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The Victoria History of the Counties of England

EDITED BY WILLIAM PAGE, F.S.A.

A HISTORY OF NOTTINGHAMSHIRE

IN FOUR VOLUMES

VOLUME I

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND

NOTTINGHAMSHIRE

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INSCRIBED
TO THE MEMORY OF
HER LATE MAJESTY
QUEEN VICTORIA
WHO GRACIOUSLY GAVE
THE TITLE TO AND
ACCEPTED THE
DEDICATION OF
THIS HISTORY

The Castle, Nottingham.

THE VICTORIA HISTORY OF THE COUNTY OF NOTTINGHAM

EDITED BY

WILLIAM PAGE, F.S.A.

VOLUME ONE

LONDON

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PREFACE

SO much of the County of Nottingham was covered on its north and east sides by the Forest of Sherwood that the early history of this district is comparatively slight. Nottinghamshire can, however, claim to possess one of the oldest county histories in Dr. Robert Thoroton's *Antiquities of Nottinghamshire*, published in 1677. Though not perhaps equal to its contemporary the *History of Warwickshire*, by Dugdale, it is a work of considerable research, and has remained till now the only history of the county, for John Throsby's *History of Nottinghamshire* published in 1797 is practically a reprint of Thoroton's work, with a few additions to the text and illustrations.

The Editor wishes to express his thanks to Mr. J. Horace Round, M.A., LL.D., for his help and suggestions regarding the articles on the Domesday Book and Political History; to Mr. G. H. Wallis, F.S.A., director of the Art Museum, Nottingham Castle, for assistance in many ways; to Mr. I. Chalkley Gould, F.S.A., for notes relating to the earthworks of the county; and to the Society of Antiquaries, the British Archaeological Society, and Sir John Evans, K.C.B., for the use of blocks.

TABLE OF ABBREVIATIONS

Abbrev. Plac. (Rec. Com.)	Abbreviatio Placitorum (Record Commission)
Acts of P.C. . .	Acts of Privy Council
Add.	Additional
Add. Chart. . .	Additional Charters
Admir.	Admiralty
Agarde	Agarde's Indices
Anct. Corresp. . .	Ancient Correspondence
Anct. D. (P.R.O.) A 2420	Ancient Deeds (Public Record Office) A 2420
Ann. Mon. . . .	Annales Monastici
Antiq.	Antiquarian or Antiquaries
App.	Appendix
Arch.	Archæologia or Archæological
Arch. Cant. . .	Archæologia Cantiana
Archd. Rec. . .	Archdeacons' Records
Archit.	Architectural
Assize R. . . .	Assize Rolls
Aud. Off. . . .	Audit Office
Aug. Off. . . .	Augmentation Office
Ayloffe . . .	Ayloffe's Calendars
Bed.	Bedford
Beds	Bedfordshire
Berks	Berkshire
Bdle.	Bundle
B.M.	British Museum
Bodl. Lib. . . .	Bodley's Library
Boro.	Borough
Brev. Reg. . . .	Brevia Regia
Brit.	Britain, British, Britannia, etc.
Buck.	Buckingham
Bucks	Buckinghamshire
Cal.	Calendar
Camb. . . .	Cambridgeshire or Cambridge
Cambr.	Cambria, Cambrian, Cambrensis, etc.
Campb. Ch. . .	Campbell Charities
Cant.	Canterbury
Cap.	Chapter
Carl.	Carlisle
Cart. Antiq. R. .	Cartæ Antiquæ Rolls
C.C.C. Camb. . .	Corpus Christi College, Cambridge
Certiorari Bdles. (Rolls Chap.)	Certiorari Bundles (Rolls Chapel)
Chan. Enr. Decree R.	Chancery Enrolled Decree Rolls
Chan. Proc. . .	Chancery Proceedings
Chant. Cert. . .	Chantry Certificates (or Certificates of Colleges and Chantries)
Chap. Ho. . . .	Chapter House
Charity Inq. . .	Charity Inquisitions
Chart. R. 20 Hen. III. pt. i. No. 10	Charter Roll, 20 Henry III. part i. Number 10
Chartul.	Chartulary
Chas.	Charles
Ches.	Cheshire
Chest.	Chester
Ch. Gds. (Exch. K.R.)	Church Goods (Exchequer King's Remembrancer)
Chich.	Chichester
Chron.	Chronicle, Chronica, etc.
Close	Close Roll
Co.	County
Colch.	Colchester
Coll.	Collections
Com.	Commission
Com. Pleas . . .	Common Pleas
Conf. R. . . .	Confirmation Rolls
Co. Plac. . . .	County Placita
Cornw.	Cornwall
Corp.	Corporation
Cott.	Cotton or Cottonian
Ct. R.	Court Rolls
Ct. of Wards . .	Court of Wards
Cumb.	Cumberland
Cur. Reg. . . .	Curia Regis
D.	Deed or Deeds
D. and C. . . .	Dean and Chapter
De Banc. R. . .	De Banco Rolls
Dec. and Ord . .	Decrees and Orders
Dep. Keeper's Rep.	Deputy Keeper's Reports
Derb.	Derbyshire or Derby
Devon	Devonshire
Dioc.	Diocese
Doc.	Documents
Dods. MSS. . .	Dodsworth MSS
Dom. Bk. . . .	Domesday Book
Dors.	Dorsetshire
Duchy of Lanc. .	Duchy of Lancaster
Dur.	Durham
East.	Easter Term
Eccl.	Ecclesiastical
Eccl. Com. . .	Ecclesiastical Commission
Edw.	Edward
Eliz.	Elizabeth
Engl.	England or English
Engl. Hist. Rev. .	English Historical Review
Enr.	Enrolled or Enrolment
Epis. Reg. . . .	Episcopal Registers
Esch. Enr. Accts. .	Escheators Enrolled Accounts
Excerpta e Rot. Fin. (Rec. Com.)	Excerpta e Rotulis Finium (Record Commission)
Exch. Dep. . .	Exchequer Depositions
Exch. K.B. . .	Exchequer King's Bench
Exch. K.R. . .	Exchequer King's Remembrancer
Exch. L.T.R. . .	Exchequer Lord Treasurer's Remembrancer

TABLE OF ABBREVIATIONS

Exch. of Pleas, Plea R.	Exchequer of Pleas, Plea Roll
Exch. of Receipt	Exchequer of Receipt
Exch. Spec. Com.	Exchequer Special Commissions
Feet of F.	Feet of Fines
Feod. Accts. (Ct. of Wards)	Feodaries Accounts (Court of Wards)
Feod. Surv. (Ct. of Wards)	Feodaries Surveys (Court of Wards)
Feud. Aids	Feudal Aids
fol.	Folio
Foreign R.	Foreign Rolls
Forest Proc.	Forest Proceedings
Gaz.	Gazette or Gazetteer
Gen.	Genealogical, Genealogica, etc.
Geo.	George
Glouc.	Gloucestershire or Gloucester
Guild Certif. (Chan.) Ric. II.	Guild Certificates (Chancery) Richard II.
Hants	Hampshire
Harl.	Harley or Harleian
Hen.	Henry
Heref.	Herefordshire or Hereford
Hertf.	Hertford
Herts	Hertfordshire
Hil.	Hilary Term
Hist.	History, Historical, Historian, Historia, etc.
Hist. MSS. Com.	Historical MSS. Commission
Hosp.	Hospital
Hund. R.	Hundred Rolls
Hunt.	Huntingdon
Hunts	Huntingdonshire
Inq. a.q.d.	Inquisitions ad quod damnum
Inq. p.m.	Inquisitions post mortem
Inst.	Institute or Institution
Invent.	Inventory or Inventories
Ips.	Ipswich
Itin.	Itinerary
Jas.	James
Journ.	Journal
Lamb. Lib.	Lambeth Library
Lanc.	Lancashire or Lancaster
L. and P. Hen. VIII.	Letters and Papers, Hen. VIII.
Lansd.	Lansdowne
Ld. Rev. Rec.	Land Revenue Records
Leic.	Leicestershire or Leicester
Le Neve's Ind.	Le Neve's Indices
Lib.	Library
Lich.	Lichfield
Linc.	Lincolnshire or Lincoln
Lond.	London
m.	Membrane
Mem.	Memorials
Memo. R.	Memoranda Rolls
Mich.	Michaelmas Term
Midd.	Middlesex
Mins. Accts.	Ministers' Accounts
Misc. Bks. (Exch. K.R., Exch. T.R. or Aug. Off.)	Miscellaneous Books (Exchequer King's Remembrancer, Exchequer Treasury of Receipt or Augmentation Office)
Mon.	Monastery, Monasticon
Monm.	Monmouth
Mun.	Muniments or Munimenta
Mus.	Museum
N. and Q.	Notes and Queries
Norf.	Norfolk
Northampt.	Northampton
Northants	Northamptonshire
Northumb.	Northumberland
Norw.	Norwich
Nott.	Nottinghamshire or Nottingham
N.S.	New Style
Off.	Office
Orig. R.	Originalia Rolls
O.S.	Ordnance Survey
Oxf.	Oxfordshire or Oxford
p.	Page
Palmer's Ind.	Palmer's Indices
Pal. of Chest.	Palatinate of Chester
Pal. of Dur.	Palatinate of Durham
Pal. of Lanc.	Palatinate of Lancaster
Par.	Parish, parochial, etc.
Parl.	Parliament or Parliamentary
Parl. R.	Parliament Rolls
Parl. Surv.	Parliamentary Surveys
Partic. for Gts.	Particulars for Grants
Pat.	Patent Roll or Letters Patent
P.C.C.	Prerogative Court of Canterbury
Pet.	Petition
Peterb.	Peterborough
Phil.	Philip
Pipe R.	Pipe Roll
Plea R.	Plea Rolls
Pop. Ret.	Population Returns
Pope Nich. Tax. (Rec. Com.)	Pope Nicholas' Taxation (Record Commission)
P.R.O.	Public Record Office
Proc.	Proceedings
Proc. Soc. Antiq.	Proceedings of the Society of Antiquaries
pt.	Part
Pub.	Publications
R.	Roll
Rec.	Records
Recov. R.	Recovery Rolls
Rentals and Surv.	Rentals and Surveys
Rep.	Report
Rev.	Review
Ric.	Richard

TABLE OF ABBREVIATIONS

Roff.	Rochester diocese
Rot. Cur. Reg.	Rotuli Curiæ Regis
Rut.	Rutland
Sarum	Salisbury diocese
Ser.	Series
Sess. R.	Sessions Rolls
Shrews.	Shrewsbury
Shrops	Shropshire
Soc.	Society
Soc. Antiq.	Society of Antiquaries
Somers.	Somerset
Somers. Ho.	Somerset House
S.P. Dom.	State Papers Domestic
Staff.	Staffordshire
Star Chamb. Proc.	Star Chamber Proceedings
Stat.	Statute
Steph.	Stephen
Subs. R.	Subsidy Rolls
Suff.	Suffolk
Surr.	Surrey
Suss.	Sussex
Surv. of Ch. Livings (Lamb.) or (Chan.)	Surveys of Church Livings (Lambeth) or (Chancery)
Topog.	Topography or Topographical
Trans.	Transactions
Transl.	Translation
Treas.	Treasury or Treasurer
Trin.	Trinity Term
Univ.	University
Valor Eccl. (Rec. Com.)	Valor Ecclesiasticus (Record Commission)
Vet. Mon.	Vetusta Monumenta
V.C.H.	Victoria County History
Vic.	Victoria
vol.	Volume
Warw.	Warwickshire or Warwick
Westm.	Westminster
Westmld.	Westmorland
Will.	William
Wilts	Wiltshire
Winton.	Winchester diocese
Worc.	Worcestershire or Worcester
Yorks	Yorkshire

A HISTORY OF NOTTINGHAMSHIRE

AN INTRODUCTION TO THE NATURAL HISTORY OF NOTTINGHAMSHIRE

NOTTINGHAMSHIRE, one of the north-midland counties of England, is in form an irregular oval, about fifty miles in length from north to south, and with a greatest width of about twenty-six miles from east to west : its total area is about 844 square miles. Its political borders are formed by the counties of York, Derby, Leicester and Lincoln, which bound it on the north, west, south and east respectively. In the north-east portion of the county the river Trent forms a natural boundary, as do also the Erewash and Soar, and about three miles of the Trent, in the south-west, but elsewhere the boundary is not formed by natural features, unless we except the few insignificant lengths along which the Witham and one or two small streams coincide with the county boundary. In its physical features Nottinghamshire presents no very great diversity ; it possesses none of the wild moorland or bold mountainous scenery of its neighbours on the north and west. Along the course of the Trent, which stretches across the southern and eastern parts of the county, are extensive areas of rich low-lying pasture and arable land, but elsewhere the surface is for the most part of a gently undulating character, rising in some places into low ranges of hills, which attain their greatest altitude to the south and west of Sutton-in-Ashfield, where there is a good deal of ground lying above the contour line of 600 feet. The highest points indicated on the last edition of the ordnance map are 651 feet at Hucknall-under-Huthwaite ; 631 feet at Wild Hill, one mile north of the former station ; and 629 feet and 614 feet respectively to the east and south-east of East Kirkby. Of lesser height are the hills north of Blidworth (500 feet) ; 'The Plains' in the immediate neighbourhood of Nottingham, which rise to a height of 470 feet at Dorket Head, and 508 feet at Cockpit Hill ; and the Wolds in the extreme south of the county, which just reach 400 feet. On the other hand a great part of the eastern side of the county lies below the 100 feet contour line, and in the Carr lands of the extreme north we have an area much of which is less than 10 feet above sea level.

The most striking of the physical characteristics of Nottinghamshire is however the beautiful park and woodland scenery of Sherwood

Forest, which occupies a considerable area on the western side of the county, between Mansfield on the south and Worksop on the north. Within this region, especially in the extensive woods known as the Birklands and Bilhagh, may be seen some of the finest primeval woodland in Britain ; the trees are mainly oak and birch, many of them, especially the former, being evidently of great antiquity. Such are the celebrated Major, Parliament, Shambles and Greendale Oaks. There is usually no undergrowth beyond a dense and luxuriant carpet of bracken. Other parts of the district, from which the old timber had long ago been cleared, are now occupied by extensive plantations of oak, beech, larch and other conifers, sweet-chestnut and other trees. The open forest and park lands are dotted over with ancient thorn trees, often infested with mistletoe ; the ground vegetation consists of various grasses with ling and heath, gorse and bracken.

Nottinghamshire is almost entirely within the drainage area of the Trent. This noble river, rising in the Staffordshire moors, enters the county near its south-west corner, shortly after its junction with the Derbyshire Derwent at Sawley, receives at once the waters of the Erewash and Soar, and thence passing along the southern boundary of the city of Nottingham, crosses the county in a north-easterly direction to Newark, whence it flows almost due north, finally leaving the county at West Stockwith, a village at the extreme north-east corner of Notts. Among its purely Nottinghamshire tributaries are the Leen, which rises in the Robin Hood Hills and flows into the canal at Lenton, and thence into the Trent at Nottingham ; the Cocker Beck, Dover Beck, and Greet from the north-west enter the Trent near Gunthorpe, Caythorpe and Fiskerton respectively ; the united waters of the Smite and Devon rivers, flowing north from Leicestershire, join the Newark branch of the Trent at Newark ; and finally at the extreme north-east of the county the Trent is reinforced by the waters of the Idle, a river formed by the union of the Ryton, Poulter, Meden, Maun, and Vicar and Rainworth waters, which drain the Sherwood Forest region. In the parks of Sherwood Forest several artificial lakes of considerable size have been formed along the course of the streams.

As before mentioned the county of Nottingham is in shape an irregular, elongated oval, its long axis pointing somewhat N.E. and S.W. It thus coincides in position with the general strike of the English sedimentary rocks which accordingly run through it from end to end as long bands of varying width. Owing to the narrowness of the county, however, these bands are very few in number, and consequently there is little variety in the nature of the rocks which form the surface, and therefore of the scenery due to such diversity of geological formations.

By far the greater part of the surface of the county is occupied by the Trias or New Red Sandstone, the two main divisions of which—the Upper or Keuper and the Lower or Bunter—form broad bands, each

several miles across. On the eastern side of the county, for the southern two-thirds of its length, the Trias is bordered by the lower beds of the Lias, which form a narrow strip between the Keuper and the county boundary. Between the Keuper and Lias is a band of Rhætic shales of insignificant thickness. On the other side of the county the Permian rocks occupy a long narrow area along the western border of the Bunter beds; and still further to the westward the Permian is followed by a patch of Coal Measures—the easterly extension of the Derbyshire and Yorkshire coalfield.

With the exception of the Drift deposits and the Alluvium of the river valleys, the above are all the formations which occur in Nottinghamshire.

