than the surrounding terrains, this description applied equally well to much of the Lower Greensand outcrop in Surrey and Sussex.³ If it were objected that the unsettled character of the Weald in the prehistoric and Dark Age periods has been exaggerated,⁴ Wooldridge has suggested other grounds for extending the Weald yet further. 'Geologists and geographers, impressed by the unity of structure of the wider region of which it forms part, customarily and legitimately use the term Weald in a wider sense as comprising the whole area involved in the great dome-shaped uplift of the Chalk. For scientific study this is the

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1. W. Topley. 1872. 242, and 1875. 603. The first geologist to adopt the usage was P.J. Martin. 1828.9, but he admitted that local custom bounded the Weald at the Lower Greensand outcrop.
 2. F.H. Edmunds. 1931. 44, and 1935.1.
 3. The term 'Holmesdale' is usedⁱⁿ West Kent & Surrey for the Gault vale (H.W. Kusker, 1915, 155-77) but Norden States (1607.214) that the Weald was formerly known as Holms Dale. There is a Holmesdale N. of Fletching (1607-PCC 13 Windebank), but no traditional support for Norden's statement has appeared.
 4. See p. 437 *et seq.*

preferable usage, for much of the interest of the area lies in the contrast between its centre and its fringes'.¹

Such an extension of the Weald is thus justified by convenience of treatment, but it has uncertain value for an appreciation of the earlier patterns of the Wealden landscape and economy. The search for contrasts is, logically, capable of indefinite extension and if the study of contrasts be advantageous for scientific study (as no doubt it is) this hardly warrants the alteration of a pays nomenclature stabilised over the course of more than ten centuries. Our rude forefathers were not blind to the differences between the terrains they distinguished as Weald, Chart and Down; they needed no extension of their Weald to Thames or South Coast in search of variant physical and human landscapes - they had already branded the notable internal differences of High and Low Weald.

Moreover, the traditional boundary of the Weald at the Lower Greensand scarp (Fig 1) was significant not only on a county scale, not only in the generalized form of a ridge of hills or change of stratum; the margin of the Weald was known precisely within the territory of a single village. Long before the seventeenth century there had arisen a difference between the tithing of Sevenoaks, and that of Sevenoaks

1. S.W. Wooldridge, 1949.3.

¹
 Weald, whilst as late as 1840 the tithe maps of Bramley and ²Hascombe in
 Surrey marked a boundary line of the 'wield' at the junction of Lower
²Greensand and Weald clay. To favour this definition of the Weald,
 the area enclosed within the Lower Greensand outcrop, is not merely
 to prefer an older definition to a newer, but to recognize that the
³older definition is based on more than stratigraphy and relief; it
 rests on the persistence within this district of unique forms of
 settlement, land-use and economy, engendered by the combined effects
 of its physical condition, the process of its colonisation and
⁴continual interaction with its surroundings.

(Note on Nomenclature.

Throughout this thesis Low Weald is used as synonymous with the Weald Clay outcrop, although the lower beds of the Tunbridge Wells Sand often have a similarly low, flat surface; and High Weald or Forest Ridge as synonymous with the outcrop of Hastings Beds, although Forest Ridge has sometimes been used, for a smaller area)

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1. J.K. Wallenberg. 1933. 65. This distinction persists in the separate parishes of Sevenoaks and Sevenoaks Weald, whose line of division runs almost exactly along the junction of Lower Greensand and Weald Clay. (However both Burwash and Burwash Weald lie within the most restricted boundary of the Weald). For the Great Tithe Cause of 1815, which judged the Lower Greensand scarp to be the Wealden boundary, see R. Furley. ii. 1874. 639-46; however, according to W. Topley. 1875. 402, Chart near Frensham in Surrey was adjudged 1692 as within the Weald, inaccurately. (PRO.E 134/4 William & Mary/ Michaelmas 12).
 2. E. Straker. 1931.6.
 3. This distinction is between the estuarine Wealden deposits, and the Lower Greensand, which is of marine origin. H.G. Dines and F.H. Edmunds. 1933. 29, and S.W. Wooldridge. 1949.3-4.
 4. This thesis, as a working method, includes data from all parishes which are all in the Weald, or have a substantial part within it. In these latter instances, data which clearly refers to the non-Wealden parts of the parish has been excluded, but such refinement is not always possible.

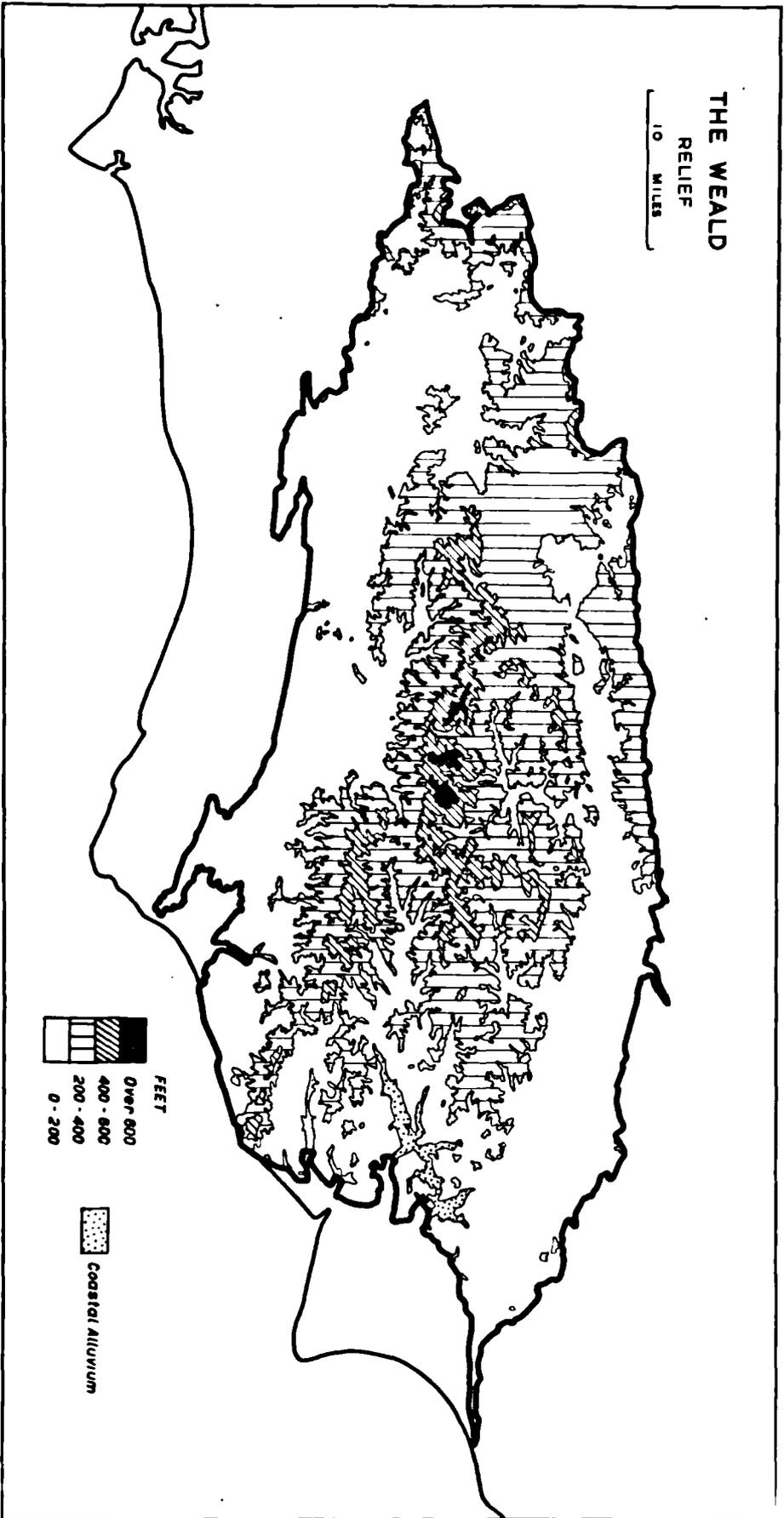


Fig. 2.

II

THE WEALDEN LANDSCAPE IN THE EARLY SEVENTEENTH CENTURY

- (i) The Natural Setting Géographie agraire-les faits avant
les théories. R. Dion. 1949.

(a) Relief.

The surface of the Weald known to Lambard and Camden was uniform neither in climate, nor in relief or soil. Morphologically, the Weald consisted of an inner upland core, rising to 792', surrounded by a low, undulating plain (Fig 2). The plain was roughly co-extensive with the large outcrop of Weald Clay (about 200 square miles) and its uniformity reflected an outcrop more approximately homogeneous than any other in the Weald. ¹ The open valleys had gentle long-profiles and wide valley floors, liable to frequent flooding, whilst the interfluves were inconspicuous and rounded; convex slopes were everywhere predominant. Considerable deposits of brickearths and valley gravels, together with smaller patches of plateau gravel and head, produced limited areas with an almost completely flat surface.

Harder horizons in the Weald Clay were responsible for some variations in the topography; in South Surrey a small but resistant outcrop of Paludina limestone formed a range of low hills extending

1. This is comparative, not absolute; variations within the outcrop are treated on the following pages, especially under geology and soils.

from west of Godstone through Outwood (where it reached 390'), to Stanhill Court, generally above 300' and a clear 100' above the clay terrains around. Near Crowhurst a sandstone ridge was capped by plateau gravel at Henfold (317') and at Beare Green (333'). Similar low ridges were found elsewhere in the Low Weald, but their lengths were limited and their continuity broken both by discontinuities in the basic strata and by the wide valleys of the larger rivers.

Where the Weald Clay had been deeply eroded, as by the Medway and its tributaries, the boundary between Low and High Weald was clearly defined; it appeared most prominently where the Eden and Medway flowed along the division. In these southern districts where most drainage was transverse to the strike—exemplified by the Ouse or Cuckmere — the boundary, lying as it did on the soft lower strata of the Tunbridge Wells Sands, was indistinct.

The central Wealden heights were composed of gently rounded ridges cut by deep valleys, locally termed 'ghylls' or 'gylls'. Their lower segments were often broad and gentle in cross-section, but they narrowed rapidly upstream. Wide valley floors were restricted to the Medway and the Rother, and some of the latter's tributaries in the east. Many valleys in the High Weald incorporated valley side-benches at 200-240' and 250-350', whilst the higher slopes (never very steep except in the ghylls) were diversified by planation at 450-500', over wide areas, and at c600' and c800', in Ashdown Forest.¹

1. The genetic significance of these and other less common surfaces is treated on p. 494-7.

Within the High Weald there were restricted areas of bold topography. The eastern extremity included not only some low, wide valleys but to their south, around Hastings, small ravines like Old R^oar Gill, whose length had been shortened and their downcutting accelerated by coastal erosion. Erosion had moved too fast for some streams - the Ecclesbourne discharged from a valley hanging in the cliff face. Further inland, steep slopes surrounded the course of the River Dudwell, cut in the Purbeck limestones; Ashdown Forest formed an upstanding mass, but hardly a rugged one. A stratum of coarse, compact sandstone at the top of the Lower Tunbridge Wells Sands was exposed in a series of upstanding sandstone cliffs at Toad Rock, High Rocks, Eridge Rock and the Waterloo Rocks on Tunbridge Wells¹ Common; the bed thinned out and became less compacted to the east. Such prominent features formed only a small part of the High Weald, which for the most part formed a massif of smoothed ridges and sharp-sided valleys, between 300' and 800' in the west but with lower elements in the east. If the physiography and drainage exhibited any general trend, it ran from east to west; but variants were many, the products of complex structural dislocation and a long erosional history.

1. H.B. Milner. 1924. 386.

- (b) Climate and water supply. Cold weather and crafty knaves
some out of the north.
J. Howell. Proverbs. 1659.

The climate of south-east England was more continental than that of the south-west; rainfall was less abundant and temperatures more varied. Most of the Weald was separated from the moderating influence of the sea by the North and South Downs and, since the prevailing winds came from the west, the eastern sea margin of the Weald had but a limited effect on conditions further inland. Winter temperature, especially in the High Weald, was not far above freezing on average - present January mean at Tunbridge Wells is 39.9°F., whilst at Ardingly 39° is the mean for December, January and February; the climate of the seventeenth century was not significantly different from that of the twentieth. Spring was cool, frost persisted into April - even into early May in local hollows. The continental airstreams which increased the coldness of winter were not sufficiently frequent visitors to make the summers hot; the summer monthly maximum at Ardingly (now 61°F.) signified a moderate warmth, with an annual range higher than that of the coastlands (now 4.5°). Variations in warmth were most rapid in late spring and early summer and, since many crops were exposed yet sensitive during this period, they were of major agricultural import. Sunshine was greatest not in high summer, but in May; in

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- 3 1. L.D. Stamp. 1942. 568, and E.H.W. Briault. 1942. 484. North Kent was considerably colder-it received the fresh blast of polar continental airstreams and collected most of their snowfall -G. Manley. 1952. 201.
2. J.N.L. Baker. 1932. 421 ff, and G. Manley, op.cit., chapter on Secular Variations of the English Climate.

consequence, this month included temperature variations of at least ¹ 5° in mere averages.

Rainfall in the Weald varied from less than 25" per annum in a small district of the Low Weald around Yalding, to ² 36" at Crowborough Beacon (792'); rainfall increased between $\frac{1}{2}$ " and 1" for every rise of 100'. Most of the Forest Ridge received over 30", autumn being the wettest season and October the wettest month. Spring was the driest season, and at most places the rainfall in April to June was little more than half that from October to December. ³ Most of the autumn rain came from maritime airstreams but continental polar air brought some snowfall in winter, especially to the northern flanks of the High Weald. The heaviest downpours of the year were convectional thunderstorms in May, July and August. Rainfall amounts varied considerably from year to year (as they do still; precipitation at Horsham between 1881 and 1915 varied from 56% of the average to 141%, at St. Leonards 56% to 145% and at Crowborough Beacon 67% to 140%). Such variability (as these later figures testify) was not a consequence of relief, but a product of variations in the relative importance of maritime and continental airstreams from year to year.

1. R. Kilburne. 1659,³wrote of Kent that 'the aire of this county, other than the Weald, & the marshes & places adjacent thereunto, is accounted very healthy.
2. H. R. Mill. 1908. 22.
3. This difference is slightly more marked in Sussex than in Kent - H.R. Mill. 1911.134.

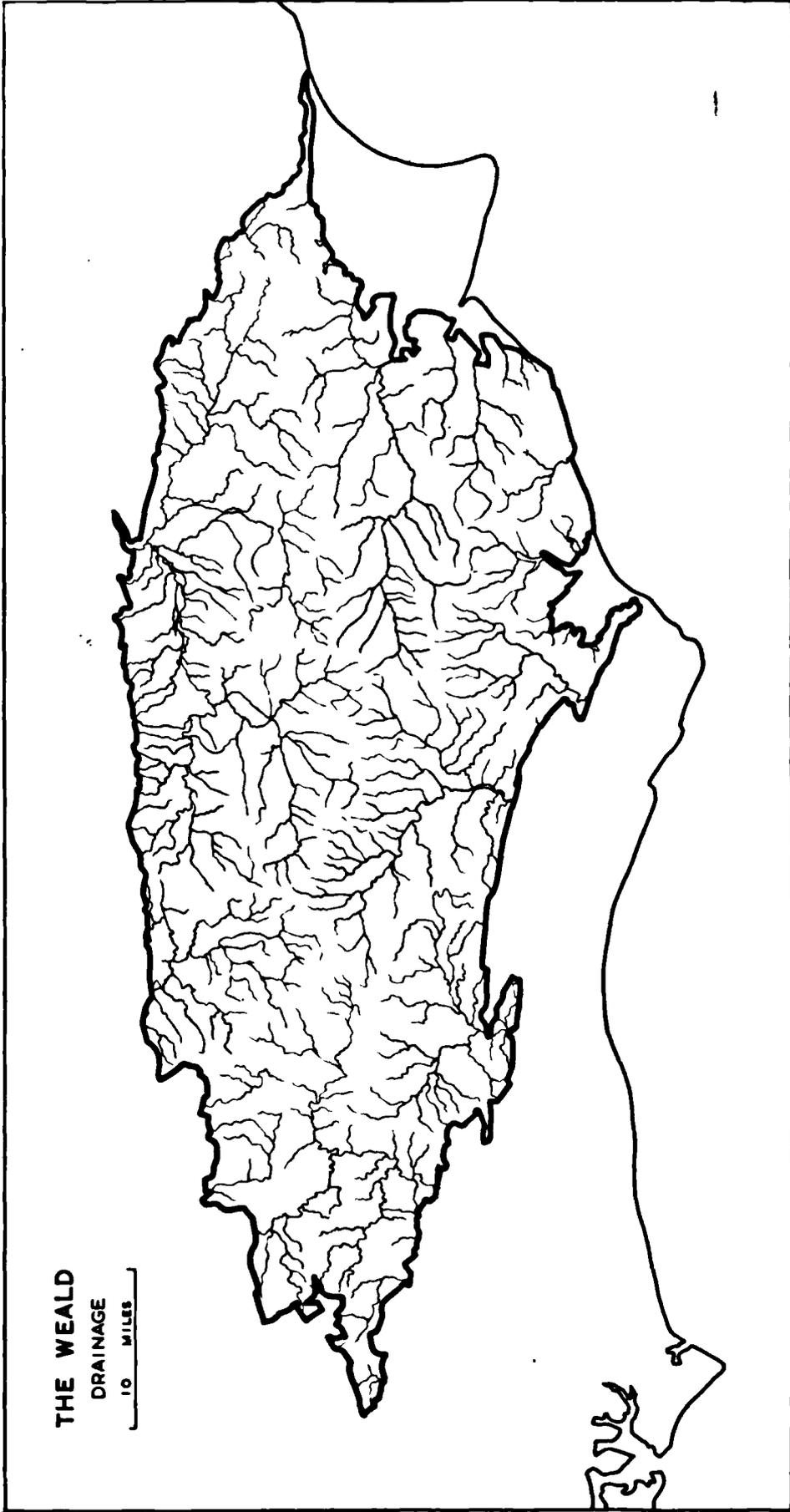


Fig. 3.

The massif of the High Weald was neither sufficiently high nor sufficiently accidented to produce any marked signs of a mountain climate;¹ on the other hand, minor differences affected local climates. The ghylls of the High Weald suffered more frost than the flatter surfaces above where, in their turn, exposure blunted and malformed the vegetation. Differences in sunshine existed between the two sides of some of the narrower valleys, whilst the frequent woodlands and shaws hindered evaporation and increased shelter and shade in their vicinity.

The Weald as a whole was characteristically an area of surface drainage (Fig 3) and many of its soils suffered imperfect drainage; yet water supply for settlements of more than hamlet size had always been problematic. The outcrop of Weald Clay was very extensive and included many natural and man-made ponds, but in late spring and early summer, the driest season of the year, ponds and streams withered and the ground began to crack. Clay could absorb three times more water, by weight, than quartz sand but the absorbed water was not available² at the surface. Underground supplies existed in scattered river gravels and in subordinate strata of limestone or sandstone; many small hamlets derived hard water from the Paludina limestones, whilst a group of settlements in the western Weald- including Fernhurst, Lurgashall, and North Chapel - drew their water from the Fernhurst sandstone, a

1. S.W. Wooldridge and F. Geldring. 1953. 120.

2. S.G. Davis. 1940. 26.

division near the top of the Waald Clay.¹ Where these strata did not appear at the surface, their supplies were often useless; little water could be extracted since percolation replenished the supplies only very slowly and, during the percolation, the water often absorbed sufficient mineral matter to be unpalatable.² Many farms were content with shallow wells dug in pure clay, little more than surface sumps,³ which slowly filled with brackish waters.

Water derived by wells from the limestones of the Purbeck Beds was very hard, and dissolved limestone affected the river waters also.⁴ The water supplies of the Hastings Beds were more satisfactory, as the formation included two sandy aquifers. The frequent clay beds broke up the waters in the sand formations into many small water tables, relatively near the surface but containing strictly limited supplies. The many folds and faults further divided up the underground accumulation of water into scattered small reserves. Some of the water tables over clay strata were perched and long dry periods could destroy such supplies by cracking the clay bed; when this occurred, the water drained downwards to the regional water table below.⁵ Clay

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1. S.W. Wooldridge and F. Goldring. 1953. 120ff.
 2. F.H. Edmunds. 1934. 69.
 3. H.J.O. White. 1924. 98.
 4. F.H. Edmunds. 1928. 8.
 5. F.H. Edmunds. 1934. 70.

strata also threw out springs at the surface, but spring waters were by no means uniform after passing through the rapidly changing Hastings Beds. The springs at Tunbridge Wells were chalybeate, containing ferrous carbonate and carbonic acid;¹ their medicinal fame blossomed in the seventeenth century but they were unsatisfactory for general usage. Although soft and otherwise pure, most water from the Tunbridge Wells Sands tended to be chalybeate.

Conditions on the Wadhurst Clay resembled those in the Low Weald; subsidiary limestones were tapped where possible by wells, but surface sumps,² their water rich in salts, were the commonest suppliers in the predominating claylands. The Ashdown Sands, coarser than the sands higher up the formation, presented least hindrance to downward percolation³ and outcropped in the wettest parts of the High Weald; the price paid for more water below was considerable soil drought at the surface. Water underground was deeper in the Ashdown Sands than in the Tunbridge Wells Series and was probably less tapped than the latter by seventeenth century wells; in this period, as earlier, many of the settlements were small and the proximity of waters to the surface was generally more important than the maximum potential supply. Many wells existed at this time but wells had their own problems in an area where even the sands

1. W. Whitaker. 1908. 45.
2. H.J.O. White. 1926. 88.
3. 1" of rainfall over 1 square mile produces 14,478,420 gallons of water. S.G. Davis. 1940. Appendix 13.

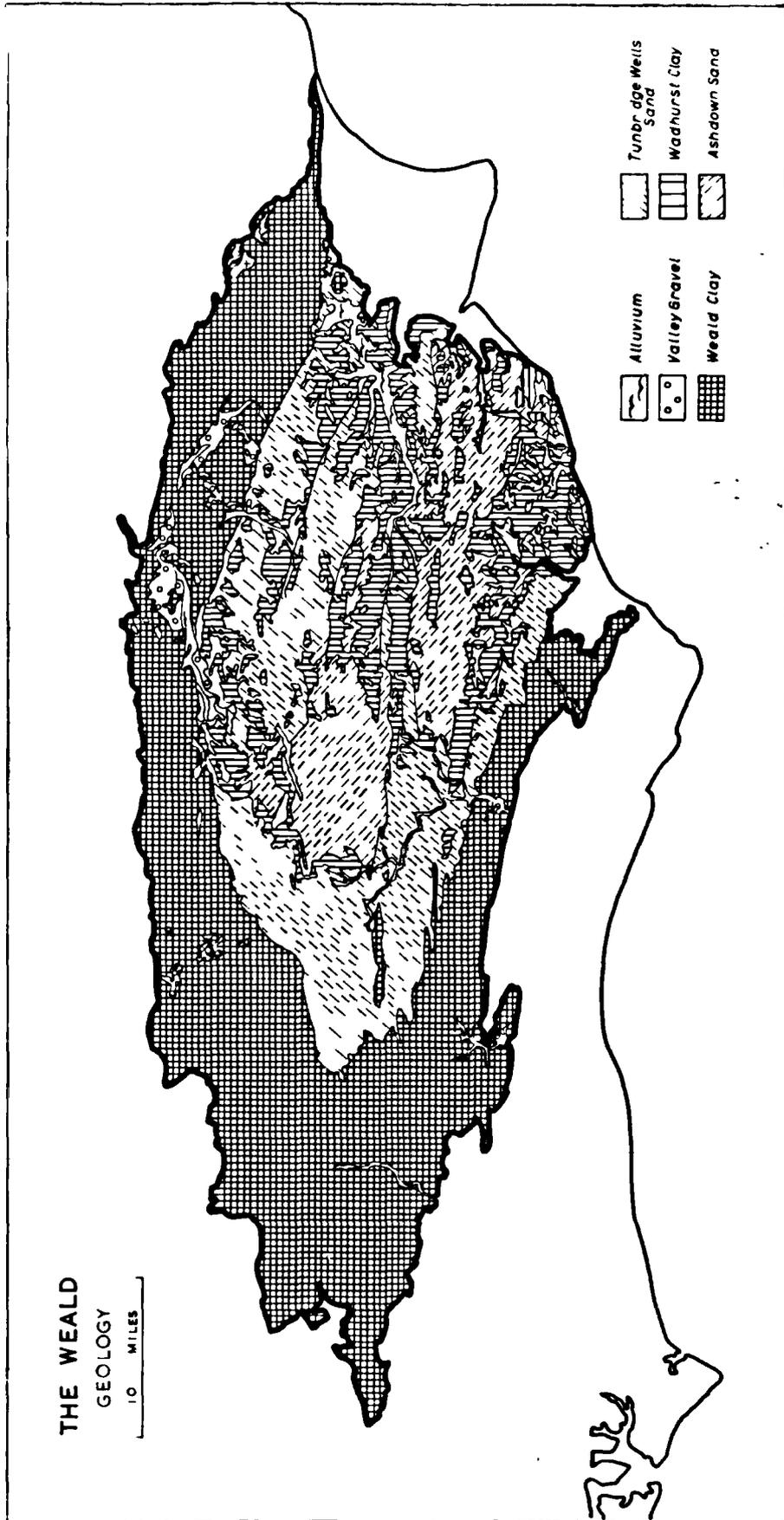


Fig. 4.

were predominantly fine grained - fine particles percolated into the wells with the water and gradually clogged them up.

Throughout the Weald, mostly on the Hastings Beds, there was an additional artificial source of domestic water, the hammer ponds of the iron industry. As mill-ponds in earlier centuries, their water was valuable and was conserved primarily to drive the mills, but a few individuals no doubt drew their small needs from these ponds; moreover, some had already lost their function, as the iron works began to close in the first decades of the seventeenth century.

(c) Geology and soils.

There ^{exists} with...reken up no fewer than one hundred seventy nine millions one thousand & sixty different sorts of Earths. J.Evelyn. Terra. 1675.

Local differences in the Weald were affected by altitude, slope and climatic considerations but the most considerable natural influence, since it was the most varied, was that of soils. Relief and climate were reflected in the soil types (for instance, slope affected drainage, rainfall affected leaching) and further diversified the soil pattern formed on an already complex geological basis (Fig 4).

The Weald Clay formation ¹ shewed considerable internal variation of lithology, mineral composition and depth of weathering. The outcrop ² in East Kent, consisted primarily of heavy clay but also included ³ five small and discontinuous limestone beds as well as two sand beds.

1. The age of the formation is treated in P. Allen. 1955. 265-81.

2. Geological Survey. 1st Drift Sheet 288, a resurvey of 1946-50.

3. W. Topley. 1875. 102-110, distinguished seven subordinate beds of limestone and sandstone in the following order ... sand; three beds of
/contd.

The seven subsidiary beds found in this district appeared separately in other parts of the Weald, but not necessarily following the same succession; the sands were hard calcareous grits which rapidly became decalcified near the surface and weathered to a yellow-brown sandstone, whilst the limestones were very hard, compacted and crystalline, of a blue-grey colour.

In southwest Kent subsidiary limestones were prominent, covering almost one quarter of the surface of the large parishes of Staplehurst and Bethersden. Superficial deposits also were important - many scattered patches of 'head',¹ considerable areas of alluvium along the Medway, smaller deposits of river gravels and one very large, continuous deposit of valley brickearth which covered well over half the parish of East Peckham and one third of Yalding and Hadlow. East of Yalding superficial deposits were less extensive but still varied - brickearth, 'head', head brickearth and river gravels weathered² according to their varying ages.

In Southeast Surrey³ the surface geology of the Weald Clay outcrop

large Paludina limestone; sand; two layers of small Paludina limestone. The first member was the Horsham stone, the last the Fernhurst sandstone. (The sequence was from eldest to youngest).

1. The nature of 'head' is discussed in H.A. Dines et al. 1940. 198-226
2. Geological Survey. 1st Drift Sheet 287, a resurvey 1930-36.
3. *ibid.* Sheet 286, a resurvey of 1928-30. One of the sandstone beds is analysed in P. Allen. 1948. 235-41.

was different again. Only two narrow outcrops of limestone were present, but there were considerable exposures of sandstone; the basic heavy character of the clays was the same. There were two patches of plateau gravel at Newdigate, both over 300', a solifluction deposit¹ incorporating pebbles from the Lower Greensand; head and alluvium covered only small areas. One-third of the large parish of Horley had a surface cover of Low Terrace river gravels, a riverine deposit, 2-5' thick, of material derived from the High Weald to the south - fragmented shale, sandstone and ironstone worn to small pebbles and of - ten cemented by iron compounds into a conglomerate; it possessed a surface cover of 1-3' of loamy clay.²

Within the Weald clay outcrop in Sussex sandstone beds were more important than the limestone and they thickened westwards; the Horsham stone outcrop near Horsham stood out clearly and the Fernhurst sandstone had a long continuous outcrop in the Western Weald.³ The clay outcrop itself was composed of three divisions.⁴ The oldest unit was the most shaley, taking generally the form of a stiff yellow clay. In the northwest it included amongst other sands the Horsham

1. H.G. Dines and F.H. Edmunds. 1933. 157.
2. ibid. 161. This deposit is locally known as 'chevick'.
3. S.W. Wooldridge and F. Goldring. 1953. 10-12.
4. This division is derived from J.W. Reeves. 1958. 1-4. In 1948.240, Reeves chose the last strong sandstone as the index between the first and second zones, and 1953.274, the Wivelsfield sandstone; he has changed to the red clays as they are more continuous. P.J. Martin A geological memoir of a part of Western Sussex, 1828.40 traced seven minor lithological divisions of the Weald Clay. scheme fits conditions west of the Adur, but not to the east H.J.O. White. 1924. 10-11, J.W. Reeves. 1948.240.

stone, a micaceous and flaggy calcareous sandstone, and some thin beds of catbrains. The Middle group was the largest, but also the most variable in composition and thickness; its index horizon was the oldest red clay (rarely over 1' thick), but it incorporated six bands of red clay, besides other clays, shales, sandstones (some ferruginous) and silty limestone. The weathered clays and shales normally assumed a yellow hue. The upper unit, whose index horizon was the newest red clay (3-4' thick) was more wholly a clay stratum, weathering from blue-grey or grey to yellow and yellow-brown. The pattern of outcrop of these three subdivisions was much disturbed by various groups of echelon southeast-northwest folds (and associated faults), and also by an anomalous series of north-south tear faults around the upper Adur. (Fig 5)

Superficial deposits on the Sussex clay outcrop included flints, far north of the Downs, which may have been moved north by periglacial agents during the Pleistocene but possibly laid on the wasting surface¹ of the Lower Cretaceous rocks ever since the Chalk scarp retreated. There were many river gravels of varying composition, these at Barcombe Cross² consisting of washy gravel with many flints, whilst the alluvial deposits along the valley floors were sand and silt materials were derived almost wholly from the Hastings Beds. The largest deposit of alluvium lay on the southern margin of the area, in Laughton Levels but elsewhere

1. H.J.O. White. 1924. 72.

2. J.V. Elsdon. 1886. 646-8.

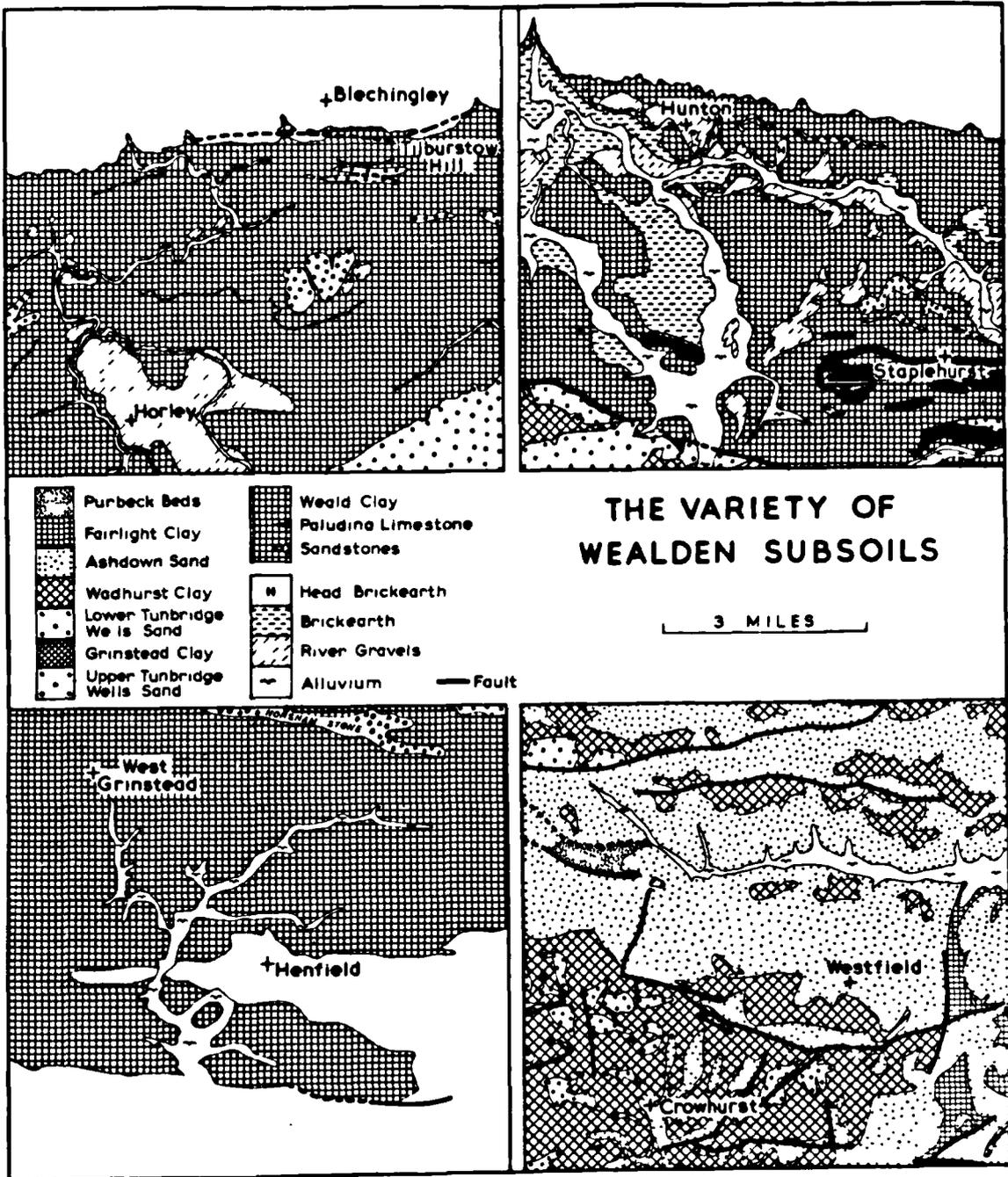


Fig.6.

aluvium was often thick - in the Ouse valley near Uckfield, just north of the Weald Clay outcrop, its thickness exceeded 20'.¹ On the clay outcrop near Fernhurst there was a surface material since described as 'an extensive blanket of redeposited Weald Clay which might well be regarded as a species of loess',² and this deposit occurred over large areas of the Weald Clay elsewhere in Sussex.³

Lithological variations within the outcrop of the Weald clay (Fig.6) and its surface deposits affected soil texture in the district. Soil texture decided the ease (or difficulty) of tillage, the quality of soil drainage; the total surface formed by the soil particles (which varied with texture) determined the power to retain any rudimentary manures used and also the extent of capillary movement of soil water upwards during a drought.⁴ The clays, shales and mudstones of the Weald Clay weathered down to a tenacious clay. Some of the clay soils possessed an exceptionally fine texture - such were those on the narrow red clay bands.⁵ The clay soils of the Low Weald tend to become lighter towards the west; Typical soils in the East Kent part were 5-10% sand, 20% silt, more than 20% fine silt, and nearly 30%

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1. H.J.O. White. 1926. 73-5. I have omitted Romney Marsh and Pevensey Levels from this study, save where their economy was directly knit with that of the Weald inland; not because they are irrelevant, but because they demand more detailed treatment than is possible here.
 2. S.W. Wooldridge. 1950. 169.
 3. J.W. Reeves. 1958. 3.
 4. A.D. Hall and E.J. Russell. 1911.53.
 5. J.W. Reeves. 1958.3.

pure clay. On a ridge, as at Lingfield, rainwash might remove the top soil layers leaving only a thin cover over a subsoil 49% clay and 19% fine silt. Better drainage on such ridges was counterbalanced by exceptionally heavy soils; slow mass movement downhill over the greasy clay base removed the more mixed upper layers and brought the heavy clay subsoil very near the surface.¹ Many, however, of the clay soils in Surrey were lighter, containing a larger fraction of silt than of clay. Sand particles increased in the soils of the western Weald Clay (sometimes coarse sand reached 10% while clay was only 10-12%) a group more varied than those of any other part of the outcrop. The Sand fraction was derived from the Lower Greensand by surface soil movements, strongest in the Pleistocene but continuing into historic times,² or from sandstone beds within the Weald Clay. In texture, these western soils formed heavy loams, but a clay subsoil and gentle relief increased their heaviness to work.

Plant growth was slow and often retarded on clay terrains. The most important single influence on plant growth was soil drainage and a major distinction lay between a yellow-brown silt loam with satisfactory drainage, and a heavier, yellow-brown to grey-brown silty clay loam with imperfect drainage, as a mottled horizon witnessed.³

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1. It is interesting that T.D.W.Dearn. 1814. xli., differentiated the soils of the Low Weald into (i) stiff, very heavy clay on hills and hillslopes, over a subsoil of clay or 'marl', and (ii) wet clay on lower ground, easier to plough, with a subsoil of yellow clay or sandstone.
 2. For the history of these movements in the Pleistocene, see p.493. A landslip of 1596 in Westerham was the subject of one of the first publications on the Weald—J. Chapman. A most true Report of the myraculous moving and sinking of a plot of Ground, about nine acres, a Westram in Kent..., 1596.

The soil profile of the adequately drained soils approximated to that of a brown earth forest soil; tillage, however, reduced the humus input (humus improved texture as well as supplying plant nutrients) and accelerated downwashing.

Local sandstone and limestone beds within the Weald Clay fathered lighter soils found, for instance, around Penshurst in Kent and along the Horsham Stone outcrop in Sussex; clay fractions in such soils were often only half those in nearby clay soils. The calcium carbonate content of these soils was of value to farmers, but weathering, especially on bare ploughed soils, rapidly decalcified them. Sandy soils, formed from Lower Greensand material which had slipped down the scarp, were present around Bower Hill and Tilburstow Hill in Surrey, and elsewhere in Northwest Sussex. The Medway valley and others contained alluvial soils, easily tilled, generally well-drained and possessing

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3. A.D. Hall and E.J. Russell. 1911. 127, suggested some of the sandy particles came directly from the former Lower Greensand cover of the area.
 1. A.D. Hall & E.J. Russell. 1911. 129-31, 53-4.
 2. H.G. Dines & F.H. Edmunds. 1933. 32.
 3. F. Gessling. 1935. 360-90, idem. 1948. 131-40, S.W. Wooldridge. 1950. 165,90,

more plant nutrients than the sandy soils. Older river gravel soils, found in the major valleys, were derived from fine sandy materials brought down from the High Weald. They were loamy soils, although the older ones had been considerably leached. At the junction of these gravels with the imp^{er}meable formations below, a layer of ferruginous gravel (locally called chevick) often formed. 'Head' deposits gave rise to some of the few coarse-grained soils in the Low Weald.

Most of the Weald Clay soils, especially the clays, were deficient in calcium carbonate; subsoils rarely included more than 1/10%. Even soils on the limestones ridges, subject to downwashing and surface erosion, were deficient; soils on a limestone ridge at Lingfield had only 0.2% in the soil and 0.07% in the subsoil. In Weald Clay soils, magnesia content was low, sulphuric acid sufficient, iron little (3.5%) and always in a ferrous state. In their content of the three basic plant foods—nitrogen, phosphoric acid and potash¹—the Weald Clay soils were more deficient than either Chalk or Greensand Soils in Southeast England, save for parts of the Folkestone and Hythe Beds soils. This deficiency was increased by the physical texture of most of the Weald Clay soils — fine particles hindered percolation, the compactness of the soil spelled a deficiency of soil air; chemical reactions as a whole were thus hindered.

The outcrop of the Hastings Beds showed even more variation than that of the Weald Clay. The uppermost member in the formation was the

1. Available potash and phosphoric acid is that soluble in 1% citric acid.

Tunbridge Wells Sands, two groups of sandstones (Upper and Lower Tunbridge Wells Sand¹) divided generally by the Grinstead Clay. These sandstones, consisted mainly of quartzose sand but also incorporated several silty seams. The most consolidated stratum was a massive, current-bedded sandrock near the top of the Lower Tunbridge Wells Sand² and formed upstanding sandstone cliffs at High Rocks, Eridge Rocks and elsewhere; it was not a continuous bed and ^{lost} all³ prominence further east. Thin beds of conglomerate (pebble beds) also occurred in the Tunbridge Wells Sands.

The Grinstead Clay, was a lenticular formation found most clearly in West Sussex; its surface outcrop, broken up by faults and by echelon⁴ folding, resembled a group of outliers. The parent rock, red, brown, blue or grey shales, weathered to mottled materials of various hues. The Tunbridge Wells Sands also included other less important clay beds, the Cuckfield and Balcombe Clays⁵ in its upper horizons and another clay bed which outcropped near Tonbridge; each of these had but small

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1. This division was first made by F. Drew. 1861. 271-86.
 2. It was formerly thought that the Tunbridge Wells sandrock was in the Upper T.W. Sand, and the cliffs at West Hoathly a similar bed in the Lower T.W. Sand - F.H. Edmunds. 1935. 23, and H.B. Milner. Proc. Geol. Ass. 1923. 285. S. Buchan 1938. 407-9, shewed there was but one bed, in the Lower T.W. sands.
 3. H.B. Milner. 1924. 386. The sandrock in the western High Weald was still compacted but more flaggy, and for this reason inconspicuous - H.G. Dines and F.H. Edmunds. 1933. 30.
 4. The structural complexes of the High Weald include outliers of Weald Clay within the Hastings Beds, but many clay outcrops formerly thus described are actually outcrops of Grinstead Clay. S. Buchan. 1938. op. cit.
 5. J.W. Reeves. 1948. 245, suggested a division of the Tunbridge Wells Sand into Upper T.W. Sandstone: Cuckfield or Balcombe Clay: Middle

surface outcrops.

Below the Tunbridge Wells Sand was the Wadhurst Clay, a very mixed deposit which included siltstones and sandstones beside its major component, a grey or blue-grey shaly clay.¹ Near the base of the formation clay ironstone occurred in nodules and tabular masses. The most important sandstone in the formation was the hard and calciferous Tilgate stone;² it was rarely more than 4' thick and did not occupy a continuous horizon. The Wadhurst Clay formation varied widely in thickness and its surface outcrop was further diversified by the effects of faulting and erosion; there were many outliers of Tunbridge Wells Sand within it, whilst elsewhere valleys had cut through the clays to the Ashdown Sands below. Wadhurst Clay formed the bulk of the valley sides of many streams in the eastern High Weald.

The Ashdown Sands were the lowest member in the Hastings Beds.³ They consisted of buff quartzose sandstone, varied by sporadic seams of clay and silt; as the Wadhurst Clay they included iron deposits and pebble beds.⁴ Their surface outcrop was discontinuous, with two major

Tunbridge Wells Sandstone: Grinstead Clay: Lower T.W. Sands. This sequence is not, however, complete in many places.

1. It also includes the well-known Equisitetes lyelli fossil soil beds - P. Allen, 1946. 303-4. 2. For treatment of iron ores in the Weald, see p. 190-3.
2. The term Tilgate stone is restricted to this horizon by some - H.B. Milner. 1923. 49; G.S. Sweeting. 1925. 413; F.H. Edmunds. 1934. 70, & 1954. 21-4. S.W. Wooldridge and F. Goldring. 1953. 12, describe it as a calcareous sandstone occurring in Tunbridge Wells Sand and Ashdown Sands; H.J.O. White 1924. 9 uses it for a stratum in the Upper Tunbridge Wells Sand and 1928. 24, states that the term has no stratigraphic connotation and includes any calcareous sandstone in the Hastings Beds - W. Topley. 1875.6, also uses it thus.
4. P. Allen. 1949. 257-321, and 1954. 498-508.

masses - Ashdown Forest, and the ridge between Uckfield and Winchelsea. In eastern Sussex the base of the Ashdown Sands included the Fairlight Clays, a local development nearly 400' thick at Hastings but thinning out rapidly to north and west. They were primarily clays and shales but included siltstone and a little sandstone.

There was a small outcrop of Purbeck (Jurassic) strata in the centre of the Weald. Difficult to distinguish from the Hastings Beds palaeontologically, their lithologic differences were apparent; as exposed in small areas in Mountfield, Heathfield and north of Battle, they formed dark calcareous shales with subordinate limestones and sandstones.

Surface deposits in the High Weald included small deposits on valley sides and floors of material moved downslope by solifluction during the Pleistocene. Small patches of valley gravels existed at Newick and elsewhere, whilst more continuous patches of alluvium penetrated up the major valleys. Only a small percentage of the surface of the High Weald was mantled by such deposits, less than on the Weald Clay of Sussex and far less than the Low Weald of Kent.

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1. It not only tapers, but passes laterally into the Lower part of the Ashdown sand -H.J.O. White. 1928. 21.
 2. These lithological variations in the Wealden strata follow a rhythmic sequence; sandstone (coarsening upwards) -pebble bed-local bone bed facies - alternating lenticular sandy siltstones and silty shales-silty clay-dark ostraced shales. Three major cycles produced the six major lithological divisions of the Wealden (Ashdown Sand: Wadhurst Clay: Lower Tunbridge Wells Sand: Grinstead Clay: Upper Tunbridge Well Sand: Weald Clay). Minor pulses produced local variations reflected in small lenses. P. Allen. 1948b. 18.
 3. W. Topley. 1875. 30-44.
 4. H.J.O. White. 1928. 76.

The varied lithology and mineral composition of the High Weald strata formed the foundation for a most complex pattern of soil types. The sandy beds were several but many of the soils developed on the Tunbridge Wells Sand differed little from clay soils; the sand was fine, and problems of percolation and drainage were prominent.¹ However, if these soils resembled the Weald Clay in this respect, and in their lack of lime, they were warmer and easier to till. Soils in the High Weald varied rapidly over short distances but extremes in soil character were rare. Nearly all soils had no very coarse component (open heath at Wych Cross in Ashdown Forest had only 0.3% coarse sand at the surface) and this caused the soils to stick when wet, even those which were incoherent sands when dried out. Fine sand was important (53% at Wych Cross, 36% at Ashurst on the Wadhurst Clay), silt up to 35%, fine silt always above 10%; clay reached 20% in some Wadhurst Clay soils but was often down to 5%.² Fine sand and silt predominated; the valley gravels contained little coarse gravel.

Many soils in the High Weald were formed on materials washed out from elsewhere; such soils were unusually deep, often more than 30" and, in contrast with the autochthonous soils,³ often more compact in the upper layers than lower down, which helped resistance to erosion. Erosion of the local sands was the original cause of the thickness

5. Geological Survey: 1" Drift sheets 303, 304. These were surveyed early and may underestimate the area of surface deposits somewhat.

1. Mottling below the surface and loose concretions of ironstone gravel in the subsoil are both common.

2. A.D. Hall and E.J. Russell. 1911. 135-7.

3. N.B. Bagenal ¹⁸⁸⁵ 35 Furneaux. 1949.7.

of these alluvial soils; the sands were sufficiently fine to compel surface run-off but without that compactness, found in clay soils, which resisted erosion.¹ Thus in the High Weald it was the heaviest soils (the sandy loams) which were most eroded, although rarely was the whole profile removed.² Erosion went on rapidly in the deep, steep-sided valleys of the High Weald; several hammer ponds dammed in the sixteenth century have been completely silted up since with eroded topsoil.³ After heavy rainfall, fine sand could often be found in layers at the downslope margins of individual fields,⁴ whilst the slower process of soil creep penetrated downwards at least three feet.⁵

Although some parts of the High Weald was sufficiently accidented to produce soil erosion, nearly 60% of the soils of the area were inadequately drained, both fine sandy soils and clays.⁶ (Such soils, however, retained moisture and the only grounds affected by soil drought were those underlain by seams of porous coarse sandstone: the Brenchley Series). Wet soils were as common on sloping ground as on flat, not only because many springs issued from hillsides but also because erosion on hillsides brought the consolidated and impermeable bedrock near the surface.⁷

1. It is for such impermeable terrains, whose volume varies between their wet and dry states, that documentary data elsewhere in Europe mentions soil erosion in the early modern period. J. Vogt. 1958. 132-4.

2. B.S. Furneaux. 1932. 125.

3. E. Straker. 1935. 175.

4. A.D. Hall and E.J. Russell. 1911. 136.

5. As at Uckfield - F.H. Edmunds. 1931. 47.

6. N.B. Bagenal and B.S. Furneaux. 1949. 8.

7. *ibid.* 8-9.

Soil types in the High Weald were more dependent, for character on bedrock than on relief (or on that microclimate which was largely controlled by relief). There were at least sixteen soil series, of which half were developed on alluvial and other surface deposits.¹ The most extensive (the Curtisden) was an autochthonous sand soil, with somewhat impeded drainage, which developed on the fine sand strata of the Tunbridge Wells and Ashdown Sands; the Pembury sandy loam was very similar but, as it occurred on coarser sands, possessed better drainage. Both were light to medium loams with much fine sand, 16-24" deep and partly pedzolised. Smaller areas were occupied by ill-drained sand and soils (Cranbrook Series), colluvial soils subject to waterlogging by springs (Ghyll series) and a group of highly eroded clay soils (Causton series). A red-brown loam occurred on brickearths, but since this deposit was derived wholly from Hastings Beds material, the soil was sandier than other brickearth soils in Southeast England (Ladham Series).

There were limited occurrences of a true pedsol (the Poundgate Loam), not only on the heaths but in cultivated fields and under woodland; it appeared most commonly on the coarser sands in the Ashdown Sands outcrop.² The texture of this soil was fine sandy or leamy, its reaction acid throughout. Drainage conditions varied, but its distinct horizons testified to a long period of weathering. It may have occurred most

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1. B.S. Furneaux. 1932. 123-40. This survey applies to Kent, but it covers all soils found on the Hastings Beds in Sussex -N.B. Bagenal & B.S. Furneaux. 1949.3. The first work on soil series in this district was by L.L. Lee. 1931. 91-3, who distinguished the grey-brown, heavy Lamberhurst series, the chief soil of the Wadhurst Clay, and the Pembury Series.
 2. B.S. Furneaux. 1932. op.cit.

commonly on high level platform remnants since such areas, longer exposed to weathering than their surroundings, often had the most leached soils.¹ Apart from these podzols, zonation of soil profiles was not well developed in the High Weald.²

The High Weald was not a large area but it contained more than sixteen clearly definable soil types and the occurrence of each was broken up into small areas by the rapid changes of accidented relief and disturbed structure. These rapid changes were reflected in drainage; many Weald Clay soils originated from similar mineral matter but they were differentiated by drainage. From an agricultural standpoint, drainage was the most important physical variable between the various soils of the High Weald.³

(The surface soils on the Purbeck outcrop were generally poor, heavy clay loams, a combination of bedrock and sandy wash from the adjacent Ashdown Beds; lime content was considerable, but plant foods were lacking.⁴)

All the soils on the Hastings Beds were deficient in lime and nitrogen,⁵ although the Wadhurst Clay soils were rich in bases. Many soils, especially those with impeded drainage, were acid. Save for soils

1. As elsewhere in southeast England -S.W. Wooldridge. 1949b. 31-4.

2. B.S. Furneaux. 1932. 127.

3. B.S. Furneaux. 1932. 127.

4. H.J.O. White. 1926. 82.

5. The only sources of lime are the infrequent thin beds of shelly limestone in the Wadhurst Clay-also some of the sands are slightly calcareous.

on the Ashdown Sands, phosphates were insufficient for full plant growth and potash also was commonly deficient. Such a lack was uncommon in heavy soils but was consequent on the absence of very fine clay particles.¹ Chemical resources in the soils varied even more rapidly than their physical condition; one soil on the generally fertile brickeath had but .014% available potash and .02% available phosphoric acid.² These two quantities varied in Wadhurst Clay soils from .009%,³ and from .007% to .082%, respectively.

1. A.D. Hall and E.J. Russell, 1911. 136-7.
2. *ibid.* 179.
3. A.D. Hall and E.J. Russell. 1911. 198.

TABLE I. SOIL SERIES OF THE HASTINGS BEDS, after B.S. Furneaux.1932.128

Parent Material	origin	Drainage	Series
Sand, non-calcareous, yellow Tunbridge Wells or Ashdown Sands	Straight	Good	Pembury
		Somewhat impeded	Curtisden
	Drift Drift and Colluvial	Bad	Cranbrook
		Good-poor	Poundgate (podsol)
		Good.	Ladham (1)
		Good.	Goodhurst
Sand, non-calcareous, yellow Tunbridge Wells or Ashdown beds, sandstone within 30" of the surface	Straight	Somewhat impeded	Teise
		Bad	Ghyll
Clay and Clay-Shale, non- calcareous, grey. Wadhurst and Grinstead Clays	Straight	Good	Brenchley
		Somewhat impeded	Brandfold
	", eroded Drift and Colluvial	Good-poor	Lamberhurst
		Poor-bad	Benenden
		Poor-bad	Causton
		Good-poor	Winchet
Composite: non-calcare- ous yellow (2)	Straight or Drift	Poor-bad	Shaw
			Hartley

(1) This soil series develops on valley brickearth, which deposit in this region is sandy material wholly derived from the Hastings Beds.

(2) This soil series occurs where Tunbridge Wells Sand overlies Wadhurst Clay, less than 42" below the surface.

- (ii) Timber and its exploitation. We had better be without gold than without timber. J. Evelyn. Sylva. 1664.

In 1650 wood was still one of the most important and widespread natural resources in the Weald, although more timber had been cut in the century immediately preceding than in any other period of like duration before or after. There had been an assault too on woodlands elsewhere in England, where total resources were often much smaller, and a national concern over timber reserves had been aroused. The most recent statute, of 1585 (27 Eliz. 1 c.19), attempted to curb an industrial activity whose timber demands were well known, perhaps even exaggerated by public opinion; the conversion of wood (i.e. oak, ash, ash or elm 1' square at the stub) for use in ironworks was forbidden within 18 miles of London or 8 miles of the R. Thames, within four miles of the foot of the Downs between Arundel and Pevensey, within 4 miles of Rye and Winchelsea, or within 3 miles of Hastings. Wood growing within 22 miles of London was not to be used, save Wealden woodlands more than 8 miles from the City or Thames.

Most of the Weald was outside the restricted areas of the statute and cutting proceeded apace. In 1607 Norden wrote 'he that hath known the Welds of Sussex, Surrey and Kent, the grand nursery specially of oak and beech, shall find such an alteration in less than thirty years as may well strike a fear lest a few years more, as pestilent as the former, will leave few good trees standing in the welds'. Since he shortly afterwards stated that ironworking did not use an excessive

1. J. Norden. 1607. 217-8.

amount of Wealden timber,¹ his fears were probably exaggerated; timber prices rose during this period (as did other prices) but there was no absolute scarcity of timber.²

By 1600 trees were being planted as well as felled. The first element of woodland management to appear was the creation of coppices, which could produce a limited amount of wood at regular intervals without any permanent reduction in timber resources.³ Coppices supplied small timber, the best form for fuel and charcoal, but they needed regular attention and fencing. They produced a salable product every 15-20 years, whereas a naval timber needed 120 years to mature.

Coppices had been planted all over the Weald on small farms and large estates.⁴ They were mentioned in Battle 1657,⁵ Ticehurst 1671,⁶ Edenbridge 1611,⁷ Cotchford near Ashdown 1656⁸ and Lingfield c1607; a tenant of Petworth manor in 1615 held a coppice of 21 years' growth on his land.⁹ Pelham, who owned large blocks of land in the eastern

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1. *ibid.* 220.
 2. G. Hammersley. 1957.150, 159.
 3. The Act of 1543, which exempted the Weald, forbade the conversion of coppices larger than 2 acres into arable and pasture; coppicing was known by the early C 16.
 4. T. Thorpe. 1835.160.
 5. C.E. Woodruff. 1910. 194.
 6. BM.Add. MS 33889 no.898.
 7. PRO.E. 317/ Sx/25.
 8. Map of Lingfield c1607, owned by Parish Council (cit. The Story of Surrey in Maps. 1956.37).
 9. Hon. H.A. Wyndham. 1954. 75.

Sussex Weald, mentioned in his will of 1580 young and coppice woods in Hastings Rape and enjoined his wife to introduce coppicing on all timber areas which were cut over, so that the supply might continue. ¹

Coppicing altered the form of tree growth to suit certain industrial needs and provide a short-term turnover of usable wood. Some of the large landowners went further than this and began to replant. Hurstmonceaux castle accounts, 1643-9, mentioned the setting of 80 service ('checker') trees and 500 quicksets on the estate, and another payment was made for planting young trees in the Park. ² At Petworth, where wood was sold in large quantities, acorns were being sown in 1609. ³ In 1557 the Petworth woods included the Frith, 160 acres of fair oak and beech about 200 years old; Colehook^k Wood, 76 acres of poor oak and beech 300 years old; Chawfold wood, 39 acres of very fine beeches 220 years old, and Ratfalling Wood, 37 acres of beech about 180 years old. (These were the major timber reserves of the estate, there was much good and bad wood scattered about on commons, copyholds and in hedgerows); and the total timber reserves increased in size from 311 acres to 413 acres between 1557 and 1610, partly by the inclusion of copyheld lands but also by new planting. ⁴

Industry provided the largest single market for Wealden timber, as

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1. PCC 46 Arundell; the wife was allowed to use young timber for iron-making, but not great woods (over 40 years old).
 2. T.B. Lennard. 1905. 113.
 3. B.M. Hargrave MS. 226. f 242.
 4. Hon.H.A. Wyndham. 1954. 50-2. In 1557 the Lord had beside the 4 woods above, timber on a common of 200 acres, Middlekorne Wood (91 acres

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as a contemporary document stated ¹ - 'The County of Kent hath of auncient and late tymes been plentifully stored with woods: which hath ben a thinge not only very commodious for all sorts of inhabitants beinge thereby furnished for fuell at reasonable price: but also hath ben allso an occasion whereby the seates & faculty of dothinge hath ben in dyvers partes of that county greatly plantedand in like sort, dyers other trades, as silke makers, and other smithes & dye tooles makers, to whose trades woods are also a necessary incident have been of and by longe and auncient time used and setteled in that county, by reason of the wanted store of woode".

Oak, followed by birch and beech, were the chief woods converted ² into charcoal, the fuel of the ironworks. A document of 1603 stated that the needs of a furnace at Cowford (in Rotherfield) and a nearby furnace (probably Maynards Gate in Rotherfield)' excused my lord for selling of the woods in Waterdown, viz. the Olde Woods of Oake and Beech.³ (Waterdown Forest was in Rotherfield and Frant). Many ⁴ ironworkers supplied timber from their own lands - in 1611 Kitchenham ⁵ forge was sold with its pond and 480 acres of scrub and wood; after

Middlekorne Wood (91 acres of poor oak and beech 240 years old), 108 acres of good young timber on copyholds; and 1680 oaks and beeches (100 fair timber trees) scattered over commons and hedgerows. By 1610 the 200 acre common was enclosed in the park (1592), Middlekorne Wood had become common; Colehook Wood was grown to 108 acres, the Frith to 171, Raffling to 97.

1. A project for act to preserve ye greath of wodds within ye county of Kent. B.M.Add. MS. 33889. f 22. Undated hand of late sixteenth and early seventeenth century.
2. E. Straker. 1931. 110, found these were the chief components of Tudor and Stuart characoals; hazel, a coppice wood, and hornbeam, which take well to pollarding, were also present. G.S. Sweeting. 1944. 19, states that ash and elm were important, but this is unlikely.

/ refs.contd.

the forge at Hodesdale (in Mountfield) became derelict, as it was in 1664, its nearby wood were soon sold (1669) to the working furnace¹ at Ashburnham. In the early decades of the seventeenth century, Pelham works at Brightling Forge, Bibleham Forge and Waldron Furnace² were supplied with timber from other estates he possessed. The Pelhams planned for their fuel needs and accounts from 1639 onwards shew that coppices on the estate were tended and cut in rotation, to secure a regular supply.³ Other ironworkers planned likewise - Darrell⁴ had coppices in Newdigate 1581 - and Evelyn had to admit, grudgingly, that ironworking had promoted timber conservation by encouraging the spread of coppicing.⁵

3.C. Pallein. 1928. 278.

4.The statute of 1585 (27 Eliz c19) said that no one should erect new ironworks in Kent, Surrey or Sussex unless they could supply their fuel needs from their own lands.

5.E. Straker. 1931. 60.

1.W. Bugden. Calendar of Ashburnham Muniments, Barbican House, Lewes. No.886.

2.BM.Add. MS 33154: accounts 1639 onwards.

3.Pelham's will, 1620, mentioned 'fallible wood', i.e small timber and windfall wood, in Burwash, Bivelham and Crowhurst, used in his ironworks -PCC 27 Clark.

4.mentioned in 1581 act - 23 Eliz.c.5.

5.Sylva. 1664. ii. 150. In 1664 it was claimed that Sussex had 200,000 acres of coppice (SAC. xxi;1881 21), an undoubted exaggeration.

Other furnaces needed to buy timber or rights to cut it and their demands, which were not evenly distributed over the Weald, caused considerable deforestation. Scattered woodland on the Dicker, a heath in Dallington, had been almost all consumed by 1607.¹ Two ironmasters who were granted the western half of St. Leonard's Forest, c.1574, including Bewbush furnace exploited their rights to timber more than fully; between 1589 and 1596 they cut 56,000 cords of wood and in 1649 Bewbush furnace had been derelict for 7 years, the reason given being shortage of wood.² A survey of the Forest in 1655 referred to great destruction of wood there since 1602, but stated that the remaining coppices, if their cutting was regulated, could still supply the 30³ cords of wood and 250 loads of charcoal granted in a patent of 1602. The forge and furnace at Eridge in Rotherfield and another forge at Hughes Hall (unidentified) obtained fuel from Waterdown Forest, especially after 1576 and 'to the great expence of woods' by 1603.⁴ Although coppicing was common in the Weald, it was localised; the Act of 1581, mentioned coppices in Newdigate but in 1635 tenants in the nearby parish of Leigh complained that recent fellings, for charcoal

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1. J. Norden. 1607. 214; earlier encroachment here had been considerable (p250)Norden, 220, denied that the wastage of wood by ironworking was serious, claiming that the mills could only work in winter when the streams were swollen with rain.
 2. E. Straker. 1931. 458, quoting PRO.E.101/151/9.
 3. PRO.E. 317/ 5x/35; a cord was a stack of wood, 8'x4'x4'.
 4. C. Pullein. 1928. 278.

primarily, had removed the woods where they formerly commoned their
¹
 cattle.

Many districts became agitated about their future timber supplies.
 In 1606 the inhabitants of Tenterden and adjoining parishes were
 enjoined to preserve any woodlands they owned.² In 1576 the Mayor of
 Rye objected to the ironworks about to be erected at Westfield and
 complained that, if they began operation, all ports from Thanet to
 Brighton would suffer.³ Two years later, the inhabitants of Rye,
 Hastings and Winchelsea threatened that any revival of the Brede
 ironworks would bring a grave local timber shortage.⁴ The demands of
 a single works could be very heavy - in 1589 it was stated that
 Rogate furnace and forge consumed 5000 cords of wood each year - and⁵
 local shortages of wood may well have arisen but there is insufficient
 evidence to support the opinion that Wealden ironworking declined
 primarily from a general fuel shortage.⁶ Decline had begun by 1650

1. O. Manning and W. Bray.ii. 1809.180.

2. HMC. x.7.

3. VCH.Sx.ix.1937.90.

4. APC. 1577-8.265.

5. E.M. Yates. 1955. 84, citing PRO. E 178/3119. G.S. Sweeting. 1944.9
 estimates that each cord contained about 2½ tons of wood: for a
 furnace and forge to consume about 250 tons of timber a week
 conditions must have been exceptional or exaggerated.

6. As suggested by W. Topley. 1875.332.

and accelerated later, yet there were compact blocks of wood in many parks and thousands of small clumps in the Weald; Sussex was still the most wooded county in England in 1900, its woods concentrated in the Weald and only a minority the products of plantations after 1650.

The demands of ironworks did not conflict with the needs of shipbuilding; charcoal was produced mostly from branches and loppings, whilst shipbuilding used large, heavy and mature timbers. Some of these at best quality, could not be supplied by English woodlands; masts and spurs were generally shaped from imported tough softwoods. The search for shipbuilding timber in the Weald was intensive because of its proximity to the naval dockyards in the Thames; these yards built the largest ships and demanded a most careful selection of durable and massive timbers. Shipbuilding reached a peak in the mid-seventeenth century; in 1664-6 6534 loads were taken from the Weald to the Medway dockyards (80 to Woolwich, the rest to Chatham), of which 5635 were oak and elm. Most of the timber must have been bought, for a survey of Crown woodlands between 1604 and 1612 (since when the area of Crown land had shrunk) included only 12,590 tons of

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1. D. Defoe found plenty of Wealden timber in 1724 - Tour...1724. 192.
 2. B. Furley. ii. 1874. 492.
 3. G. Hammersley. 1957. 151.
 4. D.C. Coleman. 1953. 149.

full-grown timber in Kent, and none in Sussex.¹ The commercial shipbuilders of the Sussex ports utilized wood from the Weald also; exceptionally tall trees provided the main timbers, whilst crooked frame timbers for the hull were provided by warped hedgerow trees.² The single most important centre³ of shipbuilding on the Sussex coast was Shoreham.

Wood was a much smaller percentage of the total costs of cloth manufacture, than of either shipbuilding or iron smelting; it was needed only for fuel, or for building machinery and workshops. Although in decline by the mid-seventeenth century, this Wealden industry remained widespread and its leaders objected to the rising prices of wood; a drafted Bill of c.1592-3 complained that around Cranbrook ironworks were consuming vast amounts of wood to the detriment of the older-established cloth manufacture.⁴ However, the decline of the cloth

1.	Trees found		Trees for sale		Coppice(acres)	
	Timber	Decayed	Timber	Decayed	Let	To Let
Kent	12,590	27,810	-	-	3000	894
	tons	loads				
Surrey	11,910	13,820	2790	4600	650	340
	tons	loads				
Sussex	Not surveyed					
	G. Hammersley, op.cit.					

2. R.G. Albion. 1952.4.

3. J.C.K. Cornwall. 1953. 247.

4. HMC.iii.7; date from R. Furley. ii. 1874. 567. In 1637 when a new iron foundry was set up in Brenchley (Cal.SP.D. 1637-8.151), Cranbrook clothworkers complained that ironworks took all the local wood, but the ironworker replied that his demands were limited and the real trouble was wood-brokers, artificially raising the price of wood (ib.291).

industry, as that of the iron industry, cannot be ascribed primarily to a shortage of wood fuel.

Wealden timber was shipped in coastwise trade and also to markets across the Channel. Hastings and Pevensey shipped but little, ceasing after 1600, but Rye and Winchelsea had a substantial export. Between 1581 and 1640 their trade, mostly in undressed wood, shewed an increasing export of timber but a decreasing export of firewood; this reflected the growing consumption of fuel wood within the Weald both by industrial concerns and by the daily needs of an increasing population. Winchelsea had its own wood wharves and in 1577 it was claimed that Rye had exported over 1000 tons of timber in the two previous years, but the largest export of timber from Sussex went not through these ports, but through Shoreham. Shoreham lay south of the Weald, whence came most of its timber exports and, as Chichester and Lewes, its exports were primarily dressed timber, treated in mills by the ports rather than directly after cutting. Where possible, the undressed wood travelled to the ports by water for cheapness' sake; wood destined for Winchelsea and Rye was shipped down the Rother in lighters. Of the total exports of timber from the Sussex ports, half went in coastal shipments to other English ports, the remainder crossing the Channel, primarily to France and the Low Countries.

1. Mentioned in a will of 1624-EM. Add. MS 5701 f 85.

2. The retort of Lord Buckhurst when Rye complained to him about the fuel consumption of his furnaces -HMC. xiii. App. iv. 57.

3. J.C.K. Cornwall. 1955. 90.

4. HMC. xiii.App.iv.75. 5. e.g. some of Rye timber went to Dover 1632

Although some industrial concerns had their own supplies of timber, many others relied on commercial timber sales; much of the industrial needs of fuel, many of the shipbuilding timbers and most of the building timbers were purchased in the open market. The chief suppliers were large estates with extensive woodlands. The Petworth lands, encouraged by the improvident spending of the Earl of Northumberland, sold over £2000 worth of wood between 1585 and 1593¹ and in the next seven years an average of 1030 cords per annum.² Between 1587 and 1593 wood worth £1360 was sold in various lots, to be cut over the next 7-10 years, from lands at Hedgecourt in Horley, Burstow and Shovelstrode in Maresfield; some sales granted all the wood on the area specified, others reserved boughs, saplings and³ underwood.

The lord of the manor owned the timber on the commons and he often wished to capitalize on this resource. Between 1624 and 1661 Lord Monson cut down the trees on Earlswood and Petridge commons in the south of Reigate⁴ and common woods at Wootton, on the northern margin of the Weald were felled in 1579; tenants often had rights to small wood on the commons for their domestic needs and at Wootton they

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1. J.C.K. Cornwall. 1955. 88. Much more was sold than reached the accounts - one sale of £400, 1587, went to the lessees of the Petworth ironworks - G.R. Batho. 1953. 115-8.
 2. Hon. H.A. Wyndham. 1954. 63.
 3. J.C.K. Cornwall. 1955. 88, from Barbican House Lewes, Gage MS 45/16.
 4. VCH, Syl 3. 1911. 36.

raised disturbances on seeing their future supplies endangered.¹ Other landowners respected common rights to timber more; on the other hand, all large timber on copyheld holdings in the Surrey and Sussex Wealds belonged to the lord and he could sell it. In 1576 all timber on the demesne and copyholds of Wickenden manor (in Bolney, Woodmancote, Hurstpierpoint and Edburton) was sold, including timber in the hedgerows and shaws; only 100 acres of wood in the park was exempted, together with wood sufficient to meet common rights for 10 years, and fruit trees.²

By the early seventeenth century, many tenants were purchasing the rights to timber on their holdings - in 1634-5 a group of tenants in Keymer and Balcombe bought all timber on their holdings for the next 500 years.³ The most powerful motive for such buying, if not the only one,⁴ must have been the hope of profit by selling the wood. In 1634 the executor of a will could be given freedom to cut all the timber on land in Wivelsfield.⁵ In the Kentish Weald, tenants could generally dispose of timber on their holdings as they wished and⁶

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1. VCH.Sy. 4. 1912. 430, citing Loseley MS. iii. 55.
 2. B.M.Add. MS 5684 f 187v (Edburton is south of the Weald).
 3. B.M. Egerton MS 1967f 43, 52; this right is referred to for a Keymer tenement again in 1643-ib.f.37.
 4. Much timber was also used at this time for rebuilding (p.42) and some, as in Kirdford 1613, sold to pay off debts and legacies -G.H. Kenyon. 1955. 141.
 5. F.W.F. Attree. 1887.30.
 6. T. Robinson. 1822 ed. 347-8; R. Furley. ii. 1874. 641. A few Sussex Wealden manors had this freedom - Bullockstown near Ashdown 1119-39 (W.H. Godfrey (ed.) 1928.117) Barcombe 1604 (B.M.Add.MS 5701 f 136) and Framfield 1622 (ib. 140v).

cutting was common; in 1591 permission was given to cut over a large area in Great Chart and in 1638 licence was provided to cut and grub wood and underwood in the Grove and Kingswood in Westerham. This increasing freedom for timber sales by tenants was largely prompted by high and rising timber prices and heavy demands for wood of all sorts; in result the Wealden timber market was supplied not only by large sales but by an increasing number of small sales.

The trade in timber had become so great that timber merchants had begun to appear as a separate economic group, not always for the general benefit; in 1637 complaint was made of wood brokers in the Brenchley district who were responsible for unnecessarily high timber prices. The will of R. Strudwick of Kirdford, 1616, disclosed that this iron and glass worker also left 50 cords of timber for cutting into boards and 9100 boards and planks of various sorts; this wood was not the fuel timber needed for his industrial enterprises - he appears to have become a timber wholesaler also.

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1. BM .Add. Ch. 37761.
 2. For 101 years-BM. Add. MS 33898, f 226v; Westerham, on the northern margin of the Kentish Weald, was exceptional, having customary tenant holdings where timber belonged to the lord unless tenants purchased it - as one did 1617 -ib. f 214.
 3. Cal. SPD. 1637. 291.
 4. G.H. Kenyon. 1955. 114-5.

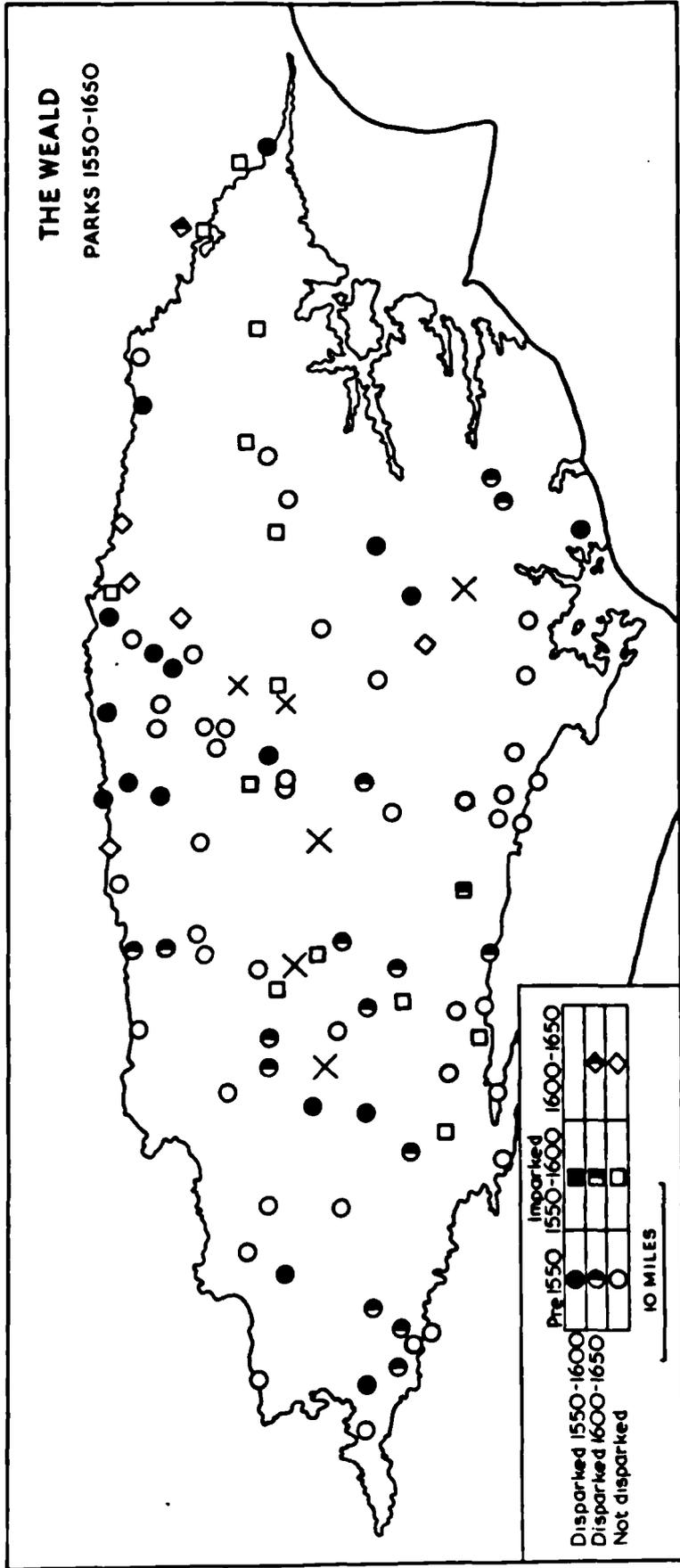


Fig. 7. Data from Appendix V: the former 'forests' are marked by crosses (cf. Fig. 28 and p. 209).

(iii) Parkland

Ashhurst Forest ... veritably the most villainously ugly spot I ever saw in England.

W. Cobbett. Rural Rides. 1822

In 1600 there were more than 50 parks¹ in the Weald (Fig 7); they must have covered not much less than 10% of the surface of the area, a much higher percentage than the national average.² Some parks were smaller than one square mile in extent - Stoneland Park in Withyham was only 520 acres in 1597-8³ - but many were larger; the Great Park (Mitchell Park) of Petworth was 691 acres in 1610, the New Park at Petworth 821,⁴ Buckhurst Park was 1150 in 1597-8,⁵ Shillingless Park (in Kirdford) c.1582 was 1700 acres,⁶ and Broyle Park in Ringmer and Famfield 1649 was 2046 acres.⁷ The boundary pale at Buckholt (in Bexhill) was 1½ miles

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1. See Appendix 5, where the incomplete coverage of contemporary maps is supplemented by documentary data.
 2. S.R. Seargill-Bird. 1886. 89 ff, estimated that before 1650 there were 700 parks in the kingdom.
 3. E. Straker (ed.) 1933.8.
 4. Hon. H.A. Wyndham. 1954.63-4. In 1610 measurements Frithfield, an area of 113 acres was included in the acreage of Mitchell Park, though outside the pale, giving it a total of 804 acres.
 5. E. Straker (ed.) 1933.7.
 6. G.H. Kenyon. 1951.121.
 7. 2046a.2r, 20p: PRO.IR 2/299. f 216-29; in 1565 an inquiry underestimating the acreage as c1600 acres, BM.Add. MS 5681 f 443v.

before its disparking c.1590;¹ in 1570 the park at Hurstmonceaux was
 '3 miles about',² and the Great and Little Parks of Hurstpierpoint 2½
 and 1½ miles respectively.³ The short lived park of Great and Little
 Ripton in Ashford and Sandhurst had a main fence 7 miles long in the
 1630's.⁴

Parks needed strong enclosures, both to confine the agile animals kept inside and to discourage poachers. Generally wooden pales or thick hedges were combined with a ditch. The upkeep of these defences demanded much labour and in earlier centuries tenants in many manors held their land on condition that they repaired and renewed a given stretch of park paling whenever it was necessary. Such palesters were still known in the seventeenth century at Petworth and elsewhere,⁵ but by then the service had often lapsed and the cost of maintenance fell primarily on the landowner. (Tenants bordering Broyle Park were responsible to maintain the pale but in 1602 much of it was in disrepair).⁶ In 1634 estate costs at Laughton included paling and fencing 825' of

1. BM.Add. MS. 5679.f 147.

2. *ibid.* f 266.

3. W.S. Ellis. 1859.66.

4. R. Furley. ii. 1874.554.

5. Hon.H.A. Wyndham. 1954.9; also *Worth Forest, 1559-60*, W.H. Godfrey (ed.) 1928.75.

6. BM Add. MS. 5681 f 443v.

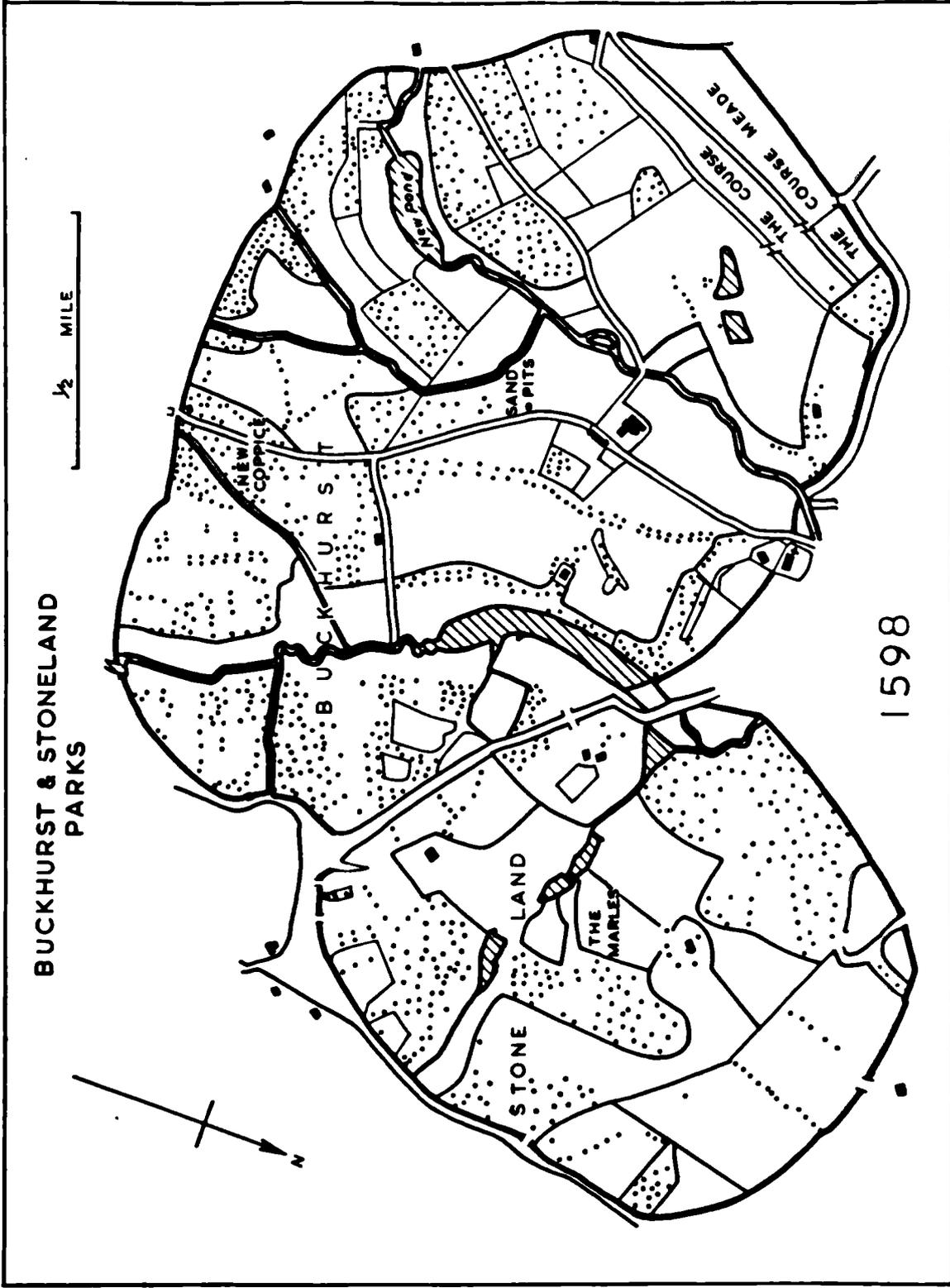


Fig. 8. Redrawn from E.Straker(ed.)1933.maps XXVI-VII.

the New Park boundary and 6014 1/4' around the Old Park,¹ and at Petworth work was done on the Little Park paling in 1585-7 and on the Coneygarth in 1590-1.² Even with such expensive boundaries, many parks lacked complete privacy- two highways ran through the middle of Hurstmonceux Park.³ Elsewhere an area of parkland bisected by a road was enclosed as two separate parks; Buckhurst and Stoneland Parks (in Withyham) were separated only by a road.⁴ (Fig.8).

The original function of parks was as hunting grounds, primarily for deer and secondarily for small game, especially rabbits. These animals, prized both for their meat and for the recreation of their hunting, were still found in large numbers within the park pales. Broyle Park in 1649 had 100 deer and it was alleged that within the previous 30 years there had been 700.⁵ At Hurstmonceux in 1570 there were 200 fallow deer in the park; in the same year the Great Park of Hurstpier point (Danny) had 60 antlers and 200 culls, and the Little Park 80 head of deer, 18 being antlers.⁶ At Petworth the expansion of the parkland acreage at the end of the sixteenth century reflected the increasing number of deer kept there by the Earl of Northumberland.⁷

1. BM. Add. MS 33147 f 19v - 20.
2. G.R. Batho. 1953. 239.
3. BM.Add. MS 5679 f 266.
4. E. Straker (ed.) 1933. Maps at end.
5. PRO. LR 2/299 f 216-29. The witness in 1649 also stated that still earlier there were over 1000 deer, but in 1602 there were only 240 fallow deer - BM.Add. MS 5681 f 443v.
6. BM.Add. MS 5679 f 266; W.S. Ellis. 1859.65.
7. G.R. Batho. 1953. 239.

Conies also were important at Petworth; one of the park enclosures was the 'Coneygarth', or warren. Between 1585 and 1587 3 pounds were spent on making coney burrows and 42 couple of conies were bought; in 1597-8 the Coney garth was extended at the expense of the New Park.¹ The warren in Danny Park had 40 couple of conies in 1570 and in the previous five years 100 acres of the lord's demesne had been impaled as a coney warren;² at Priesthaves in Westham the warren was worth as much as £40 per annum in 1620 from sales, presumably of meat and skins.³ In these Sussex parks, conies were increasing at the turn of the seventeenth century; this was true also of Kent, where Lambarde in 1596 said warrens were multiplying. Black conies, kept for their skins, were declining but grey conies, sold young for meat, were increasing fast.⁴ Some parks added other animals to variegate the chase - Whitley Forest (in Sevenoaks Weald)⁵ was stocked under Elizabeth with wild boars.

Another delicacy kept in many parks was fish. Halden Park, just before 1590, had 5 ponds covering 9 acres;⁶ Hurstmonceaux had 4 wet ponds with tench and carp, besides four others (excluding the moat) which could be filled,⁷ in 1570: the 201 acres of Old Park south of Reigate Town

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1. G.B. Batho. 1953. 239, from Alwick MSS. U12/19,48. In 1557 there were 200 couple of conies in the Coneygarth, (80 acres), 300 couple in the Little Park of Petworth (300 acres) - Hon. H.A. Wyndham. 1954. 58.
 2. W.S. Ellis. 1859. 65.
 3. HM. Add. MS. 5682 f 94.
 4. 1596 (1826 reprint). 5.
 5. E. Hasted. i. 1778. 355.
 6. G.M. Cooper. 1856. 169.

were described in 1622 as having good stock of timber, deer and fish.¹
 In 1570 the Little Park of Hurstpierpoint had 200 carp and tench in a
 2 acre pond; in 1599-1600 a pondhead was made in the New Park at
 Petworth, and in 1600-2 4480 carp were bought to stock the ponds.²
 Deer, rabbits and fish - these were all found in many Wealden parks
 and the combined attractions of the three promoted frequent poaching.³

The value of parks was not confined to large and small game - parks
 included many, if not most, of the continuous blocks of woodland
 remaining in the Weald by 1600. Broyle Park had in 1649, after heavy
 cuttings in the recent past, £1010 worth of timber (the resource in 1602
 was estimated at 6000 cords, i.e. 15,000 tons)⁴ In truth, parkland
 timber was being felled fast. In 1634 49 tons of timber was cut in
 Laughton Park,⁵ and in 1593 the timber of Burstow Park was sold to be
 felled over the next 7 years.⁶ In 1578 one tenant was given leave to
 take 2000 cords of beech, birch and oak annually from St. Leonard's Forest

7. EM. Add. MS 5679 f 266. In 1647 reference made to 3 ponds and a stew
 here, and fish included carp and eels. Fish was also bought from
 outside for salting - one lot was 148 cod: T.B. Lennard. 1905. 118-9.

1. VCH. Sy. 3. 1911. 232.

2. G.R. Batho. 1953. 240-1. In 1648 800 carp were taken out of one iron
 furnace pond at Bewbush in Lower Beeding - E. Straker. 1930.27.

3. e.g. Laughton 1633 - W.H. Blaauw. SAE. 1852. 81; Whitehurst in Marden,
 1612-EM. Add. MS. 33889. no.152.

4. PRO LR2/299 f 216-29 (1649); 1602-EM. Add. MS 5681 f 443v.

5. EM. Add. MS. 33147. f.20.

6. J.C.K. Cornwall. 1955. 89.

and the next year the licence was increased by another 2000; he used this right to the full and by 1597 had taken 75,086 $\frac{1}{2}$ cords (over 180,000¹ tons of wood), besides the 8580 removed by another lessee.

Much small timber, and perhaps some larger, was used in the ironworks found in several Wealden parks. Iwode Park in Newdigate² contained an iron furnace from 1553 to c.1604, and ironworks were established in Mitchell Park at Petworth before 1574;³ the 1574 list of⁴ furnaces mentioned one recently set up in Shillinglee Park in Kirdford. In 1650⁵ 1058 acres formerly Sedgwick Park in Horsham and Nuthurst had 2657 timber trees, and many young oak and beech replacements; in 1624 the area had been leased by the King but he retained rights to all wood,⁶ freedom of access to it and liberty to coke it on the spot. A grant of Darvell and Etchingham Forge Furnace in 1568 had included permission to cut underwood in Etchingham Park for charcoal during the next 10

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1. PRO E 178/2123, cit. W.H. Legge. 1907. 309.
 2. E. Straker. 1931. 451-4.
 3. Hon. H.A. Wyndham. 1954. 93 et seq.
 4. SPD. Eliz. xcv. 20-1.
 5. PRO.E. 317/Sz/48
 6. Dunn MSS. Hove Public Library, 712., cited S.P. Vivian (ed.) 1953. 161.

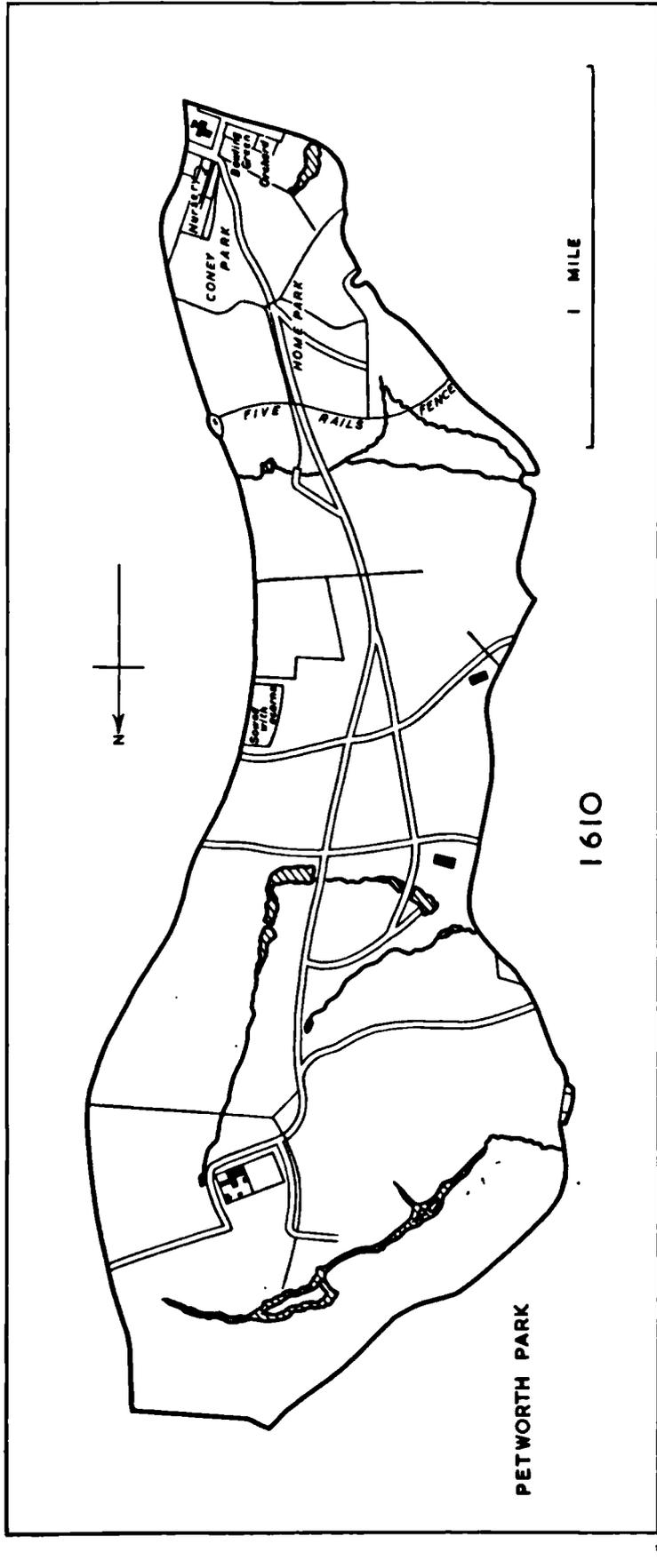


Fig.9. Redrawn from Hon.H.A.Wyndham.1954.map XV.

years. Some timber went for shipbuilding; in 1609 orders were given to carry 500 loads of timber to the royal shipyards at Deptford and Woolwich from the royal manors of Marlpost (near Hastings) & Colstaple (in Horsham) and from the recently disparked parks of Bewbush in Lower Bee-¹-ing and Shelley in Crawley.

To continue the substantial revenue which timber sales brought in, many landowners planted new trees in their parks. One of the woods² in Buckhurst Park in 1597-8 was described as 'the Coppice' and in 1634³ both Old and New Parks at Laughton included coppices. The Earl of Northumberland, further encouraged by large debts, planted extensively in Petworth; the New Park here included two plantations in 1610, and one was marked on the estate map (Fig 9)⁴ as 'sown with acorns'. Much of this far-sighted work was devastated during the troubled periods of Civil War and Interregnum. Most parks, being owned by the Cavaliers, were confiscated and left without adequate protection; the unscrupulous took the opportunity to make ready money and nearby small farmers and labourers increased their stocks of wood for fuel and repairs. The first stages in the ravaging of one such park were recorded in the writings of

1. BM. Harl. MS. 703. f 140. The parks were disparked under Elizabeth.

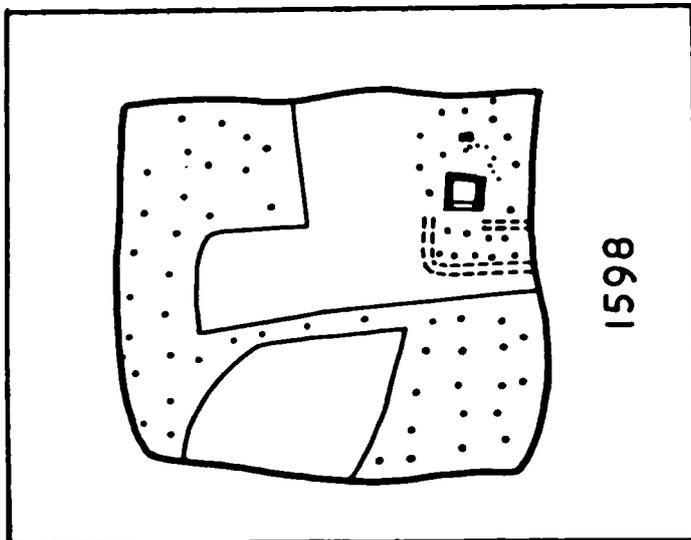
2. E. Straker (ed) 1933. map 26-7.

3. BM. Add. MS 33147 f 19v -20.

4. Hoh. H.A. Wyndham. 1954. 56 et seq.

5. The work is Twysden's 'Historicall Narrative', printed (under the incorrect title of Twysden's Journal) in AC 1858, 187-214; 1859 175-220; 1860, 145-76; 1861-131-95. The relevant parts are para. 146-7, 262-7; also BM. Add. 34163. f 22, 217-9, and Add. MS. 34164. f 86-7.

BOLEBROOKE



MITCHELL PARK

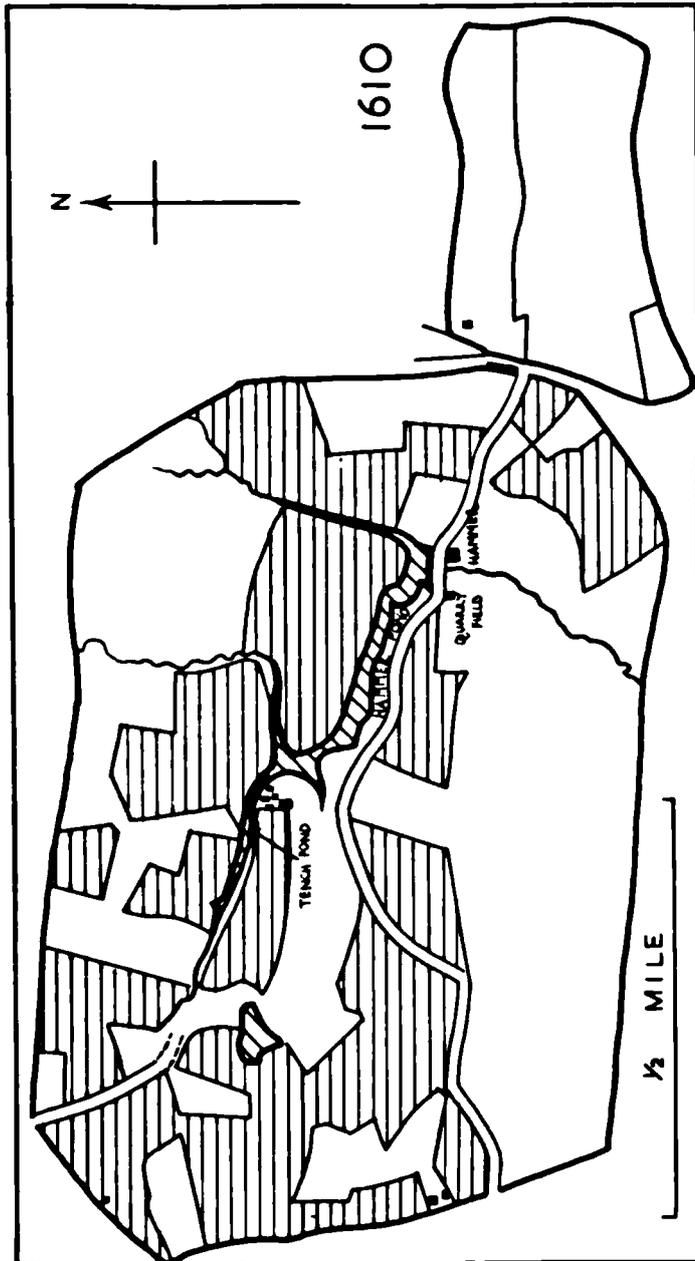


Fig. 10. Redrawn from E. Straker (ed.) 1933, map XXIII, and Hon. H. A. Wyndham, 1954, map II. The area of Bolebrooke was recorded in the 1597-8 survey as wood and pasture; the shaded area in Mitchell Park was mapped in 1610 as arable, the rest as pasture.

Sir Roger Twysden. The Committee of Kent began to fell woods on his estate at Roydon Hall in East Peckham in 1643. In 1644 and again in 1645 he secured orders from high authority to end the fellings, but the local officers-in-charge managed to nullify or circumvent them.⁵

Parkland could also be used as agricultural land, especially as pasture, without disturbing the continuity of hunting. In 1610 Mitchell Park in Petworth (Fig.0) was 312 acres arable and 379 pasture¹ and in 1630 Panthurst Park in Sevenoaks was divided into 205 acres of pasture,² 34 of wood, 117 of meadow and 67 of arable. The animals grazed were not only the park owners'; until 1581 various copyholders had common rights to graze cattle and swine in Shillinglee Park.³ Cattle were the chief animals grazed in parks but pannage for swine figured in the revenues of Broyle Park 1649 (another park subject to common grazing)⁴ and the Great and Little Parks of Hurstpierpoint in 1570.⁵ Buckhurst Park, which included a small racecourse at its west end (Fig 8)⁶ was grazed by cattle and horses; horses were also pastured in Waterdown Forest.⁷

1.Hon. H.A. Wyndham 1954. 64.

2.G.Ward. 1931b. 42-4.

3.Then these rights were exchanged for enclosures within the park -EM Add.MS. 5701 f 156v-157. In 1622-34 a tenant paid rent for pasturing cattle in Ditchling Park - W.H. Godfrey (ed.) 1928.46.

4.PRO.IR 2/299 f 216-29. Swine are mentioned in Hurstmonceaux park 1643-9: T.B. Lennard. 1905. 111.

5.W.S. Ellis. 1859.65-6.

6.E. Straker (ed.) 1933. 7-8; the map of the Park marks 'Geldings' Lodge

7.1588 revenue from agistment of cattle and horses 16/15/4:C.Pullein.1928. 91.

Arable cropping within parkland pales was considerable. In 1619-34 the manor of Bulleekstown in Withyham included as much land inside parks as without. There were within Stoneland Park (520 acres) 248 acres of tenant holdings and in Buckhurst Park (1150 acres) 44 acres of freehold. Outside the parks, the manor included 4 unspecified holdings and others totalling 257 acres. The cultivated area was increasing - one parcel in Buckhurst Park was named 'New Ground' and another '6he Marles'¹. A similar economic pattern could be seen further east in Etchingham Park, where in 1597 besides 129 acres of 'playne ground' (arable or pasture) there were 26 acres of meadow, a 'cove pasture field', a plot sown with wheat, another with two old marlpits in it, and a croft of 1½ acres just previously brought into cultivation ('latelic reeed up')². At Laughton, the turf on 6 ¾ acres of the Old Park had been pared and burnt, and the land then limed and ploughed; this process of improvement was knowh as denshiring. In 1635 46½ acres were denshired and various crops of corn and hay reaped; in 1637 54½ acres were sown with corn but no hay was taken; in 1638 24 acres of cropland were harvested and 10 acres of grass mown at 'Gretton in the Park'³. 21 acres of the Old Warren ('Warin') were under oats in 1640. Parklands provided not only small farms for tenants but also land where the large landowners could experiment with new crops and modes of reclamation.⁴

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1. W.H. Godfrey (ed.) 1928. 112-6; E. Straker (ed.) 1933. maps XXVI-VIII. The map of Ashdown c 1563 (PRO.MPF 144) marks Buckhurst as 'like ground as the forest save that it is somewhat bettered by industrie'.
 2. S.P. Vivian (ed.) 1953. 203.
 3. BM. Add. MS 33147 f 18 ff.

Parkland served many purposes but by the early seventeenth century, its extent in the Weald was decreasing. The Great Park of Battle was referred to in 1644 as lately disparked,¹ and in 1651 281 acres of it were leased out;² Bewbush (in Lower Beeding) and Shelley (Crawley) parks were disparked by 1608,³ Chesworth Park in Horsham⁴ and, Sedgwick Park in Horsham and Nuthurst by 1602.⁵ Strudgate Park (in Ardingly, West Hoathly, Worth and Balcombe) was described in 1630⁶ as lately disparked, but in 1571 it had already been leased out for some years.⁷ The circumference of the North and South (Little and Great) parks of Bletchingly was 2 leagues in 1540 but by 1680, although their acreages were still known (1135a.22p; 1681a. 28p), they had both been disparked some time.⁸ These parks lay in Surrey and Sussex; for Kent Lambarde claimed in 1596 that 'within memorie' half the Kentish parks⁹ had been disparked, a pardonable exaggeration.

4. The walled and terrace gardens found in many parks (e.g. Hurstmenceux, 1570-BM. Add. MS 5679 f 266) contributed herbs, vegetables and fruit.

1. T. Thorpe. 1835. 155.

2. ib. 158; in 1659 110 acres in one lot, 83 acres in another, of the Little Park of Battle were leased out - ib. 161.

3. BM. Add. MS 5705 f 134.

4. 1602 patent, cited in PRO. E. 317/Sx/22.

5. 1602 patent, cited in PRO.E. 317/Sx/48.

6. PRO.C. 142/456.

7. P CC 45 Holney.

8. L and P.H. VIII. xv. 1027 (6); Sy.AC. 1871. 216.

9. 1596 (1826 reprint). 5.

(The full extent of disparking is clouded by the vagueness of documentary terminology. Although Cuckfield Park seems to have been disparked,¹ the liberty of the park was mentioned in 1646,² and rights to free warren there as late as 1685.³ Parks wholly turned over to farmland were still called parks, and without precise evidence whether the pale survived or not, it is impossible to tell which were actually disparked. Shillinglee Park in Kirdford, which had only 25 acres of copyhold within its c1700 acres of parkland in 1581, was turned over wholly to agriculture c1600 and by 1648 there were 12 holdings within it⁴ less than 100 acres each, but 4 exceeding 250 acres each. Whether the pale still survived in 1648 is uncertain.⁴ In other instances part only of a park was dispaed; in 1580 various small parcels, formerly part of the Vachery Park in Cranleigh,⁵ lay outside the pale. By 1542 part of Burstow Park was dispaed,⁶ and in 1590 the area was described as 'lands ... called le Parke', but in 1649 a smaller park was still in existence.⁷)

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1. According to W.H. Godfrey (ed.) 1928. 32. However the park is marked on an early C 17 map (acc. J.P. Cooper. 1898. 92) and 1615 is called 'the parke or inclosed ground' - W.H. Godfrey (ed.) 1928.1
 2. PRO. CP 25 (2)/501.
 3. ib/800.
 4. BM. Add. MS 5688 f 112. G.H. Kenyon. 1955. 89, regards it as disparked 1648; cf. Ditchling Park said 1632 to have been long disparked. (BM. Add. MS 5683 f 114), but still called park in 1691 (Barbican House Lewes, Portman Deeds 252).
 5. E. Straker. 1941.41.
 6. PRO. Sc 2/205/39-40.
 7. VCH. Sy.3. 1911.179.

Cultivation did occur within many park pales, but much disparking was promoted by a wish to turn over the land completely to agricultural purposes. The Great Park (Mitchell Park) at Petworth exemplifies this trend. In 1593 the grazing was let and when this lease fell in, a new tenant in 1614 was empowered to divide and enclose the park for husbandry and to rid it of furze and other impediments. By 1635 the process was complete and all the area let to 10 tenants.¹ The recently disparked lands of Colstaple and Chesworth in Horsham were almost all in arable or pasture in 1608² and when Wedgwick Park (in Horsham and Nuthurst) was leased in 1624, the lessee was given right to dig marl in the area and was encouraged to denshire where it was advantageous.³

Although there was much disparking in the later sixteenth and early seventeenth centuries, there was also a lesser area imparked. This was not a period when hunting was unpopular - the royalty, especially Elizabeth and James I, were devoted to it, and the nobility followed suit. The commonalty also liked the sport, so much so that an Act had

1. Hon.H.A. Wyndham. 1954. 64-5. (cf Fig 10).

2. Colstaple was 31 acres pasture, 22 arable, 30 wood; Chesworth was 14 meadow, 160½ pasture, 47 arable, 8½ wood, 3 water. BN,Add. MS 5685 f 68v-69.

3. quoted in PRO.E. 317/Sx/48: 1650.

to be passed in 1603 which, after complaining how many 'small men' had taken to hunting, limited the hunting of game to lords of the manor, freeholders worth 10/-/- p.a., and to leaseholders worth 30/-/-¹. Whilst many of the nobility, found themselves in financial pressure during these decades,² and hastened to turn their parklands to more remunerable uses, those less pressed or less prudent continued to impark. Buckhurst and Stoneland Parks in Withyham in 1597-8, had been recently enlarged by the Earl of Dorset. In 1609 after his death (1608) it was stated that they were held of the king by knight service, but old men who could remember their first enclosure, disputed this³ legalizing of the parks' status.

A park was enclosed around the seat of Burston in Hutton between 1603 and 1625;⁴ a 60⁰ acre park in Heathfield was sanctioned in 1610; licence was given to impark 400 acres in Limpsfield and stock them with deer in 1616.⁶ Between 1625 and 1637 licence was given to enclose a park around Roydon Hall in East Peckham and a charter of free warren was granted for it;⁷ a grant of free warren in 1617 had extended over lands in 23 parishes of the Kentish Weald and Romney Marsh.⁸

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1. 1. James l.c 27.
 2. This is agreed, although the relative pressure on nobility as against gentry is disputed - L. Stone. 1951-2. 302,-21; H.R. Trevor-Roper. 1953. 1-53; R.H.Tawney. 1954-5. 91-7.
 3. They can be traced before the C 16 (see Appendix), but some additions had certainly been made in the lifetime of the Earl (born 1527-36) who died 1608-W.H. Godfrey (ed.) 1928. 112-5.
 4. E. Hasted. ii. 1782. 301.
 5. BM. Add. MS 5681 f 127v.
 6. PRO.C. 66/1529, cit. VCH. Sy. 4. 1912. 300.
 7. E. Hasted. i. ¹⁷⁷⁸1667.275.
 8. KAO.U. 48/T 46.

Although the Great Park of Petworth was turned over to agriculture, the other Petworth parks grew, but by a less legal means than by royal licence. In 1557 it was stated that 12 acres had been taken into the Coneygarth within the last 15 years and in 1558 the tenants of the manor gave sanction to the previous enclosure of 10 acres of common, over which they had lost their common rights. Between 1557 and 1610 the Earl of Northumberland made a fence (Five Rails Fence, see Fig 9) along the northern boundary of the Little Park and in exchange for land thus taken in, he gave the tenants pannage on the 91 acres of Middlekorne Wood (now Colehook Common). Later the Earl decided to inclose another 200 acres of common, and this sparked off the tenants' latent discontent. In 1592 they were making¹ nightly attacks on the park palings, and the same year they took their grievances to Court of Chancery, complaining that grazing in the park and pannage in Middlekorne had belonged to them before the enclosures, and that since the Earl had felled all the wood on Middlekorne, it had no value as pannage. The lord replied that Five Rails Fence had enclosed very little tenant land and that the fellings on Middlekorne made it more available as pasture. The final settlement has not survived, but the Earl seems to have kept his enclosures; he celebrated by accelerating the process. By 1610 a 'New Park' measured no less than 821 acres; three copyholds still continued within it, but already a new

1. EM. Harl. MS. 6995.f.75.

lodge had been built and two plantations of wood sown.¹

Not all the new parks survived long, nor did the landlord always succeed against the opposition. In the 1630's permission was given to enclose a large park, including woods and a warren in Ashford and Sandhurst. The London Road, however, crossed the middle of the Park; poaching and wood stealing was easy and after Civil War began in 1642 these ran riot. Soldiers slaughtered most of the deer and other animals in 1648-9 and in 1655 the area was disparked.²

The former royal forests still retained a separate identity in the early seventeenth century, although in other respects they resembled private parks; they had similar animals, they served the same functions, and they also had been invaded by the iron industry and by cultivation. In 1576 one pale of 432 rods still surrounded Waterdown Forest but the land within was divided between several tenants;³ Worth Forest also was very divided in ownership and parts of the Forest area had become, by 1610, separately enclosed as Tilgate and Wakehurst Parks.⁴ The acreage of St. Leonard's Forest in 1602 was 3980 acres and important ironworks had been established within its limits; the adjacent parks of Bewbush and Shelley (both disparked by 1608), Chesworth and Sedgwick (both

1. Hon. H.A. Wyndham. 1954. 56-63.

2. R. Furley.ii. 1874. 554; many of the pales of Henfield Park were stolen 1643-7, H. De Candole. 1947. 79.

3. BM. Add. MS 5682 f 285 v; the addition here is incorrect.

4. The actual parks are well portrayed on Norden's map of Sussex, as added to by Speed 1610-BM. Maps. C 7 c5 (44).

disparked by 1608) were areas probably within the forest at an earlier date.¹ Within the Forest itself, much of the poor sandy soil supported only heath and a curious pamphlet of 1614 enlarged on the 'serpents' which could be found there.²

The largest royal forest was 'the forest or chase of Ashdowne, otherwise called Lancaster Great Park'.³ The large earthen bank along its boundary was still prominent, but the paling on it was decayed.⁴ In 1650 there were only 150 red and fallow deer in the park, and the only trace of small game was 86 acres described in 1658 as 'formerly a coney warren'.⁵ The hunting area had been reduced not only by a multitude of small assarts (p. 11-4)⁶ but also by the enclosure of 14 acres into a private park (Newnham).⁷ The royal fishery was still worth 3/-/- p.a., but timber resources were very small. The poor barren soils had never supported much thick woodland and many decades of

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1. for details of these parks, see Appendix V. In 1602 the ironworks had some small fields and an orchard nearby - PRO. E 317/Sx/35 (1655, which repeats the 1602 patent in detail). The exact 1602 acreage was 3980 a.3r.2p.
 2. J. Trundle. True and wonderful: a discourse relating to a strange and monstrous serpent (or dragon) lately discovered in a woode called St. Leonard's Forest. 1614.
 3. The description of 1658- PRO. E 317/Sx/27.
 4. PRO.E. 317/Sx/14, 11, transcribed SAC. 1871.259,251.
 5. ibid/11. In the same year it was suggested that certain lands in this district be left as a coney warren - ibid./12.
 6. ibid/26.1650.
 7. SAC. 1871.295.

illegal cutting and the taking of estovers left a cover which was very scanty in 1650-8; the timber trees were valued then at 639/-/- or less than 1/- worth of timber per acre. ¹ Ashdown was suffering neglect and its history as a royal forest was nearly ended; the area was dis-
²afforested by law in 1662.

The decay apparently by the 1650's was, at least in part, recent. in appearance, for Ashdown had been a favourite hunting resort of James I. ³ In 1641-2 the Forest was seized by the Parliamentary forces and a later document, with a royalist bias, blamed most of the ⁴destruction of timber and killing of deer onto the Parliamentary forces. The Parliamentary surveyors of 1650 blamed the Earl of Dorset who, by Patent of 1633, had been granted all wood and underwood in Ashdown for 31 years. The Patent was very restrictive - he was not to cut any chestnut or crab trees, nor any marked oak, ash, beech or elm; no trees larger than 8" square at 4' above the ground were to be felled,

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1. ~~SAG. 1871.295.~~
- 1 2. Generally the surveys said much wood had been cut, and only small timber suitable for fuel remained. The lodge areas in the Forest had timber worth 414/-/-; 2 areas had none to value, 1 only 4/-/- the other 5 areas 410/-/- from 3315 acres. (PRO.E. 317/Sx/10-17). The rest of the Forest, in Duddleswell manor had 225/-/- in 1658 (ibid./27).
- 2 3. By Patent 1662, E. Straker. 1940. 124. An act passed by Parliament 1649 disafforested much Crown land, but Ashdown was exempt until 1654 (S.J. Madge. 1938. 117-9). This was all annuled at the Restoration.
- 3 4. J.C. Cox. 1905. 302.
- 4 5. The 1691 Interlocutory Decree, copy in HM. Add. MS 5709 f 3; the House of Lords Calendar 1660 mentioned waste in Ashdown in preceding years-HMC. vii. 97. (The claim in 1679 that the King had 3000-4000 deer in Ashdown was grossly exaggerated - E. Straker. 1940.122).

and 12 young trees (oak,elm or beech) were to be left on every acre
of woodland he felled.¹ Since Ashdown was not heavily wooded in any
case, Dorset could have cut very little timber had he kept strictly
to the regulations. The Parliamentary surveyors said he had
exceeded his rights - he had destroyed nearly all the wood and under-
wood, tolerated encroachment and neglected the park pales. The Lord
of Maresfield, Sir Thomas Gage, had also claimed customary rights,
illegally, in the Forest in the early 1640's as a justification for
cutting wood and allowing encroachment there.² Blame for killing
the deer was variously apportioned. The 1650 survey stated that
there were formerly some thousands of deer in the Forest, but that
many had been taken 'for the use of the Commonwealth';³ the keepers
still had allowances to buy hay for the game in winter, but the game
were nearly all destroyed.⁴ The commoners had killed some deer to
supplement their meagre food supplies.⁵

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1. Also browse of deer, and customary rights to small timber were not to be interfered with; the Patent is copied in BM.Add. MS 5681 f 29.
 2. PRO.E. 317/Sx/26. 1650: SAC.1871.311.
 3. ibid: 312.
 4. ibid. 304.
 5. This was going on for a long time before 1693 - BM. Add. MS. 5709. f.3.

Depredations and neglect had continued over many decades and they certainly had begun before the Earl of Dorset gained control in 1633. A survey of 1632, after mentioning that 20 acres were impaled near each lodge as resting places for the deer, described the keepers' lodges as much decayed and the Forest pales as largely broken down. Quicksets had been planted in the gaps in the paling, but the barren soil discouraged growth, and both cattle and red deer¹ browsed on them.

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1. BM. Harl. MS. 1579. f 22. Repairs to the palings were done in 1605 (C.N. Sutton. 1902. 370) and pales are marked on the c.1563 map of Ashdown - PRO. MPF. 144.

- (iv) Enclosed arable and pasture. For out of old felde, as men seith
Cometh al this newe corn fro yeer
to yere;
And out of old bokes, in good feith
Cometh al this newe science that
men lere.
G. Chaucer. Parlement of Foules.
1372-82.

Many small districts in the Weald were surveyed early in the seventeenth century - on the northern margin, 680 acres in Little Chart and Pluckley (1626) and 1630 acres in Little Chart and Charing (1639); in the clay lowlands, 190 acres at Bethersden (c.1640), 119 at Sutton Valence (c.1650), about 400 in West Peckham and Hadlow (1621), and 24¹ at Woodchurch (1637). On the lower slopes of the High Weald, about 340 acres in Brenchley were plotted in 1639, the manor of Hammerden in Ticehurst in 1614, 45⁶ acres in Horsmonden in 1605 and 45 acres within the same parish in 1648.² The single most important map survey was included in the Buckhurst Terrier of 1597-8, and delineated about 8500 acres on the borders of Ashdown Forest, in the highest part of the Weald.³ On all these maps, cultivated crop and pasture fields were drawn enclosed with palings, hedges or fencing (Fig.11).

Most fields in the Buckhurst lands were between 3 and 12 acres in size.⁴ Fields in lower and more fertile parts of the High Weald were often smaller, most below 5 acres in Etchingam and Salehurst (1597)⁵

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1. KAO.U. 275/P 1; W 386/P1.3; U55/P22; U 120/P 42; U 31/P3; U 78/P 38.
 2. *ibid.* U 86/P2; Barbican House, Lewes. M&B.Box.E 2; KAO.U 425; *ibid.* U 405/P1.
 3. Reproduced in E. Straker (ed.) 1933, in the Map Appendix, at 6" to the mile, the original being 16" to the mile.
 4. This is revealed by analysis of E. Straker (ed.) 1933, the Buckhurst

but this was not always so - the 1175 acres in Horsmonden and its¹ neighbours mapped in 1675 was divided into fields whose sizes, in relative proportion, resembled the Buckhurst lands. Lands in one parish varied - fields in Horsmonden mapped in 1605 and 1648 were mostly smaller than others nearby mapped in 1675.

Field sizes were no more uniform in the Low Weald than on the higher lands. If the unreliable yield of clay soils favoured large fields, drainage was less difficult in small units. Fields in Bethersden (c.1640) on heavy clay were similar in size to those on brickearth soils in West Peckham and Hadlow, the most above 6 acres; in the latter, arable fields were nearly all above 6 acres, but the pastu² fields and meadows were smaller. Most fields mapped in Sutton Valence, c.1650, were smaller than 6 acres but 680 acres in Little Chart and Pluckley, 1626, in a similar location, possessed a much higher average. Local variety was great but, in general, small fields characterized both³ Low and High Weald, and the outer margin of the Wealden district. It was hardly likely that where the two major geological formations shewed so much internal variation that the size of fields should reflect any

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1. KAO.U 180/P1.
 2. G. Markham. 1625. 7 stated that most Wealden fields were between 12 and 16 acres in size (too high if anything) and attributed their smallness to (a) the need to sow fields immediately after marling (a piece of special pleading) and (b) drainage problems.
 3. 29 of 41 measured meadows in Etchingam and Salehurst 1597 (S.P. Vivian (ed.). (1953. 199-204) were below 5 acres & 37 below 10.

major difference between High and Low Weald.

Very commonly Wealden fields were bordered not by a single row of bushes as a hedge, but by narrow strips of scrub or trees, called 'shaws' or 'rews'. In 1650 three enclosures at Horsham, described as meadow, pasture and arable, included 107 trees;¹ a few may have been scattered throughout the fields but most were no doubt on the margins. A conveyance of land in Frant 1641-2 mentioned '10 shaws and woodland, c 17 acres' and a holding (in Burwash parish) was described in 1597 as 'Eastland woodd devided into twoe parts haveinge some arrable'.² Fields in Ticehurst (1614) and Haywards Heath (1638) were surrounded in many cases by scrubby, tree-lined borders;³ single trees were scattered through the fields.⁴ In Hartfield and Withyham (1597-8) shaws were especially large in fields which bordered blocks of wood,⁵ and one wooded border might continue through several fields.⁶ Shaws occupied up to 40% of a field area in the Buckhurst lands near Ashdown;⁷ and in 680

1. PRO. E 317/Sx/48.
2. ESRO. Add. MS 283; S.P. Vivian (ed.) 1953.1.
3. Barbican House, Lewes: respectively MR. Box f/2, and the unnumbered map of Heworth and Trubweek manors.
5. E. Straker (ed.) 1933. Map VI.
4. In Shillinglee 1581 (HM. Add. MS 5701 f 156v - 159) tenants could remove trees in the midst of their meadows or arable which impeded cultivation; this was known as 'plowridd and meadridd'. Tenants in Battle had the same right 1564 - HM. Add. MS 5679 f 44v.
6. *ibid.* Map I.
7. *ibid.* 72.

acres of Little Chart and Pluckley (1626) they occupied 11% of the total land area.¹

Shaws may have been a reflection of scattered and piecemeal colonisation in the woodland of the Weald² but, whatever their origin, they fulfilled several functions in the early seventeenth century. They provided shade for beasts in pasture fields (many pastures but only one arable field in West Peckham and Hadlow, 1621, had a scrubby margin)³; many shaws, as the Brenchley map of 1639 demonstrates, served as small access ways to fields which had no frontage on a road. One of the fields in West Peckham and Hadlow had several balk-like interior divisions, uncultivated; they may have differentiated areas under different crops (it was a large arable field), or alternatively they may have been remnants of former field boundaries; some small fields were being enlarged at this time by removing intermediary divisions. (see p.⁸⁷ 1).

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1. KAO.U 275/P 1. Acreages are not given for all fields.
 2. This was suggested by E. Straker. 1935. 175.
 3. KAO.U. 31/P 3. An area of about 400 acres.
 4. KAO. U 86/P 2.

Where shaws were not present, field boundaries assumed a variety of forms - fences were mentioned in Framfield (1622),¹ post and rail at Henfield 1647,² and two of the keepers' lodges in Ashdown, 1657-8,³ had their attendant crofts bounded by a mixture of quicksets with cut-and-laid fencing. A Mirdford farm in 1666 had 40⁰ posts and rails,⁴ whilst palings bordered a few fields in Horsmonden (1605) and Pluckley (1626).⁵

Shaws needed little attention, although they brought with them all the disadvantages of hedges in increased measure - they gave excessive shade, hindered drainage on the margins of the fields, and harboured vermin and pests.⁶ Narrow hedges or fencing were less hindrance to cultivation, but their upkeep absorbed time, timber and labour. Hedgebote, timber to repair hedges, was a common customary right throughout the Weald.⁷ Trees which grew out from hedges over

1. BM. Egerton MS 1967 f 229.
2. H. de Candole. 1947. 103.
3. Whitdeane Lodge - PRO.E. 317/Sx/14, 1657; Comedeane Lodge - ib./11, 1658. In 1618 a farmer in Sedlescombe paid for some quickset hedging - W.D. Cooper. 1851. 23.
4. G.H. Kenyon. 1955. 142.
5. KAO. U. 425; U 275/P 1.
6. These problems are well treated in E. Juillard et al. 1957. 67 et seq. G. Markham. 1625.7, said Wealden hedges hindered corn from drying and ripening by their shade.
7. e.g. manor of Charlton-cum-Ashurst. BM. Harl. MS. 606. f 42; Horsham 1602, cited later in PRO. E 317/Sx/22; Duddlesfold in Lurgashall and Petworth, 1608 - BM Add. MS 5705 f 134; Clayton, Ditchling, Keymer and Cuckfield in the Barony of Lewes 1622 - W.H. Godfrey (ed.) 1928. 81 Framfield 1622- BM. Agerton MS 1967f 229, etc.

the highways reduced visibility and impeded the drying out of the road surface after rain; court orders, not always effective, frequently demanded that such trees should be trimmed. (see p.221)

There was nowhere in the Weald, a three-field or two-field system and any form of subdivision of enclosed fields occurred infrequently; the Wealden terrains thus lay in distinct contrast to the Greensand terrains around where openfields existed in several localities. Along the southern border there was openfield at Wilmington (1615)², at Steyning (1609)³, at Folkington (1650)⁴ and at Washington (1641)⁵; the field pattern at Upperton, just south of Petworth, contained in 1610 clear indications of former openfield.⁶ On the northern margin, openfield subdivision still remained at Westerham in the 1610's.⁷

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1. C.^S.B. and C.S. Orwin. 1954. 67, state that no openfields have been found within the Weald; but for some openfields in the Surrey Weald, see p.354.
 2. J.C.K. Cornwall. 1953. 50-1; also 1673 - Barbican House Lewes, C.P 218
 3. PRO.C 142/311; still existing 1817-SAC. 1918. 109.
 4. Barbican House Lewes MRI, cit. W. Bugden. 1945. 97-9, 124.
 5. J.C.K. Cornwall. op.cit.
 6. Hon. H.A. Wyndham. 1954. map XI.
 7. Pitfield was clearly subdivided - HM. Add. MS 33898 f 212-4; for C 14 openfield here, p. 353.