In a county whose highest ground is only something over 600 feet above sea-level it might be expected that the fauna and flora which characterize the more mountainous parts of Derbyshire and Yorkshire would be absent, as is indeed the case. Also an inland county must necessarily compare unfavourably with one, such as Lincolnshire, which enjoys all the advantages in flora and fauna that the possession of a long line of coast confers. A further circumstance which tends to reduce the number of species, especially of plants and molluscous animals, is the absence of certain geological formations favourable to their occurrence; even the narrow band of Magnesian Limestone which occurs along the western border of the county, and is the only calcareous rock formation that we possess, is largely spoiled for botanical and faunistic purposes by the long line of collieries and colliery villages with their attendant network of railway lines which follow its outcrop. Moreover the high state of cultivation of by far the greater part of the county, and the almost entire absence of undrained bog or marsh land account for the absence at the present day of many forms of life which may once have existed here.

Still, in spite of all these disadvantages, it will be found from the appended lists that we possess a fauna and flora of considerable richness and variety. Many groups, both of animals and plants, are still however only very imperfectly worked out, and very much still remains to be done before we can form any accurate idea of the full extent of our organic wealth.

GEOLOGY

IN relation to the general geological structure of England the city of Nottingham occupies a peculiar position. If a line be drawn from the mouth of the Tees and follow a course along the vale of York and the lower basin of the Trent on their western sides, and thence by the Soar and Avon to the east side of the vale of Severn to terminate at the mouth of the Exe, there will be found on the west side of it all the older, or Palæozoic, rocks and the bulk of the manufacturing centres, and on the east side of it most of the newer, or Neozoic, rocks and of the purely agricultural land. This dividing line passes through Nottingham.

Again, in the northern half of England the surface is dominated by a single line of elevation along the axis of the Pennine range from north to south; but in the southern half the lines of elevation are shorter and irregular in direction, more especially in the Midland district. Nottingham lies at the extreme southern end of the Pennine axis.

As a result of this position we find in Nottinghamshire the youngest members of the Palæozoic division and the oldest members of the Neozoic division of rocks, and a development both of coal mining and of agricultural industries. We find also the several successive rock formations sloping, or having a dip, to the east away from the Pennine axis until they approach the southern border, where several of them die out altogether and others change their direction.

In systematic geology the bedded rocks of Nottinghamshire are classed under four systems: the CARBONIFEROUS, PERMIAN, TRIASSIC and JURASSIC, of which the two former are Palæozoic and the two latter are Neozoic. Besides these there are the superficial deposits which lie indiscriminately on all the bedded strata. A complete table of formations, described in ascending order, follows on the next page.

THE CARBONIFEROUS SYSTEM

The whole of the Carboniferous system as developed at the southern end of the Pennine axis, if we include the rocks easily reached by boring, is found within the county. The members of the system are: 1. The *Carboniferous* or *Mountain Limestone* (marked d_2 on the Geological Survey maps); 2. The *Yoredale Shales* (d_3); the *Millstone Grit* (d_4); and the *Coal-Measures* (d_5), including the three subdivisions, Lower, Middle and Upper Coal-Measures.

TABLE OF FORMATIONS MET WITH IN NOTTINGHAMSHIRE

System	Formation	Subdivisions	Maximum *local* thickness in feet
[Superficial]	Local	Blown Sand Black Earth and Loam Alluvium . . . . . River Gravel . . . . Cave Earth	 30 20
	Glacial	Chalky Gravel Chalky Boulder Clay . . Western Gravel Western Boulder Clay .	 70 50
Jurassic	Liassic	Lower Lias	150 (?)
	Rhætic	White Lias . . . . . Black Shales with Bone Bed	18 15
Triassic	Keuper	Keuper Marls . . . . Keuper Sandstones or Waterstones	714
	Bunter	Upper Red Sandstone. . Pebble Beds. . . . . Lower Red Sandstone .	616 233
Permian		Upper Marls . . . . Upper Limestone . . . Lower Marls and Sandstones . . . . . . Small-grained Dolomite & Magnesian Limestone . Marl Slate . . . . . Breccia	89 53 148 255 185 12
Carboniferous	Upper Carboniferous	Upper Coal-Measures . Middle Coal-Measures . Lower Coal-Measures . Millstone Grit	530 2,480 820 720
	Lower Carboniferous	Yoredale Shales. . . . Mountain Limestone . .	Not pierced

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The Carboniferous Limestone, with the Yoredale Shales, which gradually replace it towards the north, was laid down over an enormous area extending to the borders of Wales on the west, to the lowlands of Scotland on the north, to an unknown distance to the east, but having its southern margin in Leicestershire and Derbyshire on the confines of Notts. In this direction it is definitely bounded by a ridge of older rocks running east and west. These come to the surface in Charnwood Forest and are met with in both directions in borings east and west of Leicester.[1] Now both the Limestone and the Shales are seen at the surface at Ticknall in east Derbyshire, and if these follow the line of their common boundary they will certainly enter Nottinghamshire, without any overlying Coal-Measures but covered only by Neozoic strata, along a line from Rempstone to Upper Broughton. They probably occur also as basal rocks throughout the whole county, but at too great a depth to be reached.

The same may be said of the Millstone Grit which comes to the surface at Melbourne and Castle Donnington. It will continue eastward underground across the Soar into Nottinghamshire along a line from Kingston-upon-Soar to Widmerpool. It has actually been found beneath the Coal-Measures at a depth of 1,150 feet in a boring at Ruddington, which was continued for a depth of 720 feet in it.

The Coal-Measures, or group of strata in which are found seams of coal thick enough to be profitably worked, are the lowest rocks which actually come to the surface in the county, of which they occupy about 36 square miles. They form part however of an immense coalfield extending continuously into Derbyshire and Yorkshire, and formerly united to the now separated coalfields of Lancashire and north Staffordshire. This former union is shown by the recognized identity of the 'Black Shale' coal of Derbyshire and Notts with the 'Silkstone' of Yorkshire and the 'Arley Mine' of Lancashire, and by the occurrence of the same kinds of Upper Coal-Measures in Notts and north Staffordshire.

The materials of which the Coal-Measures are formed consist of beds of sandstone and grit of various thicknesses interspersed with beds of shale or bind and occasional beds of coal and other special rocks, such as clunch, gannister and ironstone. It is probably seldom realized by those who have no mining experience how small is the amount of coal in comparison with the rest of the series. Thus out of 1,900 feet of strata from the top of the Coal-Measures to the lowest workable seam[2] pierced near Nottingham only 83 feet consists of actual coal, and much of that is too thin to be worked. For this reason outcrops of coal are seldom or never now seen at the natural surface, but only in cuttings or in clay and stone pits.

The best idea of the Coal-Measure strata of Nottinghamshire may be obtained from the cuttings on the canal side near Wollaton; the railway cuttings between Radford and Trowell[3] (formerly) and at Kimberley;

[1] Harrison, *Proc. Birm. Phil. Soc.* vol. ii.
[2] *Geol. Survey Mem.* sheet 71, N.E. (3 sections).
[3] Irving, *Proc. Geol. Assoc.* vol. vi.

and the openings for clay near Wollaton and for stone on Trowell Moor; though some of these are now poor. The alternations of sandstone and shale give rise, by their different ways of weathering, to very undulating country, usually well clothed with vegetation. The fresh exposures of the harder rocks are of peculiar art shades with a predominant neutral tint.

The Nottinghamshire coals burn to an ash and have a composition exemplified by one from Shireoaks, analyzed by C. Tookey :[1]—

Carbon	77·40
Hydrogen	4·96
Oxygen and Nitrogen	9·32
Sulphur	0·92
Ash	3·90
Water and loss	3·50
	100·00

Some varieties called 'splint' coal show a very bright 'face' when split, and, in others, extra bright bands may be seen standing out from the parts which consists of loose dust. The bright bands are cross sections of the broken tree stems of *Sigillaria*, etc., the surface markings of which are sometimes seen when the fracture lies in a suitable direction. The loose dust, often called 'mother-of-coal,' if carefully handled and suitably examined under the microscope, is seen to consist of the disc-bearing cells of some kind of gymnospermous tree, probably of *Cordaites*.

In Clifton Colliery a bed of 'Cannel' coal is found between the 'Waterloo' and 'Deep Soft' seams. This kind of coal has no definite structure in it and is supposed to be the result of the decomposition of the material of ordinary coal, and its deposition as a water-borne sediment. It contains, instead of plant stems, the spines, scales, vertebræ and teeth of ganoid fishes referred to the genera *Ctenacanthus*, *Gyracanthus* and *Megalichthys*. It is also more gaseous than ordinary coal, as its name implies.

Clunch and *gannister* are materials which form the bed next below any coal seam. In the case of all the coal seams of Nottinghamshire, as far as known, it is clunch that is found. This is a kind of kneaded up clay, without internal stratification, and often showing the remains of the roots of the plants which have made the overlying coal. It is also called 'underclay' and 'seat-earth.' The clunch is often valuable as a fireclay, but is little worked in Nottinghamshire, less than 9,000 tons of it being raised in 1901, against nearly 68,000 tons from Derbyshire. Gannister is a hard siliceous band found in the same position beneath certain coals with which marine remains are associated, but it has not been definitely recognized in Nottinghamshire.

The largest of the roots found associated with the underclay is the *Stigmaria*. This usually stands upright and has a diameter of 18 inches and upwards. In a downward direction it branches into four parts, each

[1] Percy, *Metallurgy*, vol. i.

marked with rootlet scars. It is cut off above by the horizontal coal seam, in which it appears lost, but on the other side of the seam the stem corresponding to the root may sometimes be seen standing upright above it. These roots are most abundant below the 'Top Hard' seam. They have long been known in the Newcastle Colliery at Old Basford, one being preserved in the museum at the University College, Nottingham, and some specially fine examples accompanied by the corresponding stems have been described by Mr. Shipman from the same horizon elsewhere.[1] In one of these, found at Bulwell, the stem belonged to *Sigillaria* and had a diameter of 5 ft. 6 in. and a length preserved, now filled in with sand, of 7 ft. 6 in. In another, found at Newstead, the stem was *Lepidodendron*, and had a diameter of 9 feet and a length preserved of 7 feet. At a little higher level similar trees of smaller diameter, 3–4 feet, are found. Such trees can only be seen in the mines themselves, as they are too large to bring up.

The *ironstone* occurs in a peculiar form. It does not form a rock-bed but consists of concretionary nodules hardened by compounds of iron. These nodules occur in great numbers at various horizons and often contain the remains of some organism embedded in them, such as a bivalve shell or a fern. The bivalve shells, named *Anthracosia*,[2] belong to the family *Unionidæ* or 'freshwater mussels,' hence the beds containing them are called 'mussel bands.' The two principal species are *A. robusta* and *A. acuta*. The ferns are most commonly of the genera *Neuropteris* and *Alethopteris*. The most remarkable fossil from these nodules, found by Mr. E. Wilson in 1876 at Skegby New Colliery near Mansfield, consists of five abdominal segments and a pair of pincers of a scorpion, described and figured by Dr. H. Woodward[3] under the name of *Eoscorpius anglicus*, being the first of its kind found in England.

The roof of a coal seam, or stratum immediately following it, is generally much richer in organisms, or perhaps more frequently examined, than other portions of the strata, and constantly contains fragments of such plants as *Sphenopteris*, *Asterophyllites*, etc., but these have not as yet been adequately studied in Nottinghamshire.

All the fossils hitherto mentioned, with the possible exception of the fishes, are inhabitants of the land or fresh water; and although in other coalfields marine organisms occur at various horizons they have not till lately been found in Nottinghamshire, probably from the scarcity of opportunities. However, in the sinking of the shaft at Gedling (vide infra) specimens of *Lingula*, *Discina* and *Aviculopecten* have been discovered in bands, both connected with or unconnected with the coal seams in that part of the Coal-Measures usually supposed to be characterized by their absence.[4]

Notwithstanding, however, these proofs of occasional submergence, as in other coalfields, the Coal-Measures exposed or worked in Nottinghamshire are essentially non-marine, as is further shown by the remark-

[1] *Nott. Nat. Soc. Transactions* for 1894.
[2] Also called *Carbonicola*.
[3] *Quart. Journ. Geol. Soc.* vol. xxxii.
[4] *Geol. Survey*, 'Summary of Progress for 1902.'

able phenomena known as 'wash-outs.' A wash-out or 'dumb-fault' is discovered in working a coal seam by the sudden dying out of the coal and its replacement by a mass of sandstone apparently pressed into it from above. This sandstone may continue for many yards, but if the 'stone-heading' is continued far enough it may reach the other side of the wash-out and enter the coal seam again. If the sandstone is traced in a direction transverse to such a heading it is found to have the form of a long, sometimes branching trough. The material filling this trough is often false bedded and includes fragments of coal, bind, fossiliferous iron-stone, etc., which have been brought from a distance.

The occurrence of a wash-out in this district was first shown by Lieut. G. E. Coke[1] in the 'Deep Hard' Coal on the borders of the county, but they have since been described by Mr. J. Shipman[2] as occurring on two horizons in the Leen Valley workings. Such a wash-out in the Newcastle Colliery affects the 'Top Hard' coal and has a breadth of 300 yards. It has been traced in a transverse direction for more than a mile. In the Newstead Colliery a wash-out affects the 'Comb' coal and the strata above it. Its breadth varies from 50 to 250 yards, and its depth is about 25 feet. It has been traced taking a winding but generally N.E. or E.N.E. course for a distance of 3 miles, and has a tributary joining it on the right hand side at the main bend. Its base is uneven and rutted, and the channel deepens towards the N.E., the upper end being probably the continuation of a wash-out formerly met with in the Annesley Colliery. A third wash-out has been seen in the 'Deep Soft' coal at Wollaton, having a breadth of 15 yards and a depth of 6 feet. In this case, as in that at the Newcastle Colliery, but in a more marked degree, the wash-out is coincident with a downward roll of the strata beneath, which was doubtless the original cause of the wash-out taking the course it did. A wash-out can only be produced on a land surface by a stream running on the level of the coal seam and wearing away a furrow which is afterwards filled with the next succeeding kind of deposit. It is an example of *contemporaneous erosion.*

Another example of this kind of erosion on a far larger scale is that of the Red Rock of Rotherham, which has also been met with in Notts. This is a massive sandstone 200 ft. in thickness which lies so irregularly on the earlier measures that it was thought at one time to be Permian. The question of its age was however definitely settled by the occurrence of a coal seam—the 'Manor' coal—above it in the Shireoaks Colliery. Its irregularity is therefore a mere accident of deposit.

With these exceptions the whole of the Coal-Measures belong to a single conformable series of deposits, of which the most constant as well as the most easily recognized are the coal seams themselves. The following is a list of all the coals that have received names in the county of Nottingham, beginning with the highest.

[1] *Trans. Chesterfield and Mid. Count. Inst. of Engineers*, vol. xvi. 1888.
[2] *Nott. Nat. Soc. Trans.* for 1894.

TABLE I. THE NAMED COALS OF THE NOTTINGHAM COALFIELD

MANOR	Shireoaks, above the Rotherham Red Rock
SHAFTON	Southcar, below the Rotherham Red Rock
BAGSHAW	Southcar, above the Oaks Rock
SWINTON POTTERY	Southcar, below the Oaks Rock
CLOWN	Shireoaks and Leen Valley = WATHWOOD in Yorkshire
ABDY or WINTER	Southcar
FURNACE	Shireoaks and Leen Valley } Possibly equal
BEAMSHAW	Southcar }
KENTS THIN	Southcar
HAZLES	Shireoaks and Leen Valley = KENTS THICK at Southcar
COMB	Leen Valley = BARNSLEY SOFT (?) at Southcar
TOP HARD	Nottingham District = BARNSLEY HARD at Southcar, and in Yorkshire
DUNSIL	Nottingham District = SWALLOW WOOD in Yorkshire
WATERLOO	Nottingham District = LIDGET in Yorkshire
HOO CANNEL	Clifton Colliery
DEEP SOFT	Nottingham District = FLOCKTON in Yorkshire
DEEP HARD	Nottingham District = FENTON'S in Yorkshire
PIPER	Nottingham District
TUPTON or FURNACE	Kimberley and Cossall = PARKGATE in Yorkshire
LOW MAIN	Tevershall = THORNCLIFFE THIN in Yorkshire
THREE-QUARTERS YARD or DOGTOOTH	Tevershall = FOUR FEET in Yorkshire
BLACK SHALE	Tevershall = CLOD in Derbyshire = SILKSTONE in Yorkshire
KILBURN	Kimberley and Cossall
NAUGHTON	Ruddington boring
ALTON	Ruddington boring

The numerous sinkings by shaft or boring that have been made to reach the coal, mostly where covered by newer strata, have thrown great light upon the succession, thickness and position of the strata, as may be seen by the following examples, showing successive parts of the series from the summit to the base.[1]

I. BORING AT THURGARTON
commences 60 ft. above O.D.
(*Communicated by G. E. Coke*)

Trias and Permian, 850 ft.	ft.
Upper Measures—Keele Series	188
" " Newcastle Series	92
" " Etruria Marls	256
Measures	620
Total Coal-Measures	1,156

I. (*a*) SHAFT at GEDLING
commences 190 ft. above O.D.
(*Communicated by G. E. Coke*)

Trias and Permian, 513 ft.	ft.
Upper Measures—Etruria Marls	93
Measures with thin coals	762
Top Hard Coal	
Total Coal-Measures	855

I. (*b*) BORING AT SCARLE
commences 60 ft. above O.D.
(*W. H. Dalton, Geol. Survey Mem.* sheet 83)

Gravel and Lias to Permian, 2,022 ft.	ft.
Upper Coal-Measures	10
Total Coal-Measures	10

[1] The thicknesses of the coals are included in the Measures overlying them, which are taken to the base of the coal seam.