Within the Weald, contemporary documents frequently refer to landholdings which comprised only part of a field - 16 acres in Hailsham, 1576, formed part of Grovefield¹ and in 1632 two men held a parcel of an enclosure in Wivelsfield;²¹ a demesne croft in Withyham 1597-8 was part of a field called 'four acres'³ and four acres in Bexhill 1605 were part of the Holme⁴field.

Certain Wealden enclosures were, beyond dispute, divided internally between several owners; data from earlier centuries confirms this (p 350ff). The exact extent of this phenomenon in the early seventeenth century is almost impossible to determine, partly because such subdivisions were not recorded on contemporary maps, partly because of the vagueness of verbal description. The word '-field' was normally restricted to one enclosure but not always; in 1573 Sharnefeld in Frant totalled 100 acres.⁵ Field names, like 'Bomfordes' of 'Birchetts' in Cuckfield 1622-5,⁶ referred clearly to several separate fields and 'parcellum' was used no less indiscriminately. Without supporting map evidence, it is often impossible to distinguish the name of a farm from the name of a single field.

1. L.F. Salzmänn, 1901.110.

2. F.W.T. Attree. 1887.21-2.

3. E. Straker (ed.) 1933. 11; another example, ib.6.

4. BM.Add. MS 5700 f 30v.

5. BM. Add. MS 5681 f 292v.

6. W.H. Godfrey (ed.) 1928. 18-31.

7. In Cuckfield, 1606;7, 'unam parcellam terram iacent in quinque seperalibus parcellis continent xv ~~sim~~ acras, parcellam de Hodeshurst ib.26.

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Data from Cuckfield 1622-5 does include references to subdivided furlongs and virgates; one of these units, called 'Crispes', totalled 47 acres and was composed of five parcels held by two tenants. Half a furlong called 'Howlers' and half a virgate called 'Parkers' were each subdivided between two tenants. Southeast of Cuckfield lay Plumpton, on the Weald Clay Lower Greensand margin and some of its holdings were scattered in parcels through East, West and Middle 'Laynes'.² It might appear that these two instances concerned lands then or formerly openfield since the normal connotation of all three terms - furlong, virgate, layne - was in such contexts but the assumption is unjustified; data from elsewhere in Sussex shows the terms were not restricted to openfield terrains.³

Some Wealden fields were subdivided in the early seventeenth century, but others were being amalgamated. Farmers in possession of several adjacent small fields were removing the interior hedges to ease the movement of animals, and of their simple but multiplying implements; such grubbing-up also reduced the area of unproductive land. By c.1650 a plot of 5 acres on the denn of East Goudhurst had lost the internal hedge which had divided it in 1561; a field in Sutton Valence c.1650 was described as 'five pieces of ground';⁴ two parcels of land⁵

1. ib.18-31.

2. In 1623 one holding of six parcels consisted of 2a 1r in East Layne, 15 poles in Middle Layne, 1½ acres in West Layne: BM. Egerton MS 1967 f 83.

3. The terms virgate and furlong occur very widely in the Weald, and layne was apparently applied to any land, owned in severalty, which had no surrounding enclosure (ex.inf.J. Brandon.B.A.)

5A. KAO.U120/P 42.

4 BM.Add.MS 33892 no. 86.

in Hadlow, called Cold Symons, were specified in 1641 as 'olim¹ in trees parcellis divis¹is'. The map of lands in Hartfield and Withyham, 1597-8, marked rows of trees crossing several fields, the relics of past hedges.²

Enclosure from the waste was also altering the field pattern of the Weald. Small irregular fields, singly or in groups were scattered over the poorest lands of the area, some on the margin, others surrounded by open heathland. When the common in Northchapel was mapped in 1610, there were several isolated enclosures within it.³ Ashdown Forest exemplified the mosaic of small improved parcels produced by long-continued assarting within a large area of open wasteland.(Fig.16). Although the enclosed fields of the Weald yielded no coherent genetic pattern,⁴ certain shapes and situations were a fossilized expression of former assarting - in Hartfield and Withyham, 1597-8, certain fields (early enclosed) protruded into others and recent clearance had produced two fields, both called Claies Croft, completely enclosed in woodland.⁵

(By 1600 the term croft did not specify any specific form or size of enclosure; it was often still used for small enclosed gardens near the house, and for small encroachments on the waste,⁶ but the term

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1. KAO.U.55/M 363.m5.
 2. E. Straker (ed.) 1933. maps 1 and XXXIII.
 3. Hon.H.A. Wyndham. 1954. maps IV and VII.
 4. The methods used by W. Müller-Wille. 1953. 179-186 to divide field patterns into various ages, cannot be used in the Weald.
 5. E. Straker (ed.) 1933. map IX. Field names on such maps are additional evidence of the process-Rough Crofts (map XXIX), Brakeland (map I), and Upper Wood was I wood and 3 fields (map XXXVI). 7 pasture fields in Hadlow and West Peckham 1621 were called Snagland Wood (KAO.U 31/P3), and several fields in Horsmonden and Goudhurst,1675, had 'Lewes Hoath' written over them(KAO.U. 180/P 1).
 6. e.g.in Ashdown.1650-3 croft 4 acres.4 crofts 8 acres.PRO.R 317/Sv/26

had become sufficiently vague for one document (Cuckfield, 1622-5) to speak of 'duas parcellas sive croftas terre'.¹ One croft in Cuckfield at this time, Houndpitts, measured only $\frac{1}{2}$ an acre,² but in 1574 Poldcroft in Bethersden comprised 66 acres.³ It would appear that 'croft' not only covered enclosures of various sizes; it might even, in some cases, be used as the name of a tenement comprising several enclosures.)

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1. W.H. Godfrey (ed.) 1928. 23.
 2. *ibid.* 18 ff.
 3. KAO. U 282/M 14.

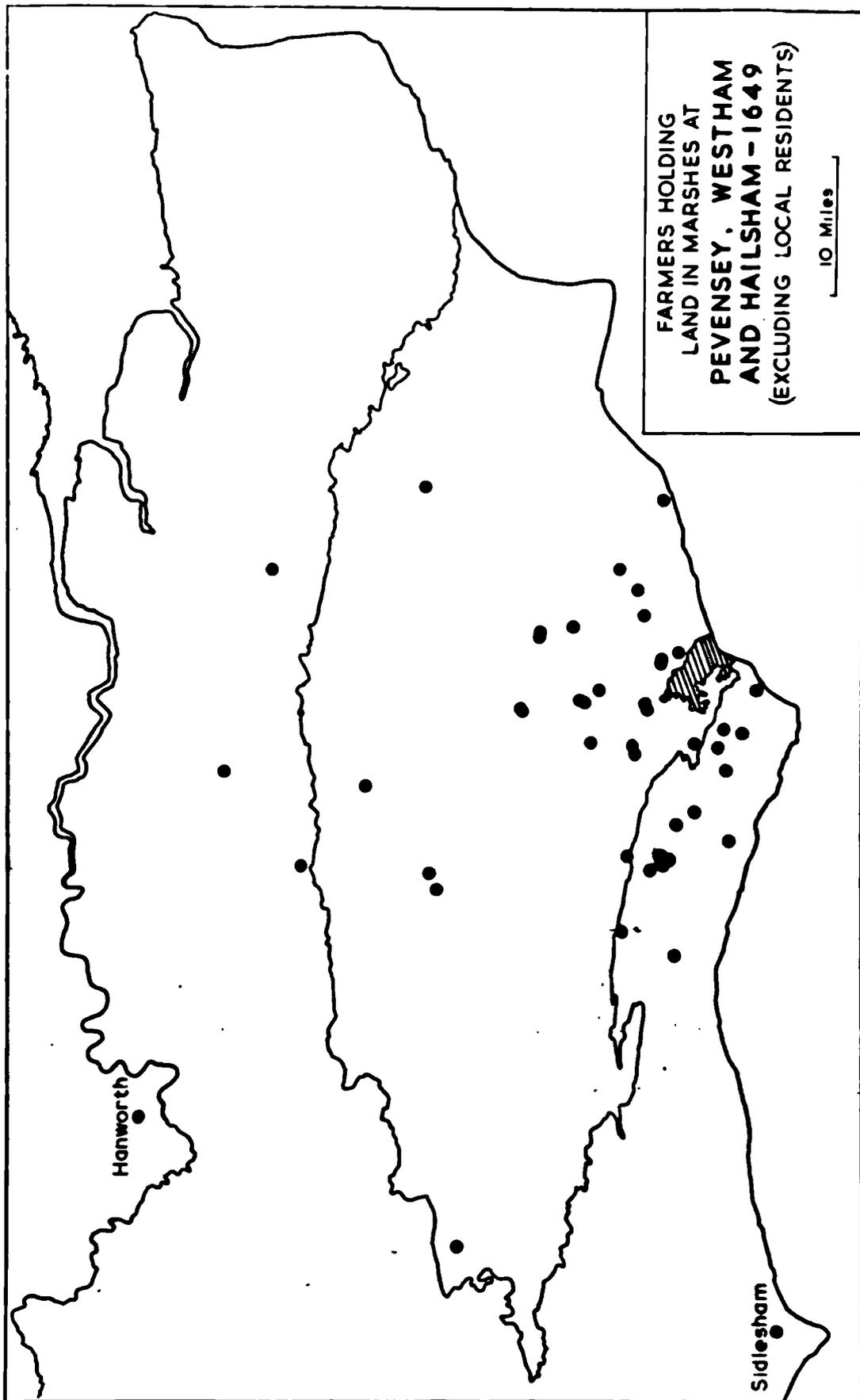


Fig. 12. The shaded area is not all Pevensey Levels, but merely that part in the three named parishes. Data from PRO.E 317/Sx/39, transcribed J.R. Daniel-Tyssen(ed.) 1878.157-74.

- (V) Meadow Claudite iam rivos, pueri; sat prata
biberunt. Vergil. Eclogues. iii.111.

Several pasture in the Weald was differentiated into 'upland', 'meadow', 'brook' (a local term for freshwater marsh) and 'marsh'. The distinction between 'upland' and wet pastures appeared regularly in land descriptions, since the wetlands had a much greater agricultural potential. Downash in Hailsham included in 1649 various 'uplands and marsh lands',¹ and a holding of 50 acres in Salehurst (1597) comprised 'twelve uplandes and twoe meadows'.² The term 'upland' was applied to land above the marshes in the eastern Weald; along the southern margin of the Weald common pastures on the Chalk Downs were also called, on occasion, 'upland' pastures.³ The 'upland meadow' in Etchingham Park, 1597,⁴ and other meadows far up hillsides were generally wet patches around springs which burst out in valley sides.

Marsh holdings were attached to many Wealden farms in 1649 (Fig12); land in Pevensey Levels was held not only by nearby residents but others who lived in Chiddingstone and Maidstone, the latter more than 35 miles away, Sidlesham, more than 50 miles distant, and Hanworth in Middlesex, at least 55 miles from Pevensey.⁵ This last tenant leased his land to a farmer, nearby, but there was no trace that the other distant tenants

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1. PRO.E 317/Sx/39. In 1625 reference was made to 'a piece of upland called the Hale 6 acres' in Hailsham -L.F. Salzmann. 1901.6.
 2. S.P. Vivian (ed.) 1953. 9.
 3. And contrariwise, commons in the Waald, on hilly ground, were sometimes called Downs, e.g. East Grinstead Heath or Downe. 1650-PRO.E.317/Sx/29. and Spittleman's Downe was a common of Hastings 1657-SAC.1860.196.
 4. S.P.Vivian (ed.) 1953. 202. For meadow high up valley sides, see E. Straker (ed.) 1933, map V: 1597-8.
 5. J.R. Daniel-Tyssen (ed.) 1878.155-74. from PRO.E 317/Sx/30.

did likewise; two brothers (coheirs) of Biddenden and Maidstone had a house¹ as well as land in Pevensey. This subdivision of the marsh reflected the high value placed by Wealden farmers (whose local pastures were often either rank or thin) on the lush fresh marshes and salts of Pevensey Levels,² ideal for fattening cattle, the most important beasts in Wealden animal husbandry. Many grazing rights in Pevensey Levels were limited to a specific number of animals;³ the rich pasture of very small areas was still divided between several graziers.

The much larger area of Romney marsh further north included many independent marshland farms but much of the pasture was still held by estates further inland. The Toke estate was one such; its main lands lay on the northern Weald margin in Ashford, Great Chart and Hothfield, but it included Wealden lands in Kingsnorth and Bethersden and marshlands at Bonnington and Cheyne Court in Ivychurch. The estate was primarily pastoral and early seventeenth century accounts refer frequently to sheep grazing in the marshes and sheep being driven between Godinton (in Ashford) and the marsh.⁴ In 1619 there were 362 sheep at Godinton and 1270 at Cheyne Court.⁵ Smaller farmers also rented marsh pastures; one man with 84 acres in Sedlescombe, 1618, rented 30 acres

1. *ibid.* 164.

2. The salts by now were mostly enclosed - L.F. Salzman.1910.32-60.

3. A man holding 5 acres of marsh at Northeye in Bexhill 1656 could graze 2 cows, 2 calves, 10 sheep and 10 lambs, with other animals in the Marsh between 8 September and 11 November: PRO.E 317/Sx/20.

4. E.C. Lodge (ed.) xxiv, 3,32,88,102, etc.

5. *ib.*xxix.

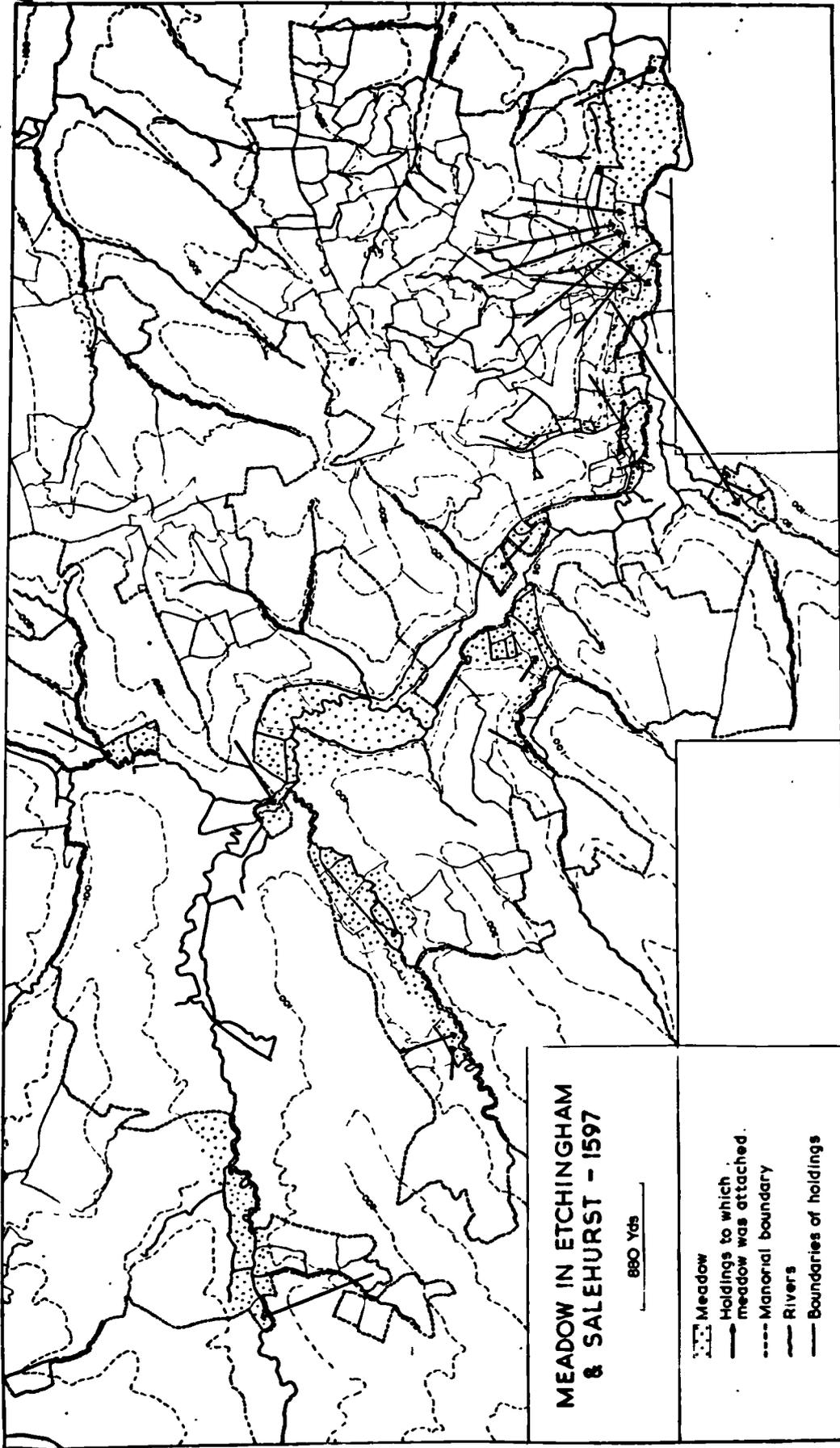


Fig. 13. Data from the 1507 survey and the maps (incorporating data from the Missell manor map I685, in private hands, and the Willgoose map c1670 in the Penn Mss, Dove Public Library) in S.P.Vivian(ed.) 1952.

of marsh pasture at Padiham and Dimsdale by Winchelsea and his stock¹ also was mostly sheep.

Further inland, meadow formed an important element in the agrarian landscape of the Weald, especially in the east. The lower courses of the Rother and its tributaries had wide valley floors, with a thick cover of alluvium; many manors occupied small stretches along these rivers and within a single manor, as the survey of Etchingham-cum-Salehurst in 1597 demonstrates, many holdings possessed outlying patches of meadow (Fig.13). Further upstream in the High Weald, rapid erosion of fine sands in the Ashdown and Tunbridge Wells series coated the floors of upper river valleys with gravel and silt; grass on the dry sandy soils above was often thin and rarely lush, so the meadows were especially valued. In Hartfield and Withyham (1597-8, (among the highest parishes of the Weald) meadow covered 21% of the surface (compared with pasture 34%);² nearly all holdings included some meadow and most of the river-side meadows were linked by narrow access ways to the nearest road⁴ (Fig 14

Because of demand, the restricted area of meadow became much divided. Meadow of various tenures was mixed up - in Withyham and Hartfield, there were patches of freehold meadow in the midst of demesne meadow;⁵ Salehurst mead included 3½ acres, split into three freehold

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1. In 1618 he had 447 sheep and lambs, only 14 cattle (in 1648, when he rented marsh pasture in Dymchurch also, 668 sheep): W.D. Cooper.1851. 23.
 2. E. Straker. 1935. 175.
 3. Even small holdings, for which it was especially important - even a limited supply of cut grass increased considerably the number of animals a small farm could keep.
 4. E. Straker (ed.) 1933. map XIII. 5. *ibid.* VIII and IX.

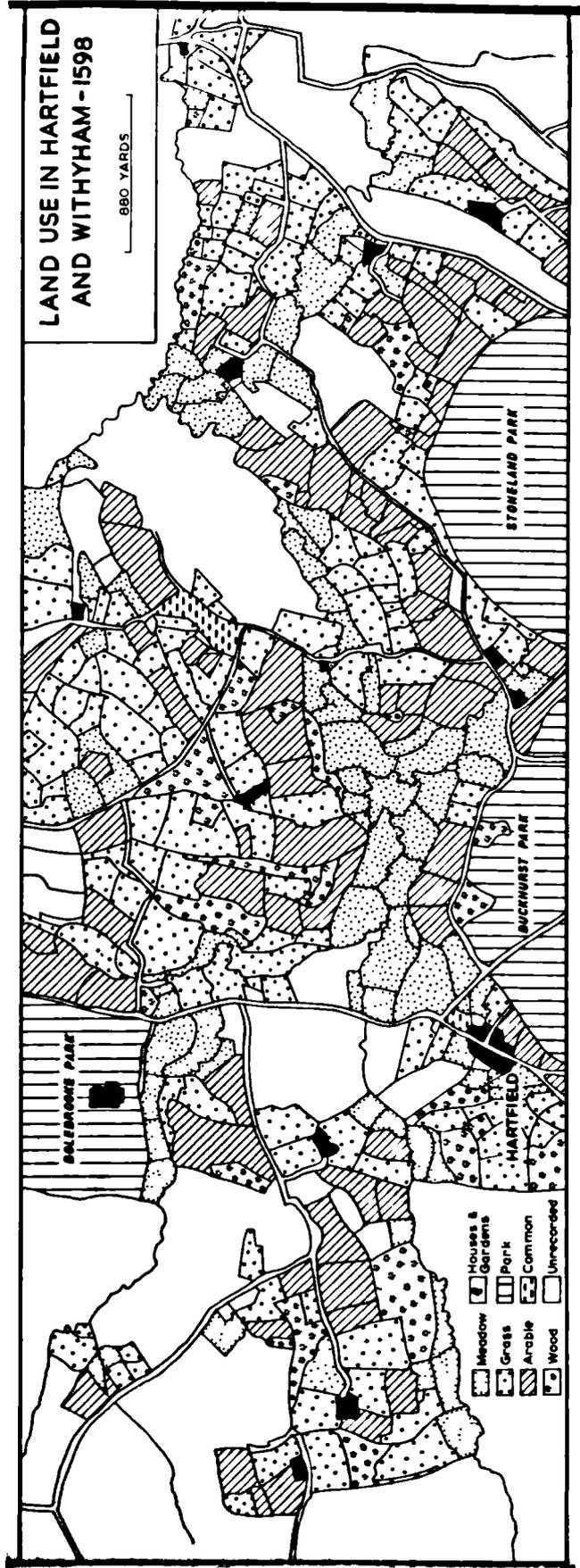


Fig. I4. Redrawn from E Straker. 1935. opp. p176; on comparison with Fig. I8 it is clear that few farm units included meadow, grass, arable and wood.

properties, in the manor of Etchingam-cum-Salehurst, and another 3 acres¹ was copyhold meadow in the manor of Bodiam. Leasing caused further subdivision - 4 acres of the meadow of Bexhurst in Salehurst were leased in 1574, but the lessor reserved free watering for his cattle and the cattle of his heirs; the lessee built earth banks to mark off his part.² This transaction illustrates how non-agriculturalists increased the competition for meadowland; the lessee wanted four acres to secure both banks of the brook from interference and thus safeguard the water supply to his mill downstream. In 1597, a master finer held some meadow below the floodgates of Forge Pond in Etchingam, so that he could flood it whenever he desired without complaint.³

The pattern of subdivision was not a product solely of manorial boundaries and the vagaries of leasing.⁴ Some meadows were too small for internal division, but often the larger were divided by ditches, or boundary stones, into rectangular strips, save for the irregular parcels (doles) created by bends in the stream. Many of these were watermeadows.

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1. S.P. Vivian (ed.) 1953. 64.
 2. S.P. Vivian (ed.) 1953. 115.
 3. *ibid.* 202.
 4. In West Peckham and Hadlow, 1621, most meadows below 6 acres - KAO.U 31/P3.

Mascall, in his work on Wealden cattle in 1587 made no reference to¹ watermeadows, but Gervase Markham mentioned them in 1625.

West Chested Mead in Chiddingstone was divided into many small strips and mention of single parcels as ownership units was made in² 1608 and 1630. This may well have been a water-meadow and other more certain examples;^{we} the meadows in Nutbourne and West Chilmington (1597-1639) where tenants were obliged to scour the watercourses and ditches and make a bridge in the middle of the mead,³ Fludgate field in⁴ Horsmonden 1675; the water meadows along the Medway between Leigh and⁵ Tonbridge,⁶ and the common water meadows at Lingfield in Surrey, and⁶ Edenbridge in Kent.⁶

Sheep did not play a dominant role in the animal husbandry of

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1. G. Markham. 1625.7-'which is there called flowing and over-flowing'. It should be remembered that the irrigation of these meadows by sluice and ditch was very simple; they had not the elaborate waterin system of the C 19 Hampshire meadows, to which perhaps the term 'watermeadow' should be restricted.
 2. BM. Add. MS 33889 no 64,67. Between mid C 15 and 1581 part of one of the meadows was enclosed as a several unit (ibid. no.69); in 1809 8 parcels were still changeable each year, G. Ward. 1931b.222-3.
 3. W. Godfrey (ed.) 1928. 107.
 4. KAO.U. 180/P 1.
 5. I have no seventeenth century reference to these, but they are unlikely to be a later invention.
 6. Mentioned by O. Manning and W. Bray.1809.ii. 339.
 7. 1584: BM. Add. MS 33889 no 827.

the Weald and watermeadows were not valued primarily, as in Wiltshire,¹ for supplying new grass early in the year for ewes and lambs; rather they were regarded as an important source of hay for beasts in general and as lush grazing for fattening, in a district where most other pasture was thin and coarse on the sandy soils, or rank on the ill-drained clays. This being so, the use of common water meadows was² regulated to prevent waste or abuse, as the Petworth data shews. The Petworth meadows were alongside the Rother, just south of the Weald; they were available for horses, kine and sheep only. The various portions were annually demarcated and allotted to holdings throughout the large³ manor, both for first grass and for 'aftermath'⁴ pasture. Fines were exacted for failure to clean the ditches, or for pasturing swine and transport animals in the meads.

1. E. Kerridge. 1953. 105-118.

2. Hon.H.A. Wyndham. 1954. 25-6, 46-7, map XIV.

3. *ibid.* 68 ff.

4. A grant of ^{land} kind in West Grinstead 1655 included 'first cut' in a parcel of meadow -WSRO Add. MS. 1482.

(vi) Common Pasture

That which is common and every man's
is no man's: the richest counties
are still enclosed.
R. Burton. Anatomy of Melancholy.
1621.

Enclosed fields were not the only source of pasture in the Weald, there were many common pastures. They lay often on the most coarse and barren soils, with only a thin cover of healthy vegetation; a few, like the Common Wood in Cranleigh, were still wooded, ¹ but ~~some of the enclosed pastures were little better - one enclosure in Withyham, 1597-8, was named 'rough pasture'~~.

Many commons in the Sussex Weald were mentioned in the early seventeenth century - the common of Cuckfield 1629, Hailsham Common 1635, Horsham Common 1650, ² common in Maresfield 1612 and 1650. Framfield ³ manor had common pastures near the other fields but the common grazings of Worth Manor were miles away on Burwash ⁴ and Brightling Down. Falmer manor, lying 6 miles south of the Weald, had 26 acres of common in East Chilmington. ⁵ Large blocks of heath were often divided between several adjacent settlements; Haywards Heath was bordered by Wivelsfield Common to the south, Keymer Common to the southwest and Lindfield Common to the north. ⁶ Small towns still retained common grazings - Hastings in

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1. Mentioned 1580- E. Straker. 1941.41.
 2. M.H. Cooper. 1920.50 (Cuckfield); L.F. Salzmänn. 1901.107 (Hailsham); P.R.O.E 317/Sx/23 (Horsham); P.R.O.E. 317/Sx/26 and ENQ.1926.126, Maresfield.
 3. BM. Egerton MS 1967 f 230v.
 4. BM.Add. MS 5680 f 192v; this conjecture is just if the Worth manor was that in Worth parish, but another Worth lay nearby in Brightling.
 5. Enclosed c 1635 -BM. Add. MS 5683 f 133v.
 6. 1638 map of Neworth and Trubweek; Barbican House, Lewes.

1657 still had waste commonland at Hawdlyns and Spittleman's Downe.¹

The total area of common in the Sussex Weald was very considerable,² though decreasing. Much later a total of 110,000 was estimated and between 1756 and 1895 nearly 13,000 acres in 41 parishes were enclosed by act,³ this but the surviving fragment of a formerly much larger area. Within the Sussex Weald, common land concentrated in the west;⁴ some eastern manors, including Robertsbridge (1567), had no commons and Hooe,⁵ in 1608, had but 6 acres. Commons covered a smaller percentage of the surface of the Kentish Weald, but despite the much-emphasised individualism of Kentish agriculture, they were not missing. Hadlow Common was mapped partly in 1621,⁶ Horsmonden Heath in 1639,⁷ the 'Hoth' in Bethersden c.1640.⁸ By no means all Kentish villages

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1. SAC. 1860.196.
 2. Rev.A. Young. 1813. 187.
 3. W.E. Tate. 1950.35-9.
 4. R.H.D! Elboux (ed.) 1944. There is no mention of common in this survey.
 5. BM.Add. MS. 5679.f 252.
 6. KAO.U. 31/P3.
 7. KAO.U. 86/P 2.
 8. KAO.U 55/P 22.

or estates had appurtenant common rights - in 1608 the very large manor of Aldington included none.¹ There were other commons in the Surrey Weald - that at Lingfield was the subject of a dispute in 1594,² and Chiddingfold parish included the commons of the distant manor of Godalming.³

Many of the Wealden roads were bordered by very wide grassy verges and these were often used as common grazings.⁴ Lye Green near Ashdown was one such roadside grazing; in Brenchley, 1639, Pearson's Green stretched alongside a road and Low Waste (5½ acres) lay in a triple road junction.⁵ Broad Street Common in Petworth, an area of 15 acres in 1610, stretched along the road from Petworth to Shillinglee.⁶ In some cases, right to these grazings, which were used by animals travelling to and from markets or commons, went with tenements; certain lands in Shermanbury and Henfield, 1616, were devised 'together also with the herbage pasture and comon in the streat and high wayes leading from Mockbridge towards Cowfold as in tymes past hath benn used to

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1. PRO LR2/196 f 250-55. However, one tenant paid a rent called 'catterell' for common on the Forwood and on Brabourne Lees, both north of the Weald on the Lower Greensand.
 2. VCH, Sy.4. 1912. 304, quoting PRO C142/242/38.
 3. VCH, Sy.3.1911. 10.
 4. The original estate plans reduced in Fig.11, shew this very clearly.
 5. KAO.U. 86/P 2. Similar roadside strips in Withyham and Hartfield, 1597-8, can be seen in E. Straker (ed.) 1933 map V, and others.
 6. Hon.H.A. Wyndham. 1954. 24.

and with the said messuages and lands¹.

The proportion of parish and manorial areas occupied by common lands varied widely. In east Sussex, and in the northern Weald the proportions were generally below 20%; this was even true of manors in the West Sussex Weald; commons were only $5\frac{1}{2}\%$ of the large manor of Petworth.² Much higher proportions appeared, however, elsewhere in this district. Keymer manor, with less than 2500 acres of improved land, included over 450 acres of common in 1624,³ whilst Barcombe manor, 1562-71, with $256\frac{1}{2}$ acres of arable meadow and pasture, had no less than 246 acres of common land.⁴

Grazing on many commons was subject to fixed, customary regulations. Tenants in the manor of Ewhurst-in-Cowfold could not keep more cattle in summer on the commons or on their meadow lots than they could feed on their own enclosed pasture in winter.⁵ This restriction was common, appearing also at Framfield, 1622,⁶ the manor of

1. SAC, 1919.51; cf. Stretham in Henfield, where grazing on the highways was forbidden 1647, H. de Candole. 105. 1947.
2. In 1610, Petworth Common, 8, acres; Hoads Common $26\frac{1}{2}$; Middlecarr Common 173; Copthurst Common 13; Colehook Mill Common $3\frac{1}{2}$; Chapel Common 5; Broad Street 15; Gospel Green 5; Hillgrove 10; Stony Lane near Parkhurst 6; Upperton Common 75. Hon. H. A. ^w Syndham. 1954.25.
3. W. H. Godfrey (ed.) 1928. 39; 462a.2r. in three commons.
4. *ibid.* 234.
5. Custom as written 1741, but no doubt much earlier in origin—P. S. Godman. 1921. 154.
6. EM. Egerton MS. 1967.f.229.

Sheffield 1597-8¹ (in the parishes of Fletching, West Hoathly, Little Horsted and Horsted Keynes) and at Petworth. Goats, geese, swine not ringed or yoked and transport animals could not graze the commons in Petworth and fines were exacted for overgrazing, grazing on commons other than those where a tenant had right and for subletting grazing rights.² Common rights went with holdings - 110 acres in Lindfield³ and Westmeston carried in 1591 grazing rights for 100 beasts.

Many manors along the southern margin of the Weald had appendant pastures on the Downs and the use of these valuable sheep pastures was strictly regulated, generally by allotting each tenant rights up to a certain number of sheep - 50 sheep for one tenement in Plumpton, 1623,⁴ 8 sheep only 'on the tenant downe of Dicheninge' for a tenant holding half-a-virgate in the small sub-manor of Ditchling restoria,⁵ according to a decision of 1609. The large manor of Steyning stretched into the Weald, but was centred on the Downs; any one holding 200 acres in the common fields of the manor could graze 300 sheep on 'Steaninge Downes'.⁶ In 1575 a tenant of Plumpton manor, with a holding of 56 acres, had a 'shepe pasture' on the Downs in Pyecombe.⁷

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1. E. Straker (ed.) 1933. 74-5.
 2. Hon.H.A. Wyndham. 1954. 26-7.
 3. ESRO. Add. MS 305.
 4. BM.Egerton MS. 1967. f 83.
 5. And then only if animals were not grazed on the commons in Ditchling-W.H. Godfrey (ed.) 1928.233.
 6. SAC. 1918.97, quoting PRO C142/311 (1609).
 7. BM.Add. MS 37688 f 3v.

The largest common grazings were the former hunting forests. In 1596 the manor of Hyde in Slaugham had common of pasture in St. Leonard's Forest,¹ and several other manors had this right. However, St. Leonards was not the largest continuous area of common grazing in the Weald - this was Ashdown Forest. Many manors around Ashdown had no commons of their own; ten of the fifteen Buckhurst manors in 1597-8 had none and the only substantial common in them all was 200 acres in Munckloe (Hartfield and Withyham parishes).² Buckhurst, an area including parkland of 4715 acres in six parishes, had only 6 acres of common.³

Just outside the pale of Ashdown were eight small commons, which had probably formed part of the single common grazing area originally; they were but small compared with the 14,000 acres within the forest boundary which served as common grazing for many villages around. The existence of rights here explained the absence of common within the territory of so many nearby estates. By the early seventeenth century there were many small enclosures within Ashdown, but this had not changed its character; the grazing animals of commoners had no entrance into the

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1. E.H.W. Dunkin (ed.) 1914. 216.
 2. E. Straker (ed.) 1933. 18 ff.
 3. Parishes of Withyham, Hartfield, Rotherfield, Buxted, Fletching and East Grinstead.
 4. Part of Chelwood Common, Forest Row Green in East Grinstead, Quavock Common in Hartfield, Marsh of Lye Green in Hartfield, Crowborough Common in Rotherfield and Buxted, Horney Common in Maresfield-PRO. E 317/Sx/26. This survey, and the one of 1658(ib./27) also mentioned Stumblett (Stumblewood) common in Maresfield, Churckhatch Green and Colmanshatch Green in Hartfield as just outside the pale, but did not state that they belonged to Ashdown.
 5. 1650 acreage was 13991 a. Or. 27p. PRO.E. 317/Sx/26.

enclosed lands, whilst those who encroached on land in the forest did not by this obtain rights to common pasture within it.¹

Ashdown Forest was the largest common pasture in the Weald, and it possessed the most complex system for regulating grazing. There were three sorts of commoners in Ashdown. Free tenants in the manors of Duddleswell (within the forest) and Maresfield² could graze in the forest any cattle they could keep on their farms in winter. The forest was available for common grazing all the year, save the pannage season (29 September-11 November)³ but it only provided any sustenance in the summer months. Intertenants, those holding land in Duddleswell and Maresfield but also in other manors, had like privileges. Foreign tenants, the third group, came from other manors outside the forest; they could graze their beasts under the same regulations but could take no estovers.⁴

A survey of Duddleswell manor was drawn up in 1658 and it proposed certain parts of the forest be enclosed; it made allowances for common grazing rights, and the details it gave included a list of foreign tenants. It was estimated that 2746 cattle were grazed by this group and

1. Defendants claiming common rights in 1691 claimed, in their favour, that they held no assart in the forest-EM.Add. MS 5709.f.9.
2. This provision probably included copyholders. In Duddleswell, 1650 (PRO.E 317/Sx/26) most tenants were copyholds of assart; such tenure was free in effect, as the inquisition of 1610 recognized in the phrase 'every free tenant who had a team and dwelt upon his customary lands'.
3. This dates back to medieval times, when many swine pastured in Ashdown, see p.331.
4. This threefold division occurs in the Inquisition on the customs in 1610; EM.Add. MS. 5705. f 137-8 and Add.MS. 5709.f.7-9.
5. PRO.E.317/Sx/27.

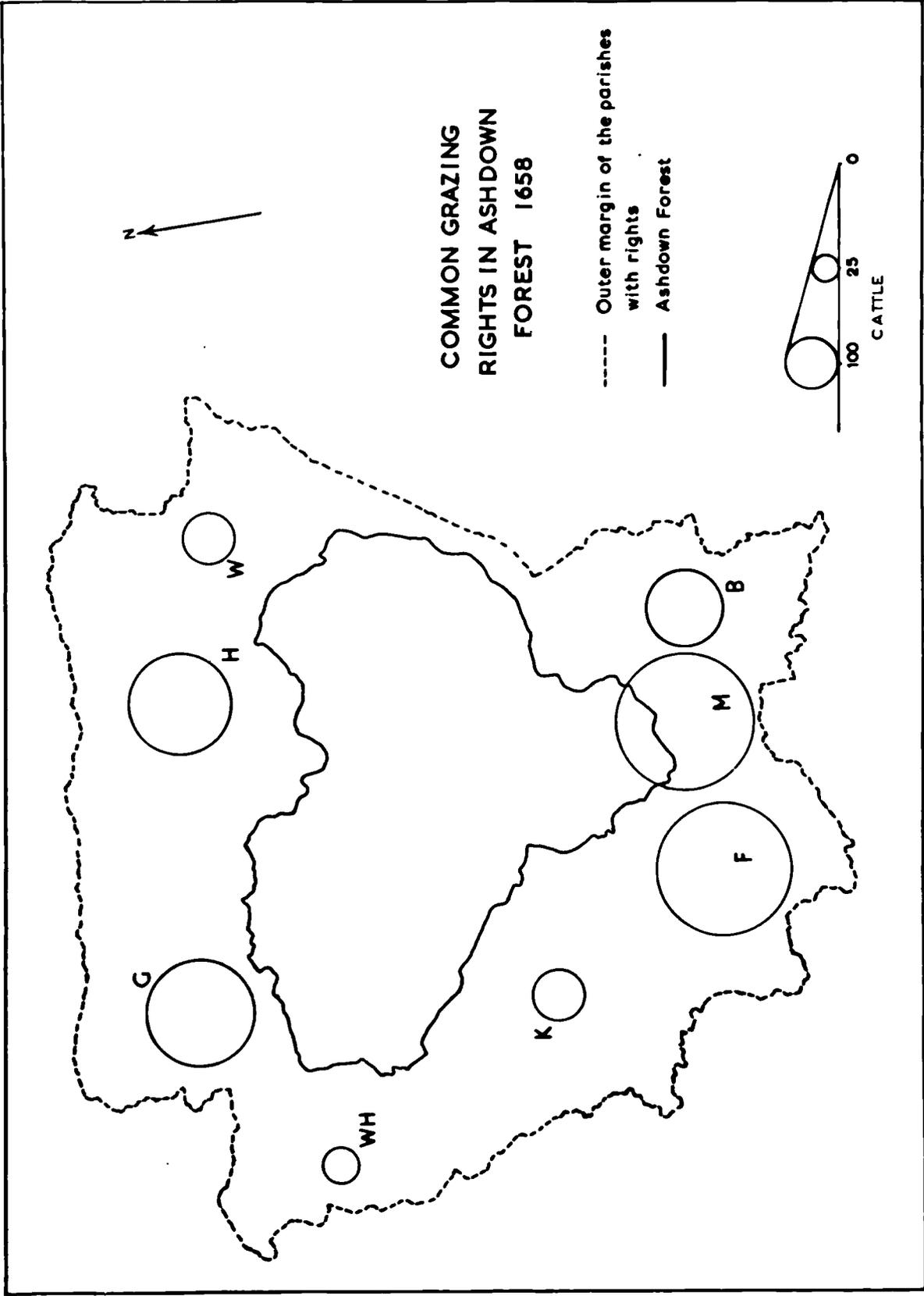


Fig. 15. K: Horsted Keynes, 88; WH: West Hoathly 49; G: East Grinstead, 445; H: Hartfield, 384; W: Withyham, 101; B: Buxted 220; M: Maresfield 710; F: Fletching 749. There was no significant change in the outer boundary of these parishes between 1658 and the earliest OS maps, but farms may well have extended across the bounds.

that pasture should be allotted at the rate of 1a.2r.20p per beast. (As in other documents of this time, common grazing in Ashdown was limited to cattle; there was no mention of sheep, and horses or swine had to be paid for.)¹ Most of the 'foreign' tenants lived in Maresfield and Fletching - they supplied 1459 of the cattle between them (Fig 15).

In all the eight villages² where the 'foreign' tenants lived, most owners had less than 30 cattle, according to the 1658 allowance, and a majority had less than 20; there was no sign of large-scale commercial cattle rearing. The total number of cattle was high but their density on the poor pasture was low; documents spoke of 'small cattle' and the exposed, bracken-covered grazings were incapable of producing large, fat beasts. However, if Ashdown did not produce quality cattle, it was by 1650 subject to commercial exploitation as well as grazing by common rights. Customary arrangements allowed extra cattle to be pastured, free tenants paying $\frac{1}{2}$ d for each beast³ intertenants $\frac{3}{4}$ d, and foreign tenants 1d.

The 6 park keepers, according to the 1650 survey, could graze besides their own beasts, 100 cattle and 20 horses each, and the tenants of Old Lodge and Chamberlains House were allowed 140 cattle and 60 horses.

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1. The 1610 inquisition stated ^{rents} that for horses, the 1650 survey rents for swine.
 2. The 1650 survey stated that tenants of Buxted, Fletching, Horsted Keynes and Maresfield had no rights in Ashdown, but such were allowed in 1658.
 3. This was stated in the 1610 inquisition (N. Neilson. 1928.36, suggests all beasts, not only extra, were charged at this rate, but the document hardly supports this).

The park keepers were not wholly occupied in upkeep of the hunting amenities (they were neglected, p. 76), and they turned their attention to grazing. It is unlikely that they bought up large numbers of cattle in spring for sale in the autumn, - the grazings in Ashdown were not good enough nor were large markets nearby - but they did fully use their rights to pasture large numbers of cattle; these numbers were probably made up of beasts belonging to nearby farmers who had no rights in Ashdown, but paid the parkers to include them in their herds. Pasture here was not good, but the other commons in the High Weald were generally no better in quality and more heavily grazed. The customary arrangement for free tenants, to graze extra cattle, different though its original import may have been, suggests that they also grazed animals from outside the forest, an untroublesome way of increasing their income and a most welcome addition to the ungenerous returns of farming in this district. By 1650 these extra animals, mostly in the parkers' herds, can have been little less numerous than the cattle grazed under common right by the three groups of tenants.

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1. London was supplied especially from the Midlands with cattle. J.D. Gould. 1955. 112-3.
 2. In 1650 they had 600 cattle and 200 horses in the park besides their own, by estimate.
 3. The 1563 map of Ashdown (PRO.MPF. 144) marks Chaunton (i.e. Chalvington) as the 'feeding ground' To Buckhurst, on the margins of Ashdown. This implies either that cattle went from Chalvington to Ashdown or (less likely) sheep from Buckhurst to the downland pasture at Chalvington, or both.

(vii) The Assault on the Commons.

Woe unto them that join house
to house, that lay field to field,
till there be no place....
Isaiah. v. 8.

The pattern of enclosed land and open commons was not static; the sixteenth and early seventeenth centuries witnessed considerable encroachments onto the common lands. Instances were widespread; in 1640¹ the parson of Keymer had a cottage and $\frac{1}{2}$ an acre on Studford Common, 1590-1 part of Netherfield Down in Battle had been 'lately enclosed'² and a widow in Hailsham held in 1625 a tenement and croft on the 'Comon of Halsham'³. Large common wastes were attacked; so also were the wide verged along many Waalden roads, surreptitiously taken into adjoining fields - part of Woodstrete in Ditchling (1621-34)⁴, half of 'chalfre strete' in Keymer (1624)⁵, and 'the lord's waste' alongside a road in Salehurst (1620)⁶. At Nutbourne in Pulborough (1621-34), land had even been enclosed within a silting-up pond,⁷ such was the demand

1. BM.Egerton MS. 1967.f 42v.

2. ESRO: Add MS 312.

3. L.F. Salzmänn. 1901. 29.

4. W.H.Godfrey (ed.) 1928. 47-9.

5. *ibid.* 35.

6. BM.Add. Ch. 31778.

7. W.H. Godfrey (ed.) 1928.96 - 'in fine stagni vocati Hethmill Ponde'.

Encroachments were not confined to the Sussex Weald - in 1633 tenants¹ were appropriating the lord's land in Shadexhurst, in 1620 a man in² Westerham was accused of taking some waste adjoining his copyhold and³ at Charlwood part of the common was granted as a holding in 1606.

By the early seventeenth century, this process had gone on long enough to produce a separate group of holdings in many manors - those taken in from the waste. The southern half of Ditchling manor (in Ditchling, Wivelsfield and Chailey) 1621-34, included 11 enclosures on the waste, varying in size from $\frac{1}{2}$ rod to four acres, and two possessed⁴ of a cottage also. Keymer manor, 1624, included eight enclosures (mostly Elizabethan in origin) on its own commons of Haywards Heath and Valebridge Common, and tenants had even encroached on Studford and⁵ Westwood Commons, where they did not even have rights to common grazing. The Dicker, a common pasture of Laughton manor in Chiddingly, contained 791 acres in 1564 but many enclosures - legalized in 1588, 1596, 1597, 1612-14, and at other times -⁶ reduced it to a small area by 1650.

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1. BM. Add. MS. 33889.f 98v.
 2. BM. Add. MS. 33898.f. 218. Similar enclosure occurred on the Chart heaths on the Lower Greensand attached to many manors on the northern margin of the Kentish Weald. 1649 R. Reynolds of Westerham had taken land out of the Chart Common *ibid.*f.235.
 3. E. Sewill and R. Lane. 1957.34; an earlier grant occurred in 1584.
 4. W.H. Godfrey (ed.) 1928. 47-9.
 5. *ibid.* 38-9.
 6. BM. Add. MS. 33058; 33147 f 4v, 6v, 87-105v. 1564 survey is PRO.DL 42/112 f 186.

Not all assarts in the waste originated in the same era. The manor of Framfield (1622) differentiated 'new', 'middle' and 'old' assart,¹ and Rotherfield in 1623 included 34 acres of 'late assart' in a total enclosed area of 43⁵³5²a. 'Late assart' was a term used throughout the later Middle Ages (see p261) but individual instances demonstrate that many of the Wealden encroachments were created not long before 1600. 2 acres at Copthorne in Worth were traceable to 1588;³ 1 acre and a cottage on 'le West Common' in Lindfield to 1594;⁴ one parcel 'formerly waste' on le Brickhost in Cuckfield to 1597.⁵ Intermixed with these were earlier enclosures; a cottage on 'Tibbals Hoth' in Cuckfield existed by 1543⁶ and several plots named Hethland in West Hoathly, although still described in 1621-34 as 'sometimes parcell of the common',⁷ were in several occupation by 1498.

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1. BM. Egerton MS. 1967. f 228v-30.
 2. *ibid.* f 55v.
 3. W.H. Godfrey (ed.) 1928. 53. This is the first mention of the enclosure, which cannot have taken place long before; such happenings were commonly recorded on manorial documents within 1 year of the action.
 4. *ibid.* 54.
 5. *ibid.* 30-1.
 6. *ibid.* 38.
 7. W.H. Godfrey (ed.) 1928. 52.

Some landowners and lords did not object to assarting and local courts, after a short period of time, granted legal status to encroachments. In 1610 a cottage and garden, enclosed on the common of Marden Thorne in Marden c 1595, was recognised; an encroachment in Chiddingly was legalised in 1597.² The custumal of Framfield, 1622, decreed that if any tenant wished to inclose part of the waste, he should, with the consent of the other tenants, stake out the plot and ask for permission to enclose at the next pannage court. Permitted enclosures were held by tenure of new assart, at a yearly rent of 4d.³ The other tenants, as well as the lord, were required to sanction new assarts in Framfield, and not only there. In this period of growing population, when land was increasingly concentrated in the hands of yeoman farmers, the tenants of a manor often united to ask the lord to grant some waste to the honest but landless poor; in 1588 the men of Chiddingly besought the Lord of Laughton to grant John Alexander, an honest poor man with a large family, part of the waste of the Dicker.⁴ Encroachments on the Dicker generally required the agreement of other tenants in Laughton, and a similar system existed in Petworth. Several requests for waste, supported by a body of tenants, were granted in

1. BM. Add. MS. 33889.f.154.^v

2. BM. Add. MS 33147.f 6.^v

3. BM. Egerton MS. 1967.f.230.

4. BM. Add. MS. 33058. In 1616 1/4 of an acre in Burw^hish waste was let similarly for 99 years at a minute rent - Hove Public Library. Deeds, Acc. 1692 (cited J.C.K. Cornwall. 1953. 200).

Petworth between 1580 and 1660.¹

Landowners often demanded the removal of illegal encroachments, but often without success. In 1596 a tenant of Laughton was ordered to remove one in Staneland^e and the charge was repeated for 6 years following, apparently without result.² Richard Galer in Petworth was ordered in 1642, and again in 1643, to pay a fine for encroachment but it was not paid until 1645.³ In Rotherfield several small assarts were disapproved but whether they were removed is uncertain.⁴ Such objections received in 1589 the support of national as well as manorial authority for in that year a statute laid down that no new cottage should be built unless it had appurtenant at least 4 acres of land (31 Eliz.1.c7).

In some localities, the tenants as a body enclosed lands from the commons. Most of one common in West Chiltonington, according to a statement of 1621-34, had been recently enclosed by connivance of the tenants, without interruption from the landlord.⁵ More commonly the lord drew up an agreement with his tenants which assured him at least some small rent in recompense for his loss of rights. In 1604 both sides

1. H.A. Wyndham. 1954, 28-9, 74. One such tenant, admitted 1657, celebrated this generosity by making another illegal encroachment, which he was ordered to remove.

2. BM, Add. MS. 33177.f 4 et seq.

3. Hon. H.A. Wyndham. 1954. 27.

4. C. Pullein. 1928. 82.

5. W.H. Godfrey (ed.) 1928. 102.

agreed in Barcombe to a division which made over most of the common to the tenants and allowed the lord to lease off most of what remained to him at the then substantial rent of 3/- an acre.¹ In 1621 common in Chailey was enclosed and the tenants secured entry to the new enclosures at very low annual rents.²

Tenants were not always the driving force behind enclosure. Often a landlord wished to improve a common waste and covert it to arable or improved pasture, but found tenant opposition. In 1616 tenants at Keymer questioned the lord's right to grant out parcels of the local common for several occupation, as he had done several times between 1573 and 1615.³ More than verbal discontent appeared sometimes; tenants in Fletching in 1624 removed the fences around an enclosure of 150 acres in Chailey Common.⁴ Disputes arose between large landowners; in 1602 Sydney accused Pelham of illegally enclosing a large area on Brightling Down.⁵ Sydney had forborne when the initial small encroachment was made, but he would not countenance a larger, especially since Pelham's ancestors tried to enclose the same land earlier.⁶

1. BM.Add. MS 5701 f 133-4.

2. W.H. Godfrey (ed) 1928.8.

3. W.H. Godfrey (ed.) 1928.40.

4. PRO. St. Ch.8/104/9, cit. J.C.K. Cornwall. 1953. 196; there were disputes, t. Eliz., about enclosing common in Framfield, Petworth and Plumpton (Chancery Enrolled Decrees 33 Eliz. pt 74, no 1; 37 Eliz. pt 92, no 14; 38 Eliz. pt 90, noll, cit. VCH. Sx.ii.1907.190)

5. BM.Add. MS 5679.f 75v.

6. From the persons cited, this earlier incident must have occurred between 1529 and 1559.

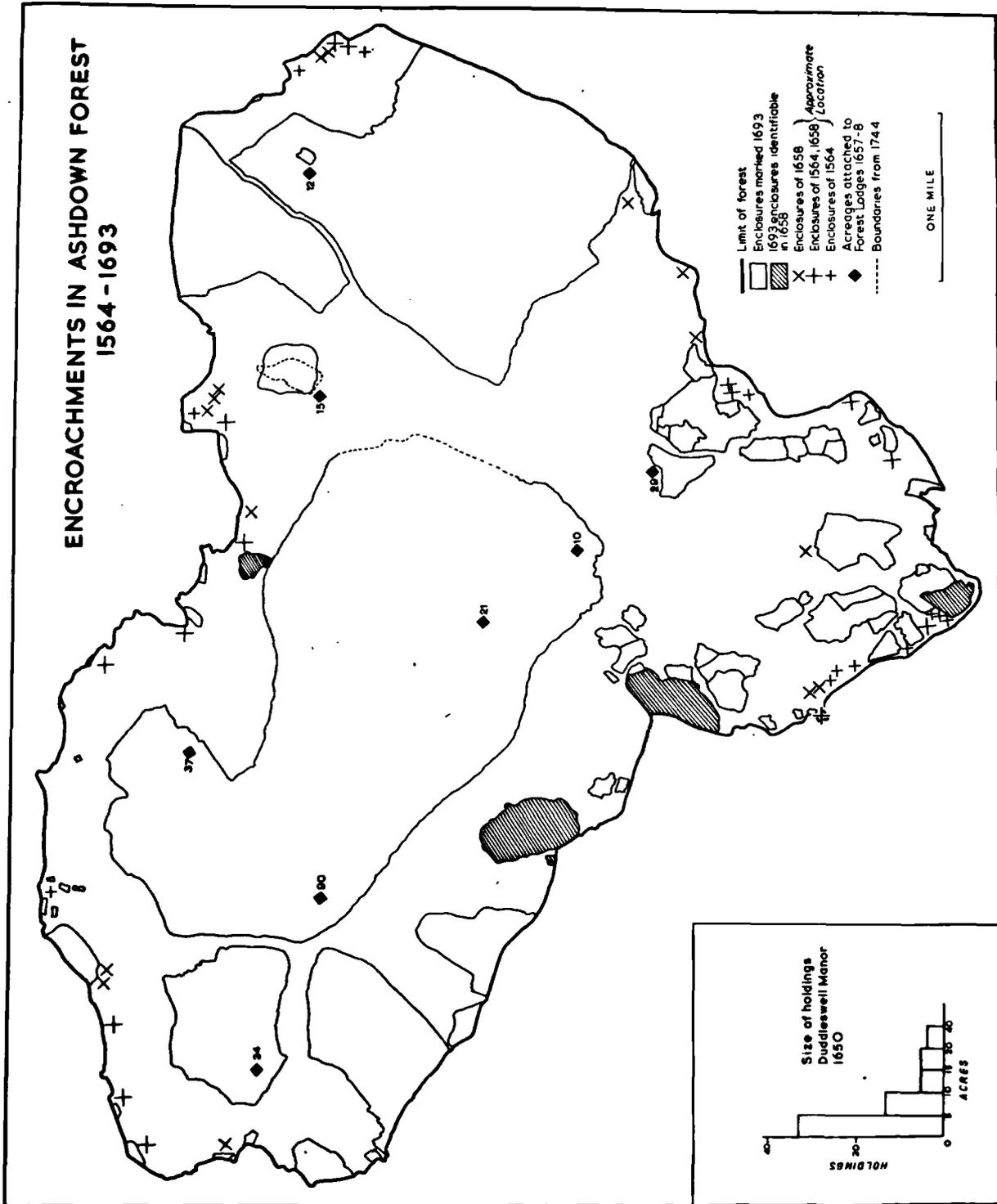


FIG. 16. Only the 1693 enclosures certainly identifiable in 1658 are shaded; in many other cases an enclosure of 1658 is known to have been located (and is thus mapped) near one of 1693, but exact correlation is unsure. The enclosures of 1693 were (a) small encroachments (b) large leased blocks; the rest remained common.

Both large and small farmers were minded to enclose parts of Ashdown Forest and their endeavours produced the most complex and protracted dispute over common rights within the Weald. By 1650 some large blocks of land, up to 2175 acres, had been enclosed within the nearly 14,000 acres of Ashdown. There were also a few small fields around each of the several lodges, varying from 14 acres at Whitedeane Lodge to 90 acres at Warren Lodge. These lodges had lost their primary function, the park keepers had become graziers (p.20¹⁰⁴-1) and their enclosures were in several places reverting to waste.

These fields around the lodges were not encroachments, but enclosures allowed to provide part or whole of the keeper's food when Ashdown had been a major hunting resort and the keepers were fully employed. By 1650 they were in decay but, in contrast, small illegal encroachments within the forest were increasing rapidly. (Fig 16). All such assarts were illegal in origin, since they were within the boundaries of a hunting preserve, but by 1650 many had been legalized. In 1658 there were at least 357 acres enclosed within Ashdown as land in Duddleswell manor, and there were other small enclosures which were not part of Duddleswell; some belonged to Maresfield. Legal recognition was not accorded to all; three encroachments described in 1650 as recent

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1. 1657 (PRO.E 317/Sx/14): 1658 (ib./12).
 2. In 1658, Old Lodge was occupied by a widow and the fences of the enclosure had been burnt, probably for fuel (ibid./15); 24 acres at Hindleap Lodge were described as 'formerly enclosed' (ibid./13.)
 3. This figure is given by E. Straker. 1940. 123. The 1650 survey of Duddleswell (PRO.E 317/Sx/26) gives 185½ acres of Duddleswell within Ashdown, excluding the Vachery (100 acres), Straker's figure is based
/contd.

were allowed to stay,¹ but seven others were to be removed and any cottages on them levelled. By 1658 only two remained, one having somehow acquired legal title, in the form of a grant of copyhold in 1648.²

Most of the copyholders by assart in Duddleswell, 1658, possessed only one small plot of land;³ it might have some internal subdivision,⁴ but nearly all holdings were less than 10 acres. Two only exceeded 40 acres, and the small fields were worked by the spade rather than by the plough.⁵ The enclosures were for cropping,⁶ but the yields must have been pitifully low; the soils were extremely poor in mineral nutrients and humus, rainfall was higher than elsewhere in the Weald and temperatures rarely exceeded 60°F for long periods. Hardly any of the assarts were below 600' above sea level. The encroachers derived a bare subsistence or less from their lands and early deaths produced many

ref,3 contd.

on detailed local knowledge; he identified at least 158 acres within in the Forest in a survey of Duddleswell in 1564. The Duddleswell surveys of 1650 and 1658 (ib./26-7) are detailed but shew slight discrepancies - Broadstone Lodge is given 37 ac. 1658, and 24 acres 1650).

4. As mentioned 1650 (SAC. 1871.311).
1. Because the tenants had laboured to improve the land, probably by marling PRO.E 317/Sx/26.
2. J. Ebbs and J. Wilkinson. SAC. 1871.301, cf. SAC. 1872.214, 247.
3. Only 5 in the manor had more than one field.
4. e.g. 4 pieces of assart called Crabbes, 9 acres.
5. Suggested by E. Straker, 1940.121 ff. For farm size 1650 see Fig 16 inset; still in 1693 (EM.Add.MS.5709 f 37 et seq.) most tenants had less than 5 acres.
6. There is no evidence that the small enclosures in Ashdown were

1
minorities.

(Encroachment continued apace after 1658. Grants of copyhold tenure to new encroachments between 1658 and 1693, excluding 21 just before 1693 and included in the 1693 award, covered 77 acres: between 1664 and 1693, 45 new copyholds were granted (2). The Earl of Bristol, during his possession of the Forest 1662-73, attempted to enclose lands, but commoners threw down his fences; his agricultural schemes were thrown into confusion and he ran into debt, thus forfeiting his ownership. New owners let large areas in 1678 to Alexander Staples, who sowed grain in some parts but his fences also were broken up (3). In 1693 a binding settlement recognized 685 3/4 ac. of copyhold as legal holdings, many enclosed before 1658, left 6400 ac. as common grazing, and allotted the rest in large land blocks to tenants (4). This settlement did not include the fields around the park lodges, some of which had gone out of cultivation by 1693).

The late sixteenth and early seventeenth centuries saw much enclosure of the waste, sufficient to reveal a considerable pressure on land. Not all these encroachments however were permanent; in 1604 it was recorded that an encroachment at Beacon Down, part of the demesne of Laughton had been abandoned.⁵ Elsewhere in the Weald there were scattered instances of fields, some long inclosed, going to waste - the

ref 6 contd.