II. Boring at Southcar on the Idle
commences 15 ft. above O.D.
(*Dunstan, Mid. Inst. Civ. and Mech. Eng. Proc.* vol. xiv.)

Alluvium, Triassic and Permian, 1,728 ft.

	ft.
Mottled Shale, with a 6 in. limestone	9
Rotherham Red Rock, with 9 ft. mottled shales near the top. . .	96
Measures with 3 thin seams . . .	118
Shafton Coal, 3 ft. 1 in.	
Measures with *Bagshaw* seam . .	469
Oaks Rock, 94 ft.; *Swinton Pottery* seam, 3 ft. 9 in.; and measures with 6 thin seams including *Abdy*, *Winter* and *Kents Thin*	608
Kents Thick Coal, 4 ft. 5 in.	
Measures.	130
Barnsley Soft Coal, 4ft. 9 in.	
Measures.	39
Barnsley Hard Coal, 4 ft. 7 in.	
Measures.	10
Total Coal-Measures. . .	1,479

II. (*a*) Shaft at Shireoaks near Worksop
commences 200 ft. above O.D.
(*Lancaster and Wright, Quart. Journ. Geol. Soc.* vol. xvi.)

Permian, 215 ft.

	ft.
Measures with *Manor Coal*, 2 ft. and bands of Ironstone	57
Rotherham Red Rock.	198
Measures with 15 thin coals . . .	546
Clown or *Wathwood Coal*, 4 ft. 4 in.	
Measures with coal seam, 2 ft. 8 in.	266
Hazles Coal, 3 ft.	
Measures with 2 thin coals . . .	241
Top Hard Coal, 3 ft. 9 in.	
Measures.	114
Total Coal-Measures. . .	1,422

III. Silver Hill Colliery, Tevershall,
commences at 545 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxiii.)

	ft.
Measures.	153
Top Hard Coal, 5 ft. 6 in.	
Measures.	63
Dunsil Coal, 4 ft.	
Measures.	111
Waterloo Coal, 2 ft. 7 in.	
Measures.	543
Deep Hard Coal, 2 ft. 7 in.	
Measures.	30
Piper Coal, 2 ft. 8 in.	
Measures.	168
Low Main Seam, 4 ft. 9 in.	
Measures with *Three-quarters Coal*, 2 ft. 10 in. and *Yard Coal*, 3 ft. 4 in.	188
Black Shale Coal, 2 ft. 10 in.	
Total Coal-Measures . . .	1,256

III. (*a*) New Hucknall Colliery
commences at 500 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxviii.)

	ft.
Measures	450
Top Hard Coal, 4 ft. 2 in.	
Measures.	51
Dunsil Coal, 2 ft. 4 in.	
Measures	111
Waterloo Coal, 3 ft. 9 in.	
Measures	348
Deep Soft Coal, 1 ft. 9 in.	
Measures	123
Deep Hard Coal, 3 ft. 3 in.	
Measures	129
Low Main Seam, 4 ft.	
Total Coal-Measures. . .	1,212

IV. New Wollaton Colliery
commences 200 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxviii.)

	ft.
Measures with 1 coal seam	33
Top Hard Coal	
Measures with 2 coal seams	105
Dunsil Coal	
Measures	54
Waterloo Coal	
Measures with 2 coal seams	360
Deep Soft Coal	
Measures	42
Deep Hard Coal	
Measures	30
Piper Coal	
Total Coal-Measures	624

IV. (*a*) Clifton Colliery, Nottingham
commences 82 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxiii.)

	ft.
Gravels and Bunter, 361 ft.	
Measures	21
Comb Coal, 2 ft. 8 in.	
Measures	120
Top Hard Coal, 6 ft.	
Measures	75
Dunsil Coal, 3 ft.	
Measures	27
Waterloo Coal, 3 ft. 3 in.	
Measures with 5 seams	177
Hoo Cannel Coal, 9 in.	
Measures with 3 coal seams and ironstone bed	221
Deep Soft Coal, 5 ft.	
Measures	42
Deep Hard Coal, 5 ft. 7 in.	
Measures	42
Piper Coal, 3 ft. 4 in.	
Total Coal-Measures	725

V. Lodge Colliery, near Eastwood
commences at 210 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxviii.)

	ft.
Measures	15
Deep Soft Coal, 3 ft. 3 in.	
Measures	44
Deep Hard Coal, 3 ft.	
Measures	54
Piper Coal, 3 ft. 3 in.	
Measures	81
Furnace Coal, 3 ft. 6 in.	
Measures with *Three-quarters Coal* = *Dogtooth Coal*, 1 ft. 5 in.	362
Black Shale Coal (worthless)	
Measures	235
Kilburn Coal, 2 ft. 3 in.	
Total Coal-Measures	791

V. (*a*) Cossall Colliery
commences at 300 ft. above O.D.
(*M.E. Colliery Guardian*, vol. lxviii.)

	ft.
Measures	33
Piper Coal, 3 ft. 9 in.	
Measures with thick sandstone and one coal seam	105
Furnace Coal, 3 ft. 7 in.	
Measures with thick sandstone and *Dogtooth coal*	528
Kilburn Coal, 3 ft. 10 in.	
Total Coal-Measures	666

VI. Boring at Ruddington
commences at 120 ft. above O.D.
(*Communicated by G. E. Coke*)

Trias, 684 ft.	
Measures	261
Naughton Coal	
Measures	169
Alton Coal	
Measures	45
Millstone Grit, 721 ft.	
Total Coal Measures	475

These sections taken together afford a fairly complete view of the development of the Coal-Measures in the county. On comparing the thicknesses of the strata between well known seams there does not appear to be quite so great a constancy as is claimed in Yorkshire.

Possibly the seams called by the same name in different collieries are not always exactly on the same horizons. One may die out and another take its place above or below it. The total thickness will vary according to the sections selected for addition, but if there are added together 536 feet for the Upper Measures at Thurgarton, 1,250 feet for the Rotherham Red Rock to the Top Hard coal at Shireoaks, 584 feet to the Piper coal at Clifton, 678 feet to the Kilburn coal at Lodge Colliery, and 476 feet for the measures at Ruddington boring, which commences *below* the Kilburn coal—we obtain a total of 3,524 feet. Considering this great thickness, and that there is no sign of thinning out on the east side of the county, nor of the assumption of a westerly dip, there cannot be a doubt that the whole of Nottinghamshire, with the exception of a narrow band along its southern margin, is underlaid by Coal-Measures, mostly at less than the maximum depth of working, and these measures may extend also to any distance beneath Lincolnshire and perhaps even the German Ocean.[1]

Regarding the Coal-Measures of Great Britain as a whole geologists have divided them into three series, Lower, Middle and Upper. The Lower Series, where characteristically developed, are distinguished by containing abundance of marine fossils, and by some of their coals having a seat earth of siliceous gannister instead of clunch. Such are principally found in the northern coalfields. The Middle Series are more entirely freshwater in origin and contain abundant coal seams with nodular bands of ironstone in all the midland coalfields. The Upper Series contain many ironstone beds and ironstained red shales with no workable coals, or very few, in the northern part of their range, but form very rich coalfields in the southern. These divisions correspond to changes in the accompanying plant remains, and possibly indicate also that conditions favourable to coal-growth gradually advanced from north to south.

The geographical position of Nottinghamshire, near the centre of the English coalfields, prepares us for the statement that the greater part of its coal-bearing strata belong to the Middle Series. No gannister beds as above defined are known to come nearer to Nottingham than Crich. We must necessarily however call those beds Lower Coal-Measures that intervene between recognized Middle Coal-Measures and Millstone Grit even in ignorance of their possessing such characteristics. In this case the line between these and the Middle Series must be chosen from considerations elsewhere derived. It is by the Geological Survey drawn for convenience below the Black Shale, Clod or Silkstone coal, which is widespread and constant. All the beds below these are there-

[1] See Dunstan, loc. cit.

fore Lower Coal-Measures, including the Kilburn coal and all the Measures in the Ruddington boring.

The Upper Series have been recognized by Mr. Walcot Gibson[1] in the cores from the boring at Thurgarton above the ordinary Middle Measures, by their resemblance in character and succession to those of north Staffordshire, which he names in ascending order the *Etruria Marls*, the *Newcastle-under-Lyme Series* and the *Keele Series*. At Gedling a Lower Series, containing sphærosiderites, called the *Black Band Series*, has also been recognized in a diminished form.[2] Mr. Gibson also quotes the ferns *Neuropteris rarinervis* and *Pecopteris miltoni*, with *Sphenophyllum* and *Cordaites* as obtained in the uppermost beds in both counties, though these are members also of the Middle Measures flora. The relations of these beds to any definite coal seam of the Middle Series, which was not ascertained at Thurgarton, is shown in the Gedling shaft, where beneath 93 feet of red strata referred to the Etruria Marls are found 762 feet of ordinary Measures above the Top Hard coal. This thickness, if there is no error, is much less than that found at Shireoaks (1,050 feet) or Southcar (1,364 feet) between the Top Hard and the Rotherham Red Rock which lies below the shales called Upper Coal-Measures in Yorkshire. If this portion of the series thins southward some of the 1,000–1,300 feet of Measures which at Bestwood, Linby and Annesley overlie the Top Hard may be expected to belong to the Upper Series, and in fact their resemblance at Bestwood to the beds at Scarle has been recognized.[3] Now Professor Hull[3] also recognized the resemblance of the red shales at Scarle to the Upper Coal-Measures of north Staffordshire, and Professor Green[4] is said also to have recognized the Measures above the Rotherham Red Rock at Southcar as the same as at Scarle. This would seem to suggest that the Rotherham Red Rock might be taken to be the local base of the Upper Series[5] in the northern part of the county.

The Coal-Measures have, of course, greatly changed their position since they were laid down. Part of this change must have taken place while the deposition of the series was still going on. Beds of coal with their swampy seat earth and their fern-filled roofs must have been originally formed near the sea level. If therefore the Kilburn coal near the base and the Manor coal near the top of the series were deposited at different times at approximately the same level there must have occurred, between the two dates of their deposit, a sinkage of the ground of 2,700 feet. When room had thus been made for the Upper Measures and the last of them had been deposited, the Carboniferous period ceased, and there was a long interval before the next succeeding period of deposition commenced.

During this interval the Pennine range was formed and the strata on the east side obtained a dip to the east and were raised towards the

[1] *Quart. Journ. Geol. Soc.* vol. lvii.
[2] See 'Summary of Progress in 1902.'
[3] See *Proc. Inst. Civ. Eng.* xlix. 159–68.
[4] See Dunstan, loc. cit.
[5] See *Geol. Survey Mem.* sheet 83.

west. We can now only ascertain the amount of this movement added to all subsequent movements. This may be gathered from the deviation from horizontality of a single wide-spread coal seam such as the Top Hard, as shown in the following table obtained by subtracting the depth of it in the sinking from the height above Ordnance Datum from which the sinking commenced.

TABLE II. SHOWING THE POSITION OF THE TOP HARD COAL ABOVE OR BELOW ORDNANCE DATUM AT VARIOUS SINKINGS

		ft.			ft.
Wollaton New . .	200 − 33	= + 167	Watnall New . .	424 − 963	= − 539
Hucknall New . .	560 − 450	= + 110	Kirkby	360 − 1049	= − 689
Kimberley	425 − 324	= + 101	Hucknall Torkard No. 1 pit . .	300 − 1163	= − 863
Watnall	346 − 370	= − 24	Newstead . . .	416 − 1368	= − 952
Broxtowe Wood . .	234 − 294	= − 60	Annesley . . .	460 − 1415	= − 955
Radford	133 − 240	= − 107	Linby	297 − 1287	= − 990
Tevershall . . .	530 − 651	= − 121	Hucknall Torkard No. 2 pit . .	236 − 1230	= − 994
Clifton	82 − 210	= − 128	Bestwood . . .	228 − 1236	= − 1008
High Park, Greetly .	340 − 513	= − 173	Gedling . . .	190 − 1368	= − 1178
Newcastle colliery .	150 − 400	= − 250	Shireoaks . . .	200 − 1523	= − 1323
Clifton borehole . .	82 − 498	= − 416	Southcar . . .	15 − 3197	= − 3182
Cinderhill	213 − 660	= − 447			

There was subsequently a great amount of removal of the Carboniferous rocks by denudation, so that the Coal-Measures and Millstone Grit are lacking in the central part of the original coalfield, where the Mountain Limestone appears, and the Upper Series in Nottinghamshire are separated from their equivalents in north Staffordshire. The amount of material thus removed within the county before the Permian period can be shown by means of Table III.

TABLE III. SHOWING THE POSITION ABOVE OR BELOW THE ORDNANCE DATUM OF THE SURFACE OF THE COAL-MEASURES AT VARIOUS SINKINGS

		ft.			ft.
Kimberley . . .	425 − 26	= + 399	Clifton	82 − 156	= − 74
Watnall New . .	424 − 44	= + 380	Gedling . . .	190 − 513	= − 323
Annesley	460 − 108	= + 352	Chilwell . . .	95 − 462	= − 367
Kirkby	360 − 45	= + 315	Clifton borehole .	82 − 459	= − 377
Watnall	346 − 50	= + 296	Ruddington . .	120 − 699	= − 579
Linby	297 − 25	= + 272	Edwalton . . .	100 − 702	= − 602
Cinderhill	213 − 25	= + 188	Thurgarton . .	60 − 850	= − 790
Hempshill . . .	244 − 91	= + 153	Owthorpe . . .	200 − 1233	= − 1033
Bestwood	228 − 144	= + 84	Southcar . . .	15 − 1728	= − 1713
Shireoaks . . .	200 − 215	= − 15	Scarle	60 − 2020	= − 1960

On a comparison of these figures with those for the Top Hard coal great differences in the amount of denudation appear, as shown in Table IV.

TABLE IV. SHOWING THE THICKNESS OF COAL-MEASURES ABOVE THE TOP HARD COAL LEFT AFTER PRE-PERMIAN (OR PRE-TRIASSIC *) DENUDATION

	ft.		ft.
*Clifton borehole	39	Kirkby	1004
*Clifton colliery	54	Bestwood	1092
Kimberley	298	Linby	1262
Watnall	320	Annesley	1302
Cinderhill	635	Shireoaks	1308
Gedling	855	Southcar	1469
Watnall New	919		

In these tables there are several anomalies. The depths to the Top Hard and to the surface of the Coal-Measures differ greatly in neighbouring sinkings without any surface indications of faults. These anomalies, due to unseen or observed dislocations, show that in the interval between Carboniferous and Permian times the Coal-Measures were much broken up. Such faults are occasionally found, as at Cinderhill, to affect in a less degree the overlying strata, in which case the disturbance was repeated, but on a smaller scale. Other faults, like those parallel to the Trent valley, seem to have first occurred in post-Triassic times.

THE PERMIAN SYSTEM

The Permian rocks of Nottinghamshire form part of the typical series in England, being continued through Yorkshire into Durham. The fullest development is in the north of this area; and on going south the divisions one by one die out till the last of them disappears near Wollaton. Everywhere it is a most peculiar formation. Lithologically it is characterized by the occurrence of a magnesian limestone or dolomite, and by the red and mottled colour of its clays. Palæontologically it contains the last relics of the Palæozoic genera, such as *Productus*, associated with forerunners of Mesozoic types, such as *Schizodus*. Various rocks have been called Permian in other parts of England, including some, as the Rotherham Red Rock, now known to belong to the Coal-Measures, but only some in Lancashire and Cheshire contain any of the characteristic fossils, and there, as a whole, they are of a different lithological character.

The unconformity of the Permian to the Coal-Measures is already shown by its resting upon different parts of them in different sinkings and by its being unaffected in whole or in part by many of the faults in that series. The actual junction, demonstrating on a small scale all these features, may be seen in the Great Northern (Erewash Valley Branch) Railway between Hempshill and Kimberley, where it has been described by Mr. Wilson.[1] The unconformity in this district was first recognized in the original description of the series given by Professor Sedgwick.[2]

THE BASEMENT BEDS.—The natural basement conglomerate along

[1] *Quart. Journ. Geol. Soc.* vol. xxxii.
[2] *Trans. Geol. Soc.* ser. 2, vol. iii.

the shore line of a new set of deposits is represented in the southern part of the county by a breccia, first noticed by Professor Sedgwick in the mineral railway at Grives Wood between Kirkby and Sutton-in-Ashfield, where it crops out at the base of the slope at its southern end. The same breccia is well seen in a ravine near Annesley Park springs and in the railway cuttings of the Midland and Great Northern Railways at Kimberley; but its constancy is best proved in borings which pierce the Permian, where it is commonly observed, when the records are carefully kept, and in the case of South Scarle it was the means by which the true reading of the section was recognized by Mr. Wilson. Its last appearance southward is seen at Old Park farm near Wollaton Colliery. It varies from a compact grey sandstone to a coarsely brecciated conglomerate, seldom more than 3 feet in thickness, but rising to a maximum of 12 feet in a boring near Mansfield and reducing to 1 foot or less in the Gedling, Thurgarton and South Scarle borings. 'It contains much angular Coal-Measure débris, sandstone, ironstone and ochreous shale, also rounded pebbles of white quartz and angular fragments of slate, chert and limestone' (Wilson).[1] In the northern part of the county no breccia has been observed in the borings either at Shireoaks or Southcar. At the former a bed of sandstone has been referred to the base of the Permian, but as it lies below 33 feet of blue bind it is possibly part of the Carboniferous series. These localities may be too far removed from the shore line of the period for the formation of a breccia.

Above the breccia comes a series of thin-bedded rocks, alternating more or less frequently with shales. These shales much resemble Coal-Measures and contain many Carbonaceous remains; they gradually become harder, and end upwards as bands of compact red limestone, varying in character with the overlying massive Magnesian Limestone. Geodes of calcite and pyrites are recorded from them. At the southernmost point near Wollaton there are only 3 or 4 feet of yellow and red marly beds between the breccia and the Magnesian Limestone, but this increases to 20 feet of shales in the Kimberley railway cuttings,[2] where numerous fine layers of sandstone form part of it. Many of these show remains of plants, and some show casts of *Pleurophorus* and *Schizodus*. They may be seen again in this neighbourhood on the rise to Chalk Hill, west of Kimberley. In the road from Hucknall Torkard to the Long Hills a slight fault crossing the road has raised the underlying shales and compact beds so as to be cut off along the roadside bank by the Magnesian Limestone, whose water they throw out, but the thickness is not here determinable. The succession may also be well seen in the slopes and in the stream bottom of a ravine, running west from Annesley Park springs. The upper part is composed of the Magnesian Limestone, here depositing calcareous tufa from its waters; the slopes and part of the stream bed show about 20 feet of shales, and beds of limestone and the breccia may be seen crossing the stream at the base. At the Grives Wood cutting

[1] *Midland Naturalist*, vol. iv.
[2] Wilson, *Quart. Journ. Geol. Soc.* vol. xxxii.

they are thus described by Mr. Aveline: 'The shales have a thickness of about 15 feet; they are of a blue and light brown colour, have a marly character and are interstratified with bands of hard compact limestone, full of fossils.' Of these he records *Schizodus schlotheimi*, *S. truncatus* and *Pleurophorus costatus*, and plant remains in some of the harder bands.[1]

In the memoir on the sheet to the north, 82 S.E., are described two sections of about 20 feet, seen in road-cuttings over the edge of the Magnesian Limestone escarpment near Skegby and on Fulwood Top. Here the limestone passes down into beds of soft sandstone of a brown colour, interstratified with which are more or fewer bands of hard compact fossiliferous limestone. These contain the same organic remains as those named above, except that *Bakewellia ceratophaga* takes the place of *Schizodus schlotheimi*. In colliery sinkings this portion of the series cannot easily be recognized except by finding the breccia below and the Magnesian Limestone above. Between these limits at Linby Colliery there are alternations of blue bind and various bands of limestone, 28½ feet in all; at Shireoaks the record of 'limestone bands and bands of blue metal, 19–20 feet,' represents the same beds. At South Scarle there are 138 feet in the same interval, and at Southcar as much as 185 feet between the lowest massive limestone and the Coal-Measures. The following records of these last two borings through post-Carboniferous strata are given for reference:—

Section of Boring at South Scarle[2]

	ft.
River Gravel	21
Lias	29
Rhætic	15
Keuper Marls	688
Keuper Sandstones	208½
Bunter Pebble Beds	318½
Lower Red Sandstone	223
Upper Permian Marls	118½
Upper Limestone	43½
Middle Permian Marls	150
Magnesian Limestone	68
Sandstone	20
Marl Slate	118
Breccia	1
	2,022

Coal-Measures, see p. 7.

Section of Boring at Southcar on the Idle[3]

	ft.
Alluvium	32
Upper Keuper	105½
Lower Keuper [533]	608½
[Upper Red Sandstone, 75½]	
Bunter Pebble Beds [273½]	434½
[Lower Red Sandstone, 161]	
Upper Permian Marls with 9 ft. seam of Anhydrite and some Gypsum	89
Upper Limestone	53
Middle Permian Marls with Gypsum veins [148]	132
Magnesian Limestone [56]	273
[Grey Limestone and Shales, 201]	
	1,727½

Coal-Measures, see p. 8.

The term Marl Slate here used is the name of a group occupying a similar position in Durham. The characters of the groups are scarcely identical, the latter being a fissile rock with many fish-skeletons in the intervals of the laminæ, and not containing the shells found in the former near Nottingham. It will be seen that the group has greatly thickened towards the east.

[1] *Geol. Survey Mem.* sheet 71, N.E.
[2] Dalton, *Geol. Survey Mem.* sheet 83. This account differs from those given by all earlier writers.
[3] Dunstan, *Midl. Inst. Min. Civ. and Mech. Eng. Trans.* vol. xiv. Extra details in square brackets.

THE MAGNESIAN LIMESTONE is the most important, widespread and characteristic of the Permian deposits. In the form most commonly seen near Nottingham, where it is largely used as a building stone, it consists of a number of rhombohedral crystals of dolomite with intervening hollow spaces. It is of a peculiar brownish yellow colour, due to oxide of iron. It yields about half its weight of magnesium sulphate (Epsom salts), but it has not hitherto been used commercially as is done near Sutherland. 'Sulphate of baryta is a very abundant mineral in many parts of the formation' in crystalline nodules and veins in the freestone beds of Mansfield and at Pleasley (Sedgwick). The limestone is everywhere water bearing and supplies many wells, as in the Leen valley, but the water is naturally hard, as is shown by the tufa near Annesley Park springs already referred to. It may occur in fairly massive beds, 8–10 inches thick, in which case it is used for building, or in large flaggy beds with irregular rough surfaces and greenish marl interstices.

The crystalline structure is not original, but has been produced by later alterations, for it is accompanied by the breaking up of the surface of any individual stratum and the formation of curvilinear cracks in the mass, as seen in Grives Wood quarries. It is possible that this crystallization has destroyed some of the organic remains, but more probably they were never abundant, since when they are found they occur mostly as hollow casts in definite layers, differing in no other respect from the neighbouring barren ones. Such fossiliferous layers, with casts of *Schizodus* and *Bakewellia*, are seen in the limestone quarries at Bulwell, in the old quarries at Beauvale near Greasley, in Grives Wood, whence *Schizodus obscurus* and plates of *Chiton* have been recorded[1]; and in a quarry near Shireoaks, which has yielded fine examples of *Productus horridus*,[2] found also in the Thurgarton boring.[3]

In the southern part of the county the maximum thickness is only 30 feet, yet the limestone extends over a considerable area in the Leen valley. This is due to the fact that the dip is very low, 2°–3° to the east, and the overlying clay is very easily removed by denudation. There is, however, a very curious anticlinal in which the overlying rocks concur near Middle Mill, east of Hucknall Torkard. It is exposed in a small quarry, of which it occupies the entire end, but there is no surface indication of its existence in the flat marshy field composed of the overlying marls. Two other similar small anticlinals have been noted in the neighbourhood (Shipman).

The most south-westerly point at which the Magnesian Limestone has been observed is near Bobbers' Mill, Radford, where it is a coarse brecciated rock followed by a grit (Wilson). At Strelley it is sandy. It probably never extended much more westerly than its present boundary, as no outlier is known more than 1½ miles from its escarpment. Nearly as far north as Mansfield it remains fairly constant in thickness and character, but at New Mill, a mile south of that town, it is found to

[1] King, *Permian Fossils* (Pal. Soc.) [2] Tylden Wright in White's *Worksop*.
[3] 'Summary of Progress for 1899.'

swell out suddenly and to change its nature. It takes on the form of a white calcareous sandstone, 60 feet in thickness. The lower parts are more siliceous and the higher more calcareous, and the whole is massive and irregularly bedded. A mile to the north-east of the town, in the Rock valley, a similar rock of equal thickness, but of a red colour, is quarried. The following analyses of the two varieties have been published :[1]—

Mansfield White Sandstone		Mansfield Red Sandstone	
Silica	51·40	Silica	49·4
Carbonate of lime	26·50	Carbonate of lime	26·5
Carbonate of magnesia	17·98	Carbonate of magnesia	16·1
Iron, alumina, etc.	1·32	Iron, alumina, etc.	3·2
Water and loss	2·80	Water and loss	4·8
	100·00		100·00

This sandstone may be traced by quarries running in a N.N.E. direction across the country to Pleasley Vale, between Pleasley Forge and Pleasley Works, and so out of the county. As the dip of the strata generally is eastwards, it is probable that the bulk of the limestone lying to the east of the outcrop of the sandstone is higher in the series than that to the west. Thus the Magnesian Limestone as a whole may be divisible into two parts, the sandstone forming the base of the higher. The upper Magnesian Limestone is seen to overlie the sandstone at the quarries, and at a higher level it expands to a rock of beautiful character at Mansfield Woodhouse. In the quarries there worked it is a glistening, finely crystalline limestone of yellowish white colour, with scattered black specks, and having the composition :— [1]

Carbonate of lime	51·65
Carbonate of magnesia	42·60
Silica	3·70
Water and loss	2·05
	100·00

From this quarry in a direction parallel to the strike of the sandstone of Mansfield the Bolsover Moor Quarry is reached, both quarries yielding similar stone of celebrated building properties.[2] This same type of limestone occupies the surface for the rest of the range in the county, and near Warsop becomes very finely laminated and perforated with numerous fine holes, whence some extra-soluble crystalline ingredient has been dissolved out. At Streetly near Worksop the limestone is also 'white and crystalline.'

It will be noted in a geological map that to the south of Mansfield the surface occupied by the Magnesian Limestone is about $1\frac{1}{2}$–2 miles broad, but to the north of that town it is 6 miles broad. This is partly due to the thickening of the lower beds, but also to the coming on of a

[1] *Geol. Survey Mem.* sheet 82, S.E.
[2] See 'Parliamentary Report on Building Stones, 1839.'

new deposit. That there are two distinct masses is shown by the section at Shireoaks containing a lower band of 48 feet and an upper band of 40 feet separately recorded.[1] In south Yorkshire these two beds are not only recognized but named; the lower being 120 feet thick and the upper one, named the 'small-grained dolomite,' 200 feet.[2] It is to the latter of these—the *small-grained dolomite*—that the limestone north of Mansfield belongs. It is possible also that to the same portion belongs the main Magnesian Limestone in the borings to the east of the county, the lower portion having more or less degenerated into shales and thin beds and so being included in the abnormally thick basement beds. In one boring there is a 'sandstone 20 ft.' in a position which would then correspond to that of the Mansfield freestone.

The Marls and Sandstones.—Overlying the Magnesian Limestone is found a series of beds consisting of so-called marls (though not calcareous) and sandstones alternating. The latter are chiefly found near the base of the series or in the north of the county. The marls are a brilliant red with bands of bluish white. The sandstones are reddish purple, sharp grained and sometimes calcareous. In most places these have every sign of conformity to the rocks on which they lie; nevertheless they must in the course of their range overlap the upper part of the limestone to lie on the lower. In some places, as near Mansfield, it has been thought that unconformity may be seen by the undulating surface on which the marls rest.[3] A still more remarkable case is the apparent anticlinal of the limestone overlaid by horizontal marls in a cutting of the Lancashire, Derbyshire and East Coast Railway at Warsop Colliery junction, figured by Mr. C. Fox-Strangways,[4] but this, like the others, may perhaps be explained by an original inequality of the surface and the formation of concentric cracks by subsequent concretionary action.

The marls do not give rise to any features, but form the base of flat areas, as in the Leen valley. They nevertheless play an important part in relation to other beds. As an impervious stratum of sufficient thickness not to be easily broken through they hold up the water that falls on the overlying porous Bunter sands, and render possible the existence of lakes, as at Newstead and Welbeck, and to some extent also the higher ones at Thoresby and Clumber. On the other hand their softness and comparative thinness has caused them to be removed from over a large surface of the Magnesian Limestone, and gives that more valuable stratum a larger superficial area than its thickness would suggest.

At the Cinderhill brickworks, in the south of the range of this series, the Magnesian Limestone is seen at the base, followed immediately by the highly contrasting brilliant red clay, in which there are thin beds of sandstone, having their surface covered with curious markings which may be due to annelids. The total thickness here

[1] Lancaster and Wright, loc. cit.
[2] Kirkby, *Quart. Journ. Geol. Soc.* vol. xvii.
[3] *Geol. Survey Mem.* sheet 82, S.E.
[4] *Quart. Journ. Geol. Soc.* vol. liv. p. 161, fig. 1. Compare fig. 2.

OROGRAPHICAL MAP.

The Edinburgh Geographical Institute

SCALE 4 MILES TO AN INCH

0 1 2 3 4 5 6

J.G. Bartholomew

County Boundary shown thus

seen is 25–30 feet up to the base of the Triassic sandstone. From this spot it may be traced with the same character to the west side of Bulwell and Hucknall Torkard, by the lake at Newstead and on the other side of the Triassic ridge to the brickyard near Kirkby station. Further on it forms the flanks of a hill between Mansfield and Skegby.

After an interval, north of Mansfield where the Trias overlaps and conceals it, a new development commences beyond Cuckney, where a broad expanse of it occupies the surface which culminates at Woodhouse Hill. Here is seen in a lane-section 30–40 feet of red sandstone in thick beds alternating with clay near the centre. On this rising ground there is a valley in which the Magnesian Limestone has been quarried beneath these red sandstones; over these come clays and over these again comes a higher limestone occupying the higher ground (Aveline). Thus the clays and sandstones are here included between *two* limestones. A little further north the red sandstone gives the names to Ratcliff and Red Hill. It much resembles the Trias sandstone, but it passes as before beneath the marls and limestone. In the Shireoaks sinking thirteen alternations of sand and clay in 46 feet were passed through between two limestones, but on the east of the county 133 feet with gypsum are recorded at Southcar and 150 feet at South Scarle in the same relative position.

The Upper Limestones.—These have been already noticed as capping the marls in places, and in the extreme north they come on in force and form an essential feature in the south Yorkshire type of Permian. The series consists of 120 feet of thin-bedded limestones of a quite different character from that of the Magnesian Limestone. They were called 'Brotherton Beds' by Professor Sedgwick. They are described by Mr. Kirkby[1] as 'usually hard and compact and of a yellow or grey colour; the surface planes are generally a little apart and often coated with red, green, or purple clays.' They contain very little magnesia, so that the term magnesian should be restricted to the lower limestones. They are much jointed and have the joint faces covered with dendritic markings. They are first seen in force just north of Shireoaks, round Ramoth-Gilead, and continue to the many quarries round Carlton and Oldcoates, where fossils abound. Those recorded are *Myalina hausmanni* (*M. squamosus*, Sow.), *Schizodus truncatus* and *S. schlotheimi*.

The Upper Limestone is found again in the deep borings in the east of the county, that at Southcar showing 53 feet of grey limestone in one mass between two series of marls and that at South Scarle showing 43½ feet in the same position. It does not appear therefore to be thickening in this direction.

The Upper Marls.—In certain places in the north of the county, viz. on Whincommon, north-east of Oldcoates and near Carlton, the Geological Survey[2] record the occurrence of red and variegated marls, without intermixed sandstone, *above* the Upper Limestones. These are

[1] *Quart. Journ. Geol. Soc.* vol. xvii.
[2] *Geol. Survey Mem.* sheet 82, N.E.

the commencement of a larger group which occurs in south Yorkshire, and forms the highest member of the Permian anywhere seen. The Upper Marls have been called, in reference to their supposed equivalents in Germany, the *Bunter Schiefer*. There can be no question however that all these red marls belong to one, i.e. Permian, group, for the base of the Trias transgresses from one to the other.

These Marls are thicker in the eastern borings, for whereas at their outcrop (in south Yorkshire) there are only 50 feet of them, at Southcar and South Scarle respectively there are 89 feet and 118½ feet. In the former place they contain a remarkable 9 feet bed of anhydrite, and also some gypsum, which is found also in the Lower Marls there and in the Upper Marls at Oldcoates.

THE TRIASSIC SYSTEM

Although this system retains the name of Trias applied to it in Germany as consisting of three parts, there are in England two only, which after their German equivalents are called the *Bunter* and the *Keuper*, the central member, or *Muschelkalk*, being the absent member. These two formations together occupy the greater part of the whole county—the strata already dealt with forming merely the western fringe, as the Jurassic form the eastern and southern fringe of it.

The Trias on a large scale lies unconformably on the Permian. At any single point it may seem to be conformable, but it passes indifferently over all the members in turn from the Upper Marls to the Magnesian Limestone, and passes beyond the limits of all to lie directly upon the Coal-Measures. And this is not due to a simple overlap by a later stratum. The Trias could not have been deposited where it is now found unless the lower strata has been *irregularly* denuded, so as to leave outliers in one spot and not in another with the Trias lying equally over all.