'brakes', temporary outfield enclosures in an infield-outfield system

1. E. Straker. 1940. 123, from Duddleswell Court Rolls (abstracts are in the Straker MS^S. Barbican House, Lewes).
2. E. Straker. 1940. 132, 125. In 1663 it was petitioned that, when the Forest was disparked, common rights should not be lost also-HMC. vii. 169.
3. BM. Add. MS 5709.f 4-6.
4. PRO.DL 31/85, copied in BM.Add. Ms 5709 f 37 ff. The map (which omits some plots in the schedule) is PRO.MPC 47.
5. BM. Add. MS. 33177.f 53v. There is a Beacon Down in Waldron-PN.Sx.ii 407.

'waste feilde', 8 acres, in Westerham, 1623; in Cuckfield (1622-5) 'unam
¹
vacuam peciam terre' at Polstubb.² A croft in Etchingam-cum-Salehurst,
cultivated in 1597, lay fallow in 1658 because the accompanying cottage
had been burnt down.³ In Petworth, tenants were admitted in 1630 and
1648 to patches of waste which had been granted away earlier but which
had ~~both~~ reverted, by death or mischance, to the lord.⁴ Such enclosed
fallow land in the Weald was found only in scattered small patches, the
product of varying local circumstances, but its existence reflected the
considerable variations in local prosperity, between village and village,
farm and farm. It was a local deviation from the general expansion of
the cultivated area, much as local assarting had continued during the
general agrarian stagnation of the later Middle Ages.

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1. BM. Add. MS. 33898. f 221.
 2. W.H. Godfrey (ed.) 1928.29.
 3. S.P. Vivian (ed.) 1953. 73.
 4. Hon.H.A. Wyndham. 1954.28.

(viii) Wealden Farming: Crops and Animals.

Some commendably affected plantations
of venemous vegetables.

Sir Thomas Browne. Garden of
Cyrus. 1658.

Wealden farms in the early seventeenth century generally practised mixed farming, with animal husbandry predominating. Animals provided much of the food resources and most of the marketable surplus; meadow and pasture together formed the largest acreage in the few land use maps of the time which survive (Fig 14¹); Wealden husbandry differed markedly from that found upon the surrounding Greensand terrains, where other grains were sown and sheep were the predominant beasts.²

Cattle were the most important animals in Wealden farming. The Sussex breed of cattle, as a Wealden authority (Leonard Mascall of Plumpton) described it in 1587, was a red stock, valued chiefly for its labouring powers and its beef. Mascall advised farmers to seal their calves and exploit their milk supplies, but most farmers had to breed and rear their own replacements. Calves were fattened for sale; in spring, when cattle were turned out from their stalls into the fields

1. The area in Hartfield and Withyham, 1597-8, in Fig 14, was 35% pasture 21% meadow, 33% arable and 11% wood and other uses. Kirdford Inventories of the early seventeenth centuries suggest proportions in the Clay Weald were not very different; arable acreage was roughly the same as pasture (excluding meadow). J.C.K. Cornwall converts animals in Wealden inventories, 1560-1640, into acres at the rate of 1½ acres per cow, ½ acre per sheep, giving results thus:

Weald Clay (18 inventories)	315 acres arable,	301 pasture
Hastings Beds (6 ")	162	266

The Weald Clay arable figure is 150% the actual to allow for a three course rotation, and probably exaggerates the arable proportion. Remembering this, & that common pasture and meadow are excluded, animal husbandry clearly used most of the land.

again, calves were often separated and fed in the farmhouse, which expedited their fattening. Oxen, which began working at 2 years, were fattened when 10 years old, preferably in the stalls and on green crops¹ as well as hay.

Oxen were still the common ploughing beasts in the Weald but horses were increasing; inventories of Weald Clay farms, 1560-1640,² give a ratio of 149 working oxen to 100 horses.¹ A Yeoman in Hever, 1654, owned 4 'working oxen',³ the Hurstmonceaux accounts of 1643-9⁴ mentioned oxen ploughing and harrowing; a survey of Warren Lodge in Ashdown Forest, 1658, mentioned cattle teams, although, an Inquisition⁵ of 1610 had considered the pasturing of plough horses in Ashdown. It was mainly after 1650 that horses replaced oxen as plough beasts in⁶ Kirdford.

The oxen were not overdrive^d, if possible, so that they survived

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2. J.C.K. Cornwall. 1954. 48ff. This section draws heavily on his Wealden material.
 1. L. Mascal. The firste booke of Cattell. 1596 ed.49-68. First edition 1587; title changed 1620 edition to Government of Cattell.
 2. As late as 1814, T.D.W. Dearn.xliiii, stated that 4 horses could plough 1 acre of Weald Clay in one day only with difficulty.
 3. BM. Add. MS. 33889. no.1006-7. On claylands oxen ploughed in single line, not paired (R.W. Blencowe. 1851.268).
 4. T.B. Lennard. 1905.109.
 5. PRO.E. 317/Sx/12: BM.Add. MS. 5709. f 8.
 6. G.H. Kenyon. 1955. 107.

for eventual fattening and sale. At Laughton manor, in the southern Weald, fat and store cattle were the largest (and most variable) groups¹ of cattle between 1633 and 1640; they included, however, a fair number of poor beasts and runts. Most fat cattle were sold locally; some were sold as far away as London, but London drew most of its supplies from elsewhere,² and long droving from the Weald would only have removed the fat cultivated with so much care and valuable provender. The Pelham estates (at Laughton, Ripe, Chiddingly, East Hoathly, Croishurst,³ Mayfield and Burwash) indulged in wider sales than most of the small Wealden farmers; in 1637-8 they sold 9 fat runts into Kent and 3 fat oxen to London. They sold much in local markets also, sufficiently to justify the purchase of lean stock for fattening not only from local markets at Battle, Cuckfield, Heathfield and Battle but, in 1639, from as far away as Cheshire.³ Many estates in the eastern Weald produced⁴ hides, which were exported in quantity.

Farm inventories demonstrate that cattle concentrated in the Clay Weald. Nearly all farms had their own plough oxen and dairy cows sufficient for their own requirements (the cheese press was a ubiquitous element of farm furniture) but fat and store beasts were most numerous;

1. J.C.K. Cornwall. 1954. 92, from BM. Add. MS 33147. Wealden inventories, 1560-1640, give proportions of 250 dairy cows, 380 store cattle, 149 working beasts, 45 calves.

2. Especially from the Midlands—J.D. Gould. 1955. 112-3.

3. J.C.K. Cornwall. 1954. 77.

4. L.F. Salzmänn. VCH. Sx.ii. 907.260.

they were the commercial element in Wealden cattle-raising.¹ Cattle were not so predominant over sheep in the High Weald as they were in the Low claylands, but in many parts of the High Weald cattle were manifestly the most important animals; many statements of common grazing rights - in Ashdown (1658),² in the manor of Worth (1617)-³ make mention of cattle alone. The relative importance of cattle and sheep, grain and stock, varied not only with the terrain, but also with the size of the farming units; farms of less than 30 acres, to judge by inventories of Weald Clay farms in Kirdford,⁴ tended to concentrate on stock, especially cattle, and buy the needed grain.

Wealden claylands were not conducive to sheep farming. Wet fields were sources of foot rot (although Romney Marsh might have provided immune stock)⁵ and the lush grass favoured meat rather than fleeces. Market needs were amply supplied by the long-established, well-organized and better-fed sheep in the coastal marshlands and on the Downs. Such sheep as were kept in the Clay Weald served chiefly to broaden the farm base, another source of food when the more important ones were attacked by famine and disease, as they regularly were.

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1. Dairying was important and commercially organized in the Rother Valley, just south of the Weald, but nowhere within it.
 2. PRO.E. 317/Sx/27.
 3. BM.Add.MS. 5680.f 19²v.
 4. G.H. Kenyon. 1955. op.cit.
 5. Grazing of sheep seems to have been greater than cattle in Northeye marsh in Bexhill, 1656-E 317/Sx/20.

Another important function of sheep was to supply manure for the indifferent arable soils. Sheep numbers varied greatly from farm to farm, and from year to year; at Laughton manor, which included an unusually large area of good pastures, sheep totals varied from 123 to nil between 1633 and 1640, and no rise or fall lasted more than one year.¹ Sheep were not essential to the estate economy - they could be sold profitably if prices were higher or sold at any price if ready money was needed. All Weald Clay farms had some cattle and some had more sheep than cattle (though cattle were probably still more valuable;² some had no sheep at all.³

Sheep were more numerous than cattle in the High Weald.⁴ Conditions were not ideal-wet,⁵ exposed, cool - but neither were they for cattle; the pastures were scantily covered, often sour, and the sharp relief kept animals lean. Within the High Weald, however, no district seems to have concentrated on sheep rearing as some concentrated on cattle; most farms possessed cattle and sheep together and both primarily for their own subsistence needs. The varied uses of both cattle and sheep were spread throughout the year - ploughing, reaping, transport, milking,

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1. J.C.K. Cornwall. 1954.92-1634 10 lambs sold to a Kentish butcher-BM. Add. MS. 33147.f.15.
 2. 48 Weald Clay inventories, 1560-1640, gave 824 cattle, 1029 sheep. Cattle were less numerous than sheep in Kirdford, G.H. Kenyon. 1955.125.
 3. A farm in Hever, 1654, had 11 pigs, 43 cattle, 0 sheep. BM. Add. MS. 33889.no.1006-7.
 4. J.C.K. Cornwall. 1954.68-6 inventories give 91 cattle, 257 sheep.
 5. Not by comparison with sheep hill pastures in North Wales, or the Lake District, but wetter than the Clay Weald, and parts of the North Downs.

manuring - and continued from year to year. There was no great slaughter each autumn, when the continuance of these services was essential; in Kirdford, only c.8% of the beasts died or were killed between summer and winter,¹ and other parts of the Weald cannot have differed greatly.

There was more arable in the Weald in the early seventeenth century than ever before;² its rural population was still growing, the industrial workers had to be fed at least in part by local grain supplies.

The Weald Clay outcrop, its soils diversified and improved by many small patches of superficial deposits and by its included beds of sandstone and limestone, was by no means wholly given over to pasture; indeed the ratio of arable land to total area was considerably greater over most of the Weald Clay outcrop than on the higher terrains of the Hastings Beds. In parts of the Low Weald arable composed 40% of the agricultural area,³ and crop value reached 43% of the total value of crops and stock.⁴ Nearly all farms in this area produced the most part of their grain needs and there was no nearby area producing much surplus grain for Wealden consumption; the London market demanded most surplus grain produced in southeast England. The only Wealden farms given over wholly to pasture were smallholdings, whose owners bought grain out of their part-time earnings as farm labourers or craftsmen.⁵

1. J.C.K. Cornwall, 1954. 82; G.H. Kenyon. 1955. 129.

2. J.C.K. Cornwall. 1954. 67.

4.. As in Kirdford-G.H. Kenyon. 1955. 90.

5. *ibid.* 90-1.

According to inventories of Weald Clay farms, 1560-1640, wheat and oats were their chief grains, wheat the more valuable, oats with the larger sown acreage; peas with beans, and mixed grains with pulse¹ neither exceeded one-third of the acreage of oats. The predominance of wheat and oats was hardly surprising; wheat needed heavy soils to support the heavy plant, and oats were tolerant of the generally inefficient drainage. Small amounts of maslin (mixed rye and wheat), dredge (mixed oats and barley)² rye and barley occurred on individual farms, whilst small patches of tuckwheat and flax were sometimes³ cultivated in oat-fields.

The beginnings of convertible husbandry were appearing; this was implied in the several rotations, including white clover, which Markham⁴ suggested in 1625 should be followed on marled land. Between 1643 and 1649 4 lbs. of Dutch clover were brought from Maidstone for cultivation⁵ in Hurstmonceaux. The accounts of Laughton manor between 1633 and 1640⁵ describe lay practises, by implication. Sheep numbers varied greatly from year to year; milk cows and plough oxen varied little, but numbers

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1. 17 inventories, 1560-1640, give these figures for the Sussex Weald; Wheat 93, Rye 6, Wheat and Rye 26, Barley 15, Oats 100, mixed grain 9, vetches and tares 9½, Grain and Pulse 36 (J.C.K. Cornwall, op.cit). Wheat and oats were the chief grains cultivated by R. Bax in Capel and Charlwood 1648-62, in the Surrey Weald (VCH.Sy.4.1912.432).
 2. Dredge occurred once, in the mixed farming area of the Rother valley, in the southwest extremity of the Weald. J.C.K. Cornwall. 1954.70.
 3. As one example in Kirdford 1633: G.H. Kenyon. 1955. 96.
 4. G. Markham. 1625. 13.
 5. T.B. Lennard. 1905. 109.
 - 6 J.C.K. Cornwall. 1954.92, from BM.Add. MS. 33147,

of market destined fat and store cattle did considerably. Hay production on the manor, which included extensive wet pastures in Laughton Levels, a fluctuated considerably. These short-term changes did not reflect market conditions - the relative profitability of sheep and cattle did not change so fast; nor can they be attributed to a largely hypothetical autumn slaughter of animals. Since the variations in hay cut do not exactly correlate with the variations in animal numbers, the manor probably included fields sown with pasture grasses and eaten off directly by the animals (vetches and tares¹ were commonly consumed thus, and these two items also figured in the manorial harvests)². Part of the ley fields at Laughton were in the parks, and this occurred in other parks at this period, when much parkland was turned over to other uses (see p.69) Land in Etchingam Park, 1597, was described as 'the³ aforesaid leyes'.

Laughton was one of the largest and most well-managed estates in the Weald and the attractions of ley husbandry for it were various - cultivated grasses gave more animal food per acre, arable land could be rested and old rank pastures ploughed up. Such ideas had less attraction for a small farm where the proportion of arable to pasture could not vary widely without imbalancing home food supplies; improvements in yields

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1. L. Mascall. 1587.50 ff, said cattle should be fattened on vetches, peas, boiled barley husked and bruised beans or coleworts (i.e. members of the cabbage family, brassica, which do not heart, or young cabbages before they heart). He farmed at Plumpton, so most of these crops were probably grown nearby.
 2. Little fodder was bought from outside, if only because there was virtually no sale of it; the cabbages bought at Lewes, in the Laughton account for 1634.EM.Add. MS. 33147,f.16, were probably for human consumption.
 3. S.P. Vivian (ed.) 1953.202.

per acre were more impressive totally if the acreage concerned was large. Ley husbandry was by no means universal in the Weald at this time; on the medium-large farms of Kirdford, large enough to have farm¹ inventories, the first sign of ley husbandry did not come until 1688.

Fields in the Low Weald tended to be small (p⁶¹), and any sizeable farm included ten or more enclosures; this, together with the independence of most farm units and the variety of available crops, encouraged variety in rotational patterns. The 8 acres of wheat and 8 acres of oats of a farm in Billingshurst, 1619, may have been part of a fallow-wheat-oats rotation, but another farmer in the same parish in 1637 had one grain only - 5 acres of wheat in two fields. The farm of Thomas Mill in Nuthurst, 1622, included 3½ acres of wheat, 11 acres of oats² and 4 acres of peas, besides small plots of hemp and flax; this may have represented a fallow-oats-peas-oats (or wheat)³ sequence.

These examples show no discernible common pattern, but the inventories of Kirdford Parish, on the Weald Clay, in the early seventeenth century suggest most farms there conformed broadly to a rotation of winter wheat, 1/4 of the arable; oats with peas (and plots of barley, buckwheat or flax) ½ the arable acreage; the other quarter was the summer fallow which generally preceded winter wheat. This four course rotation also fits the Nuthurst farm above: fallow, wheat, oats with⁴ peas, oats with peas. The proportions of each element varied somewhat

1. G.H. Kenyon. 1955. 151.

2 Hemp was also cultivated at Hurstmonceux 1643-9 (T.B. Lennard, 1905.110) and of the 'hempyard' in Withyham 1597-8 (E. Straker, 1933 (ed.) 36.

3. J.C.K. Cornwall. 1954. 71, 79.

with the years because the size of the fields varied, but the general system continued; some such regulation was necessary if land fertility was to be maintained and the advance of weeds and disease controlled.

At Laughton, between 1633 and 1639 oats were sown each year, wheat every year but one, rye and peas with tares for three years. This does not vary greatly in broad outline from the rotation practised on smaller farms, but the detailed figures shew great variations in the acreage under individual crops—oats from 6 acres (1633, 1638) to 33 (1635), wheat from nil (1634) to $24\frac{1}{2}$ (1638), and the total cropland from 54 (1637) to only 16 in 1634.¹ These variations reflect a more complex farming system than was found on smaller farms, varied by the reclamation of waste that was going on (p. 51), by the adoption of ley husbandry and by dependence of agriculture at Laughton, to some extent, on the agricultural programme of the other Pelham estates in East Sussex.

Conditions of soil, of microclimate and of relief varied widely within the High Weald and, combined with other factors, especially farm sizes, encouraged wide variety in the crops and cropping systems of the

4. G.H. Kenyon. 1955. 97-8. This data fits the evidence on conditions in the Kentish Weald, although on some better soils, as in Hever 1654 (BM. Add. MS 33889, no 1006-7), wheat was more important than oats. F. Hull (1957.12) noted that in Canterbury Diocese 1560-1640, Wealden holdings averaged only $3\frac{1}{2}$ acres of wheat, whilst better soils in North Kent averaged 10.

1. J.C.K. Cornwall. 1954.92, from BM.Add. MS 33147.

area. The proportion of enclosed land under the plough varied - in Robertsbridge manor, 1567, it was small; on the high sandy terrains of Hartfield and Withyham, 1597-8, one-third of the area was arable, a proportion which had only slightly increased by 1651. Two farms belonging to John Roberts in Ticehurst shew, in contrast, a considerable grain production, although its elements varied considerably from year to year. In the 1620's there was much wheat and some rye; in 1632 10 heaps of maslin, 40 of rye and 97 of wheat were garnered; in 1639 the two farms contained 32 acres of wheat, 35 of peas and 7 of oats-rye had disappeared. Heavy clays, suitable for wheat, occurred in Ticehurst whilst rye could grow on the poorer sandy soils (being both drought-resistant and more winter-hardy than wheat); on the other hand, soil conditions were not always studied to sow crops with the maximum potential yield. Maslin was down here in quantity, as elsewhere in the High Weald, on the principle that one of its two components would ripen under any expected weather condition, since the ideals for rye and wheat varied considerably.

The arable component in these two Ticehurst farms was more important than on many others in the High Weald, yet the farms of John

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1. R.H.D'Elboux (ed.) 1944.1-155.
 2. 31½: E. Straker. 1935. 175.
 3. J.C.K. Cornwall. 1954. 69-70. Quoting Dunn MSS, Account Books i-iv, Hove Public Library.

Roberts practised a mixed, not an arable husbandry; in 1639 they had 62 cows and 171 sheep. The arable production varied considerably, from over 310 bushels of peas in 1623 to less than 100 for the next three years, partly no doubt from planned rotation, but partly also a reflection of climatic variation. When natural conditions were ideal neither for grain or beasts and there was no large nearby market for the produce of either, it was likely that even large farms, selling produce to markets in quantity, would pursue a mixed husbandry. With small subsistence farms, it was the only safe way to ensure a food supply; one such small farm in Whatlington, 1650, comprised 2 acres of wheat, 2 of oats, 2 kine¹ and 2 bullocks, 1 ewe with a lamb, and 1 ram teg.

Data is insufficient to state what rotation, if any single one, was common in the High Weald at this time.

Grain trade in the Weald was restricted to purely local sales; only a few large farms and estates had a marketable surplus of size and that was mostly absorbed in the close net of local markets. The backbone of grain sufficiency in the Weald was the preservation within each individual tenement, as far as possible, of sufficiently grain for food and seed. This was expressed in several manorial customs. In the manors

1. *ibid.* 79. Smallholders could not concentrate on stock and buy their grain in the High Weald so easily as was commonly done in the Low Weald; grain surplus in the former was much smaller.

of West Chiltington and Nutbourne in Pulborough there was a heavy penalty, forfeiture of the holding, for any copyholder who carried grain out of his copyhold lands and the nature of this penalty had been ratified as recently as 1604.¹ Copyholders in Cuckfield, Keymer or Ditchling, by decision of 1584, paid a fine if they took corn from their land to a freehold, or to a copyhold outside the manor.² These regulations opposed the profitable selling of grain at profit to nearby villages hit by a local famine, since such sales left too little for next year's sowing (many small farms did not produce more than seed and food needs under any condition).

Local shortages of grain were common, especially amongst small holders in the High Weald, and a run of wet summers could precipitate a more general famine. One such occurred in 1631, when an exceptionally bad harvest in 1630 found farmers with no reserves from the modest harvests of several years previously.³ The Rape of Hastings, wholly in the Weald, was the worst affected area in Sussex, and lacked one-third of its needs of grain.⁴ In the Rape of Pevensey, the Downlands had sufficient and had been able to supply most of the needs in the Wealden part of the

1. W.H. Godfrey (ed.) 1928. 106-7.

2. *ibid.* 91.

3. First studied in W.D. Cooper. 1864. 21 ff; in 1597 Rye was allowed to buy 200 quarters of wheat and barley from the three western Rapes of Sussex to alleviate a local food shortage—APC.1597-8.145.

4. SPD. Jas I. ^cexc.61.

Rape; a similar report came from the Rape of Lewes.¹ The report for Bramber Rape omitted, for some lost reason, to say anything about corn and the Rapes of Arundel and Chichester, whose Wealden segments were small (and near the rich farms of the Rother valley) reported adequate supplies of corn. The 'wildish parts' of Kent were short of grain,² but were receiving grain from the south of Lewes Rape, and also, no doubt, from the Downlands to the north. The Kentish Weald included larger areas of good soil than the lands further south, and its various industries (cloth and iron chief)³ provided considerable purchasing power.

1. ib. cxcii. 98-9; clxxix. 15.

2. ib. cl~~xx~~^{xx}ix.15.

3. It is interesting that the report from Pevensey Rape noted that in the north shortage was lessened, because the Kentish clothiers employed many women and children.

Weald as in the Kentish. They were not very frequent in the Clay Weald¹ of West Sussex, but further east they were very common, mentioned in Hailsham² 1625, Etchingham³ 1597, Salehurst⁴ 1588, and one estate⁵ in Bexhill, Langney and Westham in 1606 had no less than 40 orchards.⁶ Not far away, Mersham manor in Fairlight included 12 orchards in 1620. Although this was the district where orchards concentrated, they penetrate even to Ashdown Forest (there was one at Old Lodge in 1658)⁷, the most inhospitable segment of Wealden territory. Where orchards were leased, their preservation was often a condition of leasing; the tenant of a farm at Chesworth in Horsham in 1627⁸ covenanted to 'plant or graft six crab stockes or perye stockes yearely'.

Fruit was sold for marketing in Kent, and a petition of 1624 to the Knights of Parliament for Kent complained that the Dutch were exporting fruit to England before it was ripe and thus forestalling the marketing

5. BM,Add. MS. 33889.no.992.

1. G.H. Kenyon. 1955. 117 estimates that only 1/10 of the population of Kirdford had cider presses.

27. L.F. Salzmann. 1901.28.

34. S.P. Vivian (ed.) 1953.14,200-4.

45. PCC. 32 Rutland.

56. BM,Add.MS. 5700.f 33v.

67. BM,Add. MS. 5680.f 16v.

78. PRO.E. 317/Sx/15.

8 J.R. Daniel-Tyssen(ed.) 1878.69.

of local English fruit.¹ This problem did not affect the orchards of the Weald of Kent much since most of the marketed fruit came from districts further north in Kent, favoured not only by nearness to the London market, but also by a beneficial combination in many localities of good soils and good air drainage, which saved the orchards from killing frosts. Most Wealden orchards were small and they were generally located near to the farmhouse rather than in the most favourable natural site on the farm; both here and in North Kent, the importance of good air drainage in siting orchards was still very imperfectly understood.

Much of the produce of Wealden orchards was eaten as fruit, but much also was converted into cider and perry which, with beer, formed the common beverages of the district at this period, when their impurities were still less than those of most available natural waters.

A tithe agreement for Bethersden in 1615 mentioned the proceeds from an apple mill,² and a scheme to commute tithes in Hadlow included the tithes of cider and perry made in the local apple mill, in 1626.³ One of the outbuildings of Robertsbridge manor in 1609 was an 'apple myll'.⁴

Cider was probably the chief Wealden beverage of the time, but its dominance was in decline.⁵ By 1650 hopgardens were scattered throughout

1. BM.Add. MS.33917,f 109.

2. BM.Add. MS.33884.f.134.

3. E. Hasted ii. 1782.320.

4. BM.Add. MS. 5680.f 91.

5. W. Lambarde. 1596 (1826 reprint. p.3) said that cider was formerly the chief drink in the Weald of Kent from lack of barley, but that this deficiency was being made up increasingly with oats. Herefordshire-cider was more renowned.⁵

the Kentish Weald-¹ Westerham, Chiddingstone,² Yalding,³ West Peckham⁴
 and Hadlow⁵ serving as examples (and they mostly on the border with the
 Greensand terrains, where also hops were cultivated in quantity). In
 Central and East Sussex, hopgardens were widespread, found at Ashburnham
 and Ninfield⁶ 1635, two in Cuckfield⁷ 1629, Peasmarsh⁸ 1592, Hurstmonceux⁹
 1643-9 and 7 acres of hops on a farm at Boarzell in Ticehurst in 1639.¹⁰
 Etchingham manor in 1597 included a malting house and drying kiln,¹¹
 Robertsbridge manor had a maltmill in 1609,¹² and a tenement in Salehurst
 was, in 1659, 'now a malt-house or east-house.'¹³ (An east house then

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1. 1596, 1617: FM.Add. MS. 33898.f 200v, 218v.
 2. A little hopgarden in the parsonage, 1634: *ibid.* 33889.no.992.
 3. 1637: *ibid.* 33882.f.77.
 4. At least one on 1621 map, KAO. U 31/P 3.
 5. *ibid.*
 6. Ashburnham MS. 4373, ESRO (Lewes).
 7. Mentioned in the parish boundary survey, M.H. Cooper, 1920. 45.
 8. E. Austen. 1946. 11. In 1592 a man of Peasmarsh had his hops weighed in Rye.
 9. T.B. Lennard. 1905. 110.
 10. J.C.K. Cornwall. 1954, 79.
 11. S.P. Vivian (ed.). 1953. 200. There were beer brewers in Rye 1568-161 Ditchling 1610, Hastings 1589 -VCH.Sx. 2.1907. 262.
 12. S.P. Vivian (ed.) 1953. 5,8. In 1593 Waterdown Forest accounts included the sale of hop poles-C.Pullein. 1928.92, and a farmer of Sedlescombe sold in 1622 wood of 14 years' growth for hop poles W.D. Cooper. 1851.24.

meant a storehouse for malt rather than, as now, a building where hops were dried). The former parks of ^SWedgwick and Chesworth in Horsham both included malthouses in 1650. The new-fangled brew seems to have ₁ penetrated into the west Sussex Weald also; inventories of Kirdford ₂ farmers made no mention in this period to hops or beer, but the nearby market town of Petworth quenched its thirst with beer primarily. Hops were cultivated locally (more on the Lower Greensand than on the Weald Clay, I suspect) by the maltsters and inkeepers of the town, and ₃ barley was often sown as a spring grain in the district.

1. PRO.E 317/Sx/48,22.

2. G.H. Kenyon. 1955. 78-156.

3. G.H. Kenyon. 1958.84,87-90.

(x) Improvement and Reclamation.

Few places are so defective but it yeeldeth of
itself or is neere unto some place of helpe.

J. Norden. Surveyors Dialogue.1607.

There was no abundance of organic fertiliser in the Weald. Sheep were the chief suppliers on the Downlands around, but they were less numerous in the Weald; dung from cattle yards or stalls and from animals grazing fallows was vitally necessary for the continuance of cropping and the maintenance of fertility. Some larger farms kept many animals in stalls¹ and thus accumulated a supply of dung which was easily available and which could be concentrated on any part of the farm at will; Norden opined that stall dung was best for cold ground,² which embraced the clay soils of the Low Weald and part of the High Weald also. Many small farms did not have the capital to make stalls, nor many animals to fill them, and manorial regulations reflect the shortage of manure much as they inferred a shortage of seed grain^(p.127)³; customary tenants for life, and guardians of wards in the manors of Cuckfield, Keyme and Ditchling,1616,³ were forbidden to take dung from any tenement under their charge. The tenant might get some profit by the sale of it, but his tenement was impoverished.

1. L. Mascall. 1596 edn.54-5, gave advice on stall-feeding.

2. J. Norden. 1607.227. and stable dung on hot ground.

3. W.H. Godfrey (ed.) 1928.88.

The shortage of organic manures was serious in a region where many soils were difficult to cultivate and few were rich in plant foods, and it encouraged a widespread search for and use of mineral manures. By the early seventeenth century, the application of mineral manures to Wealden soils was an ancient agricultural practice, but it was at this time that the first writings about local practise were published. In 1625 Gervase Markham published the first edition of his 'Inrichment of the Weald of Kent'¹ stating that the Weald, save near the rivers, was barren throughout and that both arable and pasture needed some dressing-
dung, marle, 'fresh earth', fodder or ashes.

He described marl as 'a fat, oily and unctious ground, lying in the belly of the earth, which is of warme and moist temperature, and so most fertill, seeing that heat and moysture be the father and mother of generation and growth; however this is not a pure and simple marrow (as that is which lyeth in our bones) but a iuyce, or fat liquor mingled with the earth'². There were four types of marl in the Weald, differentiated by colour - grey, blue, yellow and red; the best marls were fat, slippery and 'earthy' (i.e. fine textured, but less stiff than pure clay, a clay loam or silty clay in texture) and their quality was decreased by mixing with coarse sand or gravel. In order of merit, blue marl was best, followed by yellow, grey and red, but the red was

1. Published under the initials R.I. in 1625 (henceforth referred to as G. Markham. 1625) but Markham's name appeared on later editions in 1631, 1636, 1649, 1664, 1668, 1675 etc.

2. 1625.8.

good when it was found above the blue. The topographic situation of
beds containing marl was varied.¹

Markham recommended that treatment with marl should be varied according to the soil treated. On the best Wealden soils, 'haisell ground'² (which he described as a compound mould,) deep ploughing should be followed by a dressing of 500 cartloads of marl an acre, each load being 10-12 bushels of 8 gallons apiece.³ Oats could be sown immediately after the deep ploughing to stop any quick growth of grass which might occur,⁴ the land being left in summer fallow after the oats were harvested, to be followed by marling and the sowing of wheat in the autumn; alternatively the land could be marled, and the wheat sown,⁵ immediately after the deep ploughing. Marl should be worked in soon after it was spread, but after marling the land should not be deep-ploughed again, since this only increased the rate of downwashing, taking the benefits of the marl too deep for the plants to reach.⁶ Marled

1. 1625 μ .8-9.
2. This term is not explained by Markham, but J. Boys (1813.16) says it was used for clay soils in the Weald which included a considerable sand component and were thus easier to work. It was used also in Surrey and Sussex for soils of intermediate texture, rich in plant foods (W. Stevenson. 1813.33-8, J. Trimmer. 1851. 487 ff).
3. *ibid.* 10. approximately 2/3 of a ton. A 1728 farm lease in Kirdford (G.H. Kenyon. 1955. 150) gives a load as 40 bushels.
4. G.E. Fussell. 1952. 69, says the oats were sown to help the grass, but this is not what Markham says.
5. *ibid.* 10. The summer fallow might be replaced by sowing peas, but they should be harvested as soon as possible, to rest the land before wheat was sown.
6. *ibid.* 11. He derives this wish to prevent leaching from Walter of Henley.

'Haisell ground' could bear two crops of wheat, but then should be put down to grass for 5-6 years, after which the sequence could be repeated; continuous cropping for 6 years would exhaust the soil beyond any power of marl to improve it.

On heavier soils, smaller dressings were advisable. Such land would also be improved by long periods (5 years) as cattle pastures, and by the ploughing in of dung, and silt from field ditches. Frequent ploughings exhausted the 'fat' of marl, and left only its 'dry dross'; ~~marked~~ lands must be periodically put down to pasture, especially those which were very heavy. The pasture period accumulated valuable humus and dung on the land.¹

The heaviest soils, called 'marle cope ground'² were unsuitable for wheat, but ~~werved~~⁵ as poor pasture and might produce oats. Drainage was bad, and marl might increase waterlogging; this being so, 300 loads per acre was ample. If drainage was not disturbed by heavy rains, mediocre crops of wheat might be raised, but if such lands were to be tilled, they really needed dressing with 'rich ground (greet)' and good dung. The pasture fields on 'marle cope ground' were often covered with sour and weedy grasses, but 300- 400 loads per acre would remove the weeds and improve the quality of the pasture for at least 12 years. After 12 years, the accumulation of humus and dung added to the marl might allow the cultivation of a few crops of oats.

There were many patches in the Weald of sandy and gravelly soils.

1. 1625 μ . 12-15.

2. *ibid.* 15-17.

The better could be treated as 'Haissell mould', with heavier dressings and less frequent tillage. Poor sands could only be improved, and then n much, by deep ploughing and at least 500 loads per acre; after two wheat crops such lands should be grazed for 4-5 years and then, after one oat crop, be remarled.¹ Wet sandy soils, in depressions or near springs, would give sweet pasture grasses after heavy marling; some might produce oats but they were too wet for wheat.²

Such were Markham's schemes for improvement by marling. Markham was a journalist and some of his material was derived from more general agricultural treatises published not many years earlier.³ In one of these, in 1594, Plat had defined marle as 'no other thing than a kind of clay ground, a cold dry material', most commonly white in France but also found in grey, russet, black and yellow;⁴ colour was an imperfect guide, and he recommended sample dressings of various clayey materials as the best way to discover local marls. To explain why marle possessed such agricultural potency, he was forced into making it the fifth element,⁵ a tardy addition to Aristotle's first four. However he did admit that

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1. The actual sequence given by Markham, 1625*n.* 18 is marling, followed by 2 years of wheat; 5-6 years of grass; one crop of oats, marling at 400-500 loads an acre, and another crop of oats; 5-6 years of pasture; 1 oats, one wheat; and begin again. No catch crops were to be taken between reaping and sowing.
 2. 1625*n.* 16, 19.
 3. R. Gough. British Topography. i. 1780. 449, refers to a manuscript treatise on marl in the Weald by Edward Batcoat of Hawkhurst. 1592. I have not traced this, but Markham may well have used it.
 4. H. Plat. Divers new sorts of soyle... 1594. 22. This was a separately printed part of his Jewell House of Art and Nature. 1594. He in turn obtained most of his general opinions- and they are very general - from B. Palissy. Discours admirables de la nature des Eaux et Fontaines... plus un traité de la marne. 1580. 295-347. The following ideas in
/contd.

chalk and lime were suitable substitutes for marl and that the fuller's earth recommended by Palissy in France might well be adopted in England also.

Norden in 1607 stated that marl was used in Surrey and Sussex (surprisingly he omitted Kent) and that it was most valuable on sandy soils.¹ Francis Bacon in 1627, after mentioning the application of marle, seasand, 'earth', pond sediments and other mixtures as mineral manures, concluded that 'marl is thought to be the best, as having most fatness and not heating the ground too much'.² Decades before, Fitzherbert had written of the virtues of marl '.,the whiche is moche better than outhur donge mucke or lyme for it wyll laste twentie yeres togyder if it be well done'; 'marle mendeth all maner of grounde but it is costely'.³

There was thus much material for Markham to draw upon, and he

references contd.

- Markham are found earlier in Plat - that all marle was earth before it was marle (1594.22), that marle worked best after it was broken up by frost (23), that marle could be traced by augering (27), and the use of fuller's earth (31).
5. 1594. 23. Plat is not very enlightening, nor even consistent - marle is 'exceeding hot', p21, 'not hot', p.22.
 1. J. Norden. 226-7.
 2. Sylva Sylvarum. 1627: p 525 of Vol.ii. of Works of Francis Bacon. ed. J. Spedding, E.L. Ellis, and D.D. Heath. 1857. This and other extracts were copied in an early seventeenth century hand at the back of a copy of the 1625 edition of the Inrichment of the Weald of Kent, now BM. Sloane MS. 1607.f.17v et seq. I have been unable to identify an extract, f 20-21, from the 'artt of Survey, f 31'.
 3. A. Fitzherbert. The Boke of Surveyeng. 1523.cap.xxviii, xxxii, xxxv.

commenced writing about marl before his book of 1625 which was specifically devoted to it. In 1620 he first wrote of marl, 'a rich stiff clay, tough and glewy'; noted its various colours; described the value of frost in breaking up marl and 'releasing' the virtues therein; ¹ advocated very heavy marling on hillslopes because rain washed so much downhill; and concentrated on the marling of sandy lands. ² In 1625 he turned to the problem in its Wealden setting, but the 'Inrichment' still included much generalised matter derived from previous writers. He made strong claims for marl as an agent of improvement, although realising that marl was not a panacea for all agricultural deficiencies. He warned against that excessive faith in marl which encouraged continuous cropping and thus exhausted the soil beyond remedy and pointed out that marl could not remedy the inherent wetness of soils near underground water. ³

It is manifest that, although Markham wrote of marl in more detail than any previous writer, his ideas of its composition were both vague and unscientific. He provided no means of identification which can be used today with certainty. In the 'Inrichment' he stated that Wealden marls could be differentiated by colour, yet in a more general work published in the same year, ⁴ he stated that colours of marl varied

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1. In actuality, it would release such bases as existed in the clays.
 2. G. Markham, Farewell to Husbandry, 1620. 47-9; 33-40 in the 2nd edition of 1625. (1625b),
 3. G. Markham W. Blith, 1649. 14, 18-19. The warning about over-cultivation was repeated in W. Blith. 1649. 62.
 4. ~~1649. 6a. 1625b. 40.~~ One disputed method of identification concerned the supposed 'oily' feel of marl. In 1620 Markham did not describe marl directly as oily or fatty, but he did in 1625. 8. However in 1625b. 39-40 (which, for this reason, must have been published later 1

/contd.

greatly and that recognition must be based also on the toughness of the material and its loosness when dry; when moist it resembled clay, but when dry it tended to powder. This was the sum of his definition; it was true, but unhelpful, to add that marl varied in quality, that both overheavy and over-light dressings were detrimental. (Finally, Markham confided that marl was found in the lowest parts of high countries and the high places of low countries and, moreover, that if it was not deep down it could generally be found near the surface.)

The absence of any scientific knowledge of soils at the time is exemplified in the treatments suggested by Markham and his statement that lime was an alternative to marl. Lime could improve the base status of a soil, its chemical composition but, since all Wealden marls were non-calcareous, their function was limited to improving soil texture. Moreover this single virtue had limited application, for Wealden marls were always described as silty or clayey and whilst

the year) he attacked this opinion as erroneous 'for if it weare fattie it woulde bee impossible either for rayne or frost to dissolve the same, for all oylie things doe repeyl and turne against water'. Pliny described marl in England (Historia Naturalis. Lib. xvii.4,7), as oily, but Plat. 1594.28, had already taken exception to it; presumably this fact was brought to Markham's notice soon after 1625^a appeared, and he altered his description in 1625^b.

1. W. Blith. 1649.61, whose data was largely derived from Markham said marl should be defined by smoothness, the absence of coarse particles rather than colour.
2. 1625^b.40.
3. They were thus marls in present parlance, for marl is now normally defined as a calcareous clay - G.E. Fussell. 1959.214-5.
4. G. Markham. 1625^b. 33, R. Weston. 1650. 13; elsewhere in England the term 'marl' has been applied to materials of other characteristics also - H.C. Prince. 1960 (forthcoming).

such fine-textured material might improve sandy soils, its application to clay soils (where lime was beneficial) was completely useless, or worse. Admittedly Markham said heavy soils should be marled less heavily than sands but they should not have been marled at all. This confusion between improving soil texture and improving the supply of plant nutrients in the soil ¹ was still apparent in Blith's writings ² of 1649.

Markham differentiated the Wealden marls by colour but this approach to their identification must be abandoned. Both the Weald Clay and the Wadhurst Clay include all the colours he mentioned and all within a short distance vertically or horizontally. These variations are further complicated by weathering, which oxidises most clays to a yellow colour and iron-rich clays to red. ³ Most of the marl used was unweathered shale, a friable material only plastic after the effects of frost and exposure (thus corresponding to Markham's description) and richer in bases than the weathered clays nearer the surface.

It is impossible to assume that all pits now scattered over the Weald were former marl-pits. Whilst only a few are probably natural; some may have been dug as surface water sumps in the Weald Clay, where

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1. As late as the 1638 edition of the Farewell. Markham wrote of 'marl, sand or other compass^t', 34, as if all had identical effects.
 2. W. Blith. 1649. 60, said marl was very heavy but, because of its substantial character, its effects lasted longer than lime.
 3. I owe thanks to Mr. B.S. Furneaux and Dr. E.M. Yates for help on the following paragraphs.

water supply otherwise is often difficult,¹ others for clay materials² to daub the walls of timber-framed buildings, a few have been³ attributed to the clothworkers' search for fuller's earth and more were certainly mines for iron ore.

Many iron pits also produced marl and this provides the first certain data on Wealden marl. The chief source of iron ore was the⁴ bottom few feet of the Wadhurst Clay, and the clays and shales above⁵ were dug out in large quantities to apply to lands, especially sandy soils, nearby. This is witnessed not only by the complete absence of spoil heaps from these iron pits (many of which can be identified with certainty) but also by documentary statements. Two large marlpits at Framfield, near the junction of the Wadhurst Clay and the Tunbridge Wells Sand, lay very near to Framfield bloomery;⁶ it was Wadhurst Clay which was used to marl light sandy lands in Brede;⁷ in 1618 certain men were

1. see p.26-7.

2. H.S. Cowper. 1911. 169, attributes most pits in the Kentish Weald to this, an exaggeration (a house needed no more marl than 5 acres and less regularly). 1649 tenants of Ringmer could dig in Broyle Park 'marl' to repair their houses and roads- PRO.LR 2/299. f 216-229 (also copied in BM. Add. MS 5681 f 445).

3. R. Furley. ii. 1874. 329-30, attributes many pits to this, but the chief sources of fullers' earth were north of the Weald (p.206).

4. see p.189.

5. This material is generally grey or blue clay - F.H. Edmunds. 1935.22, W. Topley. 1875.334-5, H.J. White. 1924. 20, G.S. Sweeting. PGA. 1925. 412. This is perhaps the blue clay of Markham but parts of the unweathered Weald Clay are bluer; the red above the blue might refer to subsidiary red bands in the Wadhurst Clay.

6. E. Straker. 1931. 387. An C 18 account of iron ores in Sussex (BM. Sloane MS 4020.f.189) said, of Wadhurst Clay iron, 'the mine it self lying in beds of blue marle, which is admirable mendment for sandy light lands tho' it does very well upon stiffer land if it be not laid on in to large a quantity'.

accused of digging a 'marger. anglice a marlpit' in the highway between Swiftsden and Coopers Corner in Salehurst.¹ In 1642 a marlpit within a lane was included in a grant of land in Frant; the divisors of the land agreed to allow marl digging at the accustomed places but only if one year's notice was given of intention to dig.² Marlpits in the highway were a menace, but marl was needed from elsewhere; the tenants of Framfield manor, in 1622, had freedom to dig marle on the commons and waste,³ and the lease of some lands in Horsham, in 1624 gave freedom to dig marl on the premises.⁴ Other probable pits in the Wadhurst Clay were that in 'Corne Pitt Wood' in Beckley, mentioned 1650⁵ and perhaps by then disused, and the depression mapped in Brenchley 1639 as 'Sir Walter Robberts Marlepit', which was still in use.⁶

7. E. Austen. 1946.11.

1. BM.Add. Ch.31775.

2. ESRO.Add. MS 284.

3. BM.Egerton MS. 1967.f 229v.

4. PRO.E. 317/Sx/31.

5. *ibid*/21.

6. KAO.U 86/P 2. Many small pits are marked in Lamberhurst, Goudhurst and Horsmonden, in a similar geological position in 1675 - KAO.U 180/P 1.

Geology from Geological Survey, Old Series 1", sheet 5, 1893. The local availability of marl was specified in the surveys of districts attached to each lodge and individual pits mentioned in the boundary perambulations; the surveys are PRO.E 317/Sx/10-17, 27. Boundaries of the lodge areas from I.D. Margary, 1940. 136; of the Forest from the 1693 map (PRO.MPC 47) which differs slightly from Margary and from the 1744 map (EM.Add.MS 5709 f 36).

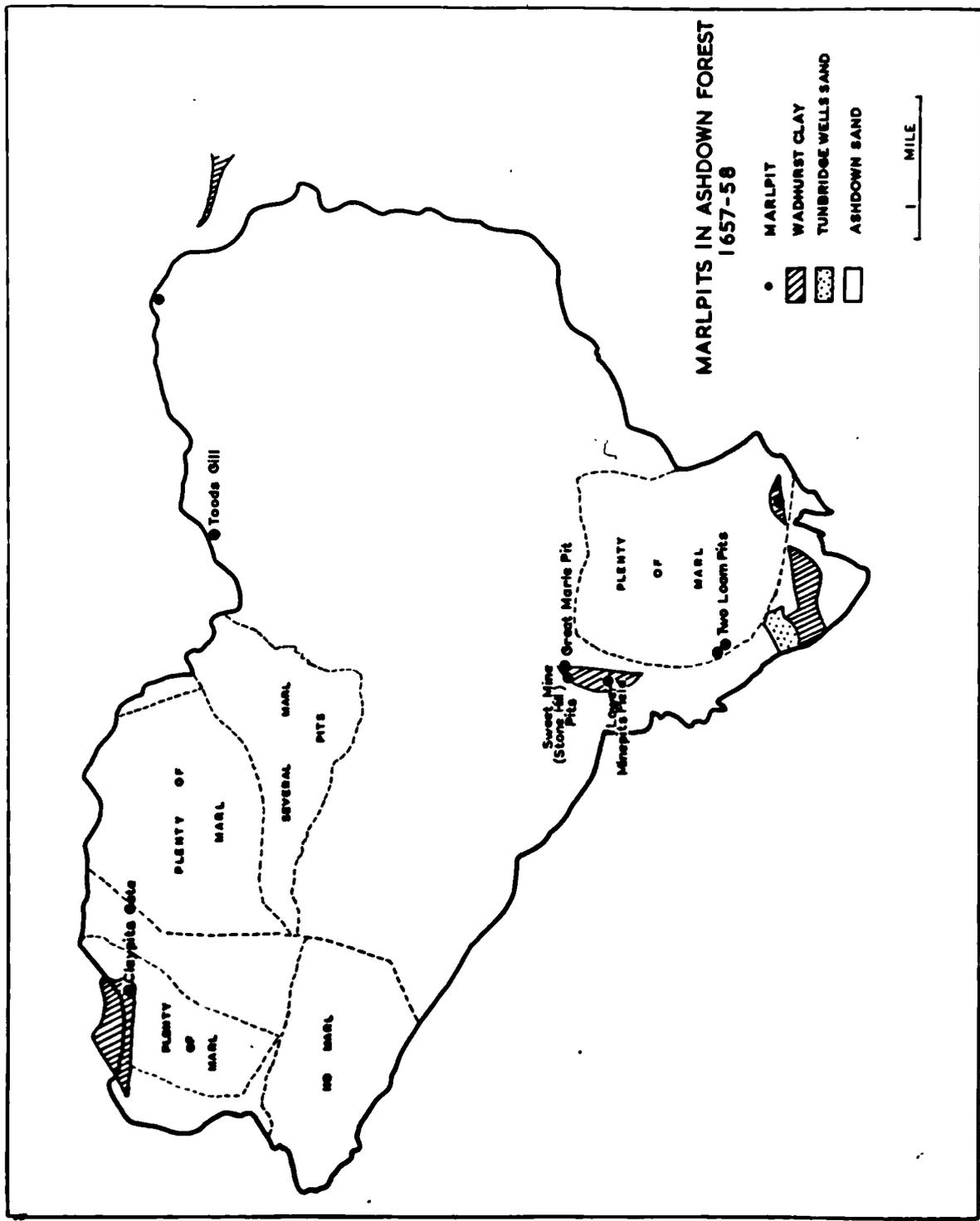


Fig.I7.

The small enclosures of arable within Ashdown Forest were heavily marled. Certain parts of the area within the forest were rich in marl,¹ others were poor. Many small fields in the former districts may have included pits, but probably not - their areas were too small; there were certainly several large pits, unenclosed, at spots where the Wadhurst Clay near or at the surface. Two were defined as 'loam pits'² (they may have tapped one of the more shaly layers in the Wadhurst Clay)³ but they were earlier described as 'two Comon Marle Pits'. Large pits⁴ were generally common to all the inhabitants within the forest and the longest distance from any part to its nearest source of marl was little over a mile. The clay, applied to bind the sands and to add some mineral nutriment, was extracted heavily; in 1650 there were no more than 357⁵ acres of enclosed ground in the forest but the proposals of the 1658 plan allocated 4 acres for expansion of one pit in the near future, 3⁶ acres 1 rod for another and 2 acres 3 rods for the third. Tenants

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1. See Fig.17, based on the lodge surveys of 1657-8, and the two surveys of Duddleswell manor, 1650 and 1658, giving complete coverage.
 2. These layers are mentioned by W. Topley. 1875.51 et seq.
 3. SAC. 1872. 195, 191.
 4. The Survey of Prestridge Bank 1658 (PRO.E 317/Sx/10) said those with rights could not use the marl save on their customary lands. An enclosure around the Inn at Nutley included 'ye Marle' and this may have been enclosed thus; in 1658 Sweet Minepits was stated to be common (ib./27) but in 1688 it was granted to an individual - E. Straker. 1940.131.
 5. E. Straker. 1940. 132.
 6. PRO.E. 317/Sx/27.

widely advocated but the chemical composition of the material was not understood, it cannot be doubted that much useless material was dug and spread.¹ Marl pits existed just south of the Lower Greensand scarp in Bletchingly,² near South Park Hoomey, a medieval ironworks; others occurred near Bough Beech in Hever where was an ironworks in the early seventeenth century.³ Contemporary references mentioned the 'Stickinge Pitts' in Smarden,⁴ Marles in Rudgwick,⁵ Great and Little Marlcroft in Edenbridge in 1611.⁶ Some pits did extract material from the Paludina limestone; there were many in Bethersden,⁷ where was one of the largest outcrops of this material in the Weald, and Marl Pond at

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1. The Weald clays are uniformly non-calcareous: A.D. Hall and E.J. Russell. 1911.130. If the red clay bands were ever dug for marl, they would fit Markham's classification of red marl as the worst, for they are the stiffest clays in the Weald Clay -J.W. Reeves. 1958.1-16.
 2. E. Straker. 1931.457.
 3. E. Straker. 1931.218. The dates when this furnace worked, within the 16th and 17th centuries, are unknown.
 4. G. Ward. 1945.3.
 5. SBS. 14.126. The name goes back at least to 1455-C.Cl.R. 1554-61.57:⁴⁵ Middelmarle, Marlespitfelde, Litelmarles.
 6. BM. Add. MS. 33889.^{no}878.
 7. B. Furley, ii. 1874.24, gives a low estimate of 200.. Land in Betersden called Marle mentioned 1632 - E.C. Lodge (ed). 1927.136.

1
 Outwood was dug in the same material. 2
 Markham's reference to white
 clover growing on marled land suggests that, in at least some instances,
 the marl improved the base status of the soils which, in both High and
 Low Weald, frequently tended to acidity. 3

Markham defined the Weald strictly by the Lower Greensand scarp,
 but the nearest true marls (i.e. calcareous clays) to the Weald lay
 outside this border. They were the Lower Chalk (chalk marl), the
 Upper Greensand and parts of the Gault Clay. These strata were dug
 for marling nearby and some of the large manors which stretched across
 the southern border of the Weald may have used them on their more
 distant Wealden lands. Tenants at Plumpton were allowed to dig 'chalke,
 marle, stones or earth⁴ in the commons or waste; in nearby Ditchling
 marlpits were being dug which undermined the highways. 5
 In East
 Chiltington, c.1630, a croft of 4 acres was called Searles Marling
 and since one Searle was then a tenant of the manor, this smallholding
 had probably been enclosed out of the waste not long before and
 'improved' by substantial applications of marl. 6
 A map of Little Chart

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1. Now 2 acres in size (H.G. Dines and F.H. Edmunds. 1933.33) it goes back to William le Marler, Assize Roll for 1342 - PN. Sy.287.
 2. G. Markham. 1625a.9, refers to sandy marl as usable primarily in cold moist (i.e. clay) ground, and this sandstone might be his yellow marl; but much clay also was yellow.
 3. G. Markham. 1625. 13. Paludina limestone was dug for floorings (G.H. Kenyon. 1934.26-7) and perhaps also as marl; however H.J.O. White. 1924. 93 says Paludina limestone does not readily break down to assimilable marl.
 4. B.M. Egerton MS 1967.f.84.
 5. 1615 - W.H. Godfrey (ed) 1928. 133.
 6. ib.102.

and Charing in 1639 marked two 'clay pitts' on the Gault¹ and the 'blow marle' dug at Stretham in Henfield 1647 was probably extracted² from the Gault.

Chalk, as distinct from marl,³ was applied to many Wealden fields in the early seventeenth century. The main source of lime and raw chalk was in the Downs north and south of the Weald and many manors which lay on the Wealden border included Downland also - at Ditchling, by a decision of 1571, fines were exacted for carrying chalk from the Lord's Downe.⁴ The large manor of Laughton lay less than 5 miles from the South Downs and its improvement schemes used much chalk - 43 loads of lime were used, and 52 loads of chalk burnt in 1634. Accounts in 1636 stated that chalk cost 6d to dig a load and lime cost 6d a load to spread.⁵

Lime was used on other estates in the Clay Weald besides Laughton. Some may have come from local seams of Paludina limestone (the 'lymepitte'⁶ at Newdigate 1584 and the 2 lime kilns in Kirdford 1652⁷ were both on or

1.KAO.U. 386/ P1. Middle Gault is a ferruginous clay with much calcium carbonate, in parts blue (William Smith called it the blue marl) but also grey, brown, red and yellow in parts - W. Topley. 1875. 13, 145-51. 1872.317; D. Forbes. QJGS. 1869. 191.

2.H. de Candole. 1947.105.

3.This distinction is blurred since various strata in the Lower Chalk have been used as mineral manures and have been called marls- P.J. Martin. Selsey Marl. SAC. 1856.269; W. Topley. 1875.389.

4.EM. Add. MS 5705 f 106.

5.EM.Add. MS. 33147.f 36-40.

6.VCH.Sy.3.1911.313.

7.G.H. Kenyon. 1955. 116.

near outcrops) but chalk was carried from the Downs into the Weald also. Norden stated 1607 that lime was often carried more than 4 miles into the Weald¹ and a proclamation of 1623,² forbidding 4 wheeled carts to carry loads exceeding one ton, exempted this carriage of chalk explicitly. Supplies of chalk were mentioned in the inventories of two Kirdford farmers, 1617 and 1639, and two others in nearby Wisborough Green,³ 1612 and 1635.⁶

Chalk was even transported across the Low Weald to lands on the Hastings Beds. Comedeane Lodge in Ashdown possessed a 'killyard' in 1658⁴ and the importance placed on lime was witnessed in the survey of Prestridge Bank, another part of the Forest, in the same year.⁵ This area had no marl within it and the Parliamentary Plan recommended that reclamation be aided not by marl, available less than two miles away, but by lime which would have to be carried at least five times that distance. There is a possibility that lime was made from Purbeck limestone, which had a small outcrop in the High Weald;⁶ in 1645 reference was made to a recent reclamation experiment near St. Leonard's

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1. 1607. 211.
 2. APC. 1621-3. 338.
 3. J.C.K. Cornwall. 1953. 210-1; G.H. Kenyon. 1955. 116.
 4. PRO.E 317/Sx/11.
 5. ib/10.
 6. As suggested by A.D. Hall and E.J. Russell. 1911.139.

Forest which used lime 'slackt in the hills'¹. Whether these were the hills of the High Weald or of the Downs cannot be decided, but certainly farms in the High Weald used lime- lands in Ticehurst were² treated with both lime and marl between 1569 and 1575.

A few large estates were experimenting, at this time, with a method of reclaiming poor sandy heaths,³ a system needing heavy capital outlay and giving only long-term returns. The turf was pared with a breast plough, burnt and its ash was scattered; lime was then ploughed⁴ in with the ashes. Such practices, known as denshiring, were used at Laughton 1634-7.⁵ The lessee of lands at Colstaple⁶ Horsham was allowed to marl any rough lands he wished to denshire or marl after burning but he was not to burn land after it had been marled nor was he to denshire any pasture or meadow; it was a treatment primarily for very poor lands. Weston in 1645 described a farm near St. Leonard's Forest where denshiring, and the application of 40 bushels of quicklime

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1. R. Weston. 1650. 13-14; the account also speaks of chalk, and the expense of bringing it, which suggests it came from the Downs.
 2. Dunn MSS, Account Books ii, Hove Public Library, cit. J.C.K. Cornwall. 1953. 212. Such were a minority of farms, however - less 1/6 of Kirdford farmers' inventories, 1612-1659, mention chalk - G.H. Kenyon. 1955. 150.
 3. J. Norden. 1607, 228, says it was known in Surrey and Sussex, but not Kent where waste was less.
 4. R. Weston. 1650. 13-14.
 5. BM. Add. MS 33147.f.19 et seq.
 6. PRO.E 317/Sx/31. A field in West Hoathly is named Dencher and 2 others Denshire field; this is a frequent field name in the Weald-SNQ. 1927. 194, 229.

¹
 per acre had enabled poor sands to give a first year crop of wheat
 followed by oats and, when rested in the third and some succeeding years,
²
 gave good grass. An alternative treatment was to marl the land, at
 only 40 loads per acre, in the autumn, denshire in the following March,
 and in the autumn spread the ³ashes and sow the grain. There was much
 variance, clearly, on proposed reclamation; this scheme ran contrary
 to the rules at Colstaple in Horsham.

Slag from ironworks was another mineral dressing which was applied
 to Wealden lands. Norden wrote in 1607 of its use on cold heavy
⁴
 clays, and it could improve the texture and drainage of such soils; it
 might add minerals of value also, since many Wealden soils were deficient
⁵
 in available potash and phosphoric acid.

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1. R. Weston 1650. 13-14. This was the second edition - the first was printed in 1645 (and some copies of this bear the incorrect date 1605 on the title page). G.H. Kenyon. 1955. 150, suggests from farm inventories, that on normal arable lands the dressings averaged $\frac{1}{2}$ a cartload (20 bushels according to a Kirdford figure of 1728) per acre.
 2. 1607. 227. S.E. Winbolt. SAC, 1931. 276. says even the waste of glass-works was sometimes used as a land dressing.
 3. H.J.O. White, 1924. 93.
 - 4.

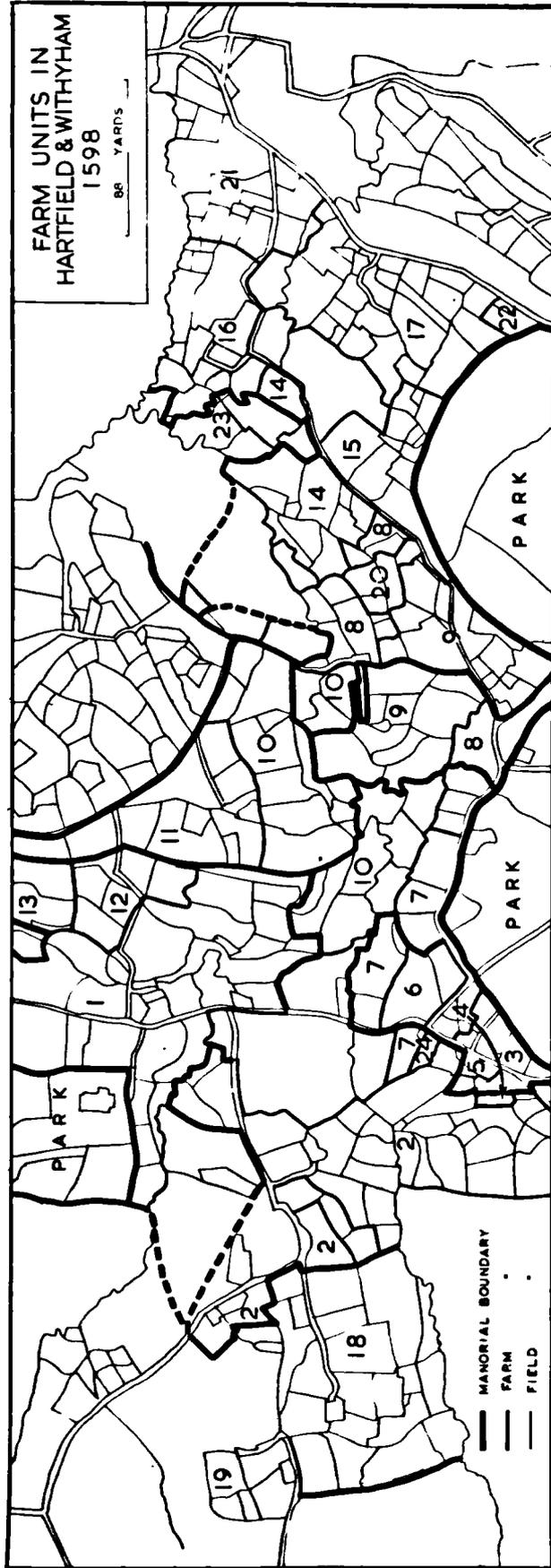


Fig 18. Drawn from data in E. Straker (ed.) 1933.

comprised two manors - combined to produce a very fragmented pattern of manorial boundaries. (Compare Fig 18). The parish of Hailsham included land held of 14 different manors.¹ By the early seventeenth century many small manors were incorporated in the larger; Buckhurst in 1597-8 included the small manors of Osenersh, 70 acres, and Hyndale, 200 acres.²

But by the early seventeenth century, large manors no longer functioned as agricultural units, if they ever had previously. Sub-division among heirs and sub-infeudation had split up many demesnes; where ownership remained undivided, demesnes were usually leased as farms and even if the demesne was leased as a whole to one 'farmer', he generally sub-let it in smaller units.³ In the Buckhurst manors, Alchernes (Rotherfield and Buxted) had no central demesne remaining,⁴ Collingherst (Hartfield) and Birchden (Withyham and Rotherfield) consisted, apart from the central mansion, wholly of freehold farms. Most of the demesne farmland at Petwerth was leased out in the seventeenth century,⁵ and the demesne of Hammerden in Ticehurst was sublet in two farms

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1. L.F. Salzmänn. 1901. 96, cf Etchingam 7, Burwash 7 (VCH.Sx.9.1937.195-215.)
 2. E. Straker (ed.) 1933. 13-15. Osenersh was clearly a sub-infeudation. Many estates were called manors in the early C 17 without having any right; VCH.Sx.9.1937.219.
 3. Topley's emphasis on the fact that many parishes bordering the Weald covered a variety of soils, providing the various natural products needed by a village community (1873-4. 30-54) is well known, but (i) the land of many of these parishes was divided between several manors (e.g. East Chiltington 6, Ditchling 4 - VCH.Sx.7.1940.99-117) (ii) the individual farms cannot have contained land of all sorts, nor did many of the manors -and, by 1600, the manorial demesnes were subdivided into farms.