The Bunter Series consists almost entirely of sandstones, which in parts are plentifully supplied with pebbles, as is so commonly the case with the basal beds of a new series—though here through a greater thickness than usual. The principal deposit of pebbles occurs in the middle portion, from which circumstance this part is called the *Pebble Beds*, while the portion below is called the *Lower Red and Mottled Sandstone* and that above, when it occurs, the *Upper Red and Mottled Sandstone*.

For the greater part of its range the Bunter sandstones rest upon various members of the Permian strata, and are raised up with them to a considerable height. Its base at Bobbers Mill is 107 feet above O.D. At Hempshill the base has risen to 270 feet, while at Bulwell Spring to the east it has descended to 175 feet, and at the colliery to 126 feet, these last three showing the easterly dip. At the upper end of the Leen valley the base appears to be at about 430 feet. At Mansfield it attains its maximum elevation in a hill of 588 feet, which includes drift gravels, so that its base is probably less than 500 feet above O.D. From this point it descends at Warsop to 210 feet, at Cuckney to 180 feet, here

overlapping the eroded Permian. Traced to the east by borings the base descends at Gedling to 250. feet below O.D., at Thurgarton to 656 feet, at South Scarle to 1,503 feet, these being along a north-east line; at East Retford to 730 feet and at Southcar to 1,165 feet.

In all the above cases the Bunter rests on the Permian, but in the south it passes beyond this limit and rests on various parts of the Coal-Measures. It is here carried down to a lower level partly by erosion of its support and partly by faulting. At the Radford gasworks the basal breccia was found at about 60 feet above O.D. From this point it gradually rises westward to 220 feet in Broomhill Plantation and to 320 feet at Catstone Hill outlier. Farther south it is affected by the first east and west fault, and is found at Clifton Colliery 74 feet below O.D., at Highfield Park 167 feet below O.D.—a difference due in part to a greater erosion of the underlying coal strata to the west. The base of the Bunter is not seen again in the county, but at a boring for water at Wilsthorpe, just on the Derbyshire side of the Erewash, the top of the whole Bunter is 153 feet below O.D.[1]; how much lower the base may be is not known. South of another fault the base of the Bunter is found to be 367 feet below O.D. in the Chilwell boring, 377 feet at Clifton, 579 feet at Ruddington, 602 feet at Edwalton and 888 feet at Owthorpe—all below O.D. Those figures show a slope to the east at a lower level but of a slower rate than between Gedling and Thurgarton—but owing to there being known post-Triassic faults in the district, e.g. one of 275 feet throw at Clifton Colliery, it is impossible to be certain of any interpretation of this. Nevertheless it suggests that a pre-Triassic valley of erosion *may* be the cause.

The Lower Red Sandstone usually contains no pebbles and the grains of sand are finer than in the Pebble Beds. They are coated with a film of red hæmatitic colouring matter which may be removed by hydrochloric acid, leaving them white. This bleaching action—by other acids—takes place sporadically in nature, and gives a mottled appearance to the rock. There is in many cases much falsebedding. Although the body of the rock does not usually contain pebbles there is found at or near the base in several localities a bed of breccia or conglomerate. Such a breccia, 5 to 8 feet thick, occurred in the excavations for the gas works at Old Radford.[2] In the brickyard south of the railway at Cinderhill this has long been noticed, and at one time was thought to represent the line of separation between Trias and Permian. In the Hempshill railway cutting described by Mr. Wilson[3] this semi-basal breccia 'is alternately sandy, marly and calcareous and it contains semi-angular green, blue and purple slates, more or less rounded grits, quartzites, and numerous white and discoloured slabs and nodular balls of fossiliferous Carboniferous Limestone Chert.' It is plain that new sources of material were available for its production. Similar pebbly bands have been met with at Annesley

[1] Shipman, 'Geol. of Sandiacre,' *Trans. Nott. Nat. Soc.* for 1891 (interpretation modified).
[2] Shipman, *Trans. Nott. Nat. Soc.* for 1889.
[3] *Quart. Journ. Geol. Soc.* vol. xxxii.

and elsewhere as well as in borings at Bestwood, Clifton Colliery and Highfield; on the other hand bands of clay occur in the midst of the sandstone east of Kimberley and at Bulwell spring. No fossils either original or derived have ever been recorded from this deposit, but a ripple-marked slab was found by Mr. Shipman at Old Radford.

The thickness of this division is variable and uncertain. At Bobbers Mill it cannot be more than 20–30 feet, but on the southern slopes of the Long Hills it must be greater and in the Robin Hood's Hills about 70 feet is seen, capped by Pebble Beds. At Mansfield and Worksop and to the east of Kimberley it is so fine in grain as to be used for moulding sand. In the northern part of its range it is thin and finally disappears beyond Blyth.

The Pebble Beds.—No definite line can be drawn between these and the last group, unless a bed of pebbles comes on suddenly. On the whole the sand grains are coarser and of a yellow colour, and the pebbles are of various sizes and kinds and are not always or usually in contact. Lenticular bands more pebbly than the rest, and in like manner some layers of red clay, lie irregularly in the mass. The false bedding when present indicates currents principally from the west or north-west, though other and sometimes opposite directions are represented. There is no continuous real bedding. The coating of the component sand-grains keeps them together against any natural tendency to separate. The exposed surfaces do not generally exfoliate under the severest frosts and the tool marks on cut surfaces are not easily effaced. Yet the rock is easily cut and does not fall from a roof even of large size.

For this reason the rock is often cut into chambers, caves and passages with which the city of Nottingham abounds, of which Mortimer's Hole in the Castle Rock is one. The 'Hermitage' at Sneinton consists of numerous dwellings dug in the rock. In the cliff overlooking the Leen by the side of Lenton Boulevard are numerous recesses cut in an excavated chamber, hence called the Columbarium, though more probably once used as a shop. A very large excavation was made in the eighteenth century in the rock on the Mansfield Road for extracting sand for sale.[1] Most of the cellars in the centre of the city are rock cellars, and passages are often discovered in making excavations, as in the case of the reservoir at the top of Standard Hill. Probably the whole city is more or less excavated like a piece of bored wood. Carvings are also cut to represent wild animals on the edge of the rock along the Rope Walk. The catacombs in the church cemetery are modern excavations.

At Nottingham the outcrop of the Pebble Beds is limited to a breadth of $1\frac{1}{2}$–$2\frac{1}{2}$ miles owing to the coming on of the Keuper Series on the high ground to the east, and the total thickness is estimated at 200 feet, but further north the outcrop widens out to a breadth of 7–9 miles, the Keuper being worn back to lower levels on the east. This is probably due to the greater elevation to which the Pebble Beds have been raised.

[1] Shipman, *Brit. Assoc. Handbook*, 1893.

If we allow 30 feet for the unknown thickness of drift with which they are covered, the solid rock rises to 538 feet near Annesley, 595 feet on the Robin Hood's Hills (their highest point) and 558 feet west of Mansfield. From these elevations they gradually slope to north and south but more especially towards the east, exposing a broad dip slope. This, worn into irregular hills and possibly undulating also, forms the wild sandy forest land for which Nottinghamshire is famous.

It is this large catchment area of more than 120 square miles, together with the porosity of the rock, which makes the Pebble Beds and underlying Red Sandstones so valuable for water supply. The larger part of the rainfall sinks in at once and has a free passage, so that there are but few streams on the surface, which is but sparsely inhabited, and little injury to agriculture can result from the extraction of water. The lower parts are thus saturated by available water and afford an almost inexhaustible supply. At the same time the reservoir itself forms its own admirable filter bed, and the water comes out with only the mineral impurities dissolved in its passage through the rock, which are not on the average great. The amount extracted in 1893 amounted to more than 5,000,000 gallons daily for the use of the borough of Nottingham,[1] while at the boring at South Scarle the water rose in a fountain above the surface from a depth of 960–1,440 feet.

The origin of the Pebbles in the Bunter.—This is a subject which has been much discussed, but it cannot be said that any satisfactory solution has been arrived at. A similar question might be asked concerning the materials of any stratum, e.g. the Millstone Grit, and it would be equally hard to answer. In the present case, however, hopes of a solution are raised by the size of the pebbles, which are large enough to show any special characters of the rock whence they are derived, whether lithological or palæontological. With regard to the lithological characters the bulk of the pebbles are of quartzite, many of which are of a peculiar liver-coloured tint, and others are whiter or of vein quartz. These as a rule afford very little guide, as 'one quartzite is very like another.' The rarer pebbles are of 'green and black slates, jaspers, gneiss, subangular blocks of sandstone, rounded greenstone and felstone' (Irving), Millstone Grit, Yoredale Sandstone, Caradoc Sandstone, amygdaloidal lava, chert, white granite, volcanic ash, and toadstone (Shipman). Palæontologically they have been found to contain *Orthis budleighensis*, *O. flabellulum*, *O. calligramma*, *Atrypa* cf. *reticularis*, *Strophomena grandis* and *Glyptocrinus basalis* from pre-Carboniferous rocks and *Lonsdaleia floriformis* from the Carboniferous Limestone.

Neither these rocks nor these fossils could have come from the north down the east side of the Pennine axis from any rocks now exposed in situ, for there are none such containing them. They probably came from the west, as indicated by the prevailing falsebedding, or in part from the north-west. The exact locality of the land of their origin

[1] Hull, *Report Brit. Assoc.* 1895, p. 743.

it is not so easy to name. Two suggestions have been brought forward: (1) that they were brought by a large river from the Highlands;[1] (2) that they are derived from some of the old rocks which border the Pebble Beds as a whole on the west or which are hidden by newer strata.[2] To the former suggestion there are apparently the following objections: (1) the fossils in the pebbles do not at all indicate the direction suggested; (2) there are no signs of any such river till the Midlands are reached; (3) it is contrary to the laws of river deposits that the finer sediments should be deposited nearer the source; (4) it is impossible to account for the Pebble Beds extending up the east side of the Pennine axis. The only positive argument brought forward in its favour is the remarkable similarity in some respects of some of the pebbles to some part of the Torridon sandstones and quartzites of the north-west Highlands, and to some of the igneous rocks in south Scotland. The latter suggestion has everything in its favour except the very serious difficulty that so far as the known rocks are concerned an adequate source of supply for the pebbles cannot yet be named, and the existence of such under cover of newer rocks is purely hypothetical. It is possible that this difficulty may be removed by further researches.

With regard to the means of transport it should be noted that the Bunter is an exceptional deposit, yet it is extremely widespread; something of the same kind being found in Germany, the south of England, the north of Scotland and America; all belong to a period during which old forms of life, in the regions where it occurs, were changing into new. Perhaps we ought not to look to the action of an ordinary river or of the sea in its ordinary condition as the efficient cause of transport.

The Upper Red Sandstone.—In the neighbourhood of Nottingham itself there are no beds that have been assigned to this division. But towards the east of the county the borings record massive beds of red sandstone, in which no pebbles are noted, overlying characteristic representatives of the Pebble Beds. At East Retford 123 feet of such occur, and some is even exposed there at the surface according to Mr. Metcalfe.[3] In the boring at Scarle 206 feet of the strata have been definitely referred to this group by Mr. De Rance,[4] and at Southcar 75 feet of red sandstone occur immediately above the beds with pebbles. In both these cases the inclusion of the red sandstone with the Pebble Beds would make the latter abnormally thick.

The 'Hemlock Stone.'—This remarkable outstanding rock and its neighbours the Bramcote and Stapleford Hills have given rise to much discussion as to the age of the rocks composing them. Their prominence, and in the case of the 'stone' the shape is primarily due to the infiltration of the sand by an ordinarily insoluble substance—barium sulphate.[5] This has been irregularly distributed, and where it has been wanting the

[1] T. G. Bonney, *Geol. Mag.* 1880; *Brit. Assoc.* 1886; *Quart. Journ. Geol. Soc.* vol. lvi.
[2] W. J. Harrison, *Proc. Birm. Phil. Soc.* vol. iii. 1882.
[3] 'Geology of Nottinghamshire' in White's *Nottinghamshire*, 1894.
[4] *Rep. Brit. Assoc.* 1891.
[5] Clowes, *Brit. Assoc.* 1885; *Proc. Roy Soc.* 1889.

rock has weathered away leaving the hardened parts outstanding. The top of Bramcote Hill is filled with porphyritic white crystals of baryta enclosing the sand grains in its substance, and these weather out into pebble-like lumps, but there is no special conglomerate—only the ordinary pebbles found in other parts of the hill. The cap of the Hemlock Stone is impregnated, but the base is less so, if at all. The top is also pebbly and the lower part soft and false-bedded without pebbles. For these reasons the upper part more easily resists the weather and therefore overhangs. In the neighbouring Stapleford Hill the lower part is in places fully charged with baryta crystals side by side with parts which are uncharged and soft ; at the same time the pebbly and non-pebbly parts are here found somewhat alternating. At the bottom of Bramcote village the sandstone has a peculiar mammillated structure, as though the grains were agglutinated by an infiltered mineral. Now the presence of baryta and its results in *this* case were first made known in 1885, but in 1882 Mr. Strahan, in his *Survey Memoir*, 'On the country round Chester,' had already described rocks on the summit of Beeston Castle with abundance of baryta, showing also the porphyritic crystals, the massive form with glistening faces, and the mammillated, agglutinated sandstone, just as if he had been describing Bramcote and Stapleford Hills. They are also false bedded and red in parts, and in parts pebbly and yellow. Lithologically, therefore, and chemically the two sets of deposit agree. There remains only the question of position. At Beeston Castle these beds overlie the Upper Red Sandstone ; at Stapleford Hill they reach a height of 331 feet above O.D., and at Bramcote Hill of over 300 feet, while a section of ordinary Pebble Beds is seen in Moor Lane, only 460 yards distant from the latter, at a little over 200 feet. They are therefore more likely to represent the Upper Red Sandstone and higher beds than the Lower Red Sandstone and Pebble Beds ; especially as the junction of the two latter is seen at Catstone Hill, $1\frac{3}{4}$ miles to the north on the other side of an upthrow fault of large amount at nearly the same level, but differing in the character of both components.

There is every reason, therefore, to believe that the rocks of the Hemlock Stone and neighbouring hills are the equivalents in a diminished form of those that overlie the Pebble Beds at Beeston Castle, especially as similar phenomena are observable in the interval. These have been divided in Cheshire[1] into two parts : a lower, softer part, called the Upper Red Sandstone, and an upper, harder part, called Keuper Basement Beds. It appears, however, that the only grounds for placing the upper division in the Keuper are an apparent gradual passage upwards into the Waterstones, and an apparent unconformity with the lower division, below a well marked conglomerate—both of which grounds are contested by Mr. Strahan and which are certainly not applicable at Bramcote and Stapleford Hills. Here at all events no beds have any relation to the Keuper, but all are the topmost beds of the Bunter whether

[1] Strahan, loc. cit. See also Hull, 'Triassic and Permian Rocks,' *Geol. Surv. Mem.* p. 9, and Strahan, *Geol. Mag.* 1881, p. 401.

separable or not. It would thus appear that in the type of Bunter which prevails to the west the beds of pebbles are not entirely confined to the centre.

It has been suggested that certain sandstones discovered at the top of the Pebble Beds in the east of Nottingham represent those at the Hemlock Stone called 'Keuper Basement Beds,' but much confusion has arisen as to the relative position of these and the Keuper Conglomerate (see post), and the exposures referred to being now covered it is impossible to clear the matter up.

The thickness of the whole Bunter series cannot easily be determined in the west, and can only be estimated where the beds outcrop, but in the east where covered by Keuper Beds we find the whole thickness at Ruddington to be 218 feet, at Owthorpe 428 feet, at Gedling 366 feet, at Thurgarton 343 feet, and in parts where the Upper Red Sandstones are left, as at East Retford, 616 feet, at South Scarle 542 feet and at Southcar 434 feet. These figures however depend too much on the interpretation of cores to be thoroughly reliable.

The Keuper Series.—The Keuper Beds throughout are sharply contrasted with the Bunter. Instead of the coarse torrential deposits with pebbles and falsebedding we find thin hard beds of constant thickness and very fine grain separated by beds of clay of various shades of red. The proportion of the hard beds to the clay varies. Towards the base the hard beds abound, towards the top the clay; and though there is no sharp line of junction between them the former are called *Keuper Sandstones* or *Waterstones*, and the latter *Keuper Marls*.

The Keuper Sandstones or *Waterstones*.—This last name appears to have been given in the Midlands from their water-bearing property when pierced through the overlying marls[1] (though there is another account of its origin),[2] and it is somewhat justified by the fountain of water obtained from them in the South Scarle boring. Yet it appears a strange title when used in the neighbourhood of the far superior Bunter Beds. The base in many places consists of a hard calcareous conglomerate, with sub-angular pebbles usually in greater variety than in the adjacent Pebble Beds. The existence of this conglomerate in relation to the Keuper Sandstones was first pointed out by Dr. Irving[3] in Red Lane and on the hillside east of Sneinton—as well as in the excavations for various culverts in the east of Nottingham. It has also been traced (by Messrs. Wilson and Shipman) at Red Hill three miles north of the city, at Highfield House near the lake, at the south-west corner of Wollaton Park and on the top of the hill at Bramcote village. It was formerly easy to see it, whilst houses were being built over the line of junction in the east of the city. Further north and east in the county it has not been seen, possibly from want of suitable sections, except at Retford where nine inches of it are recorded by Mr. Metcalfe in a well-boring.

[1] Hull, *Triassic and Permian Rocks.*
[2] See Woodward, *Geology of England and Wales.*
[3] *Geol. Mag.* 1874, 'The Geology of the Nottingham District.'

Perhaps the most instructive of these localities is that at the south-west corner of Wollaton Park. Here the pebbles are large, various, close together and with a strong calcareous cement, the rock in every respect differing from any near the Hemlock Stone only $1\frac{3}{4}$ miles away, and resting on a lower part of the Bunter Series seen in the sand pit below. Elsewhere also it rests on various parts of the Bunter, showing the unconformity between the two series, but it is nowhere known to reach the Lower Red Sandstone.

Overlying the conglomerate are other beds, which differ from the normal Waterstones, as may be seen in the following section.

Section of the junction between Keuper and Bunter in an excavation for drainage at the junction of Sneinton Dale and the Hollows. Communicated by W. N. Blair, 1884.

Shaly beds of red marl, 6 ft. 6 in.

	ft.	in.
Shaly beds of bluish grey marl, sandy towards the bottom . . .	2	8
Yellowish grey sandstone, with yellow spots and a few pebbles .	0	10
Conglomerate of yellow sandy matrix with pebbles of various material, becoming more calcareous towards the base . . .	3	9
Very hard conglomerate, with red matrix full of pebbles . . .	0	6

Sandstone rock (Bunter) with a few scattered pebbles 40 ft. +

These basal beds are not separated by any marked line from the rest of the Keuper Sandstones, though differing from them in character. We find the yellow spotted sandstone in many walls near the junction line. The bluish grey marl is found in a similar position at Farnsfield, Ollerton, Retford and Everton (at the extreme north of the county).[1]

The alternations of dark red marls with thin sandstones or fine marly limestone, which constitute the lower part of the Keuper Sandstones, may be very well seen at the Carlton Hill brickyard. They are similar to those described above the conglomerate at Blue Bell Hill and Rough Hill Wood excavations by Dr. Irving[2] and Messrs. Wilson and Shipman.[3] The limestones have flat surfaces and the sandstones are often ripple-marked. The latter often contain on their undersurfaces pseudomorphs in sand after hopper-shaped crystals of salt. Such have been noticed also at Colwick and Blue Bell Hill as well as in the Keuper Marls at Tuxford and Newark and many other places. The origin of these is as follows: As the salt water from which the underlying clay has been deposited slowly dries the salt crystals form, partly embedded in the clay, which then becomes hardened. On the rewetting of the surface the salt crystal is soon dissolved, while the hollow it has occupied still remains hard for a time. The fine sand enters this and takes a cast of it, which, when the sand consolidates into sandstone, projects from the under surface.[4] In the Keuper Marls the thin sandstones are likewise often ripple-marked, as at the Rifle Butts north of Nottingham, where they are pitted on the surface as by annelid borings, and in Lambley Dumble and at

[1] Metcalfe, 'Geology of Nottinghamshire,' loc. cit.
[2] *Proc. Geol. Assoc.* vol. iv. 1875. [3] *Geol. Mag.* 1879, p. 532.
[4] See Strickland, *Quart. Journ. Geol. Soc.* vol. ix.

Newark. These peculiarities show that both one and the other division of the Keuper were deposited between tide marks. The same condition of deposit is indicated by the footprint of a *Labyrinthodont* found on the sandstone at Colwick by Dr. Irving, and the remarkable shoal of ganoid fishes, *Semionotus*, found stranded all together in one bed at Rough Hill Wood by Mr. Wilson. It is judged from this that, as in the case of the Coal-Measures, the base on which the deposits rested was constantly being depressed at the same average rate as the deposits were formed, but, as these do not contain the ordinary marine fossils, the water was enclosed as a lake and the depression was not sufficient to open this to the sea till the next succeeding epoch.

At a higher level the sandstones become thicker and of a brown colour. These tend to form escarpments, as at Spital Hill near Retford, at Bothamsall, Kirton, and Belsthorpe and Edingley Hill near Southwell.

The Keuper Marls are distinguished by the preponderance of clay over sandstone and by the vivid red colour of the former. The beds of sandstone are usually thin, but there are parts where each bed is thicker, or where the thin beds are closer together, such as the neighbourhood of Tuxford, where much stone has been extracted for building under the name of the Tuxford Stone. Another important distinction is the abundance of gypsum. This mineral is not unknown in the Keuper Sandstone, where it forms fibrous strings or veins, but in workable masses it is confined to the marls.

Gypsum is a hydrous calcium sulphate, with a composition (from a Nottingham sample) of: calcium sulphate, 77·4 ; water, 21 ; impurities, 1·6 per cent. The crystalline form, or *Selenite*, is very rarely found in these marls and only lining accidental cavities. The commonest variety is the saccharoidal, which is massive, brilliantly white and amorphous. The more compact, transparent form of this, known as alabaster, has not been found in any quantity in Notts, though worked at Chellaston over the Derbyshire border. The fibrous variety consists of long narrow crystals packed closely side by side obliquely to the edges of the vein or round the boundaries of the saccharoidal masses. The play of light upon these crystals has obtained for the variety the name of Satin Stone, under which title it has been much worked at East Bridgeford for ornaments. The workable variety occurs in thick nodular beds or floors, in large spheroidal or lenticular masses called balls or bowls, or in rows of cakes.[1] In places where any large lump occurs the stratification of the surrounding marls is disturbed on all sides as though irregularly pushed out by the growth of the lump. This has suggested that the mineral was originally deposited in an anhydrous form as *anhydrite*, and that subsequent infiltrations of water have caused it to swell by entering into combination to produce gypsum. This explanation is rendered more probable by the occurrence of centres of anhydrite in some of the larger masses at

[1] See Metcalfe, *Trans. Nott. Nat. Soc.* for 1894.

Newark and the discovery of a mass of the same mineral 9 feet thick in the Permian Marls at Southcar boring, where no doubt it has been protected from infiltration. The gypsum beds occur principally on two horizons, one not far from the base which has been worked at Clarborough and Little Gringley in the north of the county, and one at about 100 feet from the top of the marls worked at Newark, Hawton, Shelton Orston, East Bridgford, Barton, Thrumpton, Gotham and Kingston. The gypsum industry is an important one, 76,584 tons having been raised in the county during 1901, out of 200,000 tons raised in the whole of the United Kingdom. The water also from these works, and that which is used for brewing at Newark, has an analysis closely resembling that required for the production of Burton ales, viz :—

	Grains per gallon
Calcium sulphate	84·93
Magnesium sulphate	23·91
Calcium carbonate	6·00
Sodium carbonate	4·45
Calcium nitrate	4·85
Sodium chloride	5·76
Alumina, etc.	2·02
	131·92

The Keuper Marls, from the softness of their materials, do not give rise to such marked escarpments as the Sandstones, but only to more local ones where their own sandstones occur, as round Tuxford and at Leverton and Halam Hill near Southwell. On the other hand water falling on them does not readily sink in, and numerous streams are formed which work their way downwards to a hard band, and thus excavate narrow ravines known as dumbles, filled with underwood, e.g. Lambley Dumble.

The Keuper beds as a whole occupy the eastern half of the county as far south as Nottingham, at which point their outcrop is continued up the sides of the Trent valley in a westerly direction, connecting the bulk of them with those in the Midlands. Of this area of outcrop the part occupied by the Sandstones is by far the narrower, indicating a much less thickness for this portion. In the borings made on the outcrop we only get a partial estimate of the thickness. These give at Clifton 279 feet, at Edwalton 426 feet, at Ruddington 465 feet, from the base to the middle of the Marls ; at Gedling 75 feet, at Thurgarton 273 feet, from the base to the commencement of the Marls ; at Tuxford 426 feet, at Southcar 714 feet, from the base to the middle of the Marls ; and at Newark 410 feet of Marls and 175 feet of Sandstone, neither series being complete, are found. In the borings that have commenced on the Lias we get the full thickness at the time the Jurassic period commenced, viz. 633 feet of Marls and 115 feet of Sandstones = 748 feet at Owthorpe, and 688 feet of Marls and 205 feet of Sandstones = 893 feet at South Scarle. These figures in a general way show a thickening to the east while the shore conglomerates have been mostly found to the west.

THE JURASSIC SYSTEM

The beds which succeed the Keuper Marls in the east and south borders of the county could scarcely be more contrasted with them either in nature or contents. Any line to be drawn between two systems on local grounds must be drawn here. Opinions have been always more or less divided, according to the locality in which they are studied,[1] as to the position of these upper strata, whether they should be placed in the Jurassic or Triassic systems. Here that question decides itself in favour of the Jurassic. Although, however, these beds belong to the same system as the Lias above them they are distinct from it and are named Rhætic.

The RHÆTIC formation here commences with *Black Shales*, which rest with a sharp line of demarcation on the tea-green Marls of the Keuper. These tea-green Marls were at one time taken as the base of the Rhætic, but they are now believed to be merely discoloured by the deoxidation of the red colouring matter through the decay of pyrites in the overlying beds. The Black Shales are 'thinly laminated and contain a few thin bands of sandstone and a bone bed at or near the base.' They have also been called *Contorta-beds* from the abundance in them of the shell *Cassianella contorta*. Above these come a series of 'thick bedded light-coloured marls with yellowish fine grained limestone in irregular nodular bands' (*Geol. Survey*) often called *White Lias*. Each of these two groups is about 15–20 feet thick. The Black Shales are not strong enough to make much show on their outcrop, but the hard slabs of the White Lias with *Pleuromya crowcombeia* on their surface make a slight scarp in the neighbourhood of Elton and Barnston.

The characters of both groups are best seen in artificial openings. At Beacon Hill, Newark, 19 feet of Black Shales are seen with *Cassianella contorta* and '*Pullastra arenicola*,' but neither sandstone nor bone bed has been seen in situ—the latter has probably decayed. The upper group has only been reached by excavating through the Lias to prove its presence. At Elton is seen a bone bed overlain by black paper-shales and at the station the upper group. At Kelvington cutting 18 feet of the upper group containing *Estheria minuta* overlay the shales. At Cotham cutting both groups, the lower 15 feet and the upper 18 feet thick, were found, but no bone bed. Near this spot is the Orston 'spa,' supposed to be mineralized by the decay of pyrites from the bone bed. At Barnston the lower group is 14–15 feet thick, and contains a pyritous bone bed with vertebrate remains, and the upper group is 18 feet thick. In the Midland Railway cutting at Stanton-on-the-Wold 13 feet of the lower group were seen, including two narrow pyritous bands and *Cassianella contorta*, *Schizodus elongatus*, *Protocardium rhæticum* and *Modiola minima* in the upper part and a coprolitic bone bed in the lower part, with spines, scales, teeth and bones of the following :—

[1] See Renevier, *Alpes Vaudoises, Infralias*, 1864.

Nemacanthus filifer	Hybodus reticulatus	Ceratodus altus
Saurichthys acuminatus	Acrodus minimus	Gyrolepis tenuistriata
Hybodus minor	Sargodon tomicus	Ichthyosaurus platyodon

Most of these occur also at Barnstone. In the deep boring at Owthorpe 14 feet of black paper-shales were recognized, and at South Scarle 15 feet of strata have been referred to the Rhætic.

From these observations can be seen the vast difference—lithological and palæontological—between the Keuper and the Rhætic. Another point comes out from the consideration of position and thickness. The Black Shales are remarkable for their constancy in both respects. Throughout their range they remain not far from the 200 feet contour line. They are not dependent on local conditions—in fact the bone beds of the period, though thin, are of European extent; the fossils are named from those of Germany and the Alps. The fish remains are all parts only, and the bone beds being aggregate deposits, they represent the species killed on the introduction of the new conditions.

The Lias.—The Lower Lias is the only part of the formation to enter the county, and of this we have only information about the zones near the base. It follows the Rhætic in due course with conformable stratification and is made of similar material, the chief change being in the fauna. The lowest beds belong to the *Planorbis* zone and consist of 'finely laminated shales interbedded with layers of fine grained argillaceous limestone.' They are worked for hydraulic cement at Barnston, Granby, Elton, Cotham, Coddington, Collingham and Balderton. At Barnston there are ten bands of limestone in 20 feet of strata, in one of which a fine *Plesiosaurus* skeleton has been found. In one of the quarries at Coddington another saurian skeleton was found and buried in the fallen rubbish. At Elton there was found, prior to 1719, the hinder part of an *Ichthyosaurus* skeleton, the stone containing it being turned fossil-downwards by the side of a well. In that year, on turning up the stone, it was re-discovered and sent by the rector of the parish to Dr. Stukeley, who figured it in the *Philosophical Transactions*, vol. xxx. as 'a rarity the like whereof has not been found before in this island.' It was in fact the first British fossil reptile skeleton brought to the notice of the scientific world. Near Cotham eight bands of limestone occur in 13 feet of strata with *Ichthyosaurus tenuirostris*. Saurian skeletons or remains have been found also near Corthingstock. These beds thus well deserve the name assigned to them in the south of England—'The Saurian Beds.' At Balderton a coral, *Monthivaltia haimei*, has been found. The ordinary mollusca from the zone, including the characteristic ammonite *Psiloceras planorbe* and fourteen others, are widely distributed.

The higher zones are probably present but are generally covered by superficial deposits, especially in their southern range. In the east the *Angulatus* beds contain nodules occasionally fossiliferous, and the *Semicostatus* beds are inserted on the map, being recognized by containing ironstones. The fossiliferous portion once exposed at Red Mile is beyond the limits of the county.

THE SUPERFICIAL DEPOSITS

The study of the superficial deposits is a very complicated matter in which but little progress has been made. They include Boulder Clay, gravels and associated sands and boulders, alluvium, blown sand and deposits in old meres and in fissure caves.

1. *Boulder Clay* is an unstratified clay containing large stones, which may be rounded, angular or scratched, and include some which are foreign to the district. Its distribution in Notts is almost entirely confined to the southern and eastern borders. In the south it caps an escarpment of Marlstone except along the earlier formed valleys, where it descends to lower levels, as at Stanton-on-the-Wolds. Further north it descends to the limit of the Lower Lias escarpment, and still further north to the highest Keuper escarpment. Within these limits, except at one locality, there is nothing but gravel. Two varieties of Boulder Clay have been observed during the excavation of the cuttings and tunnel for the Midland Railway near Stanton and Plumtree. The lower of these is 50 feet thick and encloses fragments from the surrounding solid rocks, with foreign pebbles from various members of the Carboniferous system. It rests at a height of about 200 feet upon Black Shales which have been contorted in a direction showing pressure from the north-west. On these grounds it may be considered to have been brought by ice, forced to travel in a south-east direction. Associated with the lower Boulder Clay was an enormous block of Millstone Grit[1]; and a mass of basaltic rock described by Mr. Toplis in 1814[2] between Barton and Thrumpton is probably another large boulder.

An upper Boulder Clay rests, near the entrance to the Stanton tunnel, at a level of 230 feet upon a floor of Lias limestone which is striated in a direction E.N.E. to W.S.W. and contains, amongst other boulders, fragments of chalk and flint. The ice that brought it is judged therefore to have come from the E.N.E. The same kind of Boulder Clay forms the summit of the cutting at Plumtree at a somewhat lower level. It is this also that lies on the rocks of lower geological horizons in the north-east. The exceptional instance of a Boulder Clay not on the borders of the Trent basin is at Kneesall Hill,[3] reaching a height of 300 feet. This clay contains fragments of Trias Sandstone, Liassic and Oolitic Limestones and Chalk, mixed with rounded or striated fragments of Carboniferous rocks with slate and quartzite probably derived from an earlier Boulder Clay. The rest of the country has not been examined with sufficient care to enable it to be said that no other exception can be found.

In other cases towards the south-west old stratified clay has been churned up, and pebbles, usually of quartzite, forced into it on the spot. Such cases for instance are known in relation to the Permian Marls west of Bulwell at a height of about 170 feet above O.D.; and at Wilsthorpe,

[1] Deeley, *Quart. Journ. Geol. Soc.* vol. xlii. [2] *Annals of Philosophy*, vol. iii.
[3] *Geol. Survey Mem.* sheet 83.

just over the Derbyshire border, Keuper Marls have been thus treated from a level of 54 feet to 128 feet. In these cases only the pebbles seem to have been brought from a distance, and it is rather uncertain at what stage of the history they arrived.

2. The *gravels* are of two kinds, those connected with the river Trent itself and those not so connected. The latter are the most widespread of all the superficial deposits and present the greatest difficulties, whether considered to have been formed on the land or beneath the sea, especially as they have not yet been sufficiently studied. Two sources of these gravels may be recognized, corresponding more or less closely to those of the two Boulder Clays, viz. one from the west or north-west and one from the east or E.N.E.