/contd.

by 1614.¹ There was no major dichotomy between large estates and small tenant farms, but, instead, a great variety of farm size, both of tenants and of owners.

An analysis of land surveys of the Kentish Weald between 1502 and 1639² included holdings varying from small crofts to over 300 acres; 41% were below 5 acres, 38% between 5 and 50 acres and of these four-fifths between 5 and 25 acres. Southborough, which was becoming urbanised, displayed a larger proportion of small holdings, many worked by labourers in trade and industry.³ On the Buckhurst manors around Ashdown Forest in the High Weald copyhold tenements were mostly below 20 acres and all below 80 acres; freehold units were mostly below 40 acres but the largest exceeded 300.⁴ Leased demesne farms, the newest

4. And since all the farms here were freehold, it probably never had any-demesne leased was always leashold, not freehold.
5. Hon. H.A. Wyndham. 1954. 45-67.
1. MR. Box.E/ 2. Barbican House, Lewes.
2. F. Hull. 1957.9-10. The surveys were of Bidborough, Nellhampton in Tonbridge, Speldhurst, Capel and Tudeley, Monks Herton, Lamberhurst, Breck in Ditten and Calehill.
3. It is almost impossible to tell from surveys which farms were owned by fulltime, and which by part-time, agriculturalists.
4. Generally in the Weald there were both small freeholds and small copyholds but the range of copyhold size was smaller.

farms, ranged from below 40 to over 400, and over one quarter exceeded 150. Several of the larger holdings included land under several different forms of tenure; most of these mixed holdings exceeded 100 acres and the largest were over 500.¹

At Etchingham and Salehurst,² on lower ground in the eastern High Weald, there was little difference in status between free tenants and tenants - at-will and no difference in the size of their farms. 38 were under 20 acres, excluding 15 no larger than gardens; 25 between 20 acres and 100, of which 16 were less than 50, 8 between 100 and 200, 5 between 200 and 500.³ Early seventeenth century farm inventories for Kirdford described farms there, typical Weald Clay parish, in detail. The inventories were confined to the larger farms but suggest that over the whole parish there were about 20 holdings smaller than 30 acres, two or three large farms of over 500 acres and most of the parish occupied by farms between 30 and 300 acres. There were thus fewer small holdings than in parts of the High Weald, but the broad areal pattern was the same; although only 29 of the 91 farm units in Etchingham and Salehurst 1597 were between 30 and 300 acres in size, they occupied about 70% of the area. Duddleswell manor presents an exceptional picture; many manors had some assarts but Duddleswell was composed almost wholly of assarts within Ashdown Forest and in 1658 almost all holdings were

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1. E. Straker (ed.) 1933.
 2. 1597-S.P.Vivian (ed.) 1953. 1-204.
 3. G.H. Kenyon. 1955. 97-130.

less than 10 acres.¹

These detailed surveys of large areas and other less comprehensive data allow the farms of the Weald to be grouped into several major magnitudes. Holdings below 5 acres were common, but they were hardly farms; they could not provide full time employment for their tenants nor produce an income in money or kind sufficient for subsistence.³ The large number of such holdings reflected the variety of alternative employment in the Weald, clothworking still important though declining, ironworking in its heyday, and the agricultural labour needed on the larger farms. Merchants and craftsmen in towns had their own small plots of land; nearly every house in Cuckfield in 1638 was backed by a creft.⁴ Small holdings were the sparetime occupation of a joiner in Fittlewerth, a glassworker in Kirdford,⁵ and many others.

/ Holdings between 5 and 30 acres were the commonest agricultural

1. PRO.E 317/Sx/27.
2. These surveys have certain limitations, especially the incomplete coverage of subletting; also surveys of single manors tend to underestimate the size of farms because so many tenants held land in more than one manor - for this reason the Buckhurst Terrier, covering 16, is especially valuable.
3. G.H. Kenyon. 1955. 124,130, estimates that c.40% of the population of Kirdford could not supply their own victuals. W.G. Hoskins. 1941-2.50 reckons 10 acres as the minimum subsistence acreage in Leicestershire where, in general, soils were more fertile than in the Weald; F. Let. 1926. 318-9, reckoned 7 hectares (14 acres) was sufficient for subsistence.
4. Map of New^Hwerth and Trubweek: Barbican House Lewes.
5. G.H. Kenyon. 1955. 90-1; J.C.K. Cornwall. 1953. 369.

(units in the Weald. They did not provide much more than subsistence needs - good soils were limited in area and patchy in distribution - and that without a balanced diet; some of the smaller holdings in this group were worked by farmers who laboured also, and it is noticeable that many of the smallest were encroachments on the waste, the poorest land in the locality. ¹ Holdings between 30 and 300 acres were less numerous but occupied more of the Wealden surface than any other group. They supplied more than the needs of their cultivators, and their surplus supplied both their smaller neighbours and the many local markets. These farms also experimented, on a smaller scale, with the new ideas on land reclamation, ley husbandry and cropping which some of the large landowners had adopted, and it was the tenants of these farms, who contributed most of the reconstruction of the Wealden Great Rebuilding. There were a limited number of farms above 300 acres but few landowners with more than 1000 acres worked the whole as one economic unit, the Pelham estates being one conspicuous exception.

These four types of agricultural unit could be discerned in the Weald, both in the late sixteenth and early seventeenth centuries. ²

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1. As at Petwerth - Hon.M.A. Wyndham. 1954. 27-9.
 2. The small farmers, below 30 acres might be called husbandmen, and these with 30-300 yeoman, as W.G. Hoskins. 1941-2. 53-67, but it must be remembered that these terms were used at the time without any precise definition. It is also certain that 'cottage' holdings were not always small and that if holdings below 5 acres are called 'cottage' holdings, the vague contemporary usage of the term must be guarded against. One cottage holding in 1597-8 was 100 acres - E. Straker (ed.) 1933. 69.

This was not a period of great change in farm units although the conditions within a single parish fluctuated constantly; leasing and mortgaging produced rapid variations in parish land ownership. However, in all this local activity as many lost land as gained it; the number of landholders did not change rapidly nor their percentage of the total population.

(h) Compactness

Smallholdings below 5 acres were nearly always compact areas and very commonly only one field. The larger the unit, the more commonly were its lands dispersed, although in the early seventeenth century most Wealden farms were probably one compact area or at the most two. In earlier centuries, division was a common feature of Wealden estates, since most of the lands early colonized in the Weald were outlying parcels of non-Wealden estates (p.437¹). By the early seventeenth century such Wealden outliers were often separate units and had little economic intercourse with the parent estate.

However if the Wealden outliers of large estates had by this time become separate units, independent and compact, more and more of the smaller farms in the Weald were acquiring scattered land parcels in this period of active leasing and land sales. In 1597-8 less than two-thirds

1. On most manors, freeholders could lease land without restriction, copyholders could lease land for 266 days without licence and for longer periods with permission. ³

of the farms in Hartfield and Withyham were compact units.¹ (Fig 18). Freeholds were more fragmented than copyholds, which in turn were less compact than the leased demesne farms. The freeholds were the eldest farms of the area, and their tenants had wide freedoms of sale, purchase or lease. No copyhold consisted of more than 4 separate land blocks but nine of the freeholds were thus fragmented. The demesne farms were recent in origin and their originally compact form had had little opportunity for alteration. The degree of subdivision varied from place to place - in Salehurst and Etchingam 1597 only 4 out of 73 freeholds were split into more than 5 separate land parcels.²

Partible inheritance was known in the Kentish Weald and some adjacent parishes of Sussex³ and from time to time, as in Westerham⁴ 1626, heirs divided a parental farm unit between themselves, thus increasing the complexity and subdivision of the ownership pattern. By 1600 however subdivision from this cause was limited; joint working

1. This map is based on E. Straker (ed.) 1933, which is reliable although additions in the text contain errors (e.g. 15) and the map ciphers are occasionally repeated - 109 is used on Map 1, at the back, for two separate properties. Since freeholds are not mapped the degree of their subdivision is not known so clearly as for the mapped copyholds, but this does not affect the conclusions above.
2. Based on S.P. Vivian (ed.) 1953; this is a written survey and written accounts tend to underestimate, if anything, the extent of subdivision.
3. Brede (W. Camden 1693 ed. 1.249), Conster in Brede, early C 17 - BM Add. MS. 5679 f 141v; Burwash 1440 - BM Add. Ch. 31372.
4. BM Add. MS 33898 f 223.

was common, recorded at Westerham,¹ Lympne and Chiddingstone;² it was found too in the Sussex Weald, on lands unaffected by gavelkind.³ Also various statutes of the sixteenth and early seventeenth century dis-⁴gavelled permanently much land in the Kentish Weald.⁵

Frequently holdings lay in several manors and several parishes but, as the farm pattern of Hartfield and Withyham 1597-8 reveals (Fig.18) this did not necessarily imply a scattered holding. Manorial and farm boundaries were not important causes of dispersed holdings, but subdivided meadowland was. Meadow was intensely subdivided and several farms might own narrow strips in one small meadow (Fig.13).

Many Wealden farms were composed of several, separated, land parcels and this scattering had probably increased substantially within the sixteenth century, as land sales and leasing increased among the tenant farmers and as demesnes were increasingly leased out. Yet even so the degree of subdivision was limited - it never reached the extent of parcellation known contemporaneously in many openfield villages.

1. 1551,1557 - ib.f 178, 180v.
2. 1517 - BM. Add. MS 33893 f 79v - 80.
3. 1581,1612 - BM. Add. MS 33889 f 64 v, 69. In 1642 an estate in Frant (a manor spanning the county boundary) was divided in two after one of the divisors had worked it for several years with a now deceased Kentish partner as 'tenants in common'-ESRO. Ad. MS 284.
4. Cowfold in Ewhurst-P.S. Godman. 1921. 154; Lindfield, 1621-34-W.H. Godfrey (ed.) 1928.51; Mountfield 1658-S.P.Vivian (ed.) 1953. 211.
5. 1495 (11 VII c 49), 1539 (31 H VIII c 3); 1548 (2-3 Ed.VI c 49); 1558-9 (1 Eliz-Statutes of the Realm. iv.xxiii); 1623-4 (21 and 22 Jas 1-ib.iv. lxxvii).

(xii) Rural Settlement

(a) The settlement pattern

Wealden settlement in the early seventeenth century was composed primarily of hamlets and isolated farms. Estate plans of both Low and High Weald portray a general scatter of habitations and farmbuildings, (Fig 11), and they represent the pattern of rural settlement more accurately than any verbal descriptions. These descriptions used vague terms - a presentment in 1614 spoke of 'our ancient town of Smalhith' (Smallhythe in Tenterden) but in 1549, when its size was much the same, a petition, described it as 'the said hamlet', with 80¹ 'houselynge people'; neither term was very applicable. Written evidence confirms incidentally the impression that settlement was dispersed, by its constant mention of land parcels situated between² houses.

Isolated large farms tended to acquire around them a cluster of barns and labourer's cottages, surrounded often by a moat,³ and there were some larger nucleations,⁴ some villages. The survey of Salehurst and Etchingam, 1597, described various small crefts and houses which made up a small nucleated settlement at Salehurst and Robertsbridge,

1. A.H. Talyer. 1914. 133 et seq.
2. For example in Rotherfield 1624 - EM. Egerton MS. 1967.f 55v.
3. For moats, see Stone Farm in Horsham, 1675, on Fig 11. A group of small labourers cottages appears on the map of land in West Peckham and Hadlow, 1621: KA0. U 31/P 3.

nearby, assumed the same form.¹ Cuckfield, on a map of 1638, was strung out on either side of a main street, the houses close together and mostly backed by a croft.² Such nucleations were nearly all markets - of which there were many (p.22-4) - populated as much by tradesmen and craftworkers as by farmers and agricultural labour. Rural concentrations where they occurred were small; there were less than 12 dwellings grouped around the church at either Withyham or Hartfield in 1597-8.³ In Brenchley, 1639, the church was isolated and the largest single concentration elsewhere in the mapped area was six houses and six barns.⁴ In contrast to the nucleated settlement of the Greensand and Chalk terrains around, the Weald stood distinct as an area of small clusters and isolated buildings.

(b) Houses and the Great Rebuilding.

The individual dwellings and barns which formed the settlement pattern were, by the middle of the seventeenth century, very largely a product of the last eighty years. Alteration and construction throughout England between 1570 and 1640 were sufficiently frequent and widespread to merit the title of 'the Great Rebuilding',⁵ and evidence from

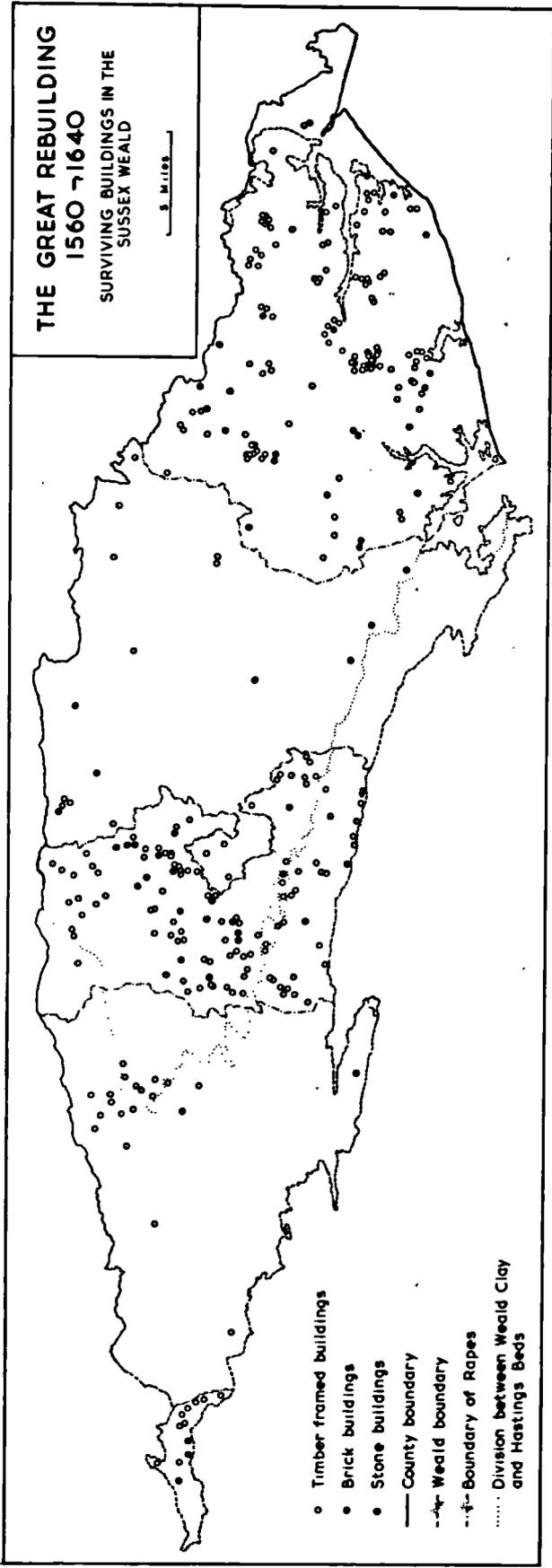
1. S.P. Vivian (ed.) 1953. map E 2.

2. Map of Neworth and Trubweck Manors, 1638: Barbican House, Lewes.

3. E. Straker (ed.) 1933. Maps XIV, XIX.

4. KAO.U. 86/ P 2.

5. W.G. Hoskins. 1953. 44.



Timber-framed buildings often had a ground floor or foundations of stone, and bricks were commonly used for infilling and for chimney stacks; brick and stone buildings on the map are those wholly built of these materials. Data from VCH. Sx. iv. 1953, vii. 1940, ix. 1937; J. L. André. 1904; M. S. Briggs. 1953; F. H. Crossley. 1951; W. H. Godfrey. 1931; I. C. Hannah. 1930. 1942-3; I. C. Hannah and W. D. Peckham. 1928a; P. M. Johnston. 1907; E. Lloyd. 1911; N. Lloyd. 1925; R. T. Mason. 1939, 1940, 1957a; W. D. Scull. 1911.

The map is complete for surviving domestic buildings within the Wealden portions of the Rapes of Hastings, Lewes and Chichester, but quite incomplete for the other 3 Rapes.

Fig. 19.

dwellings still remaining in the Weald suggests that this region was strongly affected by the national surge of reconstruction. There are in the Weald many more houses built between 1570 and 1640 than in any period of comparable length before or afterwards, and most of the older surviving buildings incorporate substantial structural alterations carried out between 1570 and 1640. The process affected both High and Low Weald (see Fig 19)¹.

Rebuilding was carried out primarily by the lesser gentry and substantial yeoman farmers. The new dwellings differed significantly from those they replaced, not so much in exterior appearance or building materials as in internal plan; they incorporated changes which had been introduced into larger houses during several previous decades. A first floor and staircase were general, and the introduction of internal floors necessitated a chimney; also the extent of subdivision within a floor increased greatly - family quarters and servant or labourers' quarters were distinct and many functions were segregated in separate rooms, kitchen, buttery, parlour and bedrooms.²³

1. Kent and Surrey are omitted from these maps as the data available for them is insufficient. Only 3 Rapes of the Sussex Weald are completely covered. The function of the map is not to show relative densities of rebuilding from place to place, which is impossible without marking all others rebuilt at the time and since demolished, but to show that the Rebuilding was widespread, and to give a minimum picture of its intensity - its analogies lie in maps of prehistoric distributions.
2. Examples are Colin Godman's Farmhouse in Danehill, early Elizabethan; I. C. Hannah. 1933. 131-3; Wakehurst in Ardingly, late C16; I.C. Hannah. 1943. 124-6. A few were three storeyed, as Lywood Farm, Elizabethan; in Ardingly-VCH, Sc. 7.1940 p28. Often a ladder made do for a staircase until the end of the seventeenth century -W.G. Hoskins. 1957b. 996.
3. By mid-C16 typical farmer's house had 3-6 rooms, and wealthier Yeoman'

In the new houses chimneys were commonly built at the gable end, whereas the chimneys inserted into older houses during this same time were generally built up over the old central hearth. Increasing internal subdivision demanded more windows if the interior was to be as well lit as formerly and the Great Rebuilding probably caused a great increase in the amount of glass window in smaller Wealden houses, the glass partly supplied by local industry in the Western Weald. (p.202)

The appearance of these new attitudes to house design encouraged the radical alteration of many older dwellings. The two most important changes - inserting first floors into open halls and building chimneys - were connected and both were introduced simultaneously into many old hall houses between 1570 and 1640.¹ The hall houses were originally built without any thought of first floors and the new floors inserted often made the ground floor ceilings very low; also in the enthusiasm to modernize many chimneys were built much larger than was necessary.² These alterations were not always carried out together - at Edmonds Farm in Balcombe the first floor was inserted in the late sixteenth century but the chimney did not come until the next century,³ whilst at Hickstead in Twineham, where a chimney had been built by 1550 the first floor was only constructed well on in the seventeenth century.⁴ In other cases the hall was roofed over, but instead of a

1. e.g. Yew Tree Farm in Northiam and Knelle Dewar House in Beckley, both C 15 halls, were converted early in the C 17-VCH.Sx. 1937. 272,143; a survey of Barcombe manor 1575 describes the chimney of the manor house as 'newly buylded'- EM. Add. MS 37688 f 8.

2. W.G. Hoskins. 1957b.995.

3. VCH.Sx.7. 1940. 132-3.

4. *ibid.* 186.

chimney a small opening was left in the first floor above the hearth through which smoke rose to find its way out, as before, through the tiles. This arrangement, adopted in several houses during the mid -¹ and late - sixteenth century, was unsatisfactory; that small part of the roof through which most of the smoke escaped became very dry and liable to catch fire. At Capons Farm in Cowfold, another variant appeared; a chimney was inserted c.1600 but only part of the fourteenth century hall was roofed over then - the eastern bay, heated by the new² fireplace, remained open until the eighteenth century.

If the original hall was very large, two floors might be inserted as in the early fifteenth century Great Hall at Higham (in Northiam); on the other hand, some remained unchanged throughout the period. Such differences appeared within a single settlement; Well House, a mid - to late - fifteenth century hall also in Northiam, was unaffected. Some houses built not long before remained unchanged longer than C15 or C14³ houses; the mid-C16 mansion at Danny in Hurstpierpoint was unaffected: and Upper Lodge in Ardingly, an early Elizabethan house, had no chimney⁴ until the seventeenth century.

Where internal functional alterations were extensive, the form and age of the older hall house was almost completely obscured, its remnants

1. e.g. Strakers in Southwater near Horsham, Upper Lodge in Ardingly - I.C. Hannah. 1935. 133-4.
2. R.T. Mason. 1957.78. Similar changes were made in a C15 hall house at Bolney Farm, Ardingly.
3. VCH,Sx, 9. 1937. 271-2; I.C. Hannah. 1933. 131-3.
4. I.C. Hannah. 1931.243-52.

confined to dateable moulded beams¹ and to kingposts in the roof, often hidden above the ceilings of the first floor.² At Hendon House in Biddenden, a brick exterior of 1624 completely encased the older timber structure, built c.1500.³ Tickerage in West Hoathly had external framing of the late sixteenth century but its central chimney, steep roof and internal mouldings revealed a C14 hall surrounded by late C16 walls built 3'-3'9"⁴ outside the original walling. At Rowfant in Worth⁵ an Elizabethan frontage was superimposed on a building of the late X15. The old timber frameworks were too valuable to be completely discarded; Marshall's Manor in Maresfield was rebuilt in stone early in the C17, its roof was raised and renewed, but the early C15 timber frame within⁶ was preserved.

Alterations were not confined to internal changes. The desire for increased privacy or more storage space was expressed sometimes in the addition of a new wing⁷ and more often by building an 'outshot', or

1. Dating of such is found in R.T. Mason. 1957.87-93, and elsewhere.
2. Sometimes the kingpost was retained, as at 10-14 High Street, East Grinstead (R.T. Mason.1939,3ff) but often it was removed when the central chimney was inserted- Boyley's Farm and Tilkhurst Farm, both in East Grinstead (R.T. Mason. 1940. 3ff).
3. H.L. Mills. 1932. 121.
4. R.T. Mason. 1941.65-72, and 1957. 71ff.
5. VCH,Sx.7. 1940.192.
6. I.C. Hannah 1931.243-52.
7. An Elizabethan two-storied wing was added to a C15 hallhouse in Lindfield-; and Tenchley Farm in Limpsfield was built in L-shape in mi C.16. VCH.Sy.4. 1912.298.

one-story extension, along or all of one side of the house.¹ This served not only for storage space but also as bedroom space for domestic servants.² Such additions might give a formerly rectangular house an L. shaped plan, but the Great Rebuilding did not radically alter the general plan of farmhouses. Most still assumed a rectangular form,³ perhaps with bay projections at one or both ends, and other more complex arrangements were exceptional. One of these was the early Elizabethan farmhouse in Danehill, now called Colin Godman's Farmhouse, which was built around a courtyard.⁴ Nor did Great Rebuilding bring with it great changes in style or decoration; occasionally, as at Bateman's in Burwash (1634),⁵ small traces of Renaissance decoration were visible, and the habit of building Dutch Gables spread a little from North Kent into the Weald.⁶ The only important differences between the houses of the Great Rebuilding and those before were of internal subdivision, not in style of outward decoration nor in more complex ground plans.

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1. Moses Hill Farm just north of Fernhurst is a C15 hall with a C17 outshot. There is another C17 outshot at Fenthill in Newick: VCH.Sx. 7. 1940. 87-8; 4. 1953. 54.
 2. The connection of outshots with a growing emphasis on privacy is paralleled in Irish farmhouses where the curtained outshot is the only really private part of the dwelling - C.Ó. Danachair. 1955-6.26-31.
 3. In the late C 16 bay windows were inserted at Swarden house-H.S. Cowper. 1911. 169ff.
 4. I.C. Hannah. 1933. 131-3.
 5. E. Turner.1952.21.
 6. Limited by the predominance of timber, rather than brick, building in the Weald. Dutch Gables are found at Sparrows Hatch in Bethersden, early C17 - E. Turner. 1952. 47; M.S. Briggs. 1953. 103.

The late medieval dwellings of the small farmers and labourers never included great halls, the main target of alteration in the Great Rebuilding. These groups rebuilt less in this period than the yeoman farmers, because they sold little produce at market and it was favourable market prices which allowed the larger farmers to rebuild and alter so extensively (p.181); on the other hand, if the small farmer added to his income by wage labour, wages rose in this period little faster than did prices. Cottage building continued between 1570 and 1640, but as the erection of cottages on newly reclaimed waste continued¹ rather than the rebuilding of existing cottages. The new cottages differed little, in form or materials, from those of the previous century; most were timber built and almost all single-storeyed.

The settlements of the Weald thus included a few great houses, many substantial farmhouses of the yeoman^e and a large number of small farmhouses and cottages. There were two other elements, temporary dwellings and barns. Some of the industrial workers, especially those engaged in digging iron ore, fullers' earth and other materials, lived in temporary habitations. The 'tents' mentioned in Ashburnham in 1600² belonged either to iron ore diggers or to charcoal burners. Barns were numerous - in 1608 Aldington manor had 2 barns, 2 stables and one granary, and many yeoman farmers who rebuilt their dwellings during this period used

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1. For the frequency of these encroachments, p.105. There was mention in 1623 of a cottage recently erected in Hadlow-BM.Add. MS. 33898.f.144.
 2. F. Whistler. 1883. 58.
 3. C.A.F. Meekings. 1938. 158-60.

other profits to rebuild their barns; large barns of this period still remain at Bolney,¹ West Heathly² and Barcombe.³ A farm in Keymer added another barn to its buildings between 1610 and 1643.⁴ Many of these barns were built of substantial timber framing but the infilling was generally wattle - and - daub rather than the brick or stone commonly used as infilling for timber-framed dwellings. Not all were so solid - in Westerham, 1592, one barn had been blown down by wind alone.⁵

The chief building material used throughout the Weald during the Great Rebuilding was timber and the most valued and the most widely-used timber was oak. In many earlier buildings the timbers were erected very close to one another but after 1570 they were often reduced to major members only, filling in the substantial areas between with other materials; this has since become known as 'post and panel building'.⁶ The decreasing use of large timbers was consequent partly on increasing competition for wood - this was the heyday of the industrial assault⁷

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1. VCH.Sx.7. 1940. 136-8. One of the early C17, one c.1580.
 2. *ibid.* 164-8.
 3. At least one of this period - *ibid.* 80.
 4. *EM. Egerton MS.* 1967.f.36v.
 5. *EM. Add. MS.* 33898.f.194v.
 6. *R.T. Masen.* 1939. 3ff; *H.S. Cowper.* 1911. 169 ff. This is a question of change in the frequency of styles, not of one style succeeding another. Post-and-panel can be seen in C15 houses whilst Cromwell House in East Grinstead, C17, has puncheons only their own width apart. *I.C. Hannah.* 1930. 120-133.
 7. *M.S. Briggs.* 1953.105, regards this as the chief reason for this change in construction. I question the verdict of *I.C. Hannah.* 1942-3. 15-16 that timber building was as expensive as the best masonry.

on Wealden timber - but it was also encouraged by the increasing availability of brick and stone. Communications were not improved, but brick and stone were necessary for chimneys, and this encouraged their use in other parts of the buildings also. Wattle and daub was insufficient to fill the large panels of post - and - panel houses, nor could it support the beams above, as did brick or stone. Where main timbers were near together, wattle and daub was still used; at Pevensey in 1649 several buildings had 'tymber and mudd walls', including one of two stories.¹ The competition for wood was reflected in considerable use of timbers between 1570 and 1640; some alterations during this period appropriated roed beams from churches² and the floor inserted into a C15 hall at Lindfield made use of former ship's timbers.³

Timber framed buildings, especially when the infilling was only wattle and daub, tended to admit damp, during south-easterly storms, and various devices were used to combat this. It is almost impossible to date the weatherboarding and weather tiling found now on many houses built between 1570 and 1640, but some probably had such a protection from the beginning. A barn at Whitestone in West Hoathly, dated 1610, which must have been clapboarded from its erection, as there is no trace of any other filling between the main members.⁵ At Gallops in Albourne, built

1. PRO.E. 317/Sx/39, transcript in J.R. Daniel-Tyssen. 1878.187. Plaster infillings also occur in Lywood Farm in Ardingly, late C16, Chatesgreve in Bolney, 1618-VCH.Sx.7.1940.127-9, 136-7. Plaster and daub were still used commonly for internal partitions.

2. e.g. in Lindfield and Goudhurst-I.C. Hannah. 1935.133; ENQ.1931.144-5.

3. Bower in Lindfield, I.C. Hannah. 1939. 165-9. However many other instances where ships' timbers have been said to have been used, are incorrect-H.L. Mills. 1932. 120 ff.

mid.C17, a row of projecting bricks was inserted over each major timber to throw rainwater clear and prevent it from being drawn into the joints between timber framework and brick infilling.¹

Few houses were built wholly of stone between 1570 and 1640 and these were among the largest - Brambletye (1631),² Streat Place (c.1607)³ and Wakehurst Place in Ardingly (1590).⁴ Many villages on the southern margin of the Weald drew stone from the Lower Greensand for building - Petworth 1595-6 used material from a quarry south of the town in the Hythe Beds⁵ and tenants at Steham in H⁴enfield, 1647, had 'time out of mind'⁶ taken building stone from the Hythe Beds quarry at West End.

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4. There are several weathertiled houses in Fernhurst of early C17-VCH. Sx.4. 1953. 54.M.S. Briggs. 1953. 103, suggests weathertiling began in the C.17.
5. I.C. Hannah. 1942-3. 15ff.
1. W.H. Godfrey. 1942-3. 1-14.
2. W.H. Godfrey. 1931.1-19; I.C. Hannah and W.D. Peckham. 1928.103-112.
3. VCH.Sx.7. 1940.113.
4. *ibid.* 127.
5. ~~*ibid.* 4. 1953. 33, 54-5. See also Fig. 19.~~
56. G.R. Bathe. 1957. 12. Petworth Quarry used at this time, and the quarries at Leith and Byworth mentioned in the rebuilding scheme of 1619, *ib.* 15. were all in the Hythe Beds.
- 6 H. de Candole. 1947. 177.

Flint walling also appeared in those outer districts of the Weald which were near the chalklands. Westmeston Place, built c 1500 and altered substantially in the next 150 years, was mostly walled with flint; Streat Place c 1607 was walled in flint with quoins of Hythe Beds ashlar and this same combination, further varied by quoins of Paludina limestone,¹ was used 1570 at Stantons in West Chiltington. These materials were not, however, carried far into the Weald; Trotten parish, lying mostly on the Lower Greensand, had much more stone building during this period than Fernhurst nearby, a parish almost wholly within the Weald Clay but all within 5 miles of the Lower Greensand outcrop.²

Save for the local thin strata of sandstone and limestone, there was no hard stone in the Low Weald and once stone had been brought in from outside, it was commonly re-used. Timberscombe in Fernhurst, a timber-framed building erected in 1600, included stones as wall-packing which had been derived from Shulbrede Priory, on the Lower Greensand three miles away.³ In 1622 stone and timber were taken out of the castle of Starborough in Lingfield to repair houses and bridges in Edenbridge,⁴ and in 1649 it was reported that flint and firestone walling had been taken from Pevensey Castle for building nearby.⁵ The Paludina limestone seams in the Weald Clay were widely dug in shallow pits, and one of the largest groups of pits was at Kirdford in the western Weald. In C17

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1. VCH, Sx.7. 1940. 116, 113, 99.
 2. ibid.4. 1953.33.54-5. See also Fig.19.
 3. VCH, Sx.4. 1953.54.
 4. G. Leveson-Gower. 1895. 111.
 5. PRO.E 317/Sx/39.

Kirdford the material was used for church and house floors, and occasionally in outside walling.¹ A plan to rebuild Petworth House, a few miles distant, in 1615 included, besides 18,000 loads of Purbeck Stone for paving, 200 loads of 'marble' which were to be dug in Mitchell Park (the Great Park of Petworth), where the Paludina limestone out-cropped again.²

In the High Weald there were various local occurrences of sandstone suitable for building. Fine-grained freestones, brown and yellow-grey, were quarried in a small area around East Grinstead. Several houses in East Grinstead and the manor house at West Hoathly (one of the few 3-storied buildings erected in this period)³ were constructed of this material, and the large quarry in the northwest of Ashdown Forest, common property of all tenants with rights in the Forest, tapped the same stratum.⁴ Seams elsewhere in the High Weald produced sandstones less resistant to erosion.⁵ Occasionally a whole house was built of stone - Shoesmiths in Wadhurst (1630)⁶ or Batemans in Burwash (1634)⁷ - but

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1. G.H. Kenyon. 1934. 26-7. In Kirdford the material was called winkle-stone; other dialect terms for Paludina 1st in the Weald were Sussex marble, Betersden marble, Petworth marble.
 2. G.B. Bathe. 1958. 116-7.
 3. R.T. Mason. 1939. 3-28, mentions 2 in East Grinstead; VCH.Sx.7.1940.16
 4. Common rights to stone from it are mentioned 1657-8 in PRO.E 317/Sx/10 17,27. It actually lay in East Grinstead parish.
 5. A.D. Hall & E.J. Russell. 1911.158.
 6. R.G. Fitzgerald-Uniacke. 1914. 155.
 7. VCH,Sx. 9. 1937. 195.

a more common construction in small houses was half-timbering; the foundations and ground floor walling were of stone (or brick), the first floor framed in timber and infilled with brick plaster or stone rubble.¹ Peckham Farm in Gussetling (c.1600)² was one such, and half-timbered buildings were not confined to the High Weald. Doves Farm, late 16,³ on the Weald Clay at Fernhurst was built with a ground floor of Hythe Beds stone with brick quoins, and half-timbered above.

Brick was used much more widely during the Great Rebuilding than it had been in the Weald in earlier centuries. It was a common infilling for house built in post-and-panel style, such as Perrymans in Ardingly (early C17),⁴ and Pepper Hall in Wivelsfield (early C.17)⁵ In other instances as Bluemans in Westfield (c.1600) brick formed the wall base of a half-timbered house, even one at Wapsbourne in Chailey where the wall spaces were still filled with daub in the old tradition (early C17).⁶ The whole lower storey might be built in brick, a form found at Cold Harbour Farm in Worth (c.1600), at Legh Manor in Cuckfield (mid. C16) and at Mackerells in Newick (late C.16).⁷ Sometimes earlier houses

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1. This is the normal connotation of the term 'half-timbered' but according to H.L. Mills. 1932. 120, but J.E. Ray.1909. 133, points out that originally it could mean a house timber-framed throughout save one wing.
 2. VCH.Sx.9. 1937.180.
 3. *ibid.* 4. 1953. 56.
 4. *ibid.*7. 1940.128-9.
 5. VCH.Sx.7. 1940.120.
 6. *ibid.*90; 7.1940.95.
 7. *ibid.* 192-3; W.H. Godfrey.1937.161-76; VCH.Sx.7.1940.88-9.

were altered; an early C.15 hall at Yeoman's in Mayfield had its lower story rebuilt in brick during the Elizabethan period,¹ and a timber-framed building at Hammonds' Place in Clayton, erected c.1500, was faced at both ends in 1556 with brickwork.² Brick and stone were commonly used together, especially in chimneys but also in walling -brick quoins in the Hythe Beds stone walls at Stanton in East Chitlington (1570)³ and Holmshurst in Burwash (1610) was brick built with stone dressings.⁴ At Mere Place in Wivelsfield the sixteenth century brick walls were plastered outside to simulate stonework.⁵

Raw materials for brick making were plentiful. Brown and blue clays in the Weald could both be used, but brown clay bound better and thus needed less applied pressure during manufacture. Atherfield Clay outcropped in a thin band along parts of the Wealden border, - this clay⁶ shrunk little in the furnace but the bricks were not strong; shrinkage in the bricks made with Weald Clay was consequent on the absence of any coarse fraction in this clay.⁷ The kilns were fired with small weed and furze (gorse); furze was cultivated on poor land as fuel for brick, pottery and glass kilns, since it burnt long and evenly. Burning with furze may have produced the green glaze found on some bricks of this period as, for instance, in Philpots, West Hoathly.⁸

1. B.T. Mason. 1953. 22-31.

2. VCH,Sx.7. 1940.141.

3. *ibid.* 99.

4. VCH,Sx.9. 1937.195.

5. Same done at Hales Place in Tenterden,c.1530-N. Lloyd. 1949.274.

6. H.G. Dines and F.H. Edmunds. 1933. 174.

7. A.D. Hall and E.J. Russell. 1911.160.

8. SNQ.1934.31.

Although raw materials for brick-making were commoner in the Low Weald and although this area, in the absence of local stone, built more in brick than did the High Weald, there were brick-kilns throughout the Weald in the early seventeenth century. In 1584 a clamp of bricks was made at St. Leonard's Forest in the High Weald,¹ in 1634 a much larger brick and tile kiln at Laughton in the Low Weald burnt 3500 'old' bricks² and on the eastern marsh border was a kiln at Peasmarsh, turning out small bricks with a blue-grey glaze.³

Sand, clay and lime were all used for wall infillings, for cement and for plasters. Clay or 'lombe' was found in most parts of the Weald and the daub infillings of timber framed walls and partitions were almost always dug in the immediate vicinity of the house under construction.⁴ There were many seams of fine sand in the High Weald-'Sandpitts' was a frequent field name,⁵ although the sand was often too fine to be ideal. The only coarse grained material available was in scattered small patches of river gravel; the 'Gravell Pitte at Lowwood Cemon' in Hadlow, c.1650,⁶ lay on one of these. Lime, which was in demand for land dressings as

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1. PRO.E. 134/27 Eliz/Hilary 1.
 2. BM.Add. MS 33147 f 19.
 3. V.F.M.Oliver. 1956. 165-6.
 4. H.S. Cowper. 1911. 169. attributed many pits in Wealden fields to the search for daub.
 5. e.g. in Buckhurst Park (E. Straker (ed.) 1933. maps XXVI-11).
 6. KAO.U. 282/M 10a; O.S. Geological Sheet 1" Drift 271.

well as for plaster, came from the small Purbeck Beds outcrop in the High Weald, from the Paludina limestone seams in the Weald Clay, and mostly from the surrounding chalklands (see p. 150) In 1619 lime and 'mull' (i.e. clay) were used in building works at Hailsham, which was little more than 5 miles from the South Downs¹ and Robertsbridge further north had several buildings described in 1609 as 'of lime and stone'.²

Thatch was the commonest roofing material, either reed thatch or straw. A malting house in Robertsbridge in 1609 was covered with a mixture of reeds and straw and the rights of tenants in Duddleswell manor included mud and stone from Ashdown Forest for their walls and 'ferne' to cover them.³ Many of the larger framhouses constructed during the great rebuilding and nearly all smaller buildings and barns were thatched. Tiling occurred in places - tiled roofs were common in Etchingam and Salehurst in 1597⁴ - in local concentrations rather than as a general roofing material. 9250 tiles were produced by the Laughton kiln in 1634,⁵ and a C 17 tile kiln has been found at Framfield.⁶

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1. R.G. Rice. 1881. 85.
 2. BM.Add. MS. 5680. f 91.
 3. 1650. PRO.E. 317/Sx/26.
 4. S.P. Vivian (ed.) 1953. 200 ff; the roofing of only a small % of the total is specified.
 5. BM.Add. MS. 33147.f 19v.
 6. H.W. Keef. SNQ. 1929. 181.

Shingles and Horsham slates were confined mostly to the roofs of large houses. Shingles, approximately 1' long and 6-8" wide, were cleft from the heart of oak trees and were fixed to the laths of the roof framework by wooden pins. They were prodigal of wood and their fitting needed more labour than tiling. Laughton manor had a few shingles in 1634,¹ Lavertie manor house in East Grinstead was roofed with shingles and Horsham slate in 1597-8,² but the most common use of shingles was on church spires - tiling was very difficult on such steep slopes and stone slabs were much too heavy. Many churches had been shingled in earlier centuries and their cover was renewed from time to time; in 1615 shingles were bought for the spire of St. Mary's Church in Horsham, although it stood in the centre of the area producing Horsham slates.³

Horsham slates were very heavy and they demanded a heavier roof framework than was needed for other roofing materials. Any house whose roof bore Horsham slates had probably been designed before its erection to be built with a solid roof. Once laid, the slabs provided an impervious and insulating cover which lasted for many generations. The material came from sandstone layers in the Weald Clay, and the largest single outcrop of suitably flaggy stone was near Horsham (see⁴

1. BM. Add. MS 33147 f 16.
2. E. Straker (ed.) 1933.44.
3. B.G. Rice. 1881.83; Horsham slabs were used on the roof 1639-40 (SNQ. 1928. 73), 1641-2 (109) and 1650-1 (ib.1929.171).
4. J.C. Ferguson. 1926. 401-13, divided the lenticular deposit of sandstone in the Horsham district into (i) flaggy, calcareous sandstone, splitting into slabs 1"-3" thick. the bed worked (ii) fissile stone.

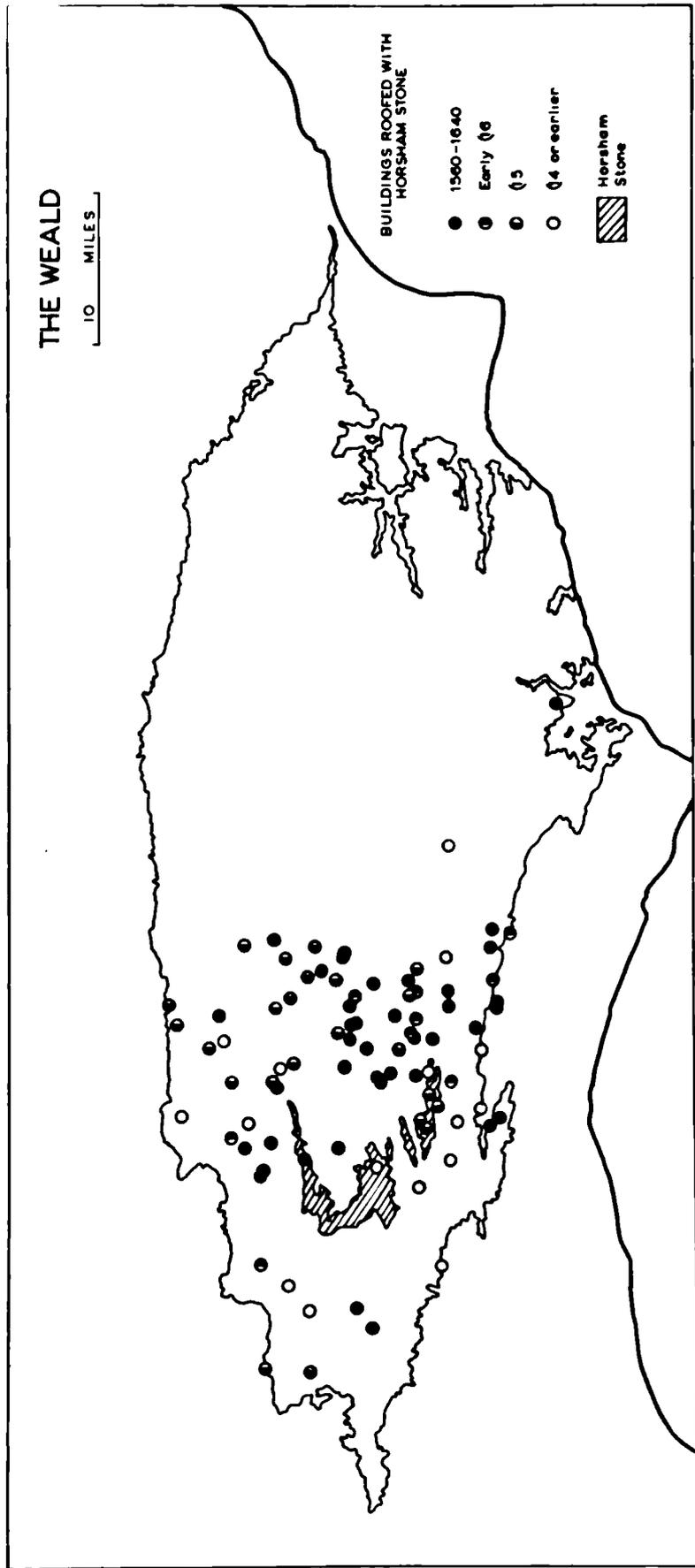


Fig. 20. Compiled from the sources listed for Figs. 19, 25 and 28; geology from the Geological Survey first edition 1" sheets 8(1862) and 9(1864).

Fig 20). The lessees of land in Horsham and Nuthurst 1602, and of land in St. Leonard's Forest also were given liberty to dig there 'stones called Horsham stone'¹. The stones were laid on large farmhouses - Priesthaves house in Westham was newly built and covered with Horsham slabs in 1620,² and even on a few large barns.³ Although they were mainly used near Horsham (where they were known as 'helynge stone')⁵ their use during the Great Rebuilding spread as far north as Capel in Surrey,⁵ as far east as Westham and Wartling in the Rape of Hastings,⁶ and as far south as Shoreham on the coast.⁷

The roofing materials used in the Weald were varied; thatch was ubiquitous, Horsham slates and tiles were largely confined to the vicinity of producing centres, shingles were not common save on large

splitting into layers $\frac{1}{2}$ " - $\frac{3}{4}$ " (iii) thickly bedded stone.

1. PRO.E. 317/Sx/48,35.
2. EM.Add. MS 5682 f 94. Barcombe manor house 1575 had a reef of this material - EM.Add. MS 37688 f 8.
3. Muncton Court Barn in Cuckfield, late C 16 - EM. Add. MS 5705 f 133.
4. M.A. Lower. 1867. 41.
5. VCH. Sy. 1911. 135-6; ib. 239, says a similar material was dug at Chaldon in Surrey, which might have been the source, but documentation of these workings is lacking.
6. Priesthaves in Westham, op.cit.; Wartling, VCH.Ss. 9. 1937.137.
7. E.F. Salmon. SAC. 1930.264.

mansiens. These differences and exceptions to them produced great variety within a small area, even within a single cluster of buildings - in 1609 a group at Robertsbridge included a new tiled house and a tiled gatehouse, a small house covered (unusually) by shingles and a thatched¹ malting house.

The Great Rebuilding in England generally was carried out by the freeholders, by yeoman, husbandmen with sizeable farms and the lesser gentry, and it incorporated changes introduced in earlier decades into the houses of the squires and nobility. These are the conclusions of² Hoskins and they are consistent with the Wealden data from this period. There were many farms in the Weald large enough to provide more than subsistence needs (see p158) and³ oppressive rents and obligations were exceptional and very localized. Rents had been standardized long before; they were very low in the inflated currency of the sixteenth century and, moreover, rents in the Weald were lower than in many other parts of England. Thus the farmers' expenses were stable; at the same time, prices rose steadily and the farmer's income from his marketable surplus rose steadily likewise. The wages of paid labour also grew but less rapidly than prices, and the gap between costs and selling prices widened continually between the mid-sixteenth century and the Civil War.³ Even farmers who sold a surplus only in good years soon

1. BM. Add. MS. 5680.f 91.

2. W.G. Hoskins. 1954.44-59;1955.104-111;1957b,995-7, 1035-6; see also E.J. Jope & P.S. Spekes. Berks.Arch.J. 1959. forthcoming.

3. W.G. Hoskins. 1954. 50. The most of the rebuilding occurred.1575-1625.

accumulated capital in this period of profit inflation. The market for agricultural produce in the Weald was growing; population was increasing, the non-agricultural population, especially the industrial, needed much food and London, growing faster than any other centre of population in the kingdom, bought food from an area which widened every year.¹

Marketable surpluses were the economic kingpin of the Great Rebuilding; small farmers and wage labourers suffered rather in this period since they bought some of their food and its price was rising. There was no great Rebuilding of the cottages.²

Social impulses channelled the surplus funds into building construction rather than into other uses. Hoskins stresses the infiltration of a wish for privacy from the aristocracy to the generality of the rural population,³ a process which continued through two centuries but lacked sufficient financial resource to express itself before 1560. The division of houses into many rooms with specialized functions characterized the Great Rebuilding, in contrast to earlier construction, and this was a direct consequence of the wish for privacy. Subdivision increased the demand for glass and for fuel, and the Weald had its own glassworks as well as a plentiful supply of small timber for

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1. The demands of the London food market as described in F.J. Fisher. 1935. 46-64, applied especially to north Kent and Surrey, but affected the Weald somewhat also.
 2. There were many cottages built on the waste, but this reflected the same economic trends; cottagers with no land found it increasingly difficult to buy food as prices rose and took to enclosing the waste in hope of providing food themselves. W.G. Hoskins. 1954.53, estimate that building a farmhouse of stone or oak, supplied in part (as was usual) from the farmer's lands, would cost 40/-/- at least.
 3. The idea spread especially through the womenfolk, W.G. Hoskins. 1957b.99; the importance of a growing desire for privacy was evident.

fuel. Increased light, warmth and ventilation helped to reduce rates of infant and mother mortality, which in turn increased the number of farmers who wanted new dwellings; at the same ^{time} increasing prosperity allowed the farmers to purchase extra varied foods and small domestic comforts which figured prominently in their farm inventories and which further improved the health of the rural population. Whether population growth encouraged the rebuilding or rebuilding improv^ed health and thus encouraged population growth ₁ is uncertain, but once rebuilding began in the 1560's, the two went hand in hand.

By 1650 the Great Rebuilding was nearly completed in the Weald. There had been agricultural difficulties in the early seventeenth century - the famine of 1631 for example - but the difficulties of Wealden agriculture were not the chief causes of the decline in building. The margin between prices and costs narrowed as the century proceeded; the new buildings as they multiplied brought congestion in some villages and a consequent increase in disease; political disturbances changed the focus of attention. Such all contributed to the end of the Great Rebuilding, but the most important contributing condition was that most of the houses which needed rebuilding and alteration had been rebuilt or altered and, in the absence of any great change in building materials or internal design, all that was needed thereafter was routine repair and renewal.

stressed in J.E. Ray^l. 1909.148.

1. W.G. Hoskins. 1957c. 1035-6.

(xiii) Population

And some there be who have no memorial; who are perished as though they had never been...
Ecclesiasticus.

The population of the Weald was increasing in the early seventeenth century. Data from parish registers is notoriously deficient but suggests that the population of Hastings increased by 25%¹ 1601-31, after little increase in the previous thirty years. Rural population² also was growing and had attained considerable densities; within the area of the Buckhurst manors in the High Weald, there were in 1597-³ 8 at least 80 persons per square mile although the area concerned included much poor sandy soil on the Ashdown Sands. In Hailsham³ parish 1600 there were 48 communicants per square mile and the density⁴ of the total population was probably double this.

Population in this period did not exhibit a continuous slow growth from year to year; this general trend was clouded by the more manifest, and more economically significant, frequency of heavy plague⁵ mortalities. In August-October 1563 191 died in Hastings⁵ and many also⁶ in Rye; Rye had further outbursts in 1579, when 744 died in 5 months,⁷

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1. W.A. Greenhill. 1862. 206, based on the parish registers of two parishes in Hastings. For the period 1601-30 data is adequate, 1571-1600 it is deficient.
 2. There is evidence of rural population ^{growth} over ~~too~~ ^a long ^{er} period; growth at Hollington, ~~by~~ although the figures given by F.W.B. Bullock. 1949. 163, 179; 1606-1812 average of 5 burials p.a. 1606-1812 (and 1606-36) average of 7 baptisms p.a. In many parts of rural England population rose 50% 1560-80: W.G. Hoskins. 1954. 57.
 3. The survey is given in E. Straker (ed.) 1933. The area is 16,507 ac. plus 32 small tenements of unspecified size; the number of landholders 546. In calculating the 1700 ac. of parkland have been omitted and the number of landholders multiplied by $3\frac{1}{2}$ to give the total population. The density given is minimal-landless are left /co

in 1590, 1592-3, and in 1597¹. In 1597 also Hastings suffered its heaviest mortality between 1563 and 1699 and 222 persons died in Cranbrook, 181 of plague;² in 1603 plague hit Fletching,³ in 1608 Surrey generally,⁴ in 1610 Charlwood lost 25 inhabitants.⁵ Hastings suffered again in 1622-4, Rye the next year and the plague danger in 1625 caused the Hastings Town Council to forbid visitors to stay in the town without licence from the mayor and to forbid the import of goods from contagious places, including London. High mortality returned to Hastings in 1638 (after reaching Sevenoaks the previous year)⁶ for 3 years, whilst

out, and the factor used might well be larger (for hearths in the Main valley 1600, H. Jäger. 1957. 142, multiplies by a factor of 6).

4. L.F. Salzmänn. 1901. 131; calculation in this instance is fairly accurate as there have been no major changes in the parish boundaries 1600-1900.
5. W.A. Greenhill. 1862. 195-6.
6. W.D. Cooper. 1857.3: 1544 462 died; 1563 765; 1580 592; 1625 198.
7. F.M. Hueffer. 1900. 8. Plague killed 385 in Rye in 6 months 1544 (ib) and the 'sweating sickness' occurred in Maresfield 1538 (R.W. Blencowe. 1851.255).
1. In 1597 the town of Ashford sent money relief to Rye-HMC.xiii.App iv 113.
2. C.C.R. Pile. 1955. 78.
3. S.D. Wilde. SAC. 1851.235; also 2 deaths of plague 1582.
4. HMC. vii. 669.
5. i.e. about 1/6 of the population - E. Sewill and R Lane. 1951.100
6. G. Ward. 1931b. 118-20.

Cranbrook suffered both 1638-40 and 1643-53; Kirdford was affected
¹ 1638-40 and Chiddingly in 1656. ² Plague was the chief cause of
 population fluctuations from year to year, but other factors caused
 variations in birth and marriage rates - not only disease and local
³ factors, but the periodic recurrences as in 1630-1 of dearth (see p.127)

By 1600 the Wealden population, especially its eastern coastal
 fringe, included many aliens - not only the long since assimilated
 Flemish immigrants of the fourteenth century, but arrivals of the
 sixteenth century. Frenchmen began to arrive in Rotherfield 20 years
 before the first religious war in France, 1562 ⁴ and French ironworkers
 were known in several parishes of the High Weald by the 1540's; French
⁵ and Dutch ironworkers occurred in the Maresfield registers 1540-1600.
⁶ Some thus were attracted by economic conditions; others were refugees
 from social disorder and religious persecution. In 1562, 1569 and 1572
 refugees from France landed in Rye. ⁷ In November 1572 after the
 massacre of Saint Bartholemew over 500 persons had entered Rye and in
⁸ 1574 the town complained of the burden put upon it by many 'very poor'
 French. ⁹ The migrants, however, soon diffused and by 1622 only 51
¹⁰ refugees were known in Rye.

1. G.H. Kenyon. 1958. 81.

2. M.A. Lever. 1862. 247.

3. See for example the considerable variations of marriages from year to year in Hailsham 1558-1599: L.F. Salzmann. 1901.259-66.

4. C. Pullein. 1928. 134.

5. See p.278-9.

6. E. Turner, 1862b. 158.

7. 1562 about 650 French and some Dutch came to Rye-SPD. Eliz.xv.29; in 1569 there were in Rye (Civil War began in France 1568) 6 from Rouen, 63 from Dieppe, 10 Walloons and Flemings B.M.Cotton MS. Galba
 C:111 + 252

Amongst the local population of the Weald, ties of kinship and family were strong but there was considerable mobility of population. In a remoter parish of the western Weald claylands, between 1575 and 1650, only 40% of the villagers married within the parish, 40% more within 10 miles and 20% travelled further; even in ownership patterns, very few farms stayed in the same hands for more than one generation and when a farmer moved, he generally crossed the parish boundaries. A list of witnesses in the Deposition books of two courts 1580-1640 emphasises how mobile the farmers of the Sussex Weald were; 42 had lived always in one parish, 89 had lived in two, 35 in three, 4 in four and 2 in six. Most of them were agriculturalists and these were more migrant, if anything, than the craftsmen (both the men who had moved five times were yeomen). The older men seemed to have moved

8. B.M. Landsdowne MS. 15 f 143-8. Most from Dieppe and Rouen.
9. HMC.xiii.App iv.30.
10. SPD. James 1. cxxxi. 102.
1. Thus in Buckhurst terrier 1597-8 (E. Straker (ed.) 1933) 296 out of 546 landholders bear a surname owned by another in the terrier also - one name is owned by 11 individuals.
2. G.H. Kenyon. 1955. 142-4.
3. W.C. Renshaw. 1914. 1-15.
4. This is minimal. Often the data may not record all moves since it merely records place of birth and place of residence; others give full details.

as frequently as the younger - it was not a new accession of wanderlust;¹ the commonest 5-year periods of sojourn were 0-5 years, and 15-20 years. When a man moved twice, the second move was often a return to his home parish but by no means always; nor were the shortest migrations the commonest - only 29% of the moves were to an adjacent parish and some covered great distances. A witness called in 1592 had moved from Carlisle to Shipley to Southwick, another in 1595 from Crawley to London to Belney; a resident of Cuckfield in 1633 had come from Thakenham in Norfolk and a resident of Laughton 1637 from Rochester. Rural population went to the towns but the reverse trend existed also.

Such mobility in the Wealden population of the early seventeenth century is not surprising - few regions of England were less self-contained. It produced raw materials - timber and iron - for industries elsewhere; it often had to import food to satisfy its needs when bad harvests came; it lay across the main routes between London and the South Coast. All these contributed to providing a labour market which fluctuated from year to year, a combination of insecurity with varied opportunities which could not but encourage frequent movement.

1.	Lengths of sojourn in years.	0-5	5-10	10-15	15-20	20-25	25-30	30-40	40 plus	unsp ific
	Years instances	58	40	19	50	28	35	43	43	57

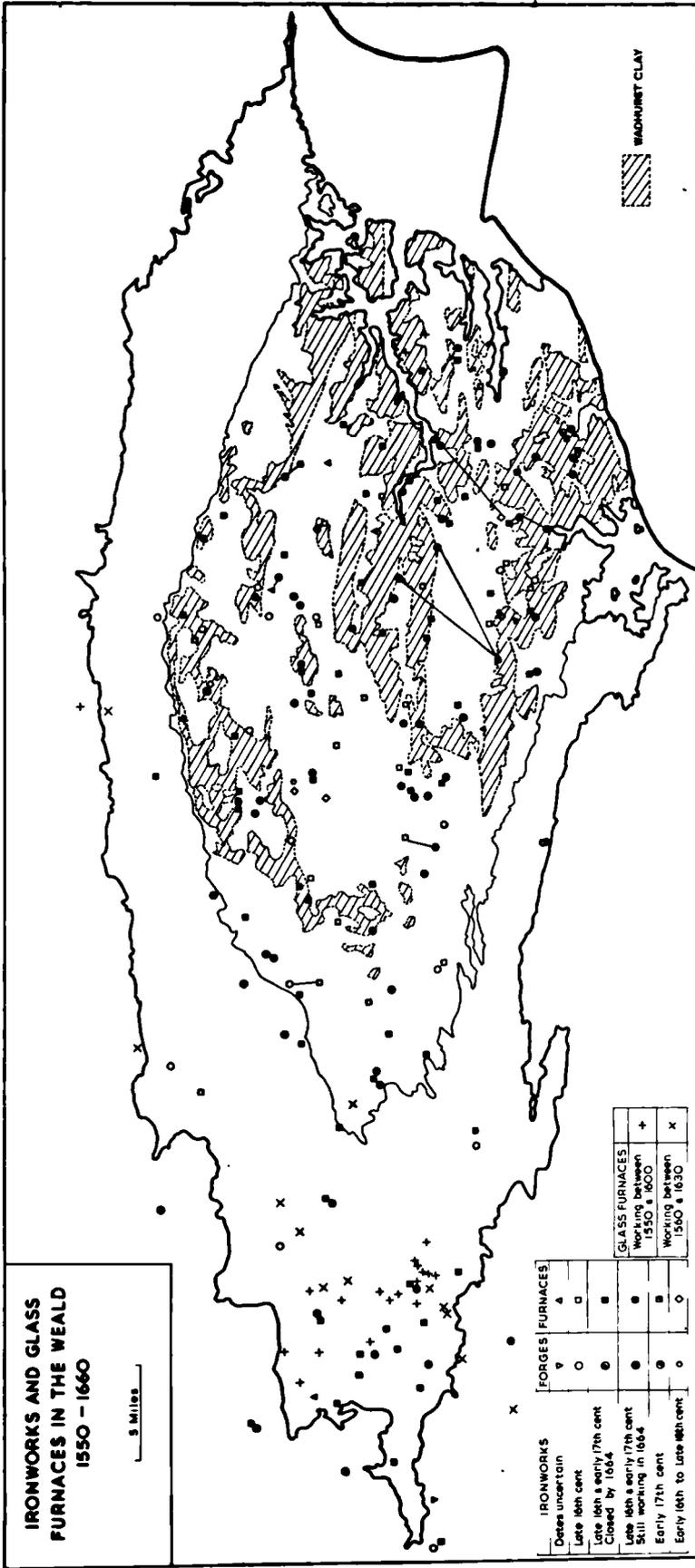


Fig. 21. The thin line within the Weald marks the division between the Weald Clay and Hastings Beds; furnaces and forges which are known to have worked together are joined by straight lines. Data from the gazetteer in E. Straker, 1931, 214-467, supplemented by E. Straker, 1933, xviii, 72; D. and G. Mathew, 1933, 91-9; L.A. Vidler, NQ, 1935, 163; G.H. Kenyon, 1952, 235-8, 1958, 45; S.P. Vivian (ed.) 1953, 37; M.M. Yates, 1955, 82-5. Cal., PD 1619-23, 12, 1b, 1635, 288, 1b, 1637-8, 151.