The gravel from the west is a high level gravel. The lowest and most southerly spot at which indications of it have been met with is on the hills to the west of Arnold, where comparatively large boulders of Carboniferous limestone and volcanic rocks lie on the surface of the Bunter Pebble Beds at a height of 300 feet. At a spot a mile north of Watnall loose and large pebbles lie in a patch on the Magnesian Limestone at a height of 440 feet. A mile further north commences the high ridge of the Long Hills, composed at the base of Lower Red Sandstone, and covered to the top with gravel, including large rounded boulders of syenite, like that of Buttermere, and smaller ones of a felspar-porphyry and of a compact lava resembling the Iron Crag lava of Keswick. This ridge rises to a height of over 500 feet. Where the Pebble Beds come on in Annesley Park they are capped by a long ridge of gravel rising to 580 feet along the nearly level top. About the middle of this ridge is a sand pit, showing on the east side a quantity of white sand,[1] irregularly bedded, with a streak of broken coal fragments, overlying obliquely a pebbly mass in which the bulk of the subangular fragments, some of fairly large size, consist of the Permian limestone with casts of *Schizodus*, and of pieces of Carboniferous sandstone. A portion of this limestone gravel, which differs in no other way from the rest, is consolidated into an irregular pipe of rock, probably by the action of percolating water dissolving and redepositing the calcareous matter from the finer particles. At the north end of the plantation is a long gravel pit where the boulders are of various sizes and materials, with a similar consolidation in parts, and surrounding in one spot a large mass of Pebble Bed rock. Further on in the same direction the gravel-covered hills rise to the highest point in the county, in the Robin Hood's Hills, at 625 feet. From this point eastward to Blidworth there are other gravel pits, in one of which the gravel is again consolidated as in a vertical pipe, and just before reaching Blidworth are seen the well known 'Druidical Remains,' which consist of similar consolidated masses, shaped by the hand of man and containing as before many fragments of Permian limestone. Beyond this point the gravels have not yet been traced. Further north at Mansfield Woodhouse,

[1] Cf. Deeley, loc. cit.

resting at a base level of 320 feet on the Lower Red Sandstone or Permian, occurs a repetition of the gravels of the Long Hills with many rounded masses of decayed volcanic ash, suggesting as before a Lake District origin. The gravels, however, do not extend much further, as near Worksop there is no trace of them.[1]

Near where this gravel lies are some enormous boulders. Thus, two flat blocks of Millstone Grit, one deeply scored with glacial striæ, lie in the valley west of the Long Hills, and a boulder of 24 cubic feet of a tough volcanic ash lies by the stream side to the north of the same hills at a height of 390 feet; a large basaltic rock of 27 cubic feet lies on the road from Kirkby Forest to Sherwood Place at a height of 555 feet, and a similar rock, but smaller in size, rests by the pump in the centre of Blidworth village at 436 feet.

The varying heights and the changes of the underlying rock where this gravel is found show us the form and character of the surface of the country on which they were deposited, since the contour has not there been sensibly modified by denudation; how far it has changed where they do not lie cannot so easily be stated, but probably not much, and as the Erewash valley contains few or no drift deposits it may be suggested that it was occupied by a field of ice which in its motion pushed up the boulders and carried forward the gravel as in a great terminal moraine. Possibly the occupation of the great Trent basin by gravel instead of by Boulder Clay may be explained in a similar but not identical manner.

Similar gravel is found at the Grove Castle near Retford containing 'a large pebble of coarsely crystalline granite with pinkish grey matrix and dark prismatic crystals,' and a large block of Millstone Grit at 300 feet. The broken ridge of 140–250 feet above O.D. that runs from Newington near Bawtry by Everton to Gringley is capped by gravel containing abundant fragments of Permian limestone,[2] and at Gringley a large boulder, 30 cubic feet in size, of Carboniferous crinoidal limestone lies at a point 275 feet above O.D.[3]

Gravels containing materials derived from the east have been very little investigated. At Osberton near Worksop at about 60 feet above O.D. two unnamed shells, identified by Professor E. Forbes with species living in the German Ocean, are said to have been found[2]; in gravel that lies near the side of Rainworth Water, north-west of Blidworth, a specimen of *Gryphæa arcuata* from the Lias and pieces of apparently Triassic sandstone have been noted; at Kersall the gravel underlying the Boulder Clay contains fragments of Chalk and Lias[3]; and there are other noteworthy patches at Wilford Hill, Orton and Newark which do not appear to be connected with the Trent drainage.

Gravels deposited by the Trent are widely distributed along or near its course, as at Beeston 30 feet above its present level, near Colwick siding, at Gamston and east of Newark and many other places. The

[1] Fox-Strangways, *Quart. Journ. Geol. Soc.* vol. liv.
[2] Thorpe, *Geol. and Pal. Soc. Yorkshire Proc.* vol. iii.
[3] *Geol. Survey Mem.* sheet 83.

pebbles in such gravels are to a large extent composed of the materials of all the older gravels and are therefore very mixed. The remarkable point about them is the evidence they afford of the recrudescence of glacial conditions,[1] at all events near Nottingham. The Beeston gravels are wonderfully contorted,[2] and so are those at Spring Close, Lenton[3] and Gamston. The pressing of pebbles into the Triassic Marls at the Nottingham sewage-farm excavations and the contortions of the same Marls at Ratcliffe-on-Trent are apparently related phenomena. There is no alternative to the conclusion that these contortions were produced by stranded ice, and it was not the same ice that brought the pebbles, since some of them came from the east.

This conclusion is to be borne in mind in reference to the other point of interest in relation to the Trent gravels. Their wide distribution to the east of Newark and beyond the limits of Notts to the other side of the Lincoln gorge, suggested to Mr. Penning that the Trent had changed its course since they began to be deposited,[4] having originally reached the sea along the lower course of the Witham. A study of the higher course of the Trent gives little support to this hypothesis, for it preserves throughout the same relation to the Trias and Rhætic, and there is no sign of change in this respect near or north of Newark. On the other hand the gravel is carried at least as far as Fledborough, near which is a buried channel, larger and deeper than the present Trent.[5] Meanwhile the occurrence of glacial conditions at a later date affords the means by which gravels originally deposited on one side of the Lincoln gorge might be carried to the other side across a low watershed in a manner which cannot be dealt with here.

3. The *alluvium* of the Trent calls for little remark. It is fairly abundant all along the course of the river, and especially so on the west side of Newark opposite the gravels on the east. The Trent has obviously varied its course considerably within the limits of its alluvium in comparatively recent times, since here and there the remains of various animals have been buried beneath it. Thus teeth of the mammoth have been reported from Island Street, Nottingham[6] and near Wilford; antlers of the red deer near North Clifton[7]; and antlers of the red deer, bones of the ox and horse and a human skull (described by Professor Huxley[8] as belonging to a dwarf race commonly found in Irish tumuli) are reported by Mr. Drake from Muskham.[7] These are usually found at a depth of 25 to 30 feet.

4. *Blown Sand* is found on the east side of the Trent from North Collingham to North Clifton. This being N.N.E. of the great spread of alluvium above mentioned may indicate prevalent S.S.W. winds in this district. Another area of blown sand is at Misterton in the extreme north of the county.

[1] Cf. Deeley, loc. cit.
[2] Shipman, *Midl. Nat.* vol. v. [3] Shipman, *Geol. of Lenton.*
[4] A. J. Jukes-Browne, *Quart. Journ. Geol. Soc.* vol. xxxix. and *Geol. Survey Mem.* sheet 83.
[5] Fox-Strangways, *Quart. Journ. Geol. Soc.* vol. liv.
[6] *White's Directory*, 1864. [7] *Geologist*, vol. iv. [8] Ibid. vol. v.

5. *Deposits in old meres* occur to the north and west of Bingham at a height of 50 feet above Trent level. They are mapped as alluvium, but consist of black earth, 3–4 ft. thick, and contain twenty-four species of land and freshwater mollusca.[1] Similar meres filled up with black soil are known at Gotham Moor and at Scarthingmoor by Tuxford, with seventeen recorded species.[1] Black soil is also recorded overlying a calcareous tufa at Lambley or containing tree stumps in the Leen valley.[2]

6. *Deposits in fissure caves.*—Caves or fissures are known to occur in the Magnesian Limestone at two localities, both of which are by the sides of rivers forming the boundary of the county on the west side. Creswell Crags are on the Poulter, a tributary of the Idle, and Pleasley is on the Meden, but of the numerous caves at Creswell only one is in Notts, and the single fossiliferous cave at Pleasley is over the border in Derbyshire. The single Notts cave is called the Church Hole.[3] It is a fissure opened in the cliff and runs in a north and south direction, commencing 14 feet above the river and extending upwards for 40 feet. The deposits within it are : a bed of red sand overlain by several varieties of cave-earth, the whole being covered with stalagmitic breccia. Of the animal remains here buried, the jaw of a polecat is peculiar to the red sand, and a limb bone of the cave-lion to the cave earth. The rest are common to both ; they include the—

Spotted hyæna	Reindeer	Woolly rhinoceros
Fox	Irish elk	Mammoth
Wolf	Bison	Hare
Bear	Horse	

Of human implements, rude ones made of quartz, etc., occur alone in the red sand, but they are accompanied in the cave earth by implements of flint, also needle, awl, and a notched instrument, and a rounded spearhead all made of bone, and a straight rod cut from a reindeer's antler.

To complete the picture of the associates of the first inhabitants of Nottinghamshire the list of additional mammals found in the caves just over the border may be given :—

Sabre-toothed lion	Leopard	Field mouse
Lion	Wild boar	
Wild cat	Hippopotamus	

To this list must be added the lynx found in 1866 at Pleasley Yew Tree Cave by Dr. Ransom.[4] The men whose works are associated with these are considered to be of Palæolithic age, though one of them was an artist and carved on the surface of a bone the picture of a domesticated horse.

[1] C. T. Musson, *Journ. Conchology*, vol. iv.
[2] Shipman, *Midl. Nat.* vol. vi.
[3] J. M. Mello and W. B. Dawkins, *Quart. Journ. Geol. Soc.* vol. xxxiii.
[4] *Rep. Brit. Assoc.* 1866.

PALÆONTOLOGY

IN the domain of vertebrate palæontology Nottingham is a county which has but small claim to distinction, very few fossil forms from within its limits having apparently been recorded in scientific publications. Of these 'finds' the majority are mentioned in a pamphlet by Professor J. W. Carr, published at Nottingham in 1893 for the meeting of the British Association at that city, under the title of *A Contribution to the Geology and Natural History of Nottinghamshire*. To that gentleman the present writer is also indebted for information with regard to other fossils from the county in the museum at Nottingham.

Commencing with the remains of Pleistocene mammals, it has first of all to be mentioned that one of the well known Creswell caves lies on the Nottinghamshire side of the river, although the others are in Derbyshire. The cave in question is known as the Church Hole, and an account of its excavation and the remains discovered is given by the Rev. J. M. Mello.[1] The species of mammals discovered in this cave include the cave hyæna (*Hyæna crocuta spelæa*), badger (*Meles meles*), wolf (*Canis lupus*), brown bear (*Ursus arctus*), common hare (*Lepus europæus*), reindeer (*Rangifer tarandus*), extinct Irish deer or 'Irish elk' (*Cervus giganteus*), the Pleistocene bison (*Bos priscus*), wild horse (*Equus caballus fossilis*), woolly rhinoceros (*Rhinoceros antiquitatis*) and the hairy elephant, or mammoth (*Elephas primigenius*). Among these the remains of the horse were especially abundant. As in the case of other caves, the bones of the larger mammals are presumed to have been dragged into Church Hole by the hyænas, which made it their den. If this be correct, it indicates two features by which the extinct cave hyænas differed from their South African representatives. For according to the reports of travellers and sportsmen the African spotted hyæna does not dwell in caves, while its food consists mainly of antelopes and not of the bones of such large animals as elephants and rhinoceroses.

Another locality for Pleistocene mammals, lying on the borderland of Derbyshire and Nottinghamshire, is the Pleasley Vale near Mansfield. The bone cavern known as the Yew Tree Cave is, however, just on the north side of the river Meden, and therefore in Derbyshire. From that cave, it may be mentioned, has been obtained the imperfect skull of a lynx (*Felis lynx*), now preserved in the museum at Nottingham. Other mammals recorded as fossils from Pleasley Vale—whether belong-

[1] *Quart. Journ. Geol. Soc.* xxxiii. 585 (1877).

ing to Nottinghamshire or Derbyshire I cannot say—are the wolf, reindeer, horse and woolly rhinoceros.

Although river gravels and alluvium occur at various places in the Trent valley, they appear to have yielded few mammalian remains. The Nottingham Museum possesses however several fine molar teeth of the mammoth which have been obtained from the old alluvium of the Trent valley, either in the course of street excavations in Nottingham itself, or by dredging in the bed of the river near the town.

Since the foregoing was in type, I have received from the Rev. T. B. Chamberlin a note on some mammalian remains, associated with a number of species of land and freshwater shells obtained from the layer above the peat in the valley between North and South Wheatley, near Retford. Acccording to Mr. Chamberlin's determinations, the mammalian remains include the base of an antler of the roebuck (*Capreolus capreolus*), a horn-core of the extinct bison (*Bison priscus*), a portion of the antler of the extinct Irish deer (*Cervus giganteus*), and several antlers of red deer. The Irish deer antler has a basal girth of 20 inches; the brow-tine is $15\frac{1}{2}$ inches in length and 5 inches in girth; and the portion of the beam still remaining, which is broken off just below the palmation, is 13 inches in length from above the origin of the brow-tine.

Passing on to older formations, a considerable amount of interest attaches to certain remains of plesiosaurians, or long-necked extinct marine reptiles from the Lower Lias of the county preserved in the British Museum. One of these is chiefly interesting on account of having been discovered so long ago as the year 1719. It consists of a slab of Lias limestone from Elston near Newark containing the impression of the hinder part of the skeleton of a small plesiosaur, which has been provisionally referred to the common *Plesiosaurus dolichodirus*.[1] In the *Philosophical Transactions* of the Royal Society for 1719[2] it was regarded by its describer, William Stukeley, as probably representing the remains of a crocodile or a cetacean, the existence of such a remarkable group of reptiles as the plesiosaurians being at that time quite unsuspected. The specimen was originally in the possession of the Royal Society, by the council of which body it was presented to the British Museum.

The second specimen, which is from the Lower Lias near Granby, is of importance on account of the comparative rarity of the species (*Eretmosaurus rugosus*) to which it belongs. It was presented to the British Museum by the Duke of Rutland in 1841, and consists of a slab showing the lower aspect of the nearly entire skeleton, from which however the skull is wanting.[3] It was described and figured by Sir R. Owen (as *Plesiosaurus rugosus*) in his 'Liassic Reptilia.'[4] The genus *Eretmosaurus*, it may be observed, is chiefly distinguished from the typical *Plesiosaurus* by certain well marked differences in the form and relations of the scapula and coracoid bones.

[1] *Cat. Foss. Rept. Brit. Mus.* ii. 259.
[2] pp. 936–8, pl. i.
[3] See *Cat. Foss. Rept. Brit. Mus.* ii. 250.
[4] *Mon. Pal. Soc.* pt. iii. p. 34 (1865).

In addition to the foregoing specimens mention must also be made of a fine plesiosaurian skull from the Lower Lias of Cropwell Bishop recently acquired by the Nottingham University College Museum. The generic and specific determination of this specimen does not hitherto appear to have been attempted. It is stated in Mr. W. J. Harrison's *Geology of the Counties of England*[1] that remains of plesiosaurs together with those of ichthyosaurs—another group of marine reptiles confined to the Secondary period—occur plentifully in the Lower Lias near Cortlingstock.

From the Rhætic deposits of the county have been obtained, according to Prof. Carr, presumed reptilian coprolites, which may belong to one or both of the aforesaid groups.

Footprints of amphibians are rare in the Keuper formation of the county, but one example from the foot of the railway cutting at Colwick is now in the possession of the Nottingham High School. There is also a statement[2] to the effect that amphibian footprints, of the type known as *Chirosaurus* or *Chirotherium*, have been observed in the Keuper sandstone of Weston Cliff, on the Nottinghamshire side of the Trent. And Mr. Harrison[3] likewise states that similar footprints have been met with in the Keuper south of Ollerton. Such footprints, it may be well to mention, were probably made by gigantic primeval salamanders or labyrinthodonts, allied to or identical with *Mastodonsaurus*. Footprints of the same nature likewise occur in the Permian Magnesian Limestone at Mansfield, and there is a fine slab displaying a number of such impressions in the Nottingham University College Museum.

Fish remains appear to be very scarce in the Secondary formations of the county, but from the Rhætic Prof. Carr records, bones, teeth and fin spines assigned to the genera *Hybodus*, *Nemacanthus*, *Acrodus*, *Gyrolepis*, *Saurichthys* and *Ceratodus*.