(xiv) Industry

By the middle of the seventeenth century the production of iron in the Weald had begun to decline. In 1653 there were 35 furnaces and 45 forges blowing; ¹ between 1653 and 1664 21 furnaces and 24 forges ceased working but 12 of the furnaces had revived by 1664 to produce war needs of ordnance and other iron goods. Decline had however begun before 1653 - in 1574 there had been no less than 59 furnaces and 58 forges in the Weald; ² many of these which continued in the early seventeenth century were, as the Mitchell Park works in Petworth, ³ only intermittent in their production. The output of bar iron p.a. from the forges at Brightling and Bivelham fell by over 50% between 1639-45 and 1656-65 ⁴ and the Dutch wars produced no significant revival; exports of iron from Rye fell substantially between 1633 and 1683. ⁵

Although there were several ironworks on the Weald Clay in 1650, especially in the west (Fig 21), working concentrated in the High Weald, where iron was readily obtainable and steep river gradients supplied considerable power to the water-mills. The single most important ore was clay ironstone, 35-40% iron, a deposit of nodules and thin beds found near the bottom of the Wadhurst Clay; its horizons shewed frequent interruptions. ⁶ This was the material used in the ironworks at

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1. E. Straker. 1931.61., quoting the lists in SAC. 1866. 15, and J.L. Parsons. SAC. 1882 21-5; the figures given by Straker are higher than those given earlier with the lists because many entries refer to double works, as Straker has identified them. Unfortunately G.S. Sweeting. 1944.4, gives the original, underestimated, totals.
 2. See p.275 for the 1574 list. S. Sturtevant. Metallica. 1612.5, said there were 400 ironmills in Kent, Surrey and Sussex but this was an uninformed exaggeration.
 3. Hon.H.A. Wyndham. 1954. 99-100.

Ashburnham (both Dallington furnace and the Upper Forge were working in 1574 and 1653, but they were derelict temporarily in 1664) and at Lamberhurst (where several works spanned the period from 1548 to 1664).¹ Some ironworks dug their own mine, but many small farmers and labourers dug up iron ore as a supplementary occupation.² Customary tenants in Framfield, 1622, had liberty to dig up iron on their copyholds,³ and a tenant of Hurstmonceux produced one ton of iron ore in 1644 in lieu of rent.⁴ Ore was sold from Clippenham (Cliphornam) in Hurstmonceux between 1643-9, and some was carried to lighters at Pevensey, for shipping coastwise or overseas.⁵ Many landlords were industrialists also and reserved rights to iron ore found on the land farmed by their tenants; with one exception all iron on the Buckhurst lands in the High Weald near Ashdown was reserved to the Earl of Dorset,⁶ and tenants in Cuckfield 1571 were not allowed to dig iron ore on the lord's common.⁷

5. T.S. Willan. 1938. 70-1.

6. G.S. Sweeting. 1944.5.

1. The material at Ashburnham was 35% iron - W. Topley. 1875. 336; all dates of working are from E. Straker. 1931. 214-467, supplemented by the gazetteer in H.R. Schubert. 1957.

2. A petition of 1661 said the iron works employed many 'poore people, farmers and others'-BM.Add. MS. 33058 f 81 et seq.

3. BM.Add. MS. 5701 f 140v.

4. T.B. Lennard. 1905. 112.

5. T.B. Lennard. 1905. 112.

6. E. Straker (ed.) 1933. 46, 50-9.

7. BM. Add. MS. 5705.f 106v.

Besides the Wadhurst Clay there were other sources of iron in the High Weald. Stratigraphically near to the clay ironstone was a bed of shelly calcareous ironstone just above the Ashdown Sand which provided both iron and flux, and this material was often dug out of the same pits as was the Wadhurst clay ironstone.¹ There were several other localized beds of ferruginous sandstone to be found in the Ashdown and Tunbridge Wells Sands, whilst the Fairlight clays at the base of the Ashdown Sand in the eastern Weald included nodules of clay ironstone and ill-defined bands of spherulitic iron carbonate.² The 'iron mines' in Lingfield, marked on a map of 1609-27,³ were probably dug into one of the ferruginous sandstones in the Tunbridge Wells Sands; no Wadhurst clay outcropped there, nor was it very near the surface.

In Surrey and West Sussex small patches of ferruginous ragstone, a concreted ferruginous gravel, occurred on the surface or under brickearth on the Weald Clay; it was a superficial deposit of 25-30% iron and was used by many of the short-lived ironworks in the western Weald.⁴ There were a few strata of ferruginous mudstone in the Weald Clay and Minepits Shaw south of Dorking, which supplied Ewood furnace⁵ (1553-1604), was dug in this material. The ironworks in the Great Park

1. W. Topley. 1875.334. There were also thin beds of limestone in the Wadhurst Clay, near the ironstone, called 'mine greys'; these were an additional flux- *ibid.* 66.
2. H.J.O. White. 1928. 19.
3. Map of manors of Blockfield, Ford and Dormans in Lingfield, 1609-27. In custody of County Borough of Ipswich, no.44 in 1956 Exhibition at the Surrey County Branch of the Institute of Chartered Surveyors.
4. Locally this material was called shrove or chevick. H.G. Dines and F.H. Edmunds. 1933. 36,177.
5. *ibid.* 36.

at Petworth were supplied from the pits nearby at Gospel Green, which were marked on the estate map in 1610 but had finished production by 1627.¹ These pits were in the Weald Clay as also were the parishes of Lurgashall and Northchapel, where the lessee of the Petworth ironworks was, in 1641, allowed to dig 250 leads of mine p.a., each lead being 18 bushels at the heap. Some of these pits must have been in ferruginous mudstone, for the lease of 1641 forbade digging more than 30' in depth;² such pits tapped more than superficial deposits of ragstone. The quarry in the Great Park which supplied marble for the locality could supply from the same pits, in the Paludina limestone, suitable material for fluxing in the nearby ironworks. Licence was given in 1578 to dig sand, also needed during ironworking, within the Park and freedom to dig 800 or more leads p.a. of iron from unspecified places; there was no proviso, unlike 1641, that copyholders whose land was dug were to be paid 3d. a lead, nor that the pits were to be filled in.³ In Petworth, as elsewhere, iron ore was dug by small men who contracted for the job; two labourers dug all the 'mine' extracted between 1517 and 1626, at an average of 295 leads per annum but reaching 663 in 1617-18.⁴

1. Hon. H.A. Wyndham. 1954. Map I; G.H. Kenyon. 1952. 237.

2. Hon.H.A. Wyndham. 1954. 101; cf. St. Leonard's Forest where it was complained in 1587 and 1788 that mines, working Ashdown sand or Wadhurst Clay, tapped only the easily reached upper seams and that flooding of the shallow pits made the lower ores inaccessible -PRO E 134/30 Eliz./ Hilary 6 and Easter 17.

3. Hon.H.A. Wyndham. 1954. 99-102; compare a lease of 1567, which demanded that the pits be filled in afterwards so that the land could be used as pasture, M. Campbell. 1942. 163.

4. *ibid.* 100.

A little ore was obtained from the Lower Greensand; such workings were confined to the western margins of the Weald. Ferruginous bands in the Hythe Beds were used by the ironworks at Harting Combe in Rogate¹ (mentioned 1588-91) - its mine was dug out of the side of the combe. Some of the other works on the Lower Greensand (8 in number - see Fig 21) may have extracted ore from the brown siliceous ironstone (carstone) in the Felkestone Beds, which had a high percentage of iron but was difficult to smelt; in West Sussex the Sandgate Beds also contained an² ironsand.

The ironworks were dependant upon waterpower, although the average annual rainfall rarely exceeded 35", even in the High Weald. One pond was needed to supply the blast at the furnace, another to drive the hammer at the forge. The streams of the High Weald, where were most of the ironworks, were small although swift and could not provide a large or regular power supply without human amendment. This consisted of artificial ponds created by erecting substantial dams across the narrow valleys wherever this was possible.³ The body of water in these ponds helped to reduce the effects of rainfall variations from month to month, although they were often insufficient for the task; in 1653⁴ works at Warbleton and elsewhere were short of water. Norden stated in 1607 that the Wealden ironworks as a whole could only work in winter⁵ because supplies of waterpower were inadequate in summer, an exaggeration

1. E.M. Yates, 1955, 82-5.

2. W. Topley. 1875, 337; H.G. Dines and F.H. Edmunds. 1933. 47-78.

3. The tenant of Birchden forge in Rotherfield 1597-8 had rights to clay & earth needed to repair the banks and head of the millpond. E. Straker (ed.) 1933. 40.

4. Cal. SPD. 1653-4. 80.

5. J. Norden. 1607. 213.

when generalized but true for many individual works. Power supplies could be increased and regularized by increasing the number of ponds -
¹
 the Heathfield ironworks had twelve supply ponds- but however many, it was impossible in the High Weald, where surface erosion was rapid on the steep slopes, to stop their silting-up and difficult to clean them out. Ponds caused other difficulties to the iron-workers, especially when heavy rain caused them to expand and flood nearby fields - in Etchingham an ironmaster acquired some meadow below the dam which he
²
 could flood when it was expedient to release some of the pondwaters, but not all could control the effects of a variable climate so easily; in 1603 the ironworks along the Medway were held responsible for the
³
 overflowing of the river near Yalding.

Iron ore, water power and timber fuel (see p.50^f) were the three needs of the iron industry. Its chief product in the Weald was non-
⁴
 malleable cast iron, and the usefulness of this was limited. It is probable that most of the iron extracted at the furnace was converted into bar iron at the forges, and sold in that form to local smiths or to London. The most famous by-1664 and most important finished product
⁵
 of the Wealden ironworks was ordnance and it was demands for ordnance

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1. E. Straker. 1931. 72.
 2. S.P.Vivian (ed.) 1953. 202.
 3. HMC.x.6.
 4. Steel was made mostly at Robertsbridge and the last reference to it i 1609 - E. Straker. 1931.179.
 5. A complaint of 1573 listed 7 ironwerks making guns and alleged that they produced 300 tons of ordnance per annus-SPD.Eliz.xcv.15-16.

in the Dutch wars which were primarily responsible for reviving 12 derelict furnaces between 1653 and 1664. The Weald had a monopoly of ordnance manufacture in Britain, and this grew in value as other districts in England began to compete with the Weald in ordinary iron¹ production.

Several works produced it - in 1609 guns were being made at Ashurst, and 1614 at Maresfield;² in 1613 its manufacture was going on at Brenchley,³ and in 1619 this furnace employed 200 people and exported half its guns to the Dutch;⁴ in 1632-3 ordnance was shipped from Rye⁵ to Arundel. Some ironworks produced other finished goods, also, but little more than nails, horsehoes, pots and pans, and even these simple goods were often made by the village smith rather than at the⁶ forge. Wealden ironworking was primarily a producer-goods industry. The large works at Brenchley were one of the exceptions and in 1635 it was turning out besides ordnance, chimneybacks, pitch pans, pots, kettles and weights.⁷ Only such large works produced the local ironwork

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1. Monopolies were troublesome within the Weald. Brenchley furnace was accused 1637 of infringing the monopoly of exporting shot granted to an individual in 1635 - Cal. S.P.D. 1637-8. 30-1.
 2. E. Straker. 1931.162.
 3. SPD. James 1.cv.92.
 4. Cal.SPD. 1619-23. 12.
 5. T.S. Willan. 1938. 149.
 6. A smith's forge in Rotherfield mentioned 1624-BM.Egerton MS.1967.f.55v.
 7. Cal.SPD. 1935. 288.

curiosities - firebacks and graveslabs - and then only to individual order. Occasionally special work was carried out. In 1608 100 tons of silver ore were refined at Maresfield forge, chosen not only because it had existing smelting equipment but also because the ore could be taken inland from Newhaven up the Ouse for almost the whole journey, thus reducing transport costs.¹

Transport was a problem which affected most stages of iron manufacture. Rarely were ore and timber, both heavy products, near together and where this was so, such sites were often far from available water power. Refined iron had to be carried several miles to nearby villages and finished products like cannon had much longer journeys to make. The amount of carriage was further increased by the mosaic of land ownership. A landowner with a furnace and forge on his lands might well prefer to work them together, although they were several miles apart, rather than reach agreements with nearer works in other hands. Throughout the seventeenth century sows from Waldron furnace were taken to be forged at furnaces in Bibleham and Brightling, all owned by Pelham but at least 8 and 7 miles away, respectively.² In the late sixteenth century the sows from Panningridge furnace were sent seven miles to Robertsbridge forge; the furnace had been erected in 1541 at Panningridge (in Ashburnham) because of the attraction of large

1. SPD. Jas.1 xxxviii.23, quoted W.V. Crake. 1912.279.

2. BM. Add. MS. 33154.

woods there. ¹ Holmsted forge in Cuckfield between 1636 and 1656 drew its smelted iron from the furnace at Tilgate in Worth, a journey of more than 5 miles which cost 2/6 a ton in summer and 3/- in winter.² Sheffield furnace and forge, which worked together from 1544-8 until a little before 1597³ were two miles apart, and the same distance separated Worth furnace (1546-1582 mention) and its forge at Blackwater Green (which appeared in the 1574 list). Bedgbury furnace and forge, mentioned in 1574 and situated in Goudhurst and Cranbrook, were separated by one mile. (see Fig 21).

The volume of heavy traffic produced by the iron industry was very considerable and by the early seventeenth century the local communications had been subject to this heavy burden continually for the last half-century and, to a lesser extent, for the same length of time before that. Water transport was used wherever possible, since it was much cheaper than road transport for heavy goods and, in the poor state of the Wealden roads, little slower per hour although its journeys were often more roundabout. Besides the lighter at Pevensey⁴ mentioned in the Hurstmonceaux accounts of the 1640's, there is mention of iron shipped down from Robertsbridge, Etchingam and Hawkhurst to

1. E. Straker. 1931.96.

2. R. Furley ii. 1874. 578.

3. In 1597 the forge was still working but the furnace was decayed - E. Straker (ed.) 1933. 72.

4. T.B. Lennard. 1905. 112.

Rye in 1635 (perhaps from Bodiam bridge),¹ and Abinger hammer probably sent its products down the River Wey to London;² ironworks at Penshurst, Tonbridge and Brenchley in the Kentish Weald shipped goods down the Medway.³ There was a coastal traffic in iron, from Rye 1632-3 to London and Arundel, from Pevensey 1621 to King's Lynn,⁴ and the exports of cannon and shot abroad were subjects of regular outcry.

Water transport was, however, largely confined to the eastern Weald, which was that part of the area with the widest streams, lowest gradients and shortest journey to the sea. Further inland, streams shrank and their long profiles became irregular; heavy traffic had to go by road. Unfortunately much of the iron ore and timber supply was derived from the clay outcrops and heavy traffic rapidly worsened roads which, with a clay base, were quagmires when wet and split by deep, wide cracks when dry. The worsening of the Wealden roads provoked various acts in the sixteenth century, culminating in the statute of 1597 (39 Eliz.c 19) which laid specific obligations of road-mending on every ironworker in Kent, Surrey and Sussex, assessed in proportion to the amounts of charcoal, ore and iron carried (details.p210)

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1. Cal.SPD. 1635-6. 29; reference is also made to wharves at Newenden and other places further downstream.
 2. E. Straker. 1931.445.
 3. F. Hull. 1957.pt.iii.12.
 4. T.S. Willan. 1938. 149, 126.

This act was enforced - 6 offenders were charged at Lewes in 1629¹ - but while ironworking continued it did no more than prevent the roads from deteriorating as rapidly as heretofore. Permanent improvement waited three more centuries for new modes of transport and new methods of road building.

By 1650 the Wealden ironworks were declining in number and in their total output. This decline has been attributed to a variety of causes. It has been frequently suggested that timber fuel shortages were the primary factor but this is not acceptable. There² was no absolute shortage of wood (p.49), for wood was used also in this period for cloth and glass manufacture, for shipbuilding and for the extensive house building which occurred also (most houses of the Great Rebuilding were of timber (Fig 19)). Moreover charcoal was made from small timber and, even if there was deficiency of large ship timbers, there was certainly no shortage of wood branches and saplings. Admittedly wood prices rose sharply after c.1570, but many other factors contributed to the decline of Wealden ironworking. Roads worsened and increased the costs of sending goods to the consumer; demands for ordnance fluctuated, and the revival of furnaces during the Dutch Wars shews how much the fortunes of Wealden iron were connected with ordnance demands. Other parts of

1. E. Straker. 1931. 186; E. Mellings 1959. 18-19, cites instances from Tudeley in Capel, Tunbridge, Pembury, Hadlow and Bidborough, prosecuted 1630 -KA0. Q/Srp.mm.2-4.

2. e.g.W. Topley. 1875. 332; H.J.O. White. 1928.93.

England had commenced iron smelting, several with more reliable power supplies, and the deficiencies of the Wealden power resources increased as smelting machinery improved and became larger.^Y Competition came from without the realm as well as from within; in 1664 a petition emphasised the competition of Scandinavian iron, and earlier the special government privileges accorded to Swedish ironmasters had allowed them to undersell a Brechley ironfounder in England and to bring him thus into heavy debt.¹² Some works closed for individual reasons - Ewood in Newdigate furnace closed in 1604²³ when Crown possession ceased, and several works in St. Leonard's Forest, owned by royalists, were destroyed by Parliamentary forces in 1644.³⁴ The impact of the general and individual pressures varied from one ironworks to another, and this was reflected in the long period over which the decline of Wealden ironworking continued; not until the changes in smelting technique in the early eighteenth century, did any one factor contributing to the waning process become decisive. In the early seventeenth century a variety of difficulties made Wealden ironworking increasingly difficult and together they caused a considerable decline in the total output, but the various contributory factors did not influence all the ironworks to the same extent, nor even at the same period of time.

1. Cal.SP.D.1634-5. 385.

2.

23. E. Straker, 1931. op.cit. M.S. Guiseppi. 1902. 28-40, for a survey of 1575. The works was probably uneconomic during its last years and therefore closed when the state subsidy was removed.

34. E. Straker, 1931.60.

Between 1560 and 1630 at least 28 works produced various sorts of glass in the Weald.¹(Fig 21). Most were located in the claylands of the western Weald, in the parishes of Chiddingfold, Alfold, Ewhurst, Kirdford, and Wisborough Green. Besides these, there was one in Petworth Park,² one in the Weald of Kent at Panthurst (in Sevenoaks),³ and two at the eastern extremity of Weald in Beckley and Northiam.⁴

The Wealden glassworks were the most important in the kingdom and they used raw materials found in the immediate vicinity. Sand came from the varied strata of the Lower Greensand, or from sand seams in the Weald Clay for the works in the western Weald; a map of Fitzlea in Ledsworth 1629 marked sandpits on the common (in the Folkestone Beds)⁵ which supplied nearby glassworks. The works in East Sussex must have used one of the seams in the Hastings Beds,⁶ whilst several other works seem to have used calcined flints.⁷ Potash for flux was obtained by

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1. Fig.21 shews these, and also the 4 just outside the Weald.
 2. Recorded 1550-1610: no ¹27 in the list of S.E. Winbolt. 1933.
 3. Panthurst 1630: G. Ward. 1931b. 43. A Glasshouse hill near Penshurst was mentioned 1597 - A. Collins. Letters and Memorials of State. ii. 1746.45.
 4. V.F.M. Oliver. 1955. 115-6, dating from 1579-81. Glassmakers are mentioned in Horsham parish registers 1581-1614 but no glassworks has yet been found nearby-S.E. Winbolt. 1933. 52.
 5. G.H. Kenyon.1954. 25-7; Graffham glassworks was 1 mile south, several to the north in the Weald.
 6. Parts of the Lower Tunbridge Wells Sand is very good glass sand -H.B. Milner. PGA. 1923. 287; Ashdown sand in east Sussex is usable-G.S. Sweeting. 1950. 35-6, F.H. Edmunds. 1937.72. Sand may have been dug in West Hills, Hastings (Lower TW sands) at this period-K.F. Salzman. Hastings. 1921.113.

burning green bracken; lime, which helped to strengthen the glass, was used at Somersbury c.1567 and at Ewhurst early in the seventeenth century.¹ Wood billets and charcoal provided the fuel; in 1567 Carré proposed to supply his works in Wisborough Green with timber brought from Arundel by barge up the Arun, and in 1568 he petitioned for liberty to cut timber in Windsor Great Park,² but most works were supplied from the much nearer, and still considerable, timber resources of the Weald.³ In the early seventeenth century, coal was first used as fuel—traces have been found at Petworth, Somersbury in Ewhurst, and ⁵Widney Wood in Alfold.⁴

Most of the output was window glass; ⁵Widney Wood in Alfold, the only glassworks marked on Speed's map of Surrey in 1610, was exceptional — it concentrated on vessel glass and produced goods of much higher quality than most of the other works.⁵ In general, as Camden noted,⁶ Wealden glass was coarse but the relative importance of fine products, including coloured glass,⁷ increased in the last years of the industry. This growth stemmed from 1567, when barilla soda was first used instead of wood or bracken ash in Wealden manufacture.⁸

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1. S.E. Winbelt. 1933. 52.
 2. *ibid.* 13; Cal.SP.D. add. 1566-79. 315.
 3. G.H. Kenyon. 1939. 171-3, suggests charcoal was used rather than wood billets, but E.W.Hulme.SNQ 1939.248-9, disagrees (& also S.E.Winbelt. 1933.52).
 4. S.E. Winbelt. 1933.24, 40-41.
 5. *ibid.* 68.
 6. 1607. (1695 edition) 167.
 7. Coloured glass was made by c 1500 in the Weald-S.E. Winbelt. 1933.63 1935.787-92; Most glass produced was greenish in hue, some red and so soda glass made in late C 16 at Sidney Wood in Alfold was colourless. B. Rackham. 1942-3. 156-7.

There was a period of prosperity for Wealden glassworks in the late
¹ sixteenth century but various factors contributed to a rapid decline
 after c.1590; only 9 are known to have worked between 1600 and 1630.
² The granting of monopolies under Elizabeth favoured a few works at the
³ expense of the majority; friction arose between the immigrant Huguenot
 glassworkers, who closely guarded their skills, and the local
 inhabitants - in 1575 the Lorrainers moved away into Hampshire, not
⁴ before one plot to murder them had been hatched. According to Aubrey,
 11 glasshouses in and around Chiddingfold were suppressed by Parliament
⁵ 1584-5 after local residents had petitioned against them. The
 remaining works temporarily profited from the lessened competition, but
 the total production of glass in the Weald was greatly reduced. Wealden
 glass could not compete with the better quality imported Venetian glass
 and when, in 1615, the import of foreign glass was forbidden the same

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8. G.H. Kenyon. 1950. 58-60. In 1567 when J. Carré petitioned for a monopoly of making vessel glass of Venetian style, the inquiry said the Chiddingfold works produced only small rough articles, Cal.SPD. add.1566-79. 34, 257.
 1. G.H. Kenyon. 1950. 58.
 2. J. Norden. 1607. 213, underestimated when he said there were only 3 of 4 glassworks⁵ in Surrey and Sussex.
 3. e.g. Jean Carré received 21 years monopoly for window glass in 1567 - he had 2 furnaces at Fernfold in Wisborough Green at this time, and built 2 more shortly after, one at Sidney Wood in Alford; 1575 Carré given a monopoly of glass drinking and other vessels-S.E. Winbolt. 1933.13,16.
 4. *ibid.* 18.
 5. J. Aubrey. iv. 1718.³⁶ 1933.23; he only says it was temp. Elizabeth - the preciser date is given by Winbolt,¹ and nothing more is heard of these works afterwards. ¹⁹³³ 15.

order prohibited the use of wood fuel¹ in furnaces. This edict was disastrous; coal was used in some furnaces but it cost much more, not being available locally, and furnaces had to be adapted to this new fuel. Furnaces were small and represented no great capital investment; as conditions in the Weald became more difficult, for these many reasons, the industry moved. Sand pits which supplied nearly glass works were mapped at Fitzlea (in Ledsworth) in 1629, but the last² mention of a works was Somersbury Weed in Ewhurst, 1613.

After ironworking, cloth manufacture was the most important and most widespread industrial activity in the Weald. The major centre was around Cranbreek in the Kentish Weald and a list of deficient cloths brought into London 29/9/1561-21/9/1562 gives a good idea of the extent of this area and the importance of various centres in it. 24 clothworkers of Cranbreek were mentioned, 8 from Benenden, 6 from Hawkhurst, 5 from Staplehurst and 5 from Biddenden; these were the chief producers, but smaller numbers came from Tenterden, Swarden and Hunton (3 each), Brenchley, Horsmonden, Tonbridge, Chiddingstone and Tudeley (2 each), Yalding and Frittenden (1 each)³. This list did not exhaust the cloth-making localities of the Kentish Weald - a fulling mill in⁴ Little Chart was mentioned 1635.

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1. SPD.Jas 1.lxxx.23; S.E. Winbolt. 1933.71, suggests that fuel shortage caused Wealden glassworking to collapse, but there was no shortage of wood - the difficulty was that coal alone was to be used.
 2. G.H. Kenyon. 1954. 25-7; S.E. Winbolt. 1933. 23.
 3. G.D. Ramsay. 1942. 361-9, from PRO.E. 159/350. mm 329-332; E.M. Hewitt. 1932. 405, and L.F. Salzmann. 1913. 147, both give it as 1552-3.
 4. E. Hasted. iii. 1790. 225; also clothworkers in Goudhurst parish

The Cranbrook producing region stretched south into Sussex; in 1631 it was noted that Kentish clothworkers employed many women and children (presumably as outworkers) in the north of the Rape of Pevensey.¹ The 1561-2 list included one clothworker of East Grinstead, and fulling mills were found at Ardingly,² Plumpton³ and Brede.⁴ Nor was cloth-working in the Sussex Weald confined to this southern extension of the Kentish centres; in the western Weald this was the chief trade of Petworth⁵ 1574 and nearby were fulling mills at Haslingbourne;⁶ in the northwest corner, at Womersley^k in Surrey, there was a local manufacture of blue cloth.

Wool for the cloth was supplied both by the Downland sheep flocks north and south of the Weald, and from the marshland sheep pastures along the eastern margin.⁷ The raw materials used in processing were mostly available nearby. Fullers' earth, the dry material containing bases which absorbed colouring from crude oil and fats, was used to

register 1561-S.D. Hershaw. 1897.212.
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1. SPD. Chas.l.excii. 99.
2. 1573-PN.Sx. ii.255.
3. 1621-SAC. 1890.47.
4. 1558-1667: VCH.Sx. 9. 1937.168, and E. Austen. 1946. 98; there were also fullers at Withyham 1568, Maresfield 1568, Hurstpierpoint 1616, kersey maker in Waldron 1637, weaver in Frant 1613-VCH.Sx. 1907.257; weavers and tainters in Salehurst 1581-97, S.P. Vivian (ed.) 1953. 72,81,137, 165.
5. G.H. Kenyon. 1958. 73, there were 11 clotheⁱrs in 1574 ulnage list (and 1 in the 1561-2 list of defaulters).
6. Mentioned 1592 and 1683-4, G.H. Kenyon. 1958. 65, 86; there was also, not far away, the site of a fulling mill on the R. Rother in Iping, 165-VCH.Sx. 4.1953.63.

cleanse the cloth in the fulling mills.¹ This 'earth' occurred in the Sandgate Beds (Lower Greensand) just north of the Weald, and the most important working was at Boxley;² the strata included a blue seam, used for fine cloth, and a yellow seam, used for coarser.³ Outcrops of good fullers' earth were restricted and the material was in much demand; some inferior clay, with a lower content of bases, was also dug in the Weald Clay for cleaning poor cloth.⁴ Teazles were cultivated at Brede and in other clothworking districts to provide the burrs used in dressing the cloth and some dye-plants also were grown, including woad⁵ (under certain restrictions) at Wonersh.⁶ (A little cloth was also made from locally-grown flax.⁷)

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7. In 1648 a farmer with lands in Sedlescombe and in the marshes near Winchelsea sold fleeces and lambs' wool to wool merchants in Cranbrook. W.D. Cooper. 1851.23.
 1. J.R. Daniel-Tyssen. 1878. 139, connects fulling mostly with hemp cloth but it was primarily used on wool cloth.
 2. H.G. Dines and F.H. Edmunds. 1933. 171-2; the absorbent is hydrous silicates of alumina. B. Furley.ii. 1874. 329-30, mentions only Boxley but Topley records other workings (undated) at Petworth in the Sandgate Beds and Hastings in the Hastings Beds-1875.394.
 3. E.M. Hewitt. 1932. 396-7.
 4. A.D. Hall and E.J. Russell. 1911. 159; H.J.O. White. 1924. 97.
 5. E. Ansten. 1946. 98.
 6. The Queen objected in 1585 to free growth of woad as prejudicial to the customs, but a petition of 1586 asked to grow it at Unstead in Wonersh-Leseley MSS. xii. 60, vii. 29b. cit. VCH. Sx. 3. 1911.121.
 7. In Cowden the poor 1601-27 were set to making canvas and linen cloth from flax (bought in London) and hemp cultivated locally; G.Ewing.1926 146-7; the Hurstmonceux accounts 1643-9 mention precessing of flax - T.B. Lennard. 1905. 110; flax and hemp weavers were found in most parishes of the Sussex Weald. L.F. Salzmann. VCH.Sx.ii.1907.257.

Most Wealden cloth was produced in a finished state and it attained a national renown for its dyes; cloth exported from Kent had to be dressed since a statute to this effect was ¹ passed in 1566. Philipot in 1659 referred to the 'perfect colours' of Cranbrook cloth, ² but this quality ³ was only maintained by frequent lawsuits over illegal colours. In 1552 certain clothiers of Cranbrook were fined, and another clothier of Cranbrook was fined in the same year for incorrectly preparing 15 broadcloths of 'Russettes Turkeyes, rate coloris de Browne ⁴ Blewes'. No less than 11 varieties of illegal colouring were found ⁵ in the Kentish Wealden cloths brought to London 1561-2.

Some of the large clothiers had buildings where cloth was dyed, but the small weavers often dyed their own cloth also, sometimes to the public discomfort; a tenant of Westerham was had up in 1593 for dying ⁶ cloth in the common stream. The quality and technical skill of Wealden clothmaking continued high in the early seventeenth century -

1. 8 Eliz. c 6; repeated 1596 (Cal.SPD.1595-7.327); illicit export continued-eg. 1620-Cal.SPD. 1619-23. 381.)

2. 1659.98.

3. E.M. Hewitt. 1932. 405, citing PRO.E 159/331 m 31 (Hewitt gives Easter 6 Ed.VI as 1553, but it was 1552).

4. *ibid.*m.44.

5. PRO.E. 159/350 m329-332.

6. BM.Add. MS 33898.f 195.

Fuller in 1662 wrote of Kentish cloth' the credit thereof (is) as high¹ as ever before'. In 1640 3 clothiers from Goudhurst and Marden had announced a new and improved method of dying wool 'in calke'.

By this date, however, production was falling. In the mid sixteenth century the industry was flourishing but by 1575 complaints of decay began to appear;² although Cranbrook produced 11,000-12,000 cloths per annum, the total had fallen by at least 1000 in less than three³ years. Export of rougher cloths from Rye was considerable until c.1580,⁴ but later became unimportant and this decline was only partly attributable to worsening harbour facilities (see p.223). Lambarde in 1570 rightly stated that the Kentish cloth industry was large and its export trade considerable,⁵ but Camden in 1586 added the other side of the picture -⁶ it was much decayed. In 1634 another petition recorded a continuing decline in Kent,⁷ whilst similar complaints for Surrey had been voiced⁸ in 1630.

1. Worthies. ii. 58.

2. Cal.SPD. 1547-80.511.

3. 12,000 is the total production figure for 1568 in SPD. Eliz.xlvii. 55k but the letter of 1568-75 which said output had fallen 1000 in the last 3 years, still gave the total as 12,000 (R. Furley.ii. 1874,481); clearly totals were not very accurate.(F.W. Jessup. 1958.102, suggests that at the peak of production, c.1580, Cranbrook produced 3000 cloths p.a. Maidstone 2000; this is manifestly an underestimate).

4. Especially broadcloths, kerseys and cottens-J.C. Cornwall. 1953.235.

5. 1596 ed.(1826 reprint)8; the MS was written 1570.

6. 1695 ed.212.

7. Cal.SPD. 1633-4. 86.

8. HMC, vii. 677.

Various factors combined to hinder Wealden clothworking. There were local difficulties - Aubrey claimed that the industry declined in Womersh because the makers dishonestly stretched their webs. But in the Weald as a whole, general economic conditions were more important than local particularities. Competition in cloth production was increasing from other regions in England and also within Kent. Refugee clothworkers from the Low Countries, who came to Kent in the 1550's and 1560's, settled mostly in the existing workshops of North Kent, at Sandwich, Canterbury and, primarily, at Maidstone - where they also set up a thread industry in 1568. By 1640 a list of the chief clothing towns of England included Canterbury and Sandwich in Kent, but only Tenterden in the Kentish Weald; Cranbrook, the traditional centre, was omitted.

Within the Weald difficulties included disputes over timber supplies. A return of 1573 said that clothworking had consumed more wood fuel in Cranbrook and 7 neighbouring parishes over the last 20 years than even the iron industry; disputes over the conflicting claims of these two industries appeared again in 1592-3 and 1637. Restrictive legislation reduced Wealden production of cloth; the restrictions of 1557

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1. J. Aubrey. 1718 ed.iv.97; in 1561 a Petworth clothier was accused of stretching cloth-PRO.E. 159/422 m 225.
 2. E.M. Hewitt. 1932. 407.
 3. G.D. Ramsay. 1942a. 491.
 4. Cloth consumed 3618 acres of wood, ironworks 2924-SPD.Eliz.xciii.37.
 5. Cal.SPD. 1591-4. 523.
 6. Cal.SPD. 1637. 290-1.

(P. and M.4 and 5.c5) on commercial manufacture outside the towns and markets,¹ and on apprenticeship were both enforced against village craftsmen in the Sussex Weald.²

The most damaging restrictions were, however, those on exports. The limitation on exporting undressed cloth from Kent was originally intended to encourage quality production in Kent, but it only antagonized the continental markets - in 1600 the French imposed restrictions on imports of finished cloth from England and seized an English ship in Rouen.³ Not long after came the disastrous Cockayne fiasco of 1615-7, which attempted to end the export of unfinished cloth from other parts of England also, and included a new provision that white, undyed, cloth was not to be exported. Continental markets, wishing to import wool rather than cloth, quickly ruined the scheme by imposing heavy import duties on English finished cloth, and in 1617 the new English restrictions on exports were removed. The Weald suffered still; its export was confined, as before, to dressed cloth and the high duties imposed by the Dutch and others during the Cockayne scheme were retained still - reduced somewhat, but higher than before.⁴

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1. The act restricted cloth making for sale to corporate towns, boroughs and market towns which had made cloth for at least 10 years previously; in 1609 a man of Ifield was charged with manufacture locally-PRO.E. 159/436 m 184-5.
 2. It was prohibited for anyone not apprenticed to the trade to make cloth, and there was a case in Fletching 1573-PRO.E. 159/366 m 384.
 3. This dispute affected East Anglian cloth and no doubt Kentish also (since Kent was restricted especially in its exports - to dressed cloth only - and thus very sensitive to export restrictions). The details of dispute 1600-5 appear in Bibl.Nat.MS.Fr. 15980 f 241-99; the terms of the 1600 restriction are on f 271.

Shortly after, in the 1620's, came a severe trade depression,¹ especially in cloth.

In the following decades, further internal difficulties plagued Wealden clothworking. Communications worsened under the continual heavy traffic (see p.218), and religious strife unsettled many of the former refugees. As early as 1616 2000 Kentish clothworkers migrated to the Palatinate and in 1640 others were leaving for Holland.²³

Iron, glass and cloth were the three major industries in the early seventeenth century Weald and they were all declining; in these same decades, the first gunpowder mills began production, the beginnings of an industry which flourished after this period had ended.⁴⁵

4. R. Furley. ii. 1874. 568; S.R. Gardiner.ii. 1899.387-90; Cal.SPD. 1611-18.141.

1. J.D. Gould. 1954.81-90.

2. S.D. Kershaw. 1897.214; the total is exaggerated.

3. L.B. Larking (ed.) 1862.37-8.

4. Evelyn had gunpowder mills at Godstone c.1612-36: VCH.Sy ii. 1905. 312ff.

5. SAC,1923. 109 ff.

(xv) Markets, Towns and Communications

The maps of Symonsen (1596) and Norden (1594-5) marked only 20 market towns in the Weald, but many other smaller settlements contained either a market, fair or some other trace - a concentration of traders, often - of urban life. There was a noticeable concentration of markets on the borders of the Weald and just outside its margins, located where routes along the fertile and low-lying scarpfoot terrains crossed others penetrating, through the limited number of gaps, into the Downlands behind. There was also a difference between the eastern Weald, where markets were often less than 4 miles apart and the less densely populated central and western districts, where some markets were separated by six or more miles (Fig.22³⁹). The pattern of markets was governed, in part, by those physical conditions which favoured certain sites for settlements, but also by those economic factors which affected the commodities and extent of local trade; since these economic factors were constantly changing, so also was the pattern of markets. The markets at Winchelsea³ and Hailsham⁴ seem to have ended during the seventeenth century and that at Cuckfield, mentioned in the 1620's may have lapsed soon afterwards, for a short time. The former ecclesiastica⁵

1. See the list of markets and fairs, App. IV.

2. e.g. Tonbridge, where dry gravel patches narrow the Medway floodplain, giving the easiest river crossing for some miles; the hilltop site of East Grinstead - S.W. Wooldridge and F. Geldring. 1953.214-20. W. Topley 1875.397, pointed out that many Wealden towns, including Edenbridge and Hailsham, lay on gravel patches.

3. W.D. Cooper. 1856b.212, says it was gone by 1700, but the description by Evelyn in 1652 would suggest it was gone by then (Memoirs (ed) W. Bray. i.1818.259); in 1575 there were less than 60 inhabited houses (M.W. Beresford and J.K. St. Joseph. 1958.223).

markets were generally continued by their new owners - Battle market¹ was still flourishing in the 1540's.

The existence of a market and borough status did not imply a settlement of any given magnitude. The borough of Reigate, a market² town since before 1276, contained only 90 separate tenements in 1622; the village of Hartfield, which included only 19 houses in 1598, was then³ called a town, although it did not even possess a market. Trading continued in most market-towns on other days than market day, although the range of commerce was greatest on this one day in the week; there⁴ were frequent court orders that Sunday trading should cease.

Many Wealden settlements held a yearly fair, which gave an opportunity for amusement and for trade in those uncommon and less needed things which could not be purchased in the weekly markets. There⁵ were many more fairs in the Weald than markets; Cowden⁶ and Charlwood

4. After a fire c.1549 the market was revived -PRO.DL 42/96 f 28v; in 1656 reference is made to the market place and shops-PRO.E.317/Sx/30, but the market seems to have ended later in the century-LF.Salzmann. 1901.34.

5. Mention 1622-5, W.H. Godfrey (ed.) 1928.22-31, but lapse suggested by fresh grant of weekly market 1670-Cal.SPD. 1670.4.

1. Mentioned 1643-9: T.B. Lennard. 1905.109.

2. Survey in private hands: VCH,Sy.3.1911.233.

3. E. Straker (ed.) 1933.19, and map XIX.

4. e.g. at Westerham, 1623-EM.Add.MS. 33898.f.220. An act of 1449 forbade fairs,markets on Sundays, and the market at Battle, granted originally for a Sunday was changed by private act in 1566 (8 Eliz.c.14) to Thursdays.

5. This goes back to before 1261, when it was mentioned -I.J.Churchill et al. 1956.317.

6. Mentioned 1592 -PRO C66/1382 m 21.

were but two of the settlements which had right to a fair annually, but possessed no market. Many of the fairs were granted long since but not all; in 1570-1 a weekly market and 3 fairs per annum were granted to Tonbridge town,¹ Ticehurst received licence for a 2 day fair in 1600,² and 1575 Hythe was allowed a 3 day fair in order to sell, amongst other things, the produce of its fishings.³ A few one day fairs existed, most continued for 2 or 3 days; Hastings had the right to one fair of 2 days and 2 for 1 day each.⁴

Market towns also served as resting places for travellers and a work of 1636 listed the taverns (inns selling wine) in the Weald; in London a tavern sold wine only, in the country it often supplied food and lodging also. According to an act of 1553 taverns could only be kept in Cities, Towns, Corporate Boroughs, Ports or Market towns, but the vagueness of some of these terms allowed taverns to appear in such small Wealden villages as Withyham, Worth and Burted.⁵ Most villages

1. BM. Add. MS. 6372.f 111^v.
2. PRO.C. 66/1529, cit. VCH, Sx. 9. 1937.252; in 1542 a parishioner left funds to provide for a fair in Ticehurst-SAC. 1882.139.
3. McFarley. ii. 1874. 297.
4. Whit Tuesday, 26-27 July, 23 November-VCH, Sx. 9.1937. 14; Lambard's list of Kentish fairs (1596, 1826 reprint, 53-5) gives only one day-the feast day - for each fair, but most commenced on the day before and continued to the day after (see App. V).
5. The list is in W. Taylor. 1636 (unpaginated). The list is probably not without errors, for Taylor lists 68 in Sussex but says the county total was 61, and lists several settlements with 3 taverns, though the act of 1553 (7 Ed.VI c5) allowed only 2 in a town.

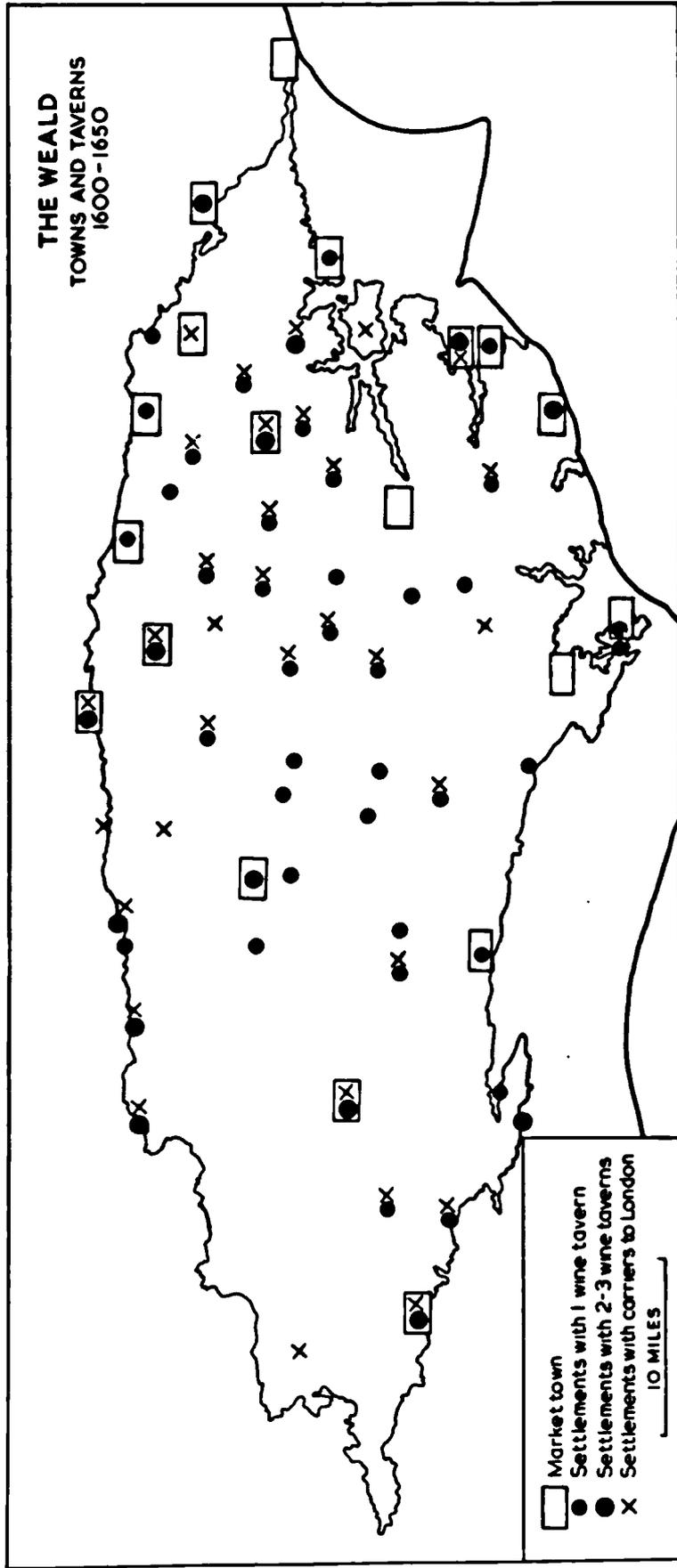


Fig. 22. Market towns from the maps of Ward in 1501-5 and S monson 1506. The taverns and carriers from J. Taylor, 1626, 1627.

had only one tavern, but some larger settlements - Cranbrook, Petworth, Hastings and others - possessed 2 and Rye, Ashford, New Romney, Dorking and Sevenoaks 3.¹ Within the Weald they concentrated in that area between Horsham and Ticehurst, in the High Weald, where terrains were lighter and most of the trans-Wealden roads were concentrated. In the Wealden villages, the needs of the local populace were served by alehouses which multiplied so fast that the restrictions on those legally allowed to own them, laid down in 1551-2, had to be further increased in 1627.²

The market towns of the Weald each contained numbers of craftsmen. Some specialized in certain crafts - tanning at Rotherfield,³ cloth manufacture in the Kentish Weald, shipbuilding at Hastings and Rye and the small silk weaving industry confined to Hastings.⁴ Other centres had no local speciality; at Petworth, in the early seventeenth century, there were c.50 trades and occupations, employing at least 100 owners, besides their employees. Trades were not restricted to certain families, but few men practised more than one trade. The craftsmen were more urban

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1. This concentration reflects the road pattern rather than (as suggested by J.B. Caldecott. 1938.70) a local concentration of ironworkers.
 2. 5 and 6 Ed.VI c 25; 3 Chas. 1 c.4.
 3. References 1591-1647 in C. Pullein. 1928. 281.
 4. It was said in the C 16 that all the coast from Brighton to Thanet had its vessels built at Hastings, Rye or Winchelsea (the last was almost defunct already)-HMC. xiii. App. iv. 76. Rye was renowned for building fishing vessels - VCH. Sx. 9. 1937. 35-6.
 5. There were only 3 mercers 1657 - SAC. 1860. 197.

than the trader-farmers of small villages; few kept a horse and very few a pig.¹ The trading element in Horsham followed the pattern in Petworth closely.² However if the craftsmen of Petworth were surprisingly urban, an agricultural element penetrated all the market towns; many of the urban residents were landowners or labourers, the houses along the streets were broken up by barns and stables, and the magnitude of the profits on agricultural produce largely determined the extent of trade in other goods at each fair and market.

There was one fast-growing settlement in the Weald which was completely non-agricultural. In 1606 Lord North discovered the Chalybeate springs at Tunbridge Wells, in the parish of Speldhurst; their fame increased with the visit of Henrietta Maria in 1630 and the publication of an account in 1632 of their curative properties.³ In 1638 the waters were definitively named Tunbridge Wells (having formerly been called Frant Wells and Speldhurst Wells also), and two walks were laid out, one for the gentility and another, which also served as a market, for the rest. To house the visitors and the service population which accompanied them, building went on rapidly at Southborough and Rusthall residences, - coffee houses and bowling greens. One unusual accompaniment was the large number of squatters who camped on the common and scraped off the

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1. G.H. Kenyon. 1958. 36-9, 67-9. Wagearners were probably 48% of the urban population, and most tradesmen lived in houses of 5-8 furnished rooms.
 2. *ibid.* 104.
 3. L. Rowzee. The Queen's Welles: that is a treatise on the nature and virtues of Tunbridge Water. 1632. 2nd ed. 1656, 3rd. 1671.

Sand Rock (Lower Tunbridge Wells Sand), which they hawked round as a cleansing powder with special properties. The Civil War interrupted development, but by 1655 expansion was resumed and reached its peak¹ after the restoration.

The market centres were connected by roads which varied greatly in their size and quality of surface. Several major routes crossed the area; all direct routes from the south coast, east of Arundel, towards London had to traverse the Weald. There was also a dense network of local roads and a large number of small access roads which led to fields and isolated farmhouses. These small access roads - 'the tenants ways' of contemporary documents - were used by few people and many, unlike all the larger roads, were privately owned;² one in Smeeth³ was sold in 1577. The roads from village to village and the main highways⁴ the public roads, were much more heavily used and by the early seventeenth century this heavy traffic was ^{making} the weakness of the subsoils unfortunately apparent.

Most of the Low Weald, and a large part of the High Weald had clay subsoil, miry when wet and cracked when dry; even the fine sandstones of the High Weald became sticky when wet. The through roads avoided these difficulties in part since most crossed the Weald where the Hastings Beds outcrop was widest and ran for long distances along the better

1. T.B. Burr. 1766. 1-40.

2. e.g. Salehurst 1597(S.P. Vivian (ed.) 1953. 54; Brenchley 1557-BM.Add. MS. 33917 f 29.

3. BM.Add. MS 33891 no 42, leading into a field; in 1623 3 parcels of land in Rotherfield were 'formerly used as a road'-C.Pullein.1928.430.

4. The several types of road can be seen on local maps - Fig.11.

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drained ridges; they did however carry the heavy burden of iron products and ship timbers destined for London or the southern ports. The heaviest traffic was in these raw materials—ore, timber, fuller's earth, fluxing limestone - needed by each industrial plant in the Weald; the chief strain of this local but intensive carriage fell on local roads and, since several of these goods were mostly derived from the clay outcrops, especially on the unresistant clayland roads.

Deterioration was sufficient to promote legislation against the ironworkers who were held, probably in truth, ² to be primarily responsible. Heavy traffic was most pernicious in winter when it broke up the wet roads into a mass of ruts^k and a complaint of 1574 alleged there was ³ 'greate decaye to the highe wayes because they carrie all winter tyme'. The Act of 1597, 39 Eliz.c 19, specified that any ironworker in Surrey, Sussex and Kent should pay 3/- for every three cartloads of charcoal or ore, and for each ton of iron carried for one mile in these counties between October 12 and May 1. In summer he was to pay 3/- or lay one load of cinder, gravel, stone or chalk for every 30 loads of coal or ore, and every 10 loads of iron carried between 1 May and 12 October. This succeeded the earlier act of 1585, 27 Eliz. c 19, which ordered anyone who carried 6 loads of coal or ore, or 1 ton of iron between 12 October and 1 May to lay one cartload of cinder, gravel, stone or

1. As emphasised by H.R. Mill. 1900. 224; A.D. Hall and E.J. Russell. 1911. 133.

2. Ironworks were the most numerous industrial plants and their demands for heavy raw materials the greatest; I.D. Margary. 1950. 49-53, allots blame primarily to them.

3. SPD. Eliz. xcv. 20.

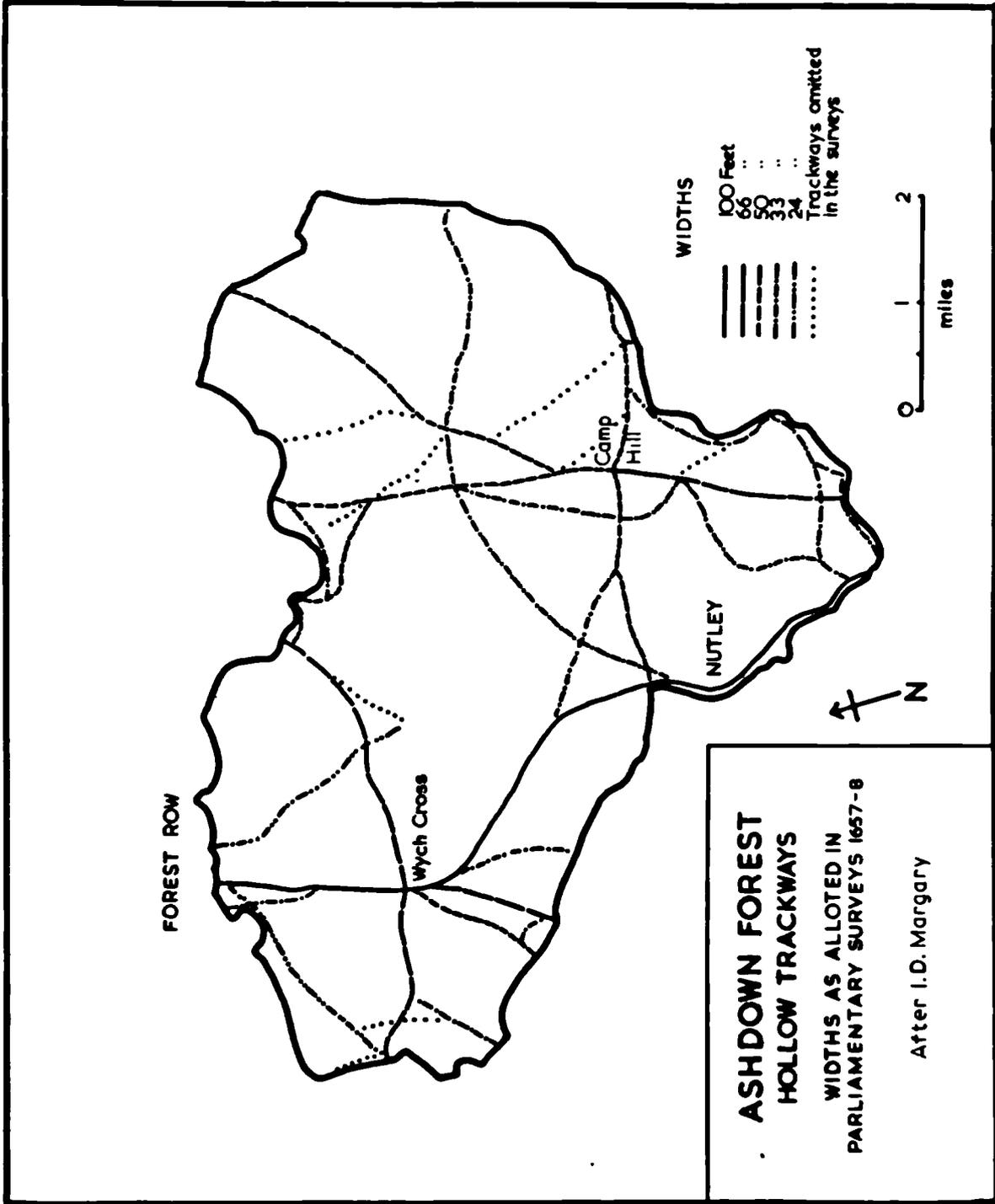


Fig. 23. Redrawn from I. D. Margary. SN3.1940.37.

chalk, this earlier act was confined to winter traffic and was vaguer in its application since, although it specified the area between the North and South Downs, it mentioned only Surrey and Kent. Sussex, where were most of the ironworks, was only specified in 1597.¹ A royal proclamation of 1623 stated that 4-wheeled wains should not carry loads exceeding one ton on any highway, but it exempted two important classes of traffic in the Weald, where such restriction would have been very beneficial - carts bringing chalk to put on the land, and wains carrying royal ordnance.²

The laws did not reduce the heavy traffic of ordnance, cloth, timber on its way to the royal dockyards; their provisions were enforced somewhat (see p 199) but even when obeyed they could not improve the roads above the limitations imposed by a difficult subsoil. Complaints continued; the way to Wootton was described in 1671 as '4 miles in ye wilde of Sussex north east from Lewes and a dirty hard way to find',³ whilst the seventeenth century etymology of Hershams was 'the town whose approaches were so bad that horses sink in up to the hams'.⁴

There were restricted areas in the High Weald where the soils were very coarse and free draining; much traffic, seeking dry routes, crossed these open heaths and long-continued traffic over Ashdown Forest had left its mark in deep hollow-ways.⁵ (Fig 22) The passage of such routes was

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1. Tolls were collected on some roads not included in the 1597 law if traffic was heavy - e.g. 5/- was charged on every load over 20 cwt on the Canterbury-Sittingbourne section of the London-Dever road; by order of 1604 -E. Melling. 1959.18, citing KA0.Q/Sr 4 m 9d.
 2. APC. 1621-3. 338.
 3. C.E. Woodruff. 1910.194.
 4. *ibid*.197.

rough and difficult for wheeled vehicles when wet but packhorse traffic was considerable. There was much they were extensively used by the considerable packhorse traffic which traversed the Weald; an account of 1637 mentioned carriers plying between West Chilmington, Horsham, Battle, Rye, Lewes, Cuckfield (and 27 other Wealden settlements) and London.¹ Light traffic in the Weald was not unduly slow; it was the heavy traffic which wreaked most havoc on the roads, and it also suffered most in result. Roads so rutted that carriage traffic was difficult could be traversed on horseback with little trouble; most Wealden roads had wide verges and an agile horse could avoid ruts. In 1574, John Pedley, charged with delivering summonses to the ironworkers, travelled 483 miles in 19 days, an average of $25\frac{1}{2}$ miles per day; he doubtless had good mounts and royal precedence but the journey was made in a bad season (15 February to 7 March).²

The law of 1597, as its predecessor, specified the materials used in road repairs but vaguely. Various were used in practice; near the margin of the Weald the best materials were found, cherty sandstone from the Hythe Beds and flint brought in from the Downlands.³ Such materials were heavy to transport and too low in value to be carried far; the interior Weald had to use inferior local supplies. In the Clay Weald,

5. They were allotted widths varying 24' - 100' in the Parliamentary surveys 1650-8: I.D. Margary. 1940b. 34-50.⁴

1. J. Taylor. 1637. unpaginated - last 3 pages.

2. E. Straker. 1928. 5-6.

3. H.G. Dines and F.H. Edmunds, 1933. 177.

local clay was burnt and spread on farm tracks, and the discontinuous seams of limestone and sandstone were dug for paving the better roads. In the High Weald various local sandstones were tapped; Tilgate stone (calciferous sandstone seams in the Hastings Beds) was used for building¹ causeways, 3' wide, along many of the major roads, for passenger traffic. Small lengths of road were surfaced also with Purbeck limestone or with² ironworks slag.

The effects of heavy traffic were not the only difficulties which affected Wealden roads. Tenants commonly defaulted on their duty to repair part of a highway or bridge,³ and court orders to scour out⁴ ditches and cut trees overhanging the highways were innumerable. In Westerham town a man dug a well in the middle of a road (1572), another in 1575 was accused of pasturing cattle in the highway; in 1590, 1595 and 1643 others were throwing their refuse into the road, and building eaves which overhung the street was classed as an encroachment in 1590⁵ and 1594. Wide verges,⁵ served both to graze animals on the move and to allow traffic to avoid ruts, but they frequently suffered encroachment^h and court orders to remove such enclosures were often disregarded. At

1. H.J.O. White. 1928. 92.

2. H.J.O. White. 1926, 85.

3. e.g. Salehurst 1576, EM. Add. Ch. 31688; Hailsham 1587-8, L.F. Salzmar 1901.91; Hunten and Yalding 1600-E. Melling. 1959.11.

4. e.g. Salehurst 1603, S.P. Vivian (ed.) 1953.85; Westerham, 1570, 1594, 1596 - EM.Add. MS. 33898, f 186-7, 197v, 201v.

5. EM. Add. MS. 33898. f 188v, 190v, 191, 196, 198v, 231v.

Whitehurst in Marden, a tenant was ordered in 1638 to remove the gate¹ he had erected across a lane, a longstanding offence going back to 1571. Conflicts between private interests and common use of the road appeared from other causes also - the water penned up by a miller in Clayton frequently overflowed the nearby highway, according to a complaint of² 1617.

Various attempts were made in the late sixteenth and early seventeenth centuries to divert some of the heavy traffic in the Weald from roads to waterways. Henry, Earl of Arundel d. 1579-80, extended the navigation of the River Arun from Turning River up as far as³ Pallingham, thus increasing the extent of water traffic to and from the southern margin of the Weald; Lewes on the Ouse remained the most important centre of river traffic along this tract. Several attempts were made to improve the outlet from the northern Weald via the Medway; one attempt c 1600 sought to improve the navigation up to Yalding and an ambitious scheme of 1627-30 aimed to make the river navigable from Twyford bridge in Yalding up to Tonbridge. The King supported this, since it would cheapen carriage of timber to his royal dockyards in Chatham,⁴ but the attempt failed. The heaviest traffic along rivers occurred in the

1. BM.Add. MS. 33898.f.151v.

2. W.H. Godfrey (ed.) 1928. 127.

3. G.D. Johnston. 1953. 272-5.

4. KAO. Transport in Kent. Exhibition Catalogue. 13-14 (from MSS of the Upper Medway Navigation company.)

eastern Weald especially along the Rother, and included the carriage of iron goods down to the ports of the eastern Weald coast. Unfortunately the facilities of all these ports were worsening by 1600.

Hastings harbour had been protected by a timber pier but in 1578 this was broken in a storm; funds were collected but misapplied until in 1595-6 two attempts were made to erect a pier of stone blocks and timber, only to be destroyed by the sea in 1597.¹ Further small-scale attempts at repair were made until 1621, but in 1656 the last remains of the defence works were washed away. At Rye silting-up had commenced by 1550²; in 1562 a survey declared that the Rother channel between Newenden and Rye had, in the recent past, narrowed from more than 200' to less than 24',³ and that unless Rye harbour was cleaned out this would continue. About 1572 the sea broke in northwest of the town and the mayor,^y thinking this might improve the harbour, refused to drain it. The lake soon filled in and a complaint of 1618 alleged, with exaggeration⁴ that all trade had departed. The port at Winchelsea was defunct by 1600; it last contributed to naval forces in 1544 and in 1587 the town had no ships and but one mariner. New Romney had also suffered shingle accumulations and also possessed no ships in 1587⁵ whilst the small

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1. HMC. xiii. App. iv. 357. The work of 1595 was partly destroyed in the first winter storm of that year - W.D. Cooper and T. Ross. 1862. 87.
 2. An Act of 1548, 2 and 3 Ed. VI. c 30, prohibited the dumping of ballast in the Camber but this was too late to save the harbour.
 3. Cal.SP.D. 1547-80. 202. Inning the marshes at New Guldeford, begun just before the Cl6 and continuing into it, upset the action of tide in scouring the harbour, Add. MS. 5704. f 20.
 4. L.A. Vidler. 1934. 62; various complaints 1576-1608 exist in HMC. xiii App.iv. 53, 64, 85, 141.
 5. Under Elizabeth it was claimed that Romney haven had been blocked for

remaining trade of Pevensey was suffering from inning of the surrounding Levels (which encouraged silting) and from the increasing size of ships.¹

By the early seventeenth century, the main livelihood of Rye and Hastings was fishing; small fishing boats were least affected by shallowing harbours. After a decline late in the C 16, fishing from Hastings grew - there were 28 vessels in 1626 and 33 in 1641; a petition of 1636 claimed that fishing was the only livelihood of the town.² At Rye, the number of boats declined between 1587 and 1626, but there were still in 1626 10 Rye boats with the Yarmouth fishery, besides the 25 from Hastings.³ In 1636 John Tayler wrote that Rye supplied fish to London and, though it was less important than Hastings, it would seem that the lament of 1619 - that hundreds of fishermen were in beggary because of sanding in the harbour⁴ - was exaggerated.⁵

If Hastings was the chief port, Rye retained the most valuable and varied coastal and trans-Channel trade; Christmas 1632-3 Rye shipped

200 years but money was spent on repairs 1498-J.M.E. Murray. 1935. 209.

1. For reclamation, L.F. Salzmann. 1910. 44. 58-9; c.1580 and 1621 there was a small export of iron goods from inland - T.S. Willan. 1938. 126.
2. EM.Add. MS. 5705. f 158.
3. These figures come from several sources - early-

Early 1587 (ships and sailors)	15,106.	0	32,249	0	11,58
Late 1587 (ships and sailors)	20,168	-	34,324	-	-
Ships 1626	28	-	16	-	-

Hastings Winchelsea Rye Romney Hythe

1587 from SPD. Eliz. excviii. 8-10, 15-16 (incorrect version in M. Oppenheim, 1907. op.cit., and W.D. Cooper. 1856b. 210; correct in J.M. Baines. 1952. 243); late 1587 ib. cciv. 25; 1626 from EM. Egerton MS 2584. f 354, 382 (and EM.Add. MS 5705. f 83).
4. 1636. unpaginated; supply confirmed VCH.Ss. ii.1907.166. Tayler referred to Hastings as a 'profitable fisher town'.

wool, ordnance to Arundel, timber to Devon and hops, tallow, leather and iron pots to London. Imports included coal from Sunderland, wheat and malt from Dover, Chichester, Arundel and Newhaven and miscellaneous goods from London.¹ Rye still kept a considerable cross-channel traffic; the 1572 inquiry mentioned trade with Dieppe, and it lay at one end of the shortest sea-crossing for passengers to and from the continent.² In 1591 the Rye passage boat to Dieppe was lost, with 6000 crowns.³ The coasting trade of Rye was more important than that of Hastings; answers to the enquiry of 1626 stated that Hastings had one coaster, but Rye 6. Trade was secondary to fishing at Hastings and its assessment for ship money fell from £410 in 1635 to £29 in 1639.⁴ The heyday of Hastings and of the other ports of the eastern Weald coast had ended, although some trade and fishing continued, another variant aspect of the Wealden scene,

5 BM. Egerton MS 2584 f 139; complaint of heavy taxes 1618-BM. Add. MS 5680 f 99v. There were difficulties with French fishermen who stole the fishing grounds near the south coast - e.g. 1645, BM.Add. MS 5679 f 242v.

1. T.S. Willan. 1938. 70-1, from PRO.E. 190/764/9.
2. The varied passenger traffic 1635-6 is discussed in W.D. Cooper. 1866. 170-9.
3. M. Oppenheim 1907. 153.
4. VCH,Sx. 9. 1937.11.

(xvi) Conclusion.

The elements of the Wealden landscape in the early seventeenth century were many and varied and the regional character, to which they contributed, appeared unique among the pays of Southern England. The Weald was, above all else, a land of trees, trees along the roadside and around the fields, scattered trees upon the commons and heaths of the sandstone ridges, the substantial remnants of ancient oakwoods in the Low Weald and the new, regular, compact plantations and coppices within the parkland pales. Between the woodlands, shaws fences and rails partitioned the terrain into an irregular chequerwork of small fields, a mixed mosaic of arable, pasture and meadow, dotted by marlpits and interrupted by the temporary locations of widespread industrial activity. Isolated farmhouses, hidden amongst the trees, were connected by their own access ways to the winding roads which led between the hamlets, clustered around the parish churches, between the village market centres and the few distinctively urban settlements.

Many a parish formed a microcosm of the Wealden character, in all its contrasts - the thriving village market and the isolated self-sufficient farm, reclamation on the common heaths whilst enclosed fields lay fallow; farms producing local food and industrial concerns producing for the national market; the long established local family and the migrant Norman ironworker. Yet the fundamental dichotomy of the Wealden village landscape did not lie between agriculture and industry-landowners were the industrialists, the urban cloth worker farmed his work to rural labour and few were the ironworkers who had no allotment; the great distinction was social as well as economic and its material expression

was the parkland ditch and pale. Within such pales, stretching into most Wealden parishes, were the largest woodlands in the Weald, most of the new plantations and coppices, almost all the land devoted to recreation rather than profit. Many expensive systems of reclamation were first tested within park pales - as the decades passed, parkland became increasingly changed to agricultural uses - but, while it remained, the park stood distinct as a product of taste, of social aspiration, of sport, as well as of those economic factors which ruled paramount over the landscape of field, furnace and forge beyond its pales.

There was variety within the Wealden parishes and contrasts between them, for not all were the same. Some were densely peopled, others not; some on major routeways, others isolated by some of the worst minor roads in the kingdom. Various elements of the Wealden scene were strictly localised - glassworking in the far west, the large hunting chaces on the high ridges, cloth manufacture to the Kentish parishes around Cranbrook. Differences of vegetation, of agriculture and of building materials reflected the natural contrasts of High and Low Weald and there was an additional contrast, bred of natural character and the history of colonisation, between the eastern and western ends of the Weald. Markets concentrated in the east, fishing and foreign trade were confined to the eastern ports; here was the greatest concentration of ironworking and of river traffic and here was the great progressive estate of the Pelhams. In the west stretched the broadest continuous area of clayland within the margins of the Weald and the densest woodlands, a wet land of self-sufficient farms, environed by wide unsettled heaths and traversed by execrable roads; yet also to

emphasise its individuality, the only important centre of glassworking in Britain.

But before the early seventeenth century passed, the glassworks were no more - if the Wealden landscape was not uniform, neither was it static. Ley husbandry was coming in, commons were enclosed, parkland displaced and ironworks began to close down; Huguenots sought sanction and clothworkers went to the Low Countries, and Rye harbour was attacked by the sea. By 1650 many of the idiosyncracies of the Wealden scene were disappearing and the importance of the region in the national economy was declining; the individuality of the pays had shone most brightly in the preceding century and, in different ways, during those earlier centuries of colonisation and settlement. The unique story of that settlement was implied by many aspects of the Wealden scene in the early seventeenth century.

III

LATER MEDIEVAL CHANGES

(1) Timber utilisation.

"To know truly is to know by causes",
Francis Bacon,
The Advancement of Learning, 1605

By 1600 the Wealden iron and glass industries were declining and industrial demand for timber had passed its peak. Legislation had been passed to limit timber consumption by the ironworks but its provisions exempted almost all the Weald. The 1585 law (see p48) differed little from that of 1581 (23 Eliz. c 5) which forbade 'coaling' of wood or underwood within 18 miles of London, 8 miles of the R. Thames, 4 miles of the foot of the Downs between Arundel and Pevensey, 3 miles of Hastings and 2 of Pevensey. Even within that segment of the Weald affected by the laws, they were not very effective; in 1583 a prosecution for coaling 400 trees in Ewhurst on or after March 1580 was ended¹ because the informant would not press the charges and a case of 1573 about felling 837 oak ash and beech in Cranleigh for charcoal, was² dismissed on the grounds of insufficient evidence. These cases were brought under the law of 1559 (1 Eliz.c 15) which had exempted the Wealds of Kent and Sussex but only 3 parishes (Charlwood, Newdigate and Leigh) in the Weald of Surrey.

Throughout the sixteenth century ironworking had consumed timber.

1. PRO.E 159/384.m 104; the case was brought in 1581 - PRO.E 159/380/.m.90

2. PRO.E 159/365.m 270. One of the accused appeared in the 1581-3 case also; it has, however been suggested (E. Straker, 1941,48-51) that these two cases, and the 1581 act, did cause the ironworks (Vachery in Cranleigh) to close.

In 1576 200 loads of charcoal, were sold in Rotherfield;¹ by 1571 4093 acres at Southfrith (in Tonbridge) were turned into 'heath and Barren land' and almost all their timber felled, after a 40 year lease to make charcoal had run only 18 years;² in 1570 the commoners of Hambledon made disturbances because large and small timber on the common had been felled for ironworks.³ In 1566 the owner of Abinger Hammer was alleged to have cut 1200 oak and beech since he was granted in 1560 a special licence to cut timber, in Abinger, Capel, Wootton and Ockley.⁴ The inhabitants of Kingston complained, 1562, that whereas they had formerly bought firewood at 2/8 or 3/- a load and charcoal at 10/- a load, their respective prices had now risen to 4/4 and 20/-, because ironworks near the timber source (Holmwood, South of Dorking) were competing for the fuel.⁵

Such instances demonstrate how widespread was timber cutting for charcoal and data from the 1540's emphasises the cubic quantities consumed. In 1549 it was alleged that any ironmill in the east of Sussex used 500 loads of charcoal, or 1500 loads of timber, each year.⁶

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1. C. Pallein. 1928. 135.
 2. PRO.E 178/1571.
 3. Loseley MS.x.28, cit. VCH, Sy.3.1911.42.
 4. BM.Add. Ch.44558;.
 5. Loseley MS. vii. 49, cit. VCH,Sy. 4. 1912. 415; HMC. vii. 616.
 6. HMC. Hatfield MSS. xiii.1915.21;however, ib.24, a hammer in Lamberhurst used 400 loads of coals only p.a. The rough equation of 3 loads of timber to 1 of charcoal is confirmed in Panningridge account of 1546, where 3343 cords made 1317 loads, and 3342½ cords made 1351 loads (E. Straker. 1931b 257); a cord of timber (8'.4'.4'), about 125 cu.ft., must have been equal to a cartload, if not more.

In the two accounting years, 1547-9, Sheffield furnace and forge consumed ^{13041½} 1304½ cords of timber and at Worth the furnace and forge consumed ¹ 9626. The 1549 claim¹ was no exaggeration; Sheffield consumed about 815, 125 cubic feet of timber annually. Large quantities were cut for the Robertsbridge works; in 1547 935 cords were cut there and 840 loads of charcoal coaled, whilst at Panningridge in Ashburnham 2515 cords were felled. At the end of 1546 there were 240 cords newly cut at Robertsbridge and 2040 remaining from the previous cuttings (a total of 285,000 cu.ft); there were also 650 loads of charcoal, whilst at Panningridge ² 1317 loads of charcoal had been produced. Timber and coaling were the chief costs of the Robertsbridge ironworks²; they were also of the works at Newbridge in Hartfield where, in 1539, fuel was 63% of the cost of producing sews, and 51% of the cost of converting ³ sews into bars. It was after 1530 that furnaces and forges began to multiply in the Weald, but complaints had begun before; in 1520 fellings in the Costley Ward of Ashdown Forest were noted and it was alleged that ⁴ one-third of the timber, over 30 loads, had already been felled. It was not a well-wooded area, but it lay near the early ironworks.

The Robertsbridge woodlands also supplied the shipbuilding industry in 1549 there was a considerable sale of shipboards and ship-planks, lathes

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1. L.F. Salzmänn.1913. 36, citing PRO.E. 101/483/19 (Sheffield) and 501/3 (Worth).
 2. HMC. Penshurst MSS.i.1925. 305-11, confirmed for 1546 by Westhall's Book (E. Straker. 1931b. 253-60). In 1542 wood cutting at Robertsbridge cost 70/13/6½; coaling 63/14/2½; Mining of iron ore only 19/3/3½-ibid.309.
 3. PRO. DL29/445/7185.

and other furniture; in 1548 400 shipboards and 2875 shipplanks had been sold.¹ The nearby shipbuilding industry at Smallhythe in Tenderden was declining, according to a complaint of 1549, but there was still a traffic of barges carrying timber downstream, and other more flourishing² centres of shipbuilding, both on the Sussex Coast and along the Thames, consumed Wealden timber. In 1530 timbers had been shipped from the woods of Battle Abbey via Hastings for the construction of a wharf at Southwark.³

Heavy local demands for wood made export less profitable and the annual timber export from Rye and Winchelsea was less in 1581-1600 than 1565-80.⁴ Before 1565 the trade had been considerable and a complaint against industrial timber consumption in 1549 alleged that it⁵ harmed not only England but also Calais, Boulogne and their environs. Coastal trade in timber also existed; in 1498 timber was carried from Battle to Bulverhythe for shipping to Cromer in Norfolk.⁶

4. E. Straker, 1940. 123, and Straker MSS, Barbican House Lewes (extract from the Duddleswell Court Rolls). In 1559 (DL.44/14) it was disclosed that I man had sold 203 cords in Ashdown; the keeper of Pippingfold walk and his predecessors had felled 360 beeches for charcoal, 10 for rails and firewood; over 500 trees had been felled in Duddleswell walk.

1. HMC. Penshurst MSS i. 1925. 311-2.

2. PRO.E 315/114. f 140.

3. A. Evans. 1942. 70.

4. J.C.K. Cornwall. 1955. 90; it revived after 1620, when industrial demands were falling.

5. HMC. Hatfield MSS. xiii. 20-21.

6. A. Evans. 1942. 70.

If commercial demands on Wealden timber reached their peak in the sixteenth century, steps were being taken already to ensure continuance of supply; conservation began long before the coppices of Newdigate were specified in the statute of 1581. Two-thirds of 6542 acres of wood cut in Cranbrook and 7 nearby parishes in the two decades before 1573 had been coppice.¹ In 1569 the coppice woods on a demn in Biddenden were cut regularly on a 23-year cycle² and when a Charlwood man's will was proved in 1563 it specified that coppice cutting should be exercised on his lands rather than felling, that sufficient standards be left when cutting occurred and that the regrowth of coppices should be protected by strong enclosures against grazing cattle.³ Enlightened conservation of woodland probably went back to the monasteries but a break in the tradition had occurred in the 1540's and late 1530's, after the dissolution, when much monastic timber was sold off by lay successors who wished to raise capital quickly.⁴

Considerable acreages of Wealden woodland had belonged to the monasteries. In 1538 the lands of Lewes Priory in 86 parishes and hamlets, many Wealden, included 1500 acres of woodland and 500 acres of alder woodland;⁵ before the Dissolution the tenants of Balneath manor in Chailey

1. 4316 out of 6542-SPD. Eliz. Vol.93. no 37.

2. A.W. Hughes Clarke. 1929. 69.

3. E. Sewill and R. Lane. 1951. 66-7.

4. J. Evelyn. *Sylva*, 1664.71, claimed that coppices in his time were not grown so long as on monastic estates before the Dissolution. There were coppices in Crewhurst Park 1406 -C.P.R. 1405-8. 185.

5. BM. Add. MS. 5702. f. 164.

owed to cart 600 loads of wood annually to the Priory. ¹ In 1530 Battle Abbey accounts demonstrate its large woodland resources - 1000 billets of firewood were carried from the monastic woods to the house, 892 cartloads of fuel were cut in the Battle Woods and 3 'dozen' of fuel in the Great Park at Battle, besides 9 cartloads supplied to the tilery at Marley in Battle for fuel; 303 beams and joists were fashioned, and 16,000² billets cut from this or other timber. Such were merely the domestic needs of the large estate, but timber was marketed also - 38/19/6 worth was sold from 4 Wealden manors of Battle in 1499, and as much as 86/13/4³ in 1492.

If the monasteries and the lay owners who succeeded them were the large timber sellers, there was also, in the sixteenth century, a continuous flow of small sales. In 1544-5 three Wealden divisions of Southmalling manor (Ringmer, Framfield and Wadhurst) sold 8/9/8 worth of timber; ⁴ in 1538 4 tenants of Battle Abbey land obtained licence to the wood and underwood on their holdings, no doubt because they wanted to capitalize on it. ⁵ Such licences were frequently granted in these decades - in 1522 4 men brought a small piece of woodland in Cranbrook

1. VCH. Sx. 7. 1940.95.

2. ^{A.} Evans. 1941. 409; judging by prices, a 'dozen' was roughly equivalent to a cartload.

3. A. Evans. 1941.437.415. In 1499, Kingsnorth (K) 20/-/-, Limpsfield (Sy) 3/16/4; Wye (K) 14/9/8, Battle (Sx) 13/6. In 1492, Limpsfield 40/-/-, Battle 46/13/4. For regular sales from Battle Abbey lands in Marley and Betherst in 1520's and 1530's see T. Thorpe, 1835. 137-41.

4. EM.Add. MS 5682.f 12v.

5. A. Evans. 1941. 415.

¹
 to sell it; in 1512 it was recorded in Aldington manor that timber in
 Rolvenden had been sold to local tenants and that like agreements had been
 concluded in 20 other dennis of the manor. ² Commercial exploitation was
 replacing the earlier economy in which dennis had supplied the timber
 needs of the rest of such large manorial units. The existence of wide-
 spread timber selling, both in large and small quantities, bred the
 existence of timber merchants as a separate economic group; in 1509
 one died in Ashford, leaving a stock of 8000 timbers. ³

The Sixteenth century exploitation of Wealden timber resembled
 that of the seventeenth in the great volume consumed, the variety of
 markets—domestic, industrial and commercial—supplied, and in the pre-
 dominance of industrial demand. During the fifteenth and late fourteenth
 century the detail of the documents is often less, but it is clear that
 the industrial market was less important proportionately in this
 earlier period. There were many scattered medieval bloomeries, but
 their scale of working, and therefore their fuel needs, were much
 smaller than those of the mills which used the indirect process, after
 1495.

The fifteenth century did resemble its successors in witnessing
 considerable demand for constructional timber. In 1497 trees from Leigh,
 Ockley and Newdigate in the Surrey Weald contributed to the building of a

1. BM. Add. MS 33917. f 226v.

2. B. Furley. ii. 1874. 426-7.

3. A Hussey. 1938. 121.

manor house at Thornecroft in Leatherhead.¹ In 1461 a will left timber to repair or rebuild the wooden church spire in Tenterden;² in 1437 61 of the best oaks within Vachery Park in Cranleigh were sold⁵ to a London 'timbermenger',³ no doubt for building (they were large timbers) and building in East Sutton manor 1416-17 consumed 6 oaks from Sutton Park and 11 cartloads of timber from Kingsnorth.⁴ In the late fourteenth century timber had been needed for military building; in 1385, when Rye was threatened with invasion, 200 trees were cut in Crownhurst Park and an unspecified number at Brede for fortifications.⁵ Between 1366-70 many timbers had been carried from woods in Ashburnham to repair gates and other parts of Pevensey Castle.⁶

Unfortunately, most references to wood sales in this period do not specify the ultimate use of the timber; they suffice, however, to shew that commercial demands for timber were continual and often large. A parcel of wood in Goldspur Hundred (Beckley, Peasmarsh, Iden and Playden) was sold in 1443;⁷ in 1435 the bursar of Robertsbridge made 100,000 billets

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1. J.M. Harvey. 1955. 42-4, from Merton College, Oxford, Estate Muniments Roll 5777.
 2. A. Hussey. 1915. 35, from Canterbury Wills A. i.11.
 3. PRO. Ancient Deed C 242.
 4. KAO.U. 120/M 5.
 5. C.P.R. 1381-5. 525, 532.
 6. L.F. Salzman. 1906. 21.
 7. BM. Add. Ch.31531.m 1.

of firewood and bought 12 quarters of charcoal; ¹ a carpenter of London bought several oaks in Leigh Park (Kent) in 1423. ² Wood worth 46/- was sold 1402-3 from the Bishop of Chichester's woods at Northwood, Pyphurst and Malhamwode (in Wisborough Green). ³

By no means all sales were regularized. In 1440 21 waggonloads of wood were stolen from land in Hawksborough Hundred (Burwash, Heathfield Warbleton) ⁴ and it was recorded in 1437 that timber on 450 acres of the Dicker in Chiddingly had been wasted, besides the woods of Clearhedge in Waldron. ⁵ Large landowners were often culpable, and John Pelham in 1418 was charged with illegal fellings in Maresfield and Ashdown Forest. In 1402 Archbishop Arundel forbade the sale of wood by Bilsington Priory without his consent, since past sales had been excessive. ⁷ Illegal cutting of timber on copyhold land ⁸ was a frequent offence in the Wealde of Surrey and Sussex. In 1387 villeins in Dorking was fined for felling ⁹ 28 oaks. ¹⁰ In 1379 75 large oaks were illegally sold from land in Ewhurst;

1. HMC, ^{ms} Parkhurst MSS. i. 1925. 169.

2. HMC, Penshurst MSS. i. 1925. 11.

3. W.D. Peckham (ed.) 1946. 254, from Chichester Liber B. f 120. In 1493-4 Bayham Abbey leased several woods in Hailsham and Frant-Bodl. Sx. Charter. 30.

4. BM. Add. Ch 31584.

5. WSR0. Chichester MS. 11.

6. C.N. Suttan. 1902. 369.

7. Reg. Arundel f 409v; the same had been enjoined by Peckham 1284 -C.T. Martin (ed.) ^{reg.} J. Peckham. ii. 1884. 709.

8. Many customs of manors in the Sussex Weald at this time and later specified that timber on copyholds belonged to the lord, e.g. Streat 157 (BM. Add. MS 5684. f 135v), Southmalling, Lindfield and Wivelsfield 1389.

in 1379 and 1365 illegal cuttings had occurred in Shermanbury.¹ In the Weald of Kent, woodland on the Wealden outliers of North Kent manors belonged to the lord of the manor but illegal cutting had become common by the late 14th century; the manorial centre was too distant to exercise proper supervision. Therefore in 1374 the manor of Brook granted its tenants at Gomersden in Bethersden all the local timber for 5/- rent p.a. and those of 'Shiredesknolle' in Benenden likewise for 1/- p.a., after recording that the tenants had illegally helped themselves to the local timber in the past.² The area where tenants could cut timber without restriction was thus increasing in the Kentish Weald; so also was it in the Surrey and Sussex Weald as assarting continued because tenures by assart had no restriction on timber utilisation.³

It is not possible from the fragmentary evidence of scattered wood

93 (HM.Add. MS. 5683 f 222); Hurstmonceux 1570 (HM.Add. MS. 5683 f 18 Battle 1564 (HM.Add. MS. 5679 f 44v); also Ashford in Kent 1516 (HM. Add. MS. 28530.f 17v).

9. VCH. Sy. 4. 1912. 416.
10. SAC. 17. 134-5; identification as near Spital Wood in Ewhurst by L.A. Vidler. 1942-3. 73-99.
1. P.S. Godman. 1921. 139, 134. The date in the second instance is incorrectly given as 1378.
2. For Gomersden, AC. 1864-5, 247-9; Shiredesknolle in HM. Add. MS. 33917 f. 26. Similar arrangements for Shlepyndenn in Smardec 1406 (Cant. Reg. B.f 219v, cit. N. Neilson. 1928.20) and Devenden in Rolvenden 1356 (AC. 1864-5. 257-9).
3. HM. Add. Ch 31839; an instance in L^uughton 1373, proving this.

sales to discern general variations of timber marketing during the fifteenth and late fourteenth centuries; this can only be suggested from a continuous series of accounts, such as survive for the Pelham estates in the Sussex Weald. On Laughton manor, there are no recorded wood sales from 1470 back to 1431; large sales cannot have gone unrecorded and their absence correlates with other evidence of economic decline during these decades (see page ²⁶⁴). Before 1431 sales varied from year to year, with peaks in 1408-9; most buyers came from nearby but in 1410 John of York bought 112 beeches in Hawkhurst.

Wealden timber was not only supplied to the internal English market; exports from Rye and Winchelsea stretch back at least to the fourteenth century. In 1446-7 out of 283 vessels which sailed from the southeast ports, 184 left with cargoes of wood and, whichever port they left, most of the wood was cut in the Weald. Trade in the period Michellmas 1398-9 included an export from the Sussex Ports of 775,000 billets of firewood, 155 seams of oak bark, 119 spars, 19 pieces of timber, valued in total at 132/9/6. Exports had been substantially larger in the previous year, including 409 seams and 137 quarters of oak bark, 1000 stakes and 1,049,800 billets, worth in toto 183/3/10.

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1. M. Clough. 1956. 151; sales in Burwash only 1/-, 1432-62.
 2. M. Clough. 1956. 76, from EM.Add. Ch. 32144-5.
 3. M. Clough. 1956. 150; in 1387 wood from Rape of Hastings shipped for works at Boston-(C.P.R. 1385-9, 306) and again 1389 (C.P.R. 1389-1392 21).
 4. M. Mollat. 1947. 146, from PRO.E. 122/34/25.
 5. E.A. Pelham. 1930. 197. These totals include export from the Kentish Weald, much of whose timber was exported through Rye, just over the border in Sussex.

Compared with the high exports of the 1390's, the late 1380's was a¹ slack period, but in 1383-4 the export, almost confined to fuel wood, reached over 100/-/-, and in 1378-9 over 494/-/- from Rye and Winchelsea alone. The earliest detailed account, 1371-2, mentions 44 shipments from New Romney (176/6/3) and 15 from Rye (over 42/-/-), again mostly of² fuel wood.

Customs accounts demonstrate that during the last three decades of the fourteenth century Wealden timber exports, though varying from year to year, were heavy and comprised both finished objects and raw fuel. (There was also a much smaller import of softwood, used for masts and wainscoting by the shipbuilding yards in the Wealden ports.)³ Before 1371 there is a long gap in the Customs Accounts, but the existence of the export trade is revealed by such incidental facts as the 1348 order that all ships along the Sussex coast, laden with wood, should⁴ join the fleet.

(2) The changing area and functions of parkland.

By 1600 many Wealden parks were such only in name. Lombarde in⁴ 1596 listed 8 recently disparked in the Kentish Weald and, in the⁵ Sussex Weald, Bewbush was being leased by 1588, Ditchling was disparked⁶

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1. Other export variants were chests (1397-8), joists (1396-7), clapboard for barrel staves (1395-6).
 2. 1384-5 total was only 7/6/8. The figures for 1371-83 come from R.A. Pelham 1928. 170-82, and 1396-9 from R.A. Pelham. 1930. 197.
 3. R.A. Pelham. 1930. 197-import 1395-6 of 12 masts, 1600'shotbord', 50 boards.
 4. SAC. 1865. 146.
 5. 1826 reprint. 51; the MS was compiled in 1570, and several were already

by 1597,¹ Newnham by 1598,² Chesworth by 1587,³ Hailey in Westmeston by 1556;⁴ Ardingly Park was leased in 1571.⁵ Buckhurst was one of the few increasing in size.⁶ The times were changing - population was increasing, demands for food (especially from the metropolis) were growing fast; hunger bred demonstrations, which included assaults on park pales,⁷ and inflation strained the pockets of the nobility. Pasturage changed from a supplementary activity to the primary in many parklands;⁸ others turned over to tillage or harboured industrial plants and their pales, if they remained, retained no functional significance.

disparked by then. For a full list of parks, see Appendix V, on which the figures in this section are based.

6. BM. Add. MS 5685 f 30.
1. W.H. Godfrey (ed.) 1928. 40; see App.V for other dates.
2. E. Straker (ed.) 1933. 16; PN.Sx. ii. 391 (1564).
3. PRO.E 134/30 Eliz/Hilary 6.
4. PCC 31 Bucke mentions leasing of the park of 'Hale' (1556); however, this may not be Westmeston park which is thus called still in 1634-BM. Add. Ch. 29655.
5. PCC 45 Holney.
6. Buckhurst increased in the half-century before 1600-W.H. Godfrey (ed) 1928. 112-5.
7. e.g. Witley Park 1549-M.S. Guiseppi. 1903. 17-18.
8. Ironworks at Iwood Park in Newdigate were mentioned 1567-8 (Bodleian Surrey Ch.16), in Southfrith Park 1553-PRO.E. 178/1093.

In the early ⁵ sixteenth century the parkland area had changed little. At least 71 parks existed in 1550, 6 appear once in the previous five decades, and 70 are documented in 1500. Some units were very large - the circumference of the Great and Little Parks in Bletchingly was 2 leagues in 1540, Broyle Park exceeded 1500 acres ¹ and units which were disparked before the century closed were still increasing - 234 acres were taken into Aldington Park in 1541-2. ² The large park at Sissinghurst was a creation of ~~the~~ ^{the} ³ nearly sixteenth century.

Deer were still plentiful in the early sixteenth century. North-frith park in Penshurst had 350 deer in 1541 and in 1539 there were 300 red deer and 7-800 fallow deer within Ashdown Forest; ⁴ Postern Park in Penshurst had 300 fallow deer, Ashore and Redleaf together 400 in 1521. ⁵ Small game was still hunted-grants of free warren were given for Robertsbridge 1545, ⁶ for lands in 9 parishes of the Sussex Weald 1524, ⁷

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1. L. and P.H. VIII. xv. 1027 (26); in 1602 the size of Broyle Park in 1565 was given as c 1600 acres (BM. Add. MS 5681 f 443v) but the more accurate 1649 figure was 2046½ (PRO.LR 2/299 f 216-29) probably differing little from the size in 1565. The circuit of River Park in Tillington 1481 was 7 miles - PRO.CP 40/876 m 400.
 2. E. Hasted. iii. 1790. 454.
 3. R. Furley.ii. 1874. 458.
 4. HMC. Penshurst MSS i. 1925. 237; survey of Ashdown made 1539-L. and P.H. VIII. xiv (2). 29, and part survives as E 32/197; there were complaints of deer poaching in Ashdown-DL 3/69/H2 (1556-7), and also 1539-40 (DL3/36/R5).
 5. R. Furley. ii 1874. 428-9.
 6. B.Add. MS 5680 f 106; new owner got it 1541-L.andP.H. VIII xvi.505.
 7. BM. Add. MS 5681 f 163.

for Bucksteep in Warbleton 1519-20.¹ A farmer in Willingdon complained, 1509-47, that part of his holding had been appropriated for a coney warren and the crops on the rest of his lands destroyed by the rabbits from it.² Hunting small game was not restricted to the rich; tenants were frequently in court for hunting without the necessary property qualification (land worth 40/-, or priest's benefice worth 10/-)³ and a will of 1490 granted land within a highway (i.e. a road verge) near Ashferd plus the coney⁴s 'being and increasing' upon it.

The Reformation disparked little land (many parks - those of Battle and Reigate, amongst others -⁵ survived this change of ownership), but some parkland was already changing to other uses before 1550, anticipating the coming trend. Parts of Bentley Park were demised 1565 and in 1497-8⁶ much of it had been in farm for pasture; in 1549 Knepp Park had no deer⁷ and was, though still impaled, a grazingground. Michelham park was disparked in 1536, Burstow Park leased by 1531 and Burwash park was partly

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1. BM. Add. MS 5680. f 162.
 2. P.D. Mundy (ed.) 1913. 74.
 3. No man without these qualifications could have hunting dogs, ferrets or snares-13 Ric.II c 13, 1389; offenders in Rotherfield are mentioned 1560- C. Pallein. 1928.81.
 4. A Hussey. 1938. 44.
 5. In 1538 the Great Park of Battle was 300 acres, the Little Park 100 acres-Pat.30 H VIII, pt iii, m 11; for Reigate, VCH.Sy.3.1911.232.
 6. 1565-W.H. Godfrey (ed.) 1928.17; 1497-8; PRO.SC 6/H VII/1494. This latter also records the farming out of Cuckfield Park, pasture, meadow and gardens (and the arrears of past farmers).
 7. SPD. Edward VI. Volume 6, No.3.

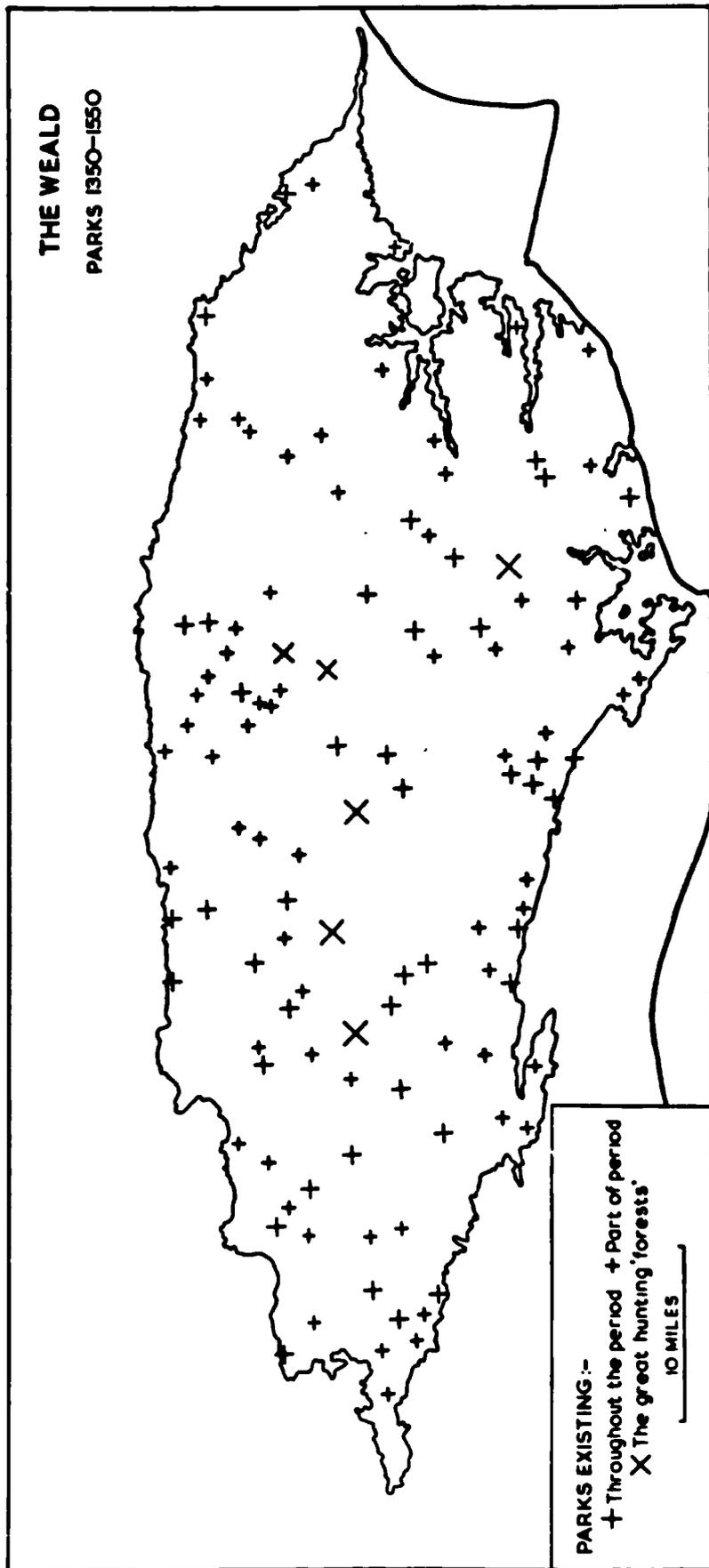


Fig. 24. Data from 'nr mdix V.

cultivated in 1507.¹ By 1500 Worth Forest had become the first of the great Wealden chaces to be dismembered; its ownership was subdivided² and it was no longer the great hunting preserve of one nobleman. The Pelham parks were being let in late fifteenth century - Dallington 1484,³ Laughton 1474 and Bivelham 1472; earlier Laughton park had been used as⁴ pasture and about 30 acres within it as arable.

The number of parks in the Weald changed little in the fifteenth and late fourteenth centuries - 70 are known for 1500, 66 in 1450, 69 in 1400 and 68 in 1350. The total number of parks (and probably the parkland acreage) remained stable although individual parks changed; some parks - Danny in Hurstpierpoint, Broyle Park in Ringmer and Framfield, Buckhurst in Withyham, Knepp in Shipley, the Great Park of Laughton and Mitchell Park in Petworth - can be traced throughout the later Middle Ages but many others are mentioned only in one half-century.^(Fig. 24) Seven parks appear once in the early fifteenth century, seven others in the previous fifty years. Most Wealden parks seem to have been impaled for more than 200 years or less than 50.

1. Michelham- L.F. Salzmann. 1901.248; Burstew-L, and P.H. VIII.v.63, and 1542 part in the hands of tenants-PRO.SC 2/205/39-40; Burwash-VCH,Sx.9 1937.197. In 1554-5 Shillinglee Park included 464 acres common pasture 374½ acres of leased pasture, 141½ acres of copyhold holdings-EM.Add. MS 5688f 114v.

2. In 1415 the forest was divided (among three heirs (C.G.O. Bridgeman. 1915.59; CPR. 1436-41.483; VCH,Sx. 7. 1940.133) in 1444 reference is made to 1/3 of it (EM.Add. MS 5683 f 7v) and in 1489 to 1/8 of it - PRO.CP 25(1)/294/79.

3. M. Clough. 1956.45-6.

4. *ibid.* 82.

Certainly grants of imparking were made in this period. The warren of Reigate was enlarged by 40 acres in 1496¹ and a grant of 1488 licensed the imparking of 600 acres of land and 1000 acres of wood in Cranbrook, Ticehurst and Goudhurst, together with rights of free warren.² In 1447 the Bishop of Chichester was confirmed to have free warren in all his demesnes and given right to impark 2000 acres in Bexhill, 2000 at Drungewick in Wisborough Green, 1000 at Turzes in Burwash and 2000 in Heathfield and Bishopstone.³ There is, no evidence that this colossal grant was ever implemented. Hurstmonceaux Park was enlarged by 600 acres in 1417.⁴ (It is interesting as contemporary evidence for the importance of hunting, that one of the 'Complaints of the Peer Commons of Kent' in 1450 was the rumour that all Kent would be turned into royal forest, subject to forest laws, in retribution for the murder of Suffolk).^{5*}

Some land was imparked, other acres reverted to agriculture. Bexhurst Park in Ewhurst was disparked by 1451,⁶ Fritebergh and Bilington⁷ before the end of the fifteenth century; by 1400 Oldepark in

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1. O. Manning and W. Bray. i. 1804. 278.
 2. CCR. 1427-1516. 268: Glassenburg Park.
 3. CCR. 1427-1516. 94. A layman was allowed to impark 800 acres in Ewhurst and Rudgwick (1698).^{b.}
 4. CCR. 1427-1516.14.
 5. J. Stow. Annales. 1631.389.
 6. S.P. Vivian (ed.). 1953. 113.
 7. Fritebergh and Shertfrith (now Fragbarrow in Ditchling) were 500 acres 1439 (W.H. Godfrey (ed) 1928. 191) but were in farm at end of C 15-BM. Add. MS 56823 f 113-4.
 8. Park, here 1256-62 (BM.Add.MS ^{3,} 27018 f 14-17)but no mention in C 15

Appledore was only a woodland¹ and the enclosed warren at Dorking was let out to farm in the early fifteenth century.² After 1400 grants of free warren almost ceased; the last decade of major granting was the 1360's - at Magham in Hailsham 1369,³ Bucksteep in Warbelton 1368,⁴ and the confirmation to Christ Church Canterbury, 1364, of free warren in many⁵ parishes.

The area of parkland, chase and enclosed warren in the Weald remained large throughout the later Middle Ages, although the fortunes of individual parks were very varied. Hunting remained a favourite pastime of the nobility and there was a long tradition of extensive parkland in the Weald; the factor which, at other times and places, sufficed to break this tradition - pressure on land - was absent from the Weald during these centuries. Assarting and colonisation were not the dominant characteristic of this period - whilst some land was cleared, other⁶ land was abandoned, including arable within parks. The arable land outside the pales was sufficient for then needs; indeed in the middle of

1. 1399-1400: Cal, IPM. iii. 1821.262.

2. VCH, Sy. 3.1911.146.

3. CCR. 1341⁰1417. 216.

4. CCR. 1341⁰1417. 211.

5. CCR. 1341⁰1417. 188 ¹⁸⁸ ~~partridges & deer.~~ CPR. 1377-8143; the legal proceedings occurred in 1379 (PRO CP40/476 in 243).

6. In 1⁴71 a field in St. Leonard's Forest was 3/4 year in the lord's hands for lack of tenant. PRO.E. 101/145/9; decayed rents in Bentley Park 1497-8 included 4/7¹1/4 for land parcels and a cottage wholly dilapidated- PRO.SC 6/H VII/1474.

the fifteenth century, the largest recorded imparking grant for Wealden lands was granted. Parks were not profitable concerns - the heavy costs of feeding deer and restoring pales consumed the profits gained by letting pasture or selling timber,¹ - yet it awaited the late sixteenth century before monetary problems amongst the nobility and pressure on land lent^d to a drastic decline in parkland. In the previous two centuries these pressures had been less and the parkland area had remained stable.

(iii) Commonlands.

The area of commonland in the Weald was declining steadily in the early seventeenth century as encroachment abstracted small parcels into private enclosures. This process had a considerable antiquity; the later medieval centuries witnessed a continual reduction in the residual area of common. A parcel of waste was granted out in Charlwood 1608,² following similar enclosures in 1584, 1552 and 1550; 158 acres of commonland in Ashdown Forest were enclosed in a multitude of small parcels by 1564;³ in 1512 1½ acres of 'Hildhoth' in Chiddingstone was granted as a several holding.⁴ Besides the small encroachments of the cottager, the commons suffered also the large scale enclosures planned

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1. In 1441 Worth Forest was worth nothing beyond reprises-W.H. Legge.1907. 308, and in same year receipts of St. Leonards' Forest were limited to fair tolls and small pasture rents-PRO.E. 101/145/9.
 2. E. Sewill and R. Lane. 1952. 34, 67.
 3. PRO. DL 42/112 f 153-64, and E. Straker. 1940.158.
 4. BM. Add. MS 33898 f 72.

by improving landlords; there were late C 16 lawsuits about such enclosures in Framfield, Petworth and Plumpton.¹ Previously in the 1550's an attempt by the lord of Milton to enclose Anstey Common in Dorking bred disorder² and enclosures by Pelham (partly for imparking) in Waldron, Laughton, the Dicker³ in Chiddingly and East Hoathly were attacked in 1530.⁴

These sixteenth century enclosures contrasted with the depression of the fifteenth century when land going out of cultivation was commoner than enclosure and the area of common altered little; in East Hoathly some assarts on commonland were by 1457 no longer distinguishable - 'jacent ad cominam et non possunt distingere'.⁴ The late fourteenth century however, saw the last decades of the early medieval expansion of the cultivated area and many assarts of this period were taken out of the commonlands.

By 1600 commonland was mostly heath and scrub but some common pasture had originally been woodland; continuous grazing brought deforestation by preventing regeneration but, as going backwards, traces of the earlier state become more frequent. There was common wood in Charlwood

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1. VCH. Sx. 2. 1907. 190, citing PRO. Chancery Enrolled Decrees 33 Eliz. pt. 74, no 1; 37 Eliz. pt. 92, no 14; 38 Eliz. pt.90, no 11.
 2. VCH.Sy. 3. 1911. 147.
 3. P.D. Mundy (ed.) 1913. 64-5; hedges in Laughton were broken again 1532 (ib.59). Licence to enclose the Great Park of Petworth was given 1524, (EM. Add. Ch.30460) and Pelham, when he imparked it 1529-31 also enclosed about 600 acres of common as well. He was forced to make an agreement with the tenants 1535 (recited 1543-EM.Add. Ch. 30484-5). (I owe this data to B.J.S. Moore, B.A.)
 4. EM.Add. Ch. 31421.

1549,¹ , at Marley in Battle 1497,² at Malham in Wisborough Green 1475.³
 In 1388 there were 8 acres of common wood in Bexhill and 40 at Drungwick i⁴
 Wisborough Green.

When rights were agreed, overstocking was common. In 1563 several commoners in Westerham Upland had surcharged the commons with sheep, as others had done in 1552;⁵ the same offence was noticed in Charlwood 1552⁶ and 1548 . In 1489 tenants of Maresfield had misused their rights of common in Ashdown to the damage of the deer there.⁷ On the Pelham estates in the eastern Sussex Weald, the number of tenants with grazing rights on the local commons seems to have been limited to prevent overstocking.⁸ Also the pressure on the grazings was varied with time in response to encroachment by an ingenious system which prevented conflict between the two interests; many of the small tenants wished

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1. E. Sewill and R. Lane. 1951. 33.
 2. T. Thorpe. 1835. 129.
 3. F.W.T. Attree. 1887. 35.
 4. R.A. Pelham 1937. 208-9.
 5. BM. Add. MS 33898.f 183, 178v.
 6. E. Sewill and R. Lane. 1951. 33.
 7. PRO. DL 37/62 m8.
 8. M. Clough. 1956. 127.

both to exercise their grazing rights and to increase the enclosed area of their holdings. Thus in 1418 23 tenants had common grazing rights at 'Ferthe' (between Laughton and Chiddingly), 23 on Hawkhurst Common in East Hoathly and 99 on the Dicker in Chiddingly, with a few smaller groups in 1300 the main groups were 39 on the Dicker 23 on Hawkhurst Common and 56 at Waldron. In the intervening century heavy encroachment at Waldron had reduced its value as common grazing; the pressure of commoning did not switch to Hawkhurst, where also encroachment had been considerable, but to the still large expanses of the 'Ferthe' and the Dicker.

There were difficulties, then, in the later Middle Ages over regulating the intensity of common grazing; more frequent disputes arose over the nature and legality of many claims to common rights, an issue made more complex in the sixteenth century by an increase in their leasing. In 1569 a dispute arose whether grazing on Haywards Heath belonged to the lord and tenants of all manors in the Barony of Lewes or if it was restricted to Trubweek manor in Cuckfield. Before 1567 the manor of Burwash had been divided in two and in that year questions arose about which of the former commons belonged to either part. Sometimes there was

1. *ib.* 158-60. In 1418 there were at least 118 ac. of new assart let in Waldron; c 1363-1416 new leases for 6½ acres in the Broyle (mostly enclosed before), 21½ on the Dicker, 12½ at 'Ferthe', 51 at Hawkhurst and 56½ at Waldron. This process occurred before (in 1300 there were 9 commoners on the Broyle (none 1418) the remnants left after much C 13 encroachment) and later (in 1564 the Dicker was 791 acres-PRO. DL 42/112 f 186- but by 1650 almost all was enclosed and common grazing on it was ended).

2. In Keymer 1547 a tenant could only lease common rights to other tenants within the manor-BM. Add. MS 5683 f 199v; In 1481 the common of Blackdown (on Lower Greensand) in Lurgashall was already leased out to a 'farmer'-L.F. Salzman. 1941.196, citing PRO.CP 40/876 m 400.

3. BM.Add. MS 5684.f 140. 4. VCH.Sx.9.1937.196, citing PRO.C3/195/11.

obstruction - the Abbot of Boxley 1463-4 would not allow a tenant to¹ graze his animals on Pynenden heath; in 1426-7 fines were exacted for pasturing cattle on Helmwood, although rights to common grazing² there were later proved. An elaborate controversy arose in 1380 over pasture land in Wisborough Green. The Bishop of Chichester complained that his enclosures had been broken into and £10 worth of herbage consumed in 1377 and the year before; these lands were his several demesne. The defendants replied that each possessed a house and quarter yardland in the township and therefore had rights to pasture in the lands concerned, save during the pannage season.³ The result is unknown.

Thus in the later medieval centuries, problems of stocking and legal rights appeared much as they still did in the early seventeenth century; the rate of encroachment varied but had no major reverse. Going backwards from 1600 the area of common steadily increases, as the nibblings of later encroachment are removed, and the appearance of the commons becomes more varied - dense wood, open wood, heath - as the extent of anthropogenic alteration is reduced.

1. BM. Add. MS 33917 f 278.

2. VCH, Sy. 4. 1912. 422.

3. W.D. Peckham (ed.) 1946. 258-9, from Chichester MSS. Liber C f 138.

(iv) Animal husbandry.

Over the Weald generally, cattle occupied the chief place in animal husbandry not only in the seventeenth century but throughout the preceding two and a half centuries. Cattle were the chief beasts on Battle Abbey lands in the 1530's,¹ a wide scatter of farms which included dairies at Kingsnorth and elsewhere;² cattle farming had already developed several specialized branches. The manors of Bexhill and Stretham in Henfield included long before, in 1388, not only cows and oxen—the milk supply and the beasts of burden — but also a considerable number of bullocks destined for the needs of the Bishop of Chichester (the owner of both manors) or for sale in the local markets.³ These two manors were one on the downland, one on the marshland borders of the Weald and they included many sheep also; further within the area the Robertsbridge grange at Footlands in Sedlescombe 1377-80 had a cattle total varying, from year to year, from 53 to 78 but no sheep;⁴ here also the raising of young stock was important.

Sheep became important on the margins of the Weald. In the extreme western corner of the area Shulbrede Priory revealed a bias towards sheep when C 1525 400 sheep and 60 cattle and swine were taken from it;⁵ according to an enquiry of c.1541 the nearby Priory at Dureford

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1. A. Evans. 1941.411; on lands of Abbey as whole cattle chief, sheep dominant on the marshland holdings.
 2. 1502 ref-T. Thorpe. 1835. 131.
 3. R.A. Pelham. 1937. 203.
 4. HMC, Penshurst.i. 1925. 162-3.
 5. W.H. Blaauw. 1854. 220.

possessed only 101 sheep and 30 hogs at its suppression but one witness¹ claimed it had 300 sheep just previously. These two houses had lands in the Weald Claylands, on the Lower Greensand heaths and on the Downs. In 1450 the house at Easebourne, a little further south, had 200 sheep but only 31 kine.² Further eastwards along the southern Downland margin of the Weald the regulations for sheep grazing in Wiston were recorded³ 1466 and its concentration on sheep, both in demesne and peasant⁴ flocks, is plain in the demesne stock account of 1370-1 - 65 cattle, 516 sheep.⁵ Sheep were more numerous than cattle in some manors on the northern margin of the Weald, as exemplified in the East Sutton account⁶ of 1416-17. The second concentration of sheep was along the eastern marshland border. Pelham, the lord of Laughton manor, possessed downland grazings at Jevington and marsh pastures in Pevensy Levels; here were grazed the 4000 plus sheep he owned in 1420.⁷ Battle Abbey⁸ grazed its sheep in Dengemarsch and Bexhill manor, where sheep were 76% of the livestock in 1388, included marshlands.

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1. *ibid.* 225.
 2. W.H. Blaauw. 1857.12.
 3. P.S. Godman. 1911.141-4; W. Hudson. 1911.177.
 4. Most of the Wiston sheep 1370-1 must have belonged to tenants -P.S. Godman. *loc.cit.* There were many peasant sheepflocks in Laughton late C 14-M. Clough. 1956. 260.
 5. Numbers varied considerably between years-1369-70 90 cattle, 918 sheep -P.S. Godman. 1911.134.
 6. KAO. U. 120/M 5; at end of year 10 cattle, 137 sheep.
 7. BM. Add. Ch.32152; in 1370's Laughton Park pastured 80 sheep, 126 horse and cattle-about half the manorial stock in this decade-M.Clough. 1956.82.

There was no great fluctuation in the relative importance of sheep and cattle in the Weald during the later Middle Ages; the major growth in sheep numbers which occurred in some parts of England during the early C 16 and late C 15 was not found in this region. Areas affected by this trend were those where soils could support both grain crops or sheep pasture, areas which were sensitive to any major change in the relative profitability of sheep and grain. This was not true of Wealden lands. In the Weald proper, natural conditions favoured mixed husbandry and cattle farming more than the fluctuations of prices favoured sheep rearing; within the marshlands to the east, sheep had reigned supreme before the late 15th century changes. Farms wholly on the downland may have been affected, but marginal farms with a limited area of down only were restricted to mixed rather than specialist farming.

If the relative importance of sheep and cattle did not vary significantly in the Weald during this period, the role of swine did change somewhat. By 1600 swine were still found on many, perhaps most, Wealden farms but the herds were small, supplying domestic needs rather than any major centre of consumption.¹ Relative to the rest of southern England, swine were still more important in the Weald than in many other areas - in 1591 a navy order for perk and bacon assessed Sussex at 400 perks and 500 fitches,² more than any other county- and customary

8. A.M.M. Melville. 1931.128; in 1510 payment for washing 130 sheep in Bevensay Levels before shearing-A. Evans. 1941.411.

1. G.H. Kenyon. 1955. 131, notes that in Kirdford only 1/4 of the humbler farm inventories mention a pig, whilst 3/4 of the larger farms had 3-4, and Wealden farm inventories of Kent 1560-1640 averaged only 4 pigs each (cf. 11 in Thanet), F.Hull. 1957. 20. On the other hand, Kenyon's survey
/contd.

regulations still prevalent recorded provisions pointing to the greater importance of swine in previous centuries. In 1603 dispute arose in Rotherfield because the lord still demanded the heavy swine rent (200 swine or their equivalent in money p.a.) whilst the preceding lord had felled most of the woodlands the tenants used for pannage; Waterdown Fores where the tenants had pannage rights and used to make pigsties, was largely enclosed and converted to tillage.¹ The number of tenant swine on the ⁿmajor was still considerable - in 1559 when the lord wished to convert the rent wholly into money, he compromised at the ²tenants' request with a payment which was still half in kind.

In 1576 the parson and chaplain of Maresfield still owned right to graze 40 swine in Ashdown Forest;³ c.1550 it was put on record that tenants of Ringmer, Ranscomebe and Glynde could common their swine in Breyle Park, making sties from turves and 'tenett' they found there; by

was limited to one parish and J.C.K. Cornwall. 1954.91, obtained an average of 10 pigs per inventory for 48 Weald Clay farms in Sussex. Kenyon also, 1958.86, criticized the 'ubiquitous pig myth' on the grounds that few Petworth tradesmen in the early C 17 kept pigs, but (1) the poorer townspeople probably kept more than the middling tradesmen who could afford inventories (2) straying pigs were a common nuisance in Petworth as court rolls shew (Hon.H.A. Wyndham. 1954.32.) Likewise the cottagers who kept many pigs were too poor to make farm inventories.

2. APC. 1595-6. 108-9. More than half of Sussex was Wealden; Kent as smaller country, and only c. one-third Wealden, was not assessed.
1. C. Pullein. 1928. 80-81, from a Chancery Proceeding of 1603. A note to the Proceeding states that an earlier agreement was made 1576, and most wood was felled before this.
2. C. Pullein. 1928. 79; the 1332-77 custumal said the lord could take kind or money; the inquisition of 1262-PRO.C 132/27/5 gave money equivalent, that of 1296-C 133/77/3, the swine number.
3. R.W. Blencowe. 1851. 247-8.

this time the average income from swine-rents was only 10/- p.a. so¹ not more than 120 swine commonly sought pannage in the Park. (One common illegal practice was to collect acorns in the common woods, mentioned in Charlwood 1549.)² When land in Sundridge was leased 1544 it³ included herbage and pannage of 135 acres in Hawkwood, a substantial acreage, but by the early sixteenth century the woodlands used for pannage had often shrunk to small areas - Mottenden in Headcorn had⁴ pannage in two woods 1540 but their total acreage was only 12. Pannage rents in Laughton were sufficiently low in 1543 for Pelham to release them in exchange for tenant agreement to give up common rights in⁵ Vertwood, which he wished to enclose.

Sixteenth century data mentioned swine grazing in many Wealden parishes but did not suggest that swine herds were large. Conditions in the previous century were not very different. Sometimes rights to⁶ pannage were not used - as in Battle 1480- in other places common pannage was still utilised, but by small numbers of swine. In Westerham 1449 swine rents were paid for 34 animals only; the previous year's total had been 44. During the period of acutest economic depression,

1. BM. Add. MS 5681 f 101r-v; average rent according to 1564-5 account (ib.f 102) at rate of 2d per swine in full mast year, 1d if not full mast.

2. E. Sewill and R. Lane. 1951. 33.

3. BM. Add. MS 33889 no.707-8.

4. E. Hasted. ii. 1782. 392.

5. BM. Add. MS 5681.f 428.

6. A. Evans. 1941. 42p0.

the 1550's and 1540's, swine totals increased on some manors, e.g. Laughton;¹ the effect of recession was to encourage self-sufficient, largely subsistence, farming and under such conditions swine, valued for a variety of domestic products rather than for marketing, grew in value. Even at Laughton, however, where this trend was clear the numbers of swine were not great and the last mention of a swineherd occurred in 1441. Most swine herds were small, groups of 5 or less kept by all agricultur-
alists from the farmer down to the cottager. The animals scavenged for their food, even in the towns-Winchelsea, in the mid C 15, attempted to stop swine running around the streets-³ and in the country parishes, trespasses by swine were amongst the commonest offences recorded in the Hundred Courts.⁴

In the late fourteenth century swine were 15% of the stock of Stretham manor in Henfield 1388, and the pannage of 100 acres at Drungewick in Wisborough Green was valued at 13/4.⁵ There were 29 swine on the small grange at Footlands in Sedlescombe 1378-9⁶ and Laughton manor bought, fattened and sold (but did not winter) swine in these decades.⁷ If, however, there are some signs that swine were more numerous

7. BM. Add. MS 33898 f 172, 170; no man paid for more than 9.

1. M. Clough. 1956. 84.

2. *ibid.* 210.

3. ^{Cott.}GGH.MS. Julius B. iv f.26.

4. BM. Add. Ch. 31538: Ticehurst 1401.

5. R.A. Pelham. 1937. 203, 208-10.

6. HMC. Penshurst.i. 1925. 162-3.

7. M. Clough. 1956. 74.

in this period than later, it is clear also that the great period of Wealden swine farming lay in earlier centuries; already by 1350 Wealden swine were declining less numerous than previously.

Although the general pattern of Wealden animal husbandry did not change greatly in the later Middle Ages there was thus a certain change in the role of swine; there was also fluctuation in the commercial sale of animal products. Economic depression in the fifteenth century, most severe in the middle decades, did not cause a decline in the animal population as clearly as it caused a shrinkage in the cultivated area; labour shortage, with which the recession was intimately connected, affected animal husbandry less than tillage. But if animal husbandry increased in importance relative to grain farming, because it was less reduced by economic depression, recession also shrunk the market demand for animal products during the mid-fifteenth century.

Animal and their products had been sold considerably in the Weald during the early fifteenth and late fourteenth century. In 1416-17 East Sutton manor bought, besides minor purchases, 5 steers and 3 bullocks at Appledore fair, 15 miles away, in July 1417 and sold 7 again before the end of September; the manor also bought 64 sheep and 13 lambs at Appledore and Lenham markets. 6 ewes, 27 wethers, 75 large wool clips and 18 lamb clips were sent to the hospital at Calchill.²¹ Dorking manor revenue from stock sales in 1388-9 was greater than 60 years before³² and the grange

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1. In 1370-8 stock numbers and sales at Laughton were increasing but declined to almost nil in late C 15, partly because the lord became resident on the manor, partly from economic recession. M. Clough. 1956. 15
 2. KA0.U. 120/M 5.
 3. Comparing figures of 1329-30 and 1388-9. At the later date sale of sheep and sheepskins has appeared, and cattle sales increased: VCH. Sy. 4. 1912. 417.

at Footlands in Sedlescombe sold, 1378-9, 5/12/8 of stock and 1/4/8 of dairy produce although its annual stock total (cattle, horses, swine) was only 100-125¹. There were some exceptions—animal sales were less than 25% of the income of Laughton manor in the late C 14² — but in the 1370's Wiston manor, on the southern margin of the Weald was selling large numbers of lambs and fleeces³.

(v) Arable.

The major grain crops of the Weald in the early seventeenth century had established their ascendancy long before. Later medieval data showed little variation in crop types from the later centuries, as a random sample of surviving accounts shews. Wheat and oats were the chief grains grown on land in Charlwood, in 1535, at Northeye and Gotham in Bexhill in 1530⁴, at Leasam manor in Rye Foreign in 1447⁵; at Laughton oats remained the chief grain throughout the fifteenth century,⁶

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1. HMC, Penshurst. i. 1925. 162-3. Sale of stock and dairy produce in previous year only 3/-/8.
 2. M. Clough. 1956. 75.
 3. P.S. Godman. 1911. 141-44.
 4. J. Hunter (ed). Valor Ecc. ii. 1814. 43.
 5. A. Evans. 1941. 409-10.
 6. HMC, v. 500.

wheat increased in importance after 1429, and small acreages lay under
 1
 barley or beans. East Sutton, on the northern margin of the Weald,
 had better than average soils and in 1416-17 wheat (24 acres) eclipsed oat
 (only 2 acres), an unusual condition, whilst peas and vetches fulfilled
 their usual role as forage crops (8 acres each).² In 1388 oats was the
 chief crop at Bexhill, followed by wheat and rye;³ in the previous year
 wheat and oats were grown at Highlands in Ticehurst.⁴ The accounts of
 a single year cleak rotational sequences, but three years accounts for
 the grange at Footlands in Sedlescombe (1377-80) confirm that wheat
 and oats were the chief grain crops of the later medieval Weald and
 that generally, oats was somewhat more important.⁵

If the main products of arable farming stayed relatively constant
 during the later Middle Ages, the area of tilled land in the Weald
 6
 fluctuated. The extent of this fluctuation is clouded by several
 problems, especially the existence of convertible husbandry,⁷ the

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1. M. Clough. 1956. 84.
 2. KAO. U 120/M 5. This was an unusual year possibly, since much wheat (17q.3 bz.) was bought. The Weald clay soils in this parish are much ameliorated by a wide outcrop of Paludina limestone.
 3. R.A. Pelham. 1937. 209.
 4. BM. Add. Ch. 31527.
 5. HMC. Peshurst MSS. i. 1925. 162-3.
 6. e.g. land in Wiston described as pasture in the Inquisition of 1357 (PRO. C 135/137/6) was in fact tilled that year- P.S. Godman.1911. 140.

variable area cultivated within fields and the difficulty of dating assarts. Assarting and the encroachment on common land which figured so prominently after 1580 can certainly be found previously in the sixteenth century. By 1564 158 acres of almost sterile soil in Ashdown Forest was already included in small enclosures, all save two less than 15 acres; the most recent encroachment, of 3 rods, was held by copy of ¹ 1554. In 1526 $3\frac{1}{2}$ acres in Maresfield were described as newly assarted; ² four small new enclosures were made in Cuckfield between 1497 and 1533, ³ and when in 1512 $1\frac{1}{2}$ acres of land on 'Hildhoth' in Chiddingstone were granted out as a holding, the small plot was surrounded by previous ⁴ encroachments.

The evidence for assarting in the fifteenth and late fourteenth century is more tenuous. Changes in the description of holdings occurred during the fifteenth century $\frac{1}{4}$ acres of woodland disappeared ⁵ from a holding in Ruckinge and a farm of 24 acres in Hawkhurst 1478 ⁶ had been only 21 in 1430-1 - but such variation may merely reflect

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1. PRO.DL 42/112. f 153-64. 16 holdings were less than 5 acres, 12 were 5-10 acres; 7 were 10-15 acres; 2 were 15 acres. These figures are for Duddleswell manor, which included most of the Forest, and E. Straker. 1940. 158 identified 158 acres of land in the Survey as certainly within ^{the} Forest.
 2. E. Turner. 1862b. 156, from Court Roll; according to a dispute of 1567 tenants in Hawkhurst had encroached 26 acres on the moor there - R. Furley. ii. 1874. 500-1.
 3. C.G.O. Bridgeman. 1915. 195. citing PRO. SC 6/Henry VIII /6158 (1532-3) compared with SC. 6/Henry VII 1494 (1497-8).
 4. BM.Add. MS 33898. f 72. ~~E. Harrison. 1936. 224-5.~~
 5. Postyswode cf BM. Add. MS 37018 f 56 $\frac{r}{k-v}$ (C 15) with f 55 (late 15-early 16).
 6. The holding of Bakeryshellys on Herdiale denn in Hawkhurst-C.E.Woodruff 1922. 221-2.

differences in recording or land assessment. Where colonisation did definitely occur, dating is often imprecise. Lands in Uckfield 1500 included new, middle and old assart,¹ but how recent was the new? There were 48 acres of novus redditus in High Halden c 1431-2 but² how many years were covered by 'novus'? In 1597 there were 1348 acres of assart and 387 of old assart in Rotherfield, whilst only 110 3/4³ were listed in 1332-77 but in what decades the expansion occurred is unknown.

Specifically dated instances of colonisation are absent from most of the fifteenth century. Later examples have been detailed, and in 1500 13/8⁴ was paid as rent for newly acquired assart in Ripe and Laughton, but then comes a gap until the early decades of the fifteenth century, when in 1423 a new 'outfield' was enclosed from the waste in Laughton and sown with oats.⁵ In 1397 1/4 acre of new assart was granted out in the same manor and the sown acreage of Wiston manor was 42 1/2⁶ acres larger in 1383-4 than in 1356-7. It seems likely, therefore, that most of the vaguely dated new assarts made in the later medieval Weald were enclosed either after c 1480 or before c 1430.

1. ESRO. Add. MS. 293. This triple division found also in Framfield customal of 1622- BM. Agerton MS. 1967. f 228v-230.

2. PRO. E 315/56 f 184; its relative newness reflected in a higher rent per acre.

3. C. Pallein. 1928. 68, 75. (It must be remembered that land called assart in the C 15 was sometimes customary or fee before-M. Clough. 1956. 277-8).

4. M. Clough. 162-3. 60% of the new rents in Laughton 1461-81 came from land but new rents from land 1481-1500 only 2/4.

5. ib. 81. Probably another part of the outfield was allowed to revert; the till-area in the whole manor was declining at this time.

6. P. S. Godman. 1011. 134.

The new enclosures of the later Middle Ages were scattered and small, subsistence encroachments encouraged by partition of holdings¹ in the Kentish Weald and by the need of farmers, throughout the area, to supply most if not all of their food requirements; few, if any,² Wealden manors in this period produced large grain surpluses for sale. There is no evidence that this was an age of economic expansion, of large-scale³ clearance, of any substantial increase in the total cultivated area; for if there was encroachment there was also land going out of cultivation.

The most detailed evidence of reversion comes from the Pelham⁴ estates in the Sussex Weald. In the fifteenth century much of the demesne at Laughton, although it was cultivated more efficiently than before, lay untilled during such bad years as 1464 and 1445-50; no grain was grown for sale after 1420 and when, as 1440-55, there was no 'farmer' of the demesne, arable was often leased as 'pasture' for single years.⁵ Tenant lands reflected economic decline more directly;⁶ at the end of the century land was being reclaimed but the loss of cultivated land during the middle decades of the century had been pronounced. In 1462 30 acres of forest assarts in Burwash were not let

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1. For proof that partition did occur, see p. 356. The extent of subdivision in the Kentish Weald during the later Middle Ages was probably not very great since the population did not grow substantially.
 2. Sale of grain from Footlands in Sedlescombe never exceeded 1/- p.a. 1377-80 (HMC. Penshurst MSS. i. 1925. 162-3); only 9/2 was sold from the large manor of Charing 1489-90 (EM. Add. MS. 33917. f 151v), only 10/6 from East Sutton 1416-17 (KAO.U 120/M 5). Cf the sale of 43/18/8 from Penshurst 1572-3 (HMC. Penshurst MSS. i, 1925. 247.).
 3. 'Although it would be wrong to think that the taking in of land ceased altogether - in fact in some parts of the country, such as the Weald of Sussex or the woodlands of Herefordshire or Buckinghamshire, it was quite active throughout the fifteenth century - the great

for lack of tenants and 1461 1/8/10 of forest rents in East Hoathly were written off. In 1457 4/6/6 $\frac{1}{2}$ of forest rent in East Hoathly had been written off, in 1439 several forest rents in Laughton manor further south were removed, arrears first appeared in Mayfield 1431 and losses in Burwash went back to 1405-8 when 8 holdings (22 acres) were untenanted.¹ These losses lay in the northern parts of the estate, in Burwash and East Hoathly, on poor sandy soils.

A little land had been lost to cultivation by imparking² but most of the loss reflected the impact of economic recession on marginal land. Assarting in the previous decades had been very considerable; in 1418 Laughton included 307 acres of assart plus assart rents of about another 160 acres, besides at least 50 acres of assart on the Dicker in Chiddingly.³ (In 1300 the manor had at least 257 acres of assart)

colonising effort of the earlier age is definitely over'. M.M. Postan. Ec.H.R. 1938~~9~~⁹. 162.

4. M. Clough. ^{1956.84-6,96,} ~~84-6,~~ 138. Dinging of the land was more intense 1407-60 than before or after.
5. ib. 55-6, 161.
6. ib. 162-3; however, new rents from land 1481-1500 only 2/4.
1. ib. 112, 132, 161-3. The actual process of reversion was sometimes almost complete - some lands in East Hoathly 1457 (BM.Add. Ch. 31421) 'jacent ad cominam et non possunt distingere'.
2. 14/8 of land in Crowhurst was imparked 1400-12 (BM. Add. Ch.31361).
3. M. Clough 1956. 154-8; new leases in Laughton c.1363-1416 were 188 1/2 acres, most in woods of Hawkhurst and Waldron.

In both Burwash and East Hoathly, where reaction was serious, much colonisation had gone on in the early fifteenth and late fourteenth centuries; in 1390 rents from assarts in Dallington Forest, poor sandy terrain on the Ashdown Sands, exceeded those of other lands in Burwash.¹ The same reaction had been seen on a smaller scale within the same estate earlier, when land under the plough declined in 1292 after excessive expansion in the 1280's.²

Recession affected other lands in the Weald also. Rents of Battle Abbey tenements 'in manu domini' reached one peak in 1527;³ this increase could only reflect a lack of tenants and a consequent decline in the intensity of land use. Cuckfield manor in 1497-8 had $4/7\frac{1}{2}$ of decayed rent; some land had been lost to Bentley Park, but several other plots of uncultivated arable had been leased as pasture and one deserted cottage had collapsed to the ground.⁴ At Laughton depression seems to have been most severe in the middle decades of the century and this is confirmed elsewhere. Decayed rents on Petworth manor rose from $1/16/4$ in 1426-7 to $6/5/8$ in 1474-5, with a high of $7/6/6$ in 1460-1;⁵

1. M. Clough. 1956. 90,167-8.

2. ib. 92.

3. A. Evans. 1941. 422.

4. C.G.O. Bridgeman. 1915. 192-4, citing PRO. SC6/H VII/1494.

5. J.W.M. Bean. 1958. 17-19, 43 (from Petworth House MSS. MAC 1-20). 1426-39 farm of lands fell by over one-third and then stabilised; chief rise in decayed rents is 1457-1461.

shortage of tenants on the Battle Abbey lands went back at least to 1466-7;¹ in 1440 a widespread decline in population was alleged for eight hundreds in East Sussex.² In 1421 Bore (Bore Place in Chiddingstone) and Medhurst (Medhurst Row in Edenbridge), two Wealden districts of the large manor of Sundridge, claimed deduction of rents from lands which had gone to waste.³ The first signs of poor land returning to waste can be traced back at least to 1361—when 80 acres of arable in Hurstmonceux were overgrown with furze and could only be used as grazing—⁴ and before (see p 345); the retreat from marginal land began in many places as a product of rapid soil exhaustion, before the real onset of economic stagnation in the later medieval period.

Land was also lost continually to the sea along the eastern coast of the Weald. Various lands in Brede were submerged in the 15th century, as some in 'Gatebergh' marsh had been 1341;⁵ in 1447 the tithing of Cooden in Bexhill had no inhabitants since the sea had almost submerged all in 1401;⁶ in 1440 it was noted that 4 churches in Hastings had largely lost their congregations because of persistent previous inroads by the sea.⁷

1.E. Swift. 1937. 61-2. Meadow was often not mown on Battle Abbey lands in these decades, e.g. at Bodiam 1480-A. Evans. 1941. 420.

2.PRO. DL 29/442/7117. The decline was attributed to plague and emigration after it.

3.H.W. Knocker. 1932. 205 ff.

4.PRO.C 135/151/14.

5.J.E. Ray. 1946.22.

6.E.J. Courthope and B.E.B. Formoy (eds.) 1931. xxiv.

7.F.W.B. Bullock. 1949. 191, from Reg. Praty f 43. (I have only included erosion along the Wealden coast, i.e. where solid formations form the coastline; there was also much sea attack on the marshlands of Romney and Pevensey).

Thus the cultivated acreage in the Weald fluctuated considerably during the later Middle Ages. Losses to the sea were continual but reversion of tilled land to waste further inland was restricted to the fifteenth century, especially its middle decades; active colonisation and assarting can be traced both after this recession and before it. These were the broad trends, which were subject to many local variations.

(vi) Orchards and vineyards.

The later medieval period witnessed no major change in the broad grains grown and consumed within the Weald but there were changes in drinking habits. Widespread consumption and production of cider in the Weald can be traced from 1600 back to 1350;¹ the change was not here. Orchards remained an integral part of the Wealden land-use pattern throughout this period² and measures were taken to husband and perpetuate them - in 1527 a tenant in Little Horsted was obliged during his tenure to plant 20 crab stocks, graft them at the right time and prevent their damage by grazing cattle.³

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1. References to cider in Battle c 1530-A. Evans. 1941. 414; cider in New Romney 1435-6, 1435, 1416, 1405 and (with perry) 1397-8 - HMCv. App. 551, 541, 540, 535, Warbleton 1403 (PRO. SC 6/1031/5); apple mill in Burwash 1562 (CP 25(2)/229).
 2. At Flimwell in Ticehurst 1543-EM.Harl.Ch.76 H 42; Battle Abbey 1530-A. Evans. 1941.411, where besides pear and apple orchards there were 19 ac. of cherry gardens - E. Turner. 1865.378; apple and pear orchards at Panningridge in Ashburnham 1546 - E. Straker. 1931b 253-60; crab apple trees in Worth 1473-PN.Sx. ii. 281; orchard at 'Skennegardyn' in Netherfield Hundred (Brightling, Dallington, Mountfield, Peshurst) 1406 - EM. Add. Ch.31544, and in Wisborough Green 1385 -L.F.Salzmann. VCH.Sx. ii. 1907. 263.
 3. SNQ. 1928. 56, quoting Barbican House, Lewes Deed D 41.

The first major change was the disappearance of the vine. The latest mention of Wealden vines in 1565 at Hawkhurst rectory; 'Vyneyard pond' in Battle 1538 was another evidence of the viticulture which had been formerly more widespread in the Weald. But, as the local output of wine declined, the production of beer was increasing; by the sixteenth century beer was produced widely in the Weald and had become a popular competitor with cider. Hops had come to the Weald of Kent (and Sussex) not, as the traditional rhyme had it, in the year of the English Reformation but at least a century before. By 1488 hops were being imported into Winchelsea and Rye, and beer was being exported; in 1445 the illegal sale of ale and beer before they matured was punished in Hythe Hundred, also on the east coast. The first recorded import of beer into the Sussex ports was as early as 1393. Ale (cervisia) was still produced in large quantities after beer began to compete, but it became less important; it was made from wheat, barley or oats, often mixed, and appeared in a variety of qualities.

1. J.B. Caldecott. 1938. 73.

2. FM.Add. MS 5679 f 43. Large quantities were imported - over 245,000 gallons 1395-9: R.A. Pelham. 1930. 188.

3. PRO.E. 122/35/7-8; import of hops into Sussex ports 1466-E 122/34/25.

4. HMC, vi. App. 431.

5. PRO.E. 122/33/13, cit. R.A. Pelham. 1930. 188.

6. Bayham Abbey 1290 distinguished convent ale and household ale - G.M. Cooper. 1857.159.

(vii) The precedents of the Great Rebuilding, and the Wealden hallhouse.

These changes in house design which were widely incorporated in Wealden housing between 1570 and 1640 had been carried out earlier in a few instances. By 1550 a first-floor had been inserted into the hall¹ of at least one house in East Grinstead and in Ticehurst a chimney and attic floor were inserted, shortly after 1500, into a building² constructed at the end of the previous century. About the same time a house in Lindfield was fitted with a chimney.³ Such alterations occurred first in the houses of the Gentry which, being larger, profited most from a more efficient subdivision of the available space; Cuckfield included many small hall houses altered in the decades after 1570, but the chimney and first floor made their first⁴ appearance in the town between 1540 and 1550 in three large dwellings—Legh Manor, Pain's Place and Slough Place.⁵ Many of the early sixteenth century alterations were piecemeal and incomplete; Hickstead in Twineham was given a brick chimney between 1510 and 1530, but the hall was not floored over until the seventeenth century;⁶ Strakers in Horsham was floored over early in the sixteenth century, but waited until the next for a chimney.⁷ Radical and complete

1. 2 Judges Terrace—R.T. Mason. 1957. 250.⁴

2. VCH.Sx. 9. 1937.253.

3. I.C. Hannah. 1939. 165-9.

4. First, that is, by surviving examples.

5. VCH.Sx. 7. 1940. 148-56.

6. *ibid.* 186.

7. I.C. Hannah. 1931. 243-52.

alterations, in most cases, awaited the decades after 1650.

Some of the houses built in the early sixteenth century incorporated the new ideas on house design and layout. One house of this period in Sedlescombe never, probably, included a hall place ¹ and Tanhouse Farm ² in Northiam was built, c.1490, as a two storied building; the fifteenth century hall at Horselunges in Hellingly was also built as two storied and a chimney was inserted before 1500. ³ One house in Smarden constructed between 1485 and 1540 possessed, when completed, 7 hearths ⁴ and 4 chimney-stacks. The hall, however, had been the central element in the older design and it was not easily removed from building design; if a first floor was built, a hall open to the rafters was sometimes found on the first floor level, as in early sixteenth century houses ⁵ in East Grinstead and West Hoathly. One wing in Coombe House, Bolney, was built c.1500 in an intermediate form - the Great Hall had three bays, but only the north bay was open to the roof; here was the hearth ⁶ and this section of the hall, open to the roof, acted as a great flue.

1. VCH, Sx. 9. 1937. 276.

2. *ibid.* 272.

3. W.H. Godfrey. 1925.1-18.

4. H.L. Mills. 1932. 127.

5. E.T. Masen. 1939. 3ff and I.C. Hannah. 1943. 124-6.

6. VCH, Sx. 7. 1940. 138.

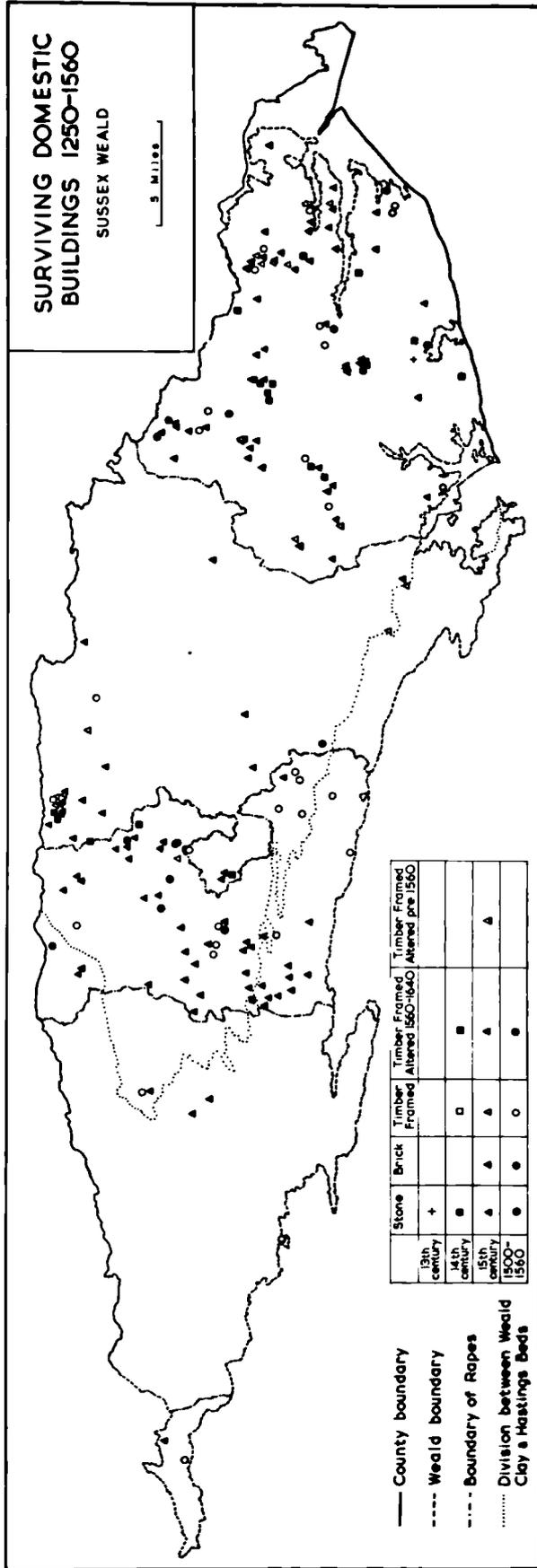


Fig. 25. Alteration means the introduction of a first floor and chimney into a hall house, although occasionally one was introduced without the other. As Fig. 19, this map is complete for surviving buildings in the Wealden parts of the Rapes of Hastings, Lewes and Chichester, but quite incomplete for the other three Rapes. Data from VCH. Sx. 4, 1953, 7, 1940, 9, 1937; J. L. André. 1904; E. Austen. 1925; F. H. Crossley. 1951; W. H. Godfrey. 1925, 1937, 1942-3; I. C. Hannah. 1912; 1930, 1931, 1933, 1935a, 1935b, 1939, 1942-3, 1943; L. G. Hannah and W. D. Peckham. 1928b; P. M. Johnston 1907; N. Lloyd. 1949; E. T. Mason. 1938, 1939a, 1939b, 1940. 1946b, 1941, 1941b, 1949, 1953, 1957a, 1957b, 1957c, 1958; W. D. Peckham. 1929, 1930; W. D. Simpson. 1931, 1942; S. Toy. 1953.

Early sixteenth century houses included other distinctive features; elder hall houses were often jettied at the first floor level along one side or at the ends but at Walesbeece, near East Grinstead, and many other farms in the Kentish Weald, the first floor overhung the lower on two or three sides.¹ Whilst earlier buildings commonly adopted a kingpost and tie-beam construction for the roof, purlined roofs were used in several hall-houses built in the century before 1550.² They were less wasteful of timber than kingpost roofs and more stable, and they heralded the disappearance of kingpost roofs in new houses built after 1550.³ The early sixteenth century was a period of innovations but they were not widespread - in general the older traditions of building construction continued; kingpost roofs were commonly used in this period,⁴ and open hall houses, as two in Ticehurst, were still built.⁵

The great period of the Wealden hall-house was the fifteenth century and the number which still survive (their internal arrangements altered in later centuries) is very considerable (map.²⁵24). This house type reflected

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1. R.T. Mason. 1940. 3-18. H.S. Cowper. 1911. 169 ff. Jettied stories at both ends probably indicate an early hall house with a first floor at either end and open hall in the centre, whilst a jettied side of a house reveals that the first floor extends the length of the house, a later feature generally.
 2. R.T. Mason. 1957. 248-9, e.g. Bagpiths Farm in Balcombe and Summersvere Fm in Worth.
 3. And also the removal of kingposts from many early houses which were altered.
 4. The kingpost roof at Furze Grove in Chailey is C 16-VCH, Sx. 7.1940.94, and one was built at Lower Burrells in East Chiltonington even early C 17 -ib.98-9; two late C 16 houses in Cuckfield have queen-post roofs-ib. 148-56.
 5. VCH, Sx. 9.1937.253; another example in Sedlescombe, aed.1509-ib.277.

one aspect of Wealden social structure - the large number of yeoman farmers, with more land than mere subsistence demanded, and of gentry (whilst, in contrast, large estates were few); theirs were the hall¹ houses. Also it has been suggested that joint-working of estates by co-heirs in Kent favoured a hall-house which, having separate quarters at each end of the hall, could accomodate the families of at least two partners in one building.² This may well have been true in some cases but the hall-house was common in the Sussex Weald also.³

The average hall house consisted of a miniature Great Hall, with two storied wings at one or both ends;⁵ often the first floor was jettied out over the lower one at the ends of the building. A great tie-beam crossed the hall and upon it stood the kingpost which supported the ridge of the roof; hammer beam roofs occurred in some late-

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1. Of small cettages, virtually nothing is known since none earlier than the late C 17 survive-W.G. Hoskins. 1955. 107.
 2. H.M. Colvin. 1958. 91. In 1256-62 ref. is made to the messuage of the heirs of Stephen de Hull near Bilsington (EM.Add. MS. 37018.f 26) and a Staplehurst will of 1533 shews that on the farmer's death, his house was jointly inhabited by the widow and the heirs-H.S. Cowper. 1914. 11. On the other hand the Consuetudines Kanciae stated that in gavelkind division the house went to the youngest son, and the same held for the Borough English tenure very common in the Sussex Weald (G.R. Corner. 1853. 164-89).
 3. A document of 1336 granted half the manor of Penhurst, in the Sussex Weald, with half the hall, i.e. the solar and cellar to the east of it and half the kitchen-Cal. Ashburnham Docs. Lewes. i. 9.
 4. Sometimes called the 'Wealden house', although it is found in Essex also-J.T. Salkth 1953. 93.
 5. ~~J.E. Roy. 1909. 148; many late medieval halls in Sussex lack ridge-pieces-I.C. Hannah. 1931. 243-5.~~

fifteenth century examples.¹ Some houses included aisles on both sides of the hall but this was more common in barns,² where the grain and animals were kept in the wide aisles and carts of wains had free access along the centre. The hall house was divided into bays by open trusses reaching across the house from pairs of upright posts along each side. The number and size of the bays varied considerably; the commonest form included three bays - a two bay hall with a two storied bay at one end,³ or a one bay hall with two storied bays at either end. A few houses of one bay only have survived,⁴ the hall and service quarters all included and the hall space reduced to only c.13' X 18'. Towards the end of the fifteenth century the size of the hall in new buildings became smaller, as its traditional uses became less real and the desire for subdivision began to appear; this trend was exemplified in a late fifteenth century house in Brede where the hall was built smaller than the buttery.⁵

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1. J.E. Ray. 1909. 148; many late medieval halls in Sussex lack ridge-pieces. I.C. Hannah. 1931. 243-5.
 2. VCH,Sx. 7. 1940. 137-8.
 3. A bay was generally twice as wide as it was long.
 4. R.T. Mason. 1958. 9-15. e.g. Daleham in Fletching, late C 15; Hickpots in Ardingly, late C 15; 23-5 Robertsbridge East Street, mid C 15.
 5. E. Austen. 1925. 136-47, VCH,Sx. 9. 1937.167.

In building materials, later medieval construction in the Weald differed little from the Great Rebuilding. If anything, the predominance¹ of timber was even more marked at the earlier period; infilling was very commonly wattle and daub. Infilling with brick became common during the sixteenth century but previously its use was restricted to special works;² of these, Hurstmonceaux castle, built in 1445-6, was the most notable and it remains the earliest dated brick construction in the Weald.³ Stone was widely used in building, for infillings and ground floors more commonly than for complete buildings;⁴ material was drawn from the Sussex and Kentish Hythe Beds,⁵ the Upper Greensand near Eastbourne⁶ and flint from the Downs⁷ but import of such stone from outside⁸ the Weald decreased in importance during the later Middle Ages. This

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1. R.T. Mason. 1939. 3 ff.
 2. It is not possible to date brick infillings in surviving buildings so easily as the timber framework surrounding; Hayes Farm in Beckley has a frame partly C 15, with brick infilling- VCH.Sx. 9. 1937. 143.
 3. W.D. Simpson. 1942. 112, on bricks; N. Lloyd. 1925.90, 113, for dating Licence given 1441 (C.Ch.R. 1427-1516. 13-14). W.D. Peckham. 1929.128-9, suggests that medieval building construction allowed only for stone or wattle-and-daub, which hindered the spread of brick construction.
 4. Whether C 15 houses were originally built with stone first floors (as now found in C 15 almonry at Battle and Conster manor house in Brede c1350-VCH.Sx. 9. 1937. 97. 167) is uncertain; such houses may have been timber-framed throughout, the stone ground floor being inserted when the sill beams, or feet of puncheons and studs began to decay-R.T. Mason. 1940. 10ff.) One late C 14 farm building at Pulborough probably had a stone lower story ab initio, W.D. Peckham. 1929. 119-133.
 5. e.g. Pulborough stone for C 16 work in Pulborough church-W. Topley. 1875. 370.
 6. e.g. Kentish Rag in C 15 work in High Halden church-G.M. Livett. 1902. 295-315.

period, before brickwork rose to its later importance saw the dominance
¹
of Hastings Beds material in Wealden stone construction; compared
with imported stone, its greater cheapness counted for more than its
generally inferior resistance to weathering.

(viii) Technical changes and industrial expansions.

In 1574 there were at least 51 furnaces and 58 forges operating
²
within the Weald and the iron industry was at the height of its
activity; there were only seven other furnaces throughout the rest of
England. ³ Few new works were built in the Weald after 1574 but there
had been steady growth previously - in the 1560's 2 furnaces in Kent
and 11 in Sussex were mentioned for the first time; ⁴ in the previous
decade, ironworks had begun to infiltrate into the Kentish Weald and
furnaces at Southfrith and Tonbridge both existed by 1553. ⁵ At this
date (and until c 1560) the Weald still had a monopoly of ironworking

7. e.g. Pevensey Castle 1407-8, L.F. Salzman. 1906. 24.

8. e.g. Langley grange in Westham c1400, S. Toy. 1953. 125-33.

1. P.M. Johnston. 2907. 336; J. Borrowman. 1906. 20ff; VCH, Sx. 7. 1940, 82, 127-9; ib. 9. 1937. 165, 259; W.D. Simpson. 1931. 69 ff.

2. In 1574 Christopher Baker submitted a list of 49 furnaces and 58 forges (SPD. Eliz xcv. 20-1); documentary evidence raises the number of furnaces to 51 (H.R. Schubert. 1957. 174) and several other sites worked in the Tudor period (Chithurst forge, New Place furnace in Framfield, East Lynden forge in Ticehurst, Tollesley in Frant) are undocumented- E. Straker. 1931. 214-468. Other versions of the list are SPD. Eliz. xciii. 20-1, probably 1573, xcvi. 199, 1574. D. and G. Mathew. 1933. 91-9, printed the version in cxvii. 39, and claimed that it was complete. They dated it 1578; Straker. 1938b. 97, and Cal.SPD. 1547-80. 563 give it as 1577.

3. H.R. Schubert. 1957. 174.

4. H.R. Schubert. 1957. 354-7.

by the indirect process¹ and output was considerable (in 1548 there were² as many as 20 (or 21) furnaces and 28 forges within the Sussex Weald); iron was exported (1550)³ from the Sussex ports as far west as Dartmouth, south to Jersey and coastwise to London. Much iron also went to London⁴ by road.

During the 1540's the industry had grown in its productive capacity - 11 new blast furnaces were built 1543-8⁵ - after a major technological advance in 1543. In that year, probably at Buxted, the casting of guns was successfully carried out, an event which was largely responsible for the later importance of ordnance manufacture in the Wealden iron industry. Before the advance of 1543, the industry had grown more slowly, not from lack of resources but because Henry

5. *ib.* 354. Forge at Southfrith is also mentioned in same year - PRO. 178/1093.
1. *ib.* 175; bloomeries were still occasionally erected - one near Haslemere 1603, E. Straker. 1931. 37.
2. There was a temporary decline after an outcry in 1548, which gave the total of works as 53-HMC. Salisbury MSS. xiii. 1915. 23; E. Straker. 1931. 311, erroneously dates this list as 1539.
3. L.F. Salzmänn. VCH, Sx. 1907. 246-7.
4. e.g. from Sheffield and Worth 1547-8 (PRO.E. 101/483/19 and 101/501/3 from Newbridge 1539 (PRO. DL 29/445/7185.))
5. H.R. Schubert. 1957. 173; including Lamberhurst furnace where a ditch 1300 yards long was cut for water supply (E. Straker. 1931. 269-73).

VIII bought much ordnance abroad and because of the difficulties in producing a raw material suited both for casting and for conversion into malleable iron.¹

Two groups of works had, however, appeared by 1542. One lay in southeast Sussex, and its oldest member was the furnace mentioned at Sockmersh in Brightling 1535;² this group worked some good ores and was better served by water transport than the original concentration around Ashdown Forest. There, between Stumlet furnace in West Hoathly on the west (erected 1534) and the forges at Bayham and Brookland in Frant (erected 1525, 1521) lay the oldest ironworks in the Weald to use the indirect process. In 1511-14 iron bullets were produced from Parrock forge in Ashdown;³ two years earlier Steel forge had been erected near Newbridge⁴ and also in that year, the first cast-iron guns to be made in England were cast at Newbridge.⁵ In 1496-7 varied iron goods were carried from Hartfield forge to the Tower-axle trees, wheel rims, cast-iron bullets and shot;⁶ accounts of 1496 refer to a 'great water hammer'

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1. H.R. Schubert. 1957. 170.
 2. This group included Sockmersh (1535-), Darfold wood furnace in Etchingham (1539-), furnace and forge at Robertsbridge in Salehurst (1541-7, 1573-), furnace at Panningridge in Ashburnham (1542-), furnace at Pashley in Ticehurst (1543-).
 3. E. Straker. 1931. 241 ff.
 4. PRO.DL²⁹/455/7331. Steel never seems to have been an important part of the output; but 1502 a lease was granted to construct forges and a hammer on 6 acres in Ashdown to make steel there-DL.42/21 f 185.
 5. PRO.DL 29/455/7331, and H.R. Schubert. Journ. Iron and Steel Inst. Vol.146. 130-140.
 6. E. Straker. 1931. 245.

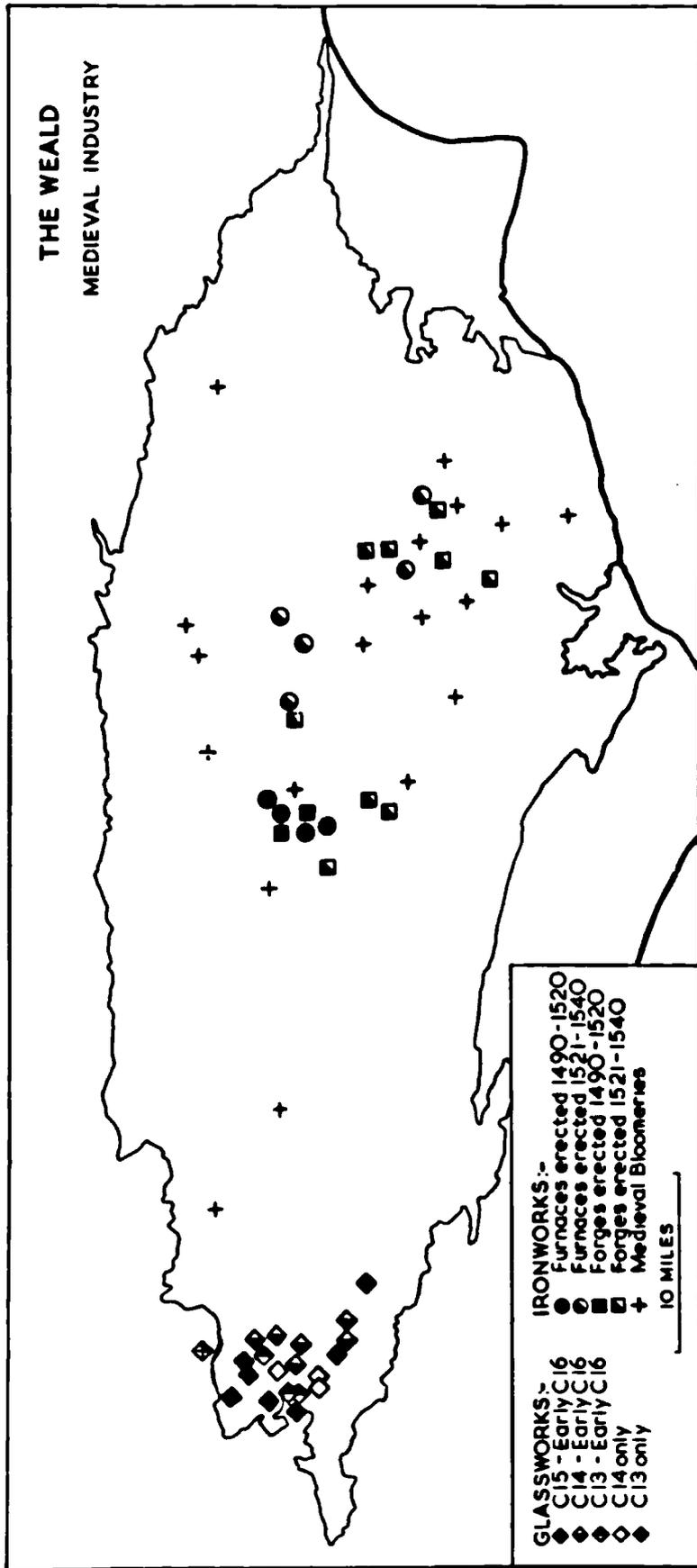


Fig. 26. Data on ironworks from E. Trevor, 1927, 217-168, p. 1, and S. Finch, 1927, 117-8; B. H. Lucas, 1957, p. 7; S. P. Vivian (ed.), 1902, 1/9, p. 10; Chubb, 1957, 26-7, 2/3. Data on glassworks from S. T. Winbolt, 1922, 10-50; 1925b, 787-90, p. 10; TFC(-61).

and other items at Newbridge which describe, without doubt, an existing blast furnace.¹ This is the earliest direct reference to the indirect process of ironworking in England,² a system which needed more capital than the medieval bloomery but which could produce seven times as much iron per day.

Two characteristics of this, the original centre of Wealden indirect ironworking, are noteworthy. Throughout the early sixteenth century its chief market was royal demands for ordnance, carts and other war machinery. The early works were on Duchy of Lancaster lands and may have been encouraged by royal capital as well as a valuable royal market. Also from 1544, when workers from ^NNormandy were at Brookland forge, back to 1493-1500, when Grand Pierre was working at Newbridge, much of the energy and skill of Wealden ironworking was supplied by French labour.³

Before the introduction of the indirect process, the scale of ironworking in the Weald was much smaller. The bloomery needed only iron ore, charcoal and bellows, and one process was all; small-scale operations were general and many bloomeries had short lives. Some have left cinders but no documentation (see map ²⁶25); others probably existed but their cinder has been removed for roadbuilding. Documentation is very slight; 15th and 14th century pottery from the bloomery at

1.H.R. Schubert. 1957. 162-3; from PRO. E 36 /8.f.49ff; E. Straker. 1931. 248 suggested the works were Steel forge or Cotchford Forge in Hartfield but it is clearly Newbridge from the document.

2.The indirect system consisted of (i) blast furnace (ii) forge with three units-finery, chafery, hammer. The process may have begun before 1496-in 1494 lease of Duchy of Lancaster mills in Ashdown granted rights to iron stone and as much fuel as was needed-PRO.DL 42/21 f 184, and 1490 there were 'irone founderys' in Buxted.(H.R. Schubert. 1957. 161.)

Thundersfield castle in Horley,¹ 2 iron-mines mentioned at Charlwood² 1396, the dispute over another mine nearby in Horley 1371³ and the lease of 1362 to dig for iron ore near Merstham⁴ - all instances from one small area in the northwestern Weald. These few indications shew that Wealden iron was worked in the century and a half before the indirect process was introduced but they also emphasise how much smaller - and less important in the total English output - was the production of these earlier years.

The fluctuations of cloth production in the Weald during the later Middle Ages did not resemble those of the iron industry. During the early sixteenth century, when the indirect process of ironworking was expanding, came complaints of a decline in cloth output. A plea of 1536 alleged decline and demanded that clothworkers from other regions should not be employed in the 'Seven Hundreds' of Wealden Kent,⁵ where Wealden production concentrated; this followed a complaint of decline in Kent as a whole voiced in 1528.⁶ Production at this time was

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3. Grand Pierre at Newbridge 1493-1500 (PRO. C 1/222/112) and c.1496-8 (H. R. Schubert. 1957. 164); L. Symart at Newbridge 1511-2 came from Normandy 1494 and P. Symart at Newbridge 1498-1512 probably also (H.R. Schubert. 1957.164-5); one Norman came to Brookland forge in Frant 1537 (W. Page. 1887. 144, 233); 7 french families in Rotherfield 1538-42 (ib. 174,200); Simon Forneres from Bruges was sub-tenant of Newbridge 1534-9 (DL. 29/446/7169-70); the muster roll of Brightling, Netherfield Mountfield and Penhurst 1539 included 49 Frenchmen - E. Straker. 1931. 363.
 1. E. Hart and S.E. Winbolt. 1937. 147-8; also medieval bloomery at Cinderfield in Horley-E. Straker. 1931. 465.
 2. Lambeth Court Roll 1438, cit. E.W. Hulme. 1939. 206-8.
 3. H. Lambert. Sy.Ac., 1921. 105-6., citing PRO.KB 27/443 m15.
 4. J.B. Sheppard^d (ed.) ii. 1878.420-1; probably the diggings were at Charlwood, then part of Merstham manor-VCH.Sy. 3. 1911. 165.
 5. L. and P. Henry VIII. xi.210. 6. L.and P.H. VIII.iv,part ii. 1881.

varied, mostly finished coarse cloths - in 1523 a Cranbrook clotheir¹⁰ was
 in court for exporting unfinished cloths;¹ russet cloths were a speciality
 the chief sale of a Tenterden clothier whose accounts stretch from 1551
 back to 1536,² and they were supplied from Cranbrook to Christ Church
 Canterbury in 1499.³

The fifteenth century was the heyday of Wealden cloth manufacture.
 The pardons issued in 1450 mentioned wool textile workers (excluding
 tailors) at Brasted, High Halden, Smarden (I 6) Heacorn,^d Pluckley(8)
 Yalding (4), Graat Chart, Boughton Malherbe and Brookland in the Kentish
 Weald, Ewhurst, Wadhurst, Ashburnham and Hastings across the border
 in Sussex.⁴ This list was quite incomplete since references earlier
 in the century mentioned wavers at Brede,⁵ weavers and fullers at Icheregge
 in Biddenden,⁶ and the pardons list omitted several of the major centres
 of production, notably Cranbrook. Fulling mills existed during the
 fifteenth century at Barcombe,⁷ Ardingly,⁸ Karkeregge in Cranbrook,⁹

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1. PRO. E 159/301 m 24.
 2. HMC. vi. 570.
 3. HMC. v 437.
 4. CPE. 1446-52.338-74.
 5. E. Austen. 1946. 103; also Petworth clothier 1463-PRO.E. 159/240 m 29.
 6. c 1431-2: PRO. E 315/56 f 185.
 7. By early sixteenth century a corn mill-VCH. Ex.7.1940.82, from PRO Req.2/9/16.
 8. Known 1309-1573: PN. Sx. ii. 252,255.
 9. C.C.R. Pile. 1954. 5-9, lists this mill, worked until at least 1477, and other possible fulling mills in Cranbrook -(i) Moat ^{at} Fram on the R. Crane-undocumented; (ii) Branden, which closed in the C 16, and was /_{can}

Hampton's Mill in West Peckham and Brightling, besides those unrecorded,³
 The mills recorded in the sixteenth century at Brede, Milford in Witley,⁵
 Angley in Cranbrook, Horsmonden,⁷ and Haslingbourne near Petworth were⁸
 probably existant in the previous century since the sixteenth century,
 a period of general decline in Wealden clothworking, cannot have
 witnessed much new building.⁹

Wealden cloth was exported during the fifteenth century in
 considerable quantities but trade varied greatly from year to year; only
 237 cloths were exported via Sandwich in 1449, when international
 relations were strained, but 2078 in the previous year. (The exports¹⁰
 from this port included cloth from North Kent also). In 1437 the Prior
 of Bilsington was pardoned for illegal exports of cloth for six years¹¹
 past,

probably a fulling mill; (iii) Freight and Baker's Cross, on a
 tributary of the R. Crane, which both closed in the C 16; (v) Great
 Trenley on the Hawkhurst boundary, mentioned 1577.

1. Mentioned 1275-W.V. Dumbreck. 1958. 143, and 1556-KAO.MR 38/M I.
2. 1475-H.M.C. Penshurst. MSS. i. 1925.154.
3. Besides the several mills which cannot be dated - at Chesworth in Horsham 1650, were 'fulling mill fields and pond'- PRO. E 317/Sx/22; fulling mill field in Clayton early C 17-J.E. Couchman. 1926, map opp. 34; fulling mill bridge in Lindfield-W.H. Godfrey (ed.) 1928. 134; fulling mill pond at Nutbourne in Pulborough 1504-ib. 95; fulling mill lands in Keymer 1594-F.W.T. Attree. 1887. 38.
4. 1558-E. Ansten. 1946. 98.
5. 1548-PRO.E. 369 /168 f 79 et seq.
6. 2 in 1539-40: E. Hasted. iii. 1790.47.
7. 1516-PCC 24 Holder, Henry VIII 2 fulling mills called Bradford Mills in Horsmonden were leased-R. Furley.ii. 1874.568.

Some great clothiers appeared in the fifteenth century and have left their monument in substantial cloth-halls, but the industry rested from its origins on a large number of small producers; in 1395 only one Kentish manufacturer produced more than 50 dozens (pieces of 12 yards), only 3 others more than 25. It was these small men who were recorded incompletely in the Poll Tax of 1379 and not only in Kent - in the Sussex Weald there were 2 cloth merchants, 2 weavers, 2 shearmen and 2 tailors at Hurstpierpoint and 2 weavers, 2 shearmen and a capmaker in Cuckfield; few were the settlements without a tailor.

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8. 1592-G.H. Kenyon. 1958. 65; compare the reference by J. Leland 1535-43 to the manufacture of good cloth in Petworth-Itinerary.ed.L.T. Smith.iv. 1909. 92.
 9. R.A. Pelham. 1944. 53, maps one fulling-mill of 1331-1400 in the Weald only, and 1957 map opp.9, gives four - at Tonbridge, Fletching, Rotherfield and Buckhurst (locations ex.inf. R.A. Pelham).
 10. H.M. Lyle. 1950.7; national cloth exports fell 35% 1448-50.
 11. C.E. Woodruff. 1929. 27.
1. For two fifteenth century cloth halls in Headcorn, with large open halls on the first floor, see H.S. Cowper. 1915b. 121-30.
 2. L.F. Salzmann. 1913. 158.
 3. PRO.E. 179/189/41, cit. A.M.M.Melville 1931. 120.

The great period of Wealden glassmaking in the late sixteenth century began with the petition of Jean Carré in 1567 (see p. 203) at a time when competition from German, Dutch and Venetian glass was increasing. In earlier centuries this external competition was less and the Weald was already established, by the fifteenth century, as the chief glass-producing district of England. Whilst Carré was important in his time, a predecessor had gained more complete domination of the industry than Carré ever did; Peytoves, who settled in 1435, gained control of nearly all the furnaces in the western Weald. Glassmaking was concentrated in the western clay Weald; ¹ traces of fifteenth century manufacture have been found at 12 sites in Chiddingfold, 1 in Wisborough Green and 4 in Kirdford ² but, although nine of these seem to have begun production during this century, this expansion did not take the industry away from that confined area in the Weald where it seems to have begun (p. 414). ³

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1. Production included coloured glass (red glass found at Malham Ashfeld in Wisborough Green c 1500-S.E. Winbolt. 1933. 63).
 2. In the lists of S.E. Winbolt. 1933. 10-50; 1935b. 787-792; 1940b. 156-61, these works are numbers 1, 3-4, 6-8, 10, 12-16 (Chiddingfold); 20 (Wisborough Green); 22-3, 25, 29 (Kirdford).
 3. There were glaziers elsewhere, as in Brightling 1521 (PN, Sx, ii. 473), and Battle 1402-T. Thorpe. 1835.94.

(ix) Towns and communications.

Markets played a significant role in the Wealden economy before the seventeenth century. Some important products of the Weald, notably iron, were produced primarily for an external market whilst, on the other hand, the Weald imported grain and other materials, e.g. chalk, not available locally. This combination of supply and demand within the area, together with its location between the metropolis and the south coast, could not but give impetus to commercial exchange within it.

In the early sixteenth century there were several evidences of the vitality of its markets. By 1552 High Field had become too cramped for the market place of Great Chart and it was moved to Chelmington, in the southeast of the parish; ¹ c.1549 it was announced, after a fire in Hailsham, that the Wednesday and Friday markets would ² be resumed as soon as possible; in 1530 Battle Abbey rented a shop ³ in Hastings to handle its purchases of fish, and places in the market ⁴ centre at Smeeth were being actively leased in 1530-1. Tonbridge, which held a market and several fairs, was described in 1521 as a large ⁵ town, well peopled & with a good water supply whilst in 1516 some of ⁶ the shops in Ashford market could be described as 'newe buylded'.

1.EM.Add. MS 33884 f 139v.

2.PRO.DL 42/96 f 28v.

3.A. Evans. 1942. 68.

4.KAO.U. 71/M 51; in Westerham market place, one shop was rebuilt 1547, and others changed hands in 1513 and 1508 (EM.Add. MS 33898 f 173,86v, 60v).

5.L and P.H. VIII. iii. (1).508. 6. EM.Add. MS 28530 f 17v.

On the eastern coast Winchelsea and Hastings revived little from their decline but Rye was active; it still possessed one of the best harbours on the south coast, retained a strong fishing industry and was a chief passage point to France. In 1539 Protestant immigrants had already begun to develop additional handicraft industry.

However if Wealden markets were active and prosperous in the early sixteenth century, this condition was recent in origin; the economic stagnation of the previous century, had affected the prosperity of many. A considerable number of settlements with rights for markets and fairs no longer held them in the seventeenth century - a market had lapsed in Cuckfield, a market and fair at Hawkhurst, and the market towns plotted on the county maps of 1594-6 did not include many settlements where markets had been known two centuries earlier. Among such were Ulcombe, Warehorne, Hunton and Goudhurst in the Kentish Weald, Lindfield, Bodiam, Battle and Mayfield in the Sussex Weald, Burstow, Ockley and Cranleigh in the Surrey Weald. Map coverage was doubtless incomplete but some markets and fairs did die during the later Middle Ages and, if so, probably during the fifteenth century; it

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1. VCH, Sx. 9. 1937. 52-4.
 2. L and P.H. VIII xix (2). 349.
 3. Known in 1465 (Norfolk MSS) but the licence renewed in 1670 (Cal.SP.D. 1670.4) before which date it had become defunct.
 4. Long lapsed by 1650-R. Kilburne. 1659. 135.
 5. Symonson for Kent 1596; Nerden for Sussex 1595 and Surrey 1594. These maps mapped market towns, which did not include all settlements with a market.

was then, in 1465, that proceeds from the unchartered fair in Ardingly, on the 29 June, were nil.¹ In 1460⁴⁹ Horsham^{revised} added a corn market² ~~to its existing and flourishing poultry market~~ but such expansion was localised and exceptional.

The towns along the eastern coast of the Weald, the most truly urban centres of the region, suffered heavily during this century not only from economic recession but from wave attack and foreign raiding. The eastward drift of shoreline deposits along the coast, impelled by the prevailing westerlies and strengthened by the narrowing of the Channel, brought erosion problems to Hastings and silting up to Hythe and New Winchelsea. The rivers which flowed out at the ports carried a heavy load of debris and, when the marshes around the estuaries were in³ned, deposited an increasing amount of debris in the river mouth and adjacent harbours. The problems which resulted from these natural conditions were ex⁴acerbated by regular dumping of ballast in the harbours and by the increasing size of ships.⁵

The position of New Winchelsea, on a small river six miles from the sea, rapidly became disadvantageous for trade and c 1498 its merchants⁶ moved to Rye. Winchelsea and Rye may have been sacked by a French⁷ attack in 1448-9; certainly Rye also was suffering decline and in 1449

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1. VCH, Sx. 7. 1940. 129.
 2. P.S. Godman, 1903. 181-94. C.C.R. 1427-1516. 106.
 3. Because (a) debris was no longer deposited on the marshes by the river floods (b) the velocity of the stream was reduced by reclamation and its capacity to transport debris reduced likewise. Also the debris content may have been increasing because timber fellings in the Weald encouraged surface erosion there—R.A. Pelham. 1928. 181.
 4. Complained of in Winchelsea 1336 (CPR 1334-8). 259) and 1357 (CCIR.1354-60.315); fines were imposed for this offence according to the C 15 /contd

Tenterden was incorporated with Rye to help it supply the shipping quota¹ it owed the king in wartime (Smallhythe in Tenterden was a river port,² where small vessels were built, but it too was suffering silting-up).² Pevensey, which had always been one of the smallest ports, was so³ reduced in population by 1441 that its tax obligations were reduced; the inhabitants blamed this decline on sea attack and foreign raids but silting of the port (after inning of the Levels) and plague attacks in the previous century had also contributed. In 1440 four of the parishes of Hastings had been destroyed by the sea or otherwise depopulated.⁴ Romney was actively pursuing improvements - a new watercourse for the harbour was surveyed 1439, scouring the port was continuous, and a new

ordinances of the towh-EM. Cotton MS. Julius B. iv f 24v-25.

5. Cogs were generally adopted in the C 14-M. Burrows. 1903. 89.
6. F.M. Hueffer. 1900. 105.
7. W.D. Cooper. 1856^b. 207 dates the attack 1449, M. Burrows. 1903. 150, as 1448, but the evidence for the attack is a statement lacking contemporary support (see VCH, Sx. 9. 1937.67).
1. C.P.R. 1446-52. 276-7; this refers to burnings of Rye, without specific dating.
2. By 1549 only small vessels could reach Smallhythe, and at high water A.H. Taylor. 1914. 153-6.
3. PRO.DL 37/9 n 3.
4. Reg. Praty f 43.

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haven had been dug in 1401 - but the storms of the previous century, which diverted part of the Rother away from Romney toward Rye, had left a legacy which could not be overcome.

All the ports were affected by adverse pressures during the fifteenth centuries, although the individual circumstances varied; trade fluctuated violently because of internal and external strife and the only activity which remained stable was fishing. In 1440 it was stated that the inhabitants of Rye and Winchelsea employed themselves 'solely in fishing and sea works'; fish were supplied to London and beyond.

The vitality of the ports had been sapped, before the oncoming of severe economic recession in the fifteenth century, by plague and pillage in the late fourteenth. Rye, Winchelsea and Hastings were all attacked by the French in 1380; Rye and Hastings had both suffered a similar attack only three years previously. Rye was also suffering from coastal erosion on its eastern side but the clearest evidences of

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1. 1439-W.A. Scott Robertson. 1880b. 279; 1401-M.Burrows. 1903. 213; by 1549 one of the 3 churches was destroyed, perhaps 2- W.A. Scott Robertson. 1880a. 239-41.
 2. C.P.R. 1436-41. 381.
 3. C.P.R. Daniel Rough of Romney in the late C 14 supplied fish as far as London, Hertford, St. Albans, Cambridge, Newmarket and Uxbridge-HMC. vi.545; reppers (carriers of fish to London, according to B.B. Orridge and W.D. Cooper. 1869.29) of Hawkhurst and Goudhurst were mentioned 1450 (C.P.R. 1446-52. 341, 362.)
 4. The attack of 1380 is recorded in J. Stow. Annales. 1631.293; he says they burnt Appledore also.
 5. The 1377 assault is recorded in T. Walsingham. Historia Anglicana, (ed. T.D. Hardy) ES. i. 1863. 340; see also W.D. Cooper and T. Ross. 1862. 80, VCH, Sx. 2. 1907. 139. New Romney, which was unaffected had over 1000 inhabitants 1380-941 were recorded in the Poll Tax (E.B. Walker. 1880. 206).

decline appeared at Winchelsea. After the 1380 attack burgesses began
¹ to leave the town; before the attack, in 1378, Chichester had succeeded
 Winchelsea as the chief Sussex port and Rye had already exceeded
² Winchelsea in the value of its timber export. In 1365 294 tenants in the
³ town were receiving rent relief- it had not recovered from an earlier
⁴ despoilation⁴ in 1360.

The inland markets centres of the Weald were not affected by coastal
 raids and they seem to have been more prosperous in the preceding
 decades. Grants of fairs and markets were still continuing - an
⁵ additional fair at Mayfield 1394, a market and fair at Bodiam 1383,
⁶ a fair and market in Goudhurst 1380. In 1381-2 rents for new shops were
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6. VCH, Sx. 9. 1937. 40; a monastic house set up on the east side 1364,
 moved 1378.
1. C.P.R. 1381-5. 425.
2. VCH, Sx. 9. 1937. 70. In 1374 the local customs tolls in Winchelsea were
 leased for only 43/9-C. Fine R. 1369-77. 261.
3. Besides 148 on the hillslopes around who also had relief; in 1369 at
 least 377 houses in the town were inhabited - M.W. Beresford and J.K.
 St. Joseph. 19 58.222. (VCH, Sx. 9. 1937. 66-7, gives the different
 total of 385, as burnt and uninhabited, in 1366). In 1342 94 holdings
 were excused rent-PRO.SC 6/1032/6.
4. C.C.R. 1360-4. 15, 51.
5. C.C.R. 1341-1417. 346.
6. *ibid.*, 281.
7. *ibid.* 263.

being paid in Hailsham. ¹ Many trades were restricted to settlements with markets and their practice elsewhere was an offence; such illegalities were frequently recorded - 2 tanners outside Warbleton and 1 outside Burwash ² 1392 - but the very frequency of the offence and common pardon of the defendants suggests that ³ the regulations were not very restrictive. No borough in the Weald had gild privileges and this absence of cramping gild restrictions encouraged the widespread growth of small scale industry in and near the market centres; commercial activity was widely diffused in many small centres rather than concentrate in a few large towns.

Roads through clayland areas of England were never good before Macadam but Wealden roads had not always been as bad as they were when they provoked legislation in 1597 and earlier in 1584 (27 Eliz.c 19). Their then state was largely a product of increasing traffic during the sixteenth century, especially the heavy transport of the iron industry; the ore and fuel it needed were both heavy goods and iron was transported out of the Weald in bulk. During the sixteenth century, the traffic of the iron industry grew very fast; meanwhile the regular carriage of heavy timbers from the Weald to the shipyards continued without interruption.

The peak of iron production came in the last decades of the century but deterioration of the roads had begun before; the 1582 will which

1. The second year of payment -L.F. Salzmann. 1901.33.

2. BM. Add. Ch. 31525.

3. There is no reference to guild regulations for any Wealden settlement in A. Ballard. 1913. 202-18, or A. Ballard and J. Tait. 1923. 278-302.

described roads in Ticehurst as 'verye fowle in winter' was repeating another will of 40 years previously.¹ The Worth furnace accounts, 1546-9, included payment for remaking three bridges between Worth and Crawley,² damaged by the heavy traffic from the works which passed that way. Sixteenth century wills, which frequently gave money for road repairs, reflected the decline of the road surfaces as much as any rise in³ charitable giving.

In 1549 it was written of Tenterden 'the countrie thereabouts is very fowle as it is openly knowne'⁴ and over 40 years before licence was given for divine service at Smallhythe chapel in Tenterden because the dangerous roads, great floods and 'sharp severity' of the weather made travel into the centre difficult.⁵ A statute of 1534 (26 H VIII c 7) extended to the Sussex Weald the right granted in 1523 (15 H VIII c 6) to substitute new routes for existing roads which were impassable, a provision prompted by conditions in the Kentish Weald near Cranbrook.

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1. L.J. Hodson and J.A. Odell. 1925. 21; in Chiddingfold constant complaints described local roads variously as noxia, profunda or submersa-VCH. Sy.3. 1911. 10.
 2. E. Straker. SNQ. 1930. 89.
 3. e.g. Brede 1553, 1496-R.G. Rice. 1935. 205-6; Yalding 1329-EM. Add. MS 33891 f 31; Northiam 1526-EM. Add. MS 33892 f 111; Hailsham 1540-L.F. Salzmann. 1901. 168; Wakehurst in Ardingly 1516-PCC 24 Holder. In Ashford there were 16 wills with such provisions 1461-1500, 23 1500-40, A.Hussey (ed.) 1938.
 4. A.H. Tayler. 1914. 153, citing PBO. E. 315/114 f 140.
 5. ib. 140-6, citing Warham's Register, 1504-33, f 10; in 1463 a will gave money to repair the Tenterden-Smallhythe road.

Complaints of bad roads were known in the Weald before the
 sixteenth century and so were charitable bequests for their repair,¹ but
 the subjects of action were difficulties of road upkeep in general and
 the problems of roads over sticky, ill-drained clays in particular.
 There were instances of overhanging trees (Chevening 1478,² Mountfield
 1392),³ unscoured and overflowing ditches (Staplehurst 1483,⁴ Frienden
 in Chiddingstone 1482,⁵ Etchingam 1392)⁶ refuse in the highway, broken
 bridges (Charlwood 1396,⁷ Hurstmonceux 1393),⁸ conflicts over rights of
 way and encroachment.⁹ After an encroachment in Burwash in 1410 the
 highway was 'lost'.¹¹ There is little evidence, however, in the fifteenth
 or late fourteenth centuries for any progressive deterioration of the
 roads, nor complaints of continuous stretches in a dangerous condition;
 certainly travellers could still make good speed - a bishop on visitation
 in the Sussex Weald 1478 managed to fulfil his enquiries and travel over
 10 miles a day.¹²

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1. Henfield 1473-G. Leveson-Gower. 1895. 112; Crawley 1466-7, PCC Godyn 19 (cit. SAC, 1912.9).
 2. EM. Add. MS 33898 f 17v.
 3. EM. Add. Ch. 31525-Glottenham in Mountfield.
 4. PRO. SC 2/781/72, cit. H.S. Cowper. 1914. 39.
 5. EM. Add. MS 33898 f 26v; also Sevenoaks 1481-ib.f 25v.
 6. E.J. Courtherpe and B.E.R. Fermoy(ed.) 1931. 115; Iridge in Salehurst 1392-EM. Add. Ch. 31525.
 7. E. Sewill and R. Lane. 1951.41.
 8. EM. Add. Ch. 31525.
 9. e.g. Ticehurst 1436-EM. Add. Ch. 31581.m.1.
 10. Ashburnham 1392 EM Add Ch 31525; Staplehurst 1483 EM Add Ch 31525

(x) Conclusion.

The antecedents of the early seventeenth century Wealden scene were not all of equal antiquity, as the variety of later medieval changes demonstrates. Mixed farming with cattle and swine the chief beasts, oats and wheat the major grains; the tripartite division of grazings into common, enclosed grass and meadow; the broad expanses of parkland; the pattern of semi-dispersed settlement, and the constant demand for timber - all these indeed went back to 1350 and beyond, but they composed but half the picture. The great age of glass production came after 1550; the origins of large-scale ironworking (and related deterioration of the roads) lay in technical advances introduced to the Weald in the 1490's; the Wealden hall-house flowered in the fifteenth century. Nor was agriculture wholly stable - swine were more numerous in the earlier centuries and the arable fields of 1600, whilst they included some new enclosures of the sixteenth century, did not contain many lands which had gone out of cultivation in the mid-fifteenth century. Some elements of the seventeenth century landscape first appeared after 1350 and those whose origin lay earlier had almost all been affected by the pronounced economic fluctuations of the later medieval period.

11. BM. Add. Ch. 31550.

12. J.H. Cooper. 1900. 55.