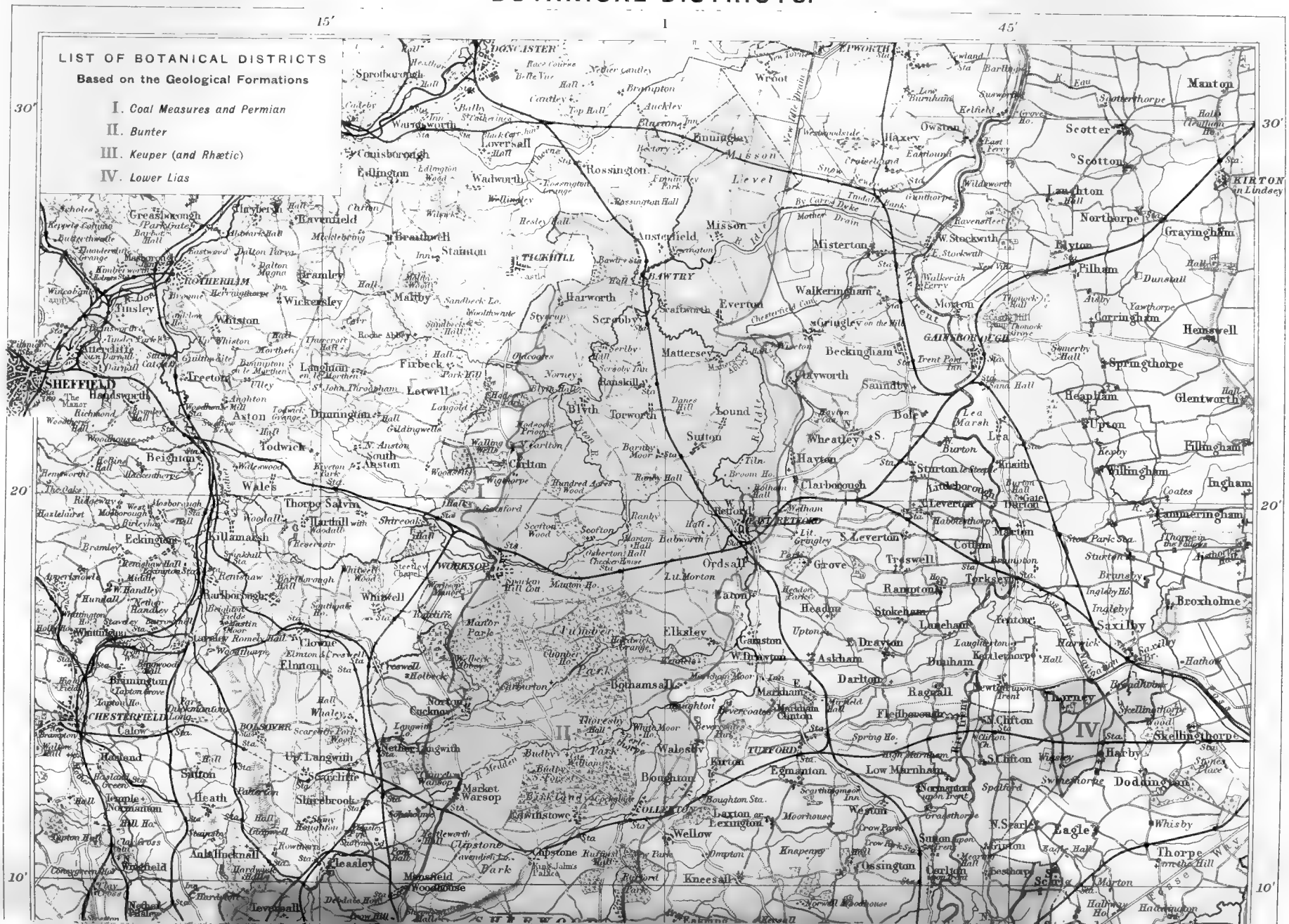
Of much greater interest however are numerous remains of the ganoid or enamel-scaled fish known as *Semionotus brodiei*, which occurs typically in the Keuper of Warwickshire. The Nottinghamshire specimens were discovered in 1879 by Mr. E. Wilson[4] in the roof of a tunnel which was at that time being driven through the so-called 'waterstones' of the Upper Keuper at Colwick Wood near Nottingham for the Lean valley outfall sewer. In recording this 'find' Mr. Wilson makes the following observations :—

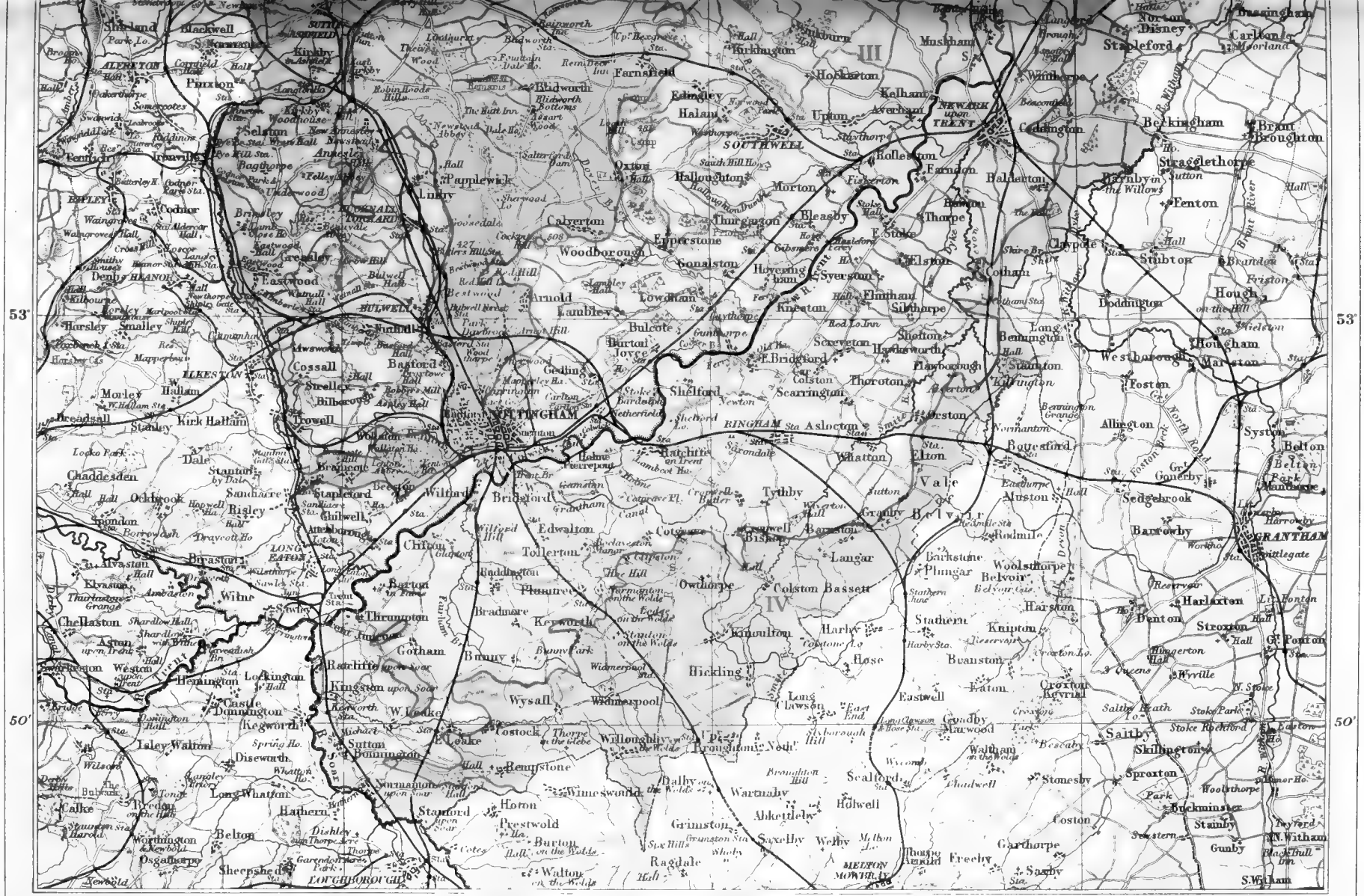
> In addition to the exceptional interest that is always to be derived from the presence of organic remains in Triassic rocks, as a rule so barren of life, there were two points specially noticeable in connection with the occurrence of these fossils in the Keuper at Nottingham ; namely, first, the great number of the fishes, there being quite a shoal of them for a distance of 30 feet or thereabouts in the line of section, the individual fishes even lying over one another in the middle portion of that distance, but gradually becoming more widely separated in either direction until they finally came to an end ; and, secondly, their occurrence at the junction of two formations of the Trias, namely, of the waterstones of the Upper Keuper and the basement beds (Lower Keuper).

[1] p. 211. [2] See Hall, *Mem. Geol. Survey United Kingdom* (1860). [3] Op. cit.
[4] See *Quart. Journ. Geol. Soc.* xliii. 542 (1887).

No record of fish remains appears to exist from the Permian of the county, but about twenty years ago there were discovered in the roof of a coal-seam in Clifton Colliery teeth, spines and vertebræ of large fishes. The spines were reported to resemble those of the Palæozoic genera *Ctenacanthus* and *Gyracanthus*, but it does not appear that any proper description of the specimens has ever been published.

BOTANICAL DISTRICTS.

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NOTTINGHAM
NEWARK upon TRENT
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GRANTHAM
LOUGHBOROUGH
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Vale of Belvoir
Sherwood Forest
Trent
Soar
Leen
Dover Beck
Fosse Way
Great North Road
III
IV
The Edinburgh Geographical Institute
J.G. Bartholomew
SCALE 4 MILES TO AN INCH
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BOTANY

THE earliest records of Nottinghamshire plants are contained in the *Phytologia Britannica* of William How, published in 1650. In this work Nottinghamshire localities are given on the authority of Mr. Stonehouse for *Dianthus deltoides*, *Gnaphalium dioicum*, and a grass which was probably *Melica nutans*. Sixteen years later Christopher Merrett in his *Pinax* mentions, in addition to the above, *Sparganium minimum* and a white-flowered form of *Galeopsis versicolor*. These were probably found by Thomas Willisell, who travelled all over Great Britain in search of plants, and visited Nottingham about this time. He was the first botanist to observe *Silene nutans* on the walls of Nottingham Castle. The celebrated John Ray was at Wollaton Hall in 1670, and records in his correspondence and botanical works a number of Nottinghamshire plants, among which are *Silene nutans*, previously discovered by Willisell, *Cerastium arvense*, *Teesdalia nudicaulis*, *Verbascum pulverulentum*, and *Apera Spica-venti*. One or two other unimportant records are given in the Dillenian edition of Ray's *Synopsis*, published in 1724, but no further additions of any consequence were published until Deering's *Catalogus Stirpium, etc.*, or *Catalogue of Plants naturally growing . . . about Nottingham*, appeared in 1738.

Charles Deering, M.D., was born in Saxony, probably in 1695, and after graduating in physic at Leyden came to England and practised for some years at Bedford, London, and Rochester. He settled in Nottingham in 1736, and remained there until his death on 12 April, 1749. He was buried in St. Peter's churchyard. His *Catalogue* contains about 840 separate entries of Phanerogamic and Cryptogamic plants, a few of which are errors of identification, a few are cultivated plants only, and some others are unimportant varieties of other species. Considering, however, the paucity of works of reference, and the lack of facilities for travelling at this remote period, as well as the fact that the book was apparently the result of only two years' research, it displays truly remarkable industry and ability on the part of the author.

Most of the references to Nottinghamshire plants in the various botanical works published in the latter half of the eighteenth century are copied from Deering, but some additional Nottinghamshire records are given in a paper by R. Pulteney on the rarer plants growing about Loughborough, published in vol. xlix of the *Philosophical Transactions*, and in Nichols' *History and Antiquities of the County of Leicester* (1795).

The *Botanist's Guide* of Turner and Dillwyn (1805) gives a list of the rarer plants of Nottinghamshire, mostly copied from Deering, but with a few new species added.

In 1807 Thomas Ordoyno of Newark published his *Flora Nottinghamiensis*, which comprised the flowering plants and vascular cryptogams, and included many species unknown to Deering. Although by no means free from error, the publication of this work seems to have given an impetus to the study of the county flora, for the first half of the nineteenth century was a fruitful period in the history of Nottinghamshire botany. Among the numerous workers of this time, two men, Thomas Jowett and Godfrey Howitt, M.D., stand out conspicuously.

Born in 1801 at Colwick (where his father was steward to the Musters family), Thomas Jowett received a medical education and practised in Nottingham for about ten years. In 1831 his health broke down, and he retired to the village of Morton in the Trent Vale, where he died in the following year at the early age of 31. From boyhood Jowett seems to have been keenly interested in the plants of his native county, and in 1826, when only 25 years old, he published in the *Nottingham Journal*, under the pseudonym of 'Il Rosajo,' a series of 'Botanical Calendars,' or 'Notices of Native Plants of the County of Nottingham, arranged according to the order of their appearance.' These calendars, twenty-eight in number, appeared at frequent intervals from March to December, and are as remarkable for their admirable literary style as for the evidence they afford of their author's intimate acquaintance with the county flora and with the botanical and poetical literature of his time. Localities are given for 1,023 species of flowering plants and cryptogams, including more than 100 species not mentioned in the works of Deering and Ordoyno. Four volumes of dried specimens of Nottinghamshire plants collected and mounted by Jowett are preserved in the Bromley House Library at Nottingham. These are particularly valuable as settling the identity of several species which are not now to be found in the county.

Dr. Howitt, the friend and co-worker of Jowett, was born in 1800, and after graduating in medicine at Edinburgh, practised as a physician in Nottingham. In 1839 he emigrated to Australia, and died there in 1873. His *Nottinghamshire Flora*, the latest work devoted to the plants of the county, appeared in 1839, and is a tiny volume of 124 pages, recording 1,137 species of plants, of which 866 are phanerogams, ferns, etc., and the rest are mosses, hepatics, lichens, and algae. There is not a word of preface or introduction, no attempt is made to distinguish between indigenous plants and those of doubtful nativity, and the information about each species is confined within the narrowest possible limits. It must, however, be remembered that the work was published during the year in which Dr. Howitt left England, and was probably prepared very hurriedly, with the object of placing his extensive knowledge of the county flora at the disposal of other local botanists. As a record of the composition of our flora at a period when it was still comparatively

unmodified by modern industrial developments, Howitt's *Flora* is, in common with Jowett's *Calendars*, of the greatest value to modern workers.

Six years before the publication of his *Flora*, Dr. Howitt (in conjunction with Wm. Valentine, F.L.S., a talented Nottingham bryologist) issued three parts of a *Muscologia Nottinghamiensis*, consisting of dried specimens of local mosses with descriptive letterpress. Presumably from lack of support no further numbers of this work were published.

The *New Botanist's Guide* by H. C. Watson (1835–7) contains a long list of Nottinghamshire plants, which was drawn up mainly from a marked catalogue, accompanied by numerous specimens, supplied to Mr. Watson by Mr. T. H. Cooper. The specimens were given to Mr. Cooper by Dr. Howitt for conveyance to the author of the *N. B. G.*, to be used in drawing up the county list. They must therefore be accepted as evidence of the occurrence in Nottinghamshire of the species they represent, but as Mr. Cooper ' was almost a stranger in the county, and had enjoyed few opportunities of botanizing there,' and as, moreover, the catalogue contains many obvious inaccuracies, the records which are unsupported by actual specimens must be ignored. In the *N. B. G. Supplement* a new list of Nottinghamshire plants, drawn up from the advance sheets of Dr. Howitt's *Flora*, is given to replace that supplied by Mr. Cooper.

The published botanical literature of Nottinghamshire since the time of Howitt is very scanty. Lists of the plants of the county, or of parts of it, such as Sherwood Forest, have appeared from time to time in sundry directories and guide-books, and a few new species have been recorded in various botanical works and periodicals by E. J. Lowe, J. Bohler, Hilderic Friend, J. K. Miller, H. Fisher, and the writer, but an up-to-date *Flora of Nottinghamshire* is still a desideratum.

A modern account of Nottinghamshire botany, when compared with the records of Jowett and Howitt, furnishes melancholy evidence of the large number of interesting plants which, once common, have now become exceedingly rare or altogether extinct. The enormous growth of the city of Nottingham has covered some of our best collecting grounds with buildings, while the cultivation of waste lands, the drainage of bogs, the multiplication of railways and collieries, and the conversion of large areas of arable land into pasture, have all been potent agents in the destruction of our native plants. Nor are we compensated for their loss by the numerous aliens—waifs and strays from foreign lands—which are making their appearance along railway lines and canals, and about malt kilns and grain warehouses, brought over with grain, fodder, and other merchandise from abroad. Perhaps the most famous of our disappearing plants—though of course not a true native—is the purple spring crocus (*Crocus vernus*), which formerly covered many acres of the Nottingham meadows with such a luxuriant growth as to suggest the idea of its having been sown as a crop. Much of the ground this beautiful plant occupied is now built over, and although it is still common in places its

habitat becomes more restricted year by year. In the same locality grew abundantly the autumnal crocus (*C. nudiflorus*), first recorded as a British plant in 1738 by Dr. Charles Deering, who found it 'in Nottingham meadows and about Trent Bridge.' I have seen it in some numbers within the last fifteen years in a field close to Trent Bridge, but the locality has recently been built upon. The plant still, however, persists in fair quantity in some of the Trent meadows. The wild tulip (*Tulipa sylvestris*) also was formerly common in the Nottingham and Beeston meadows, although it never flowered in its wild state, and usually put forth only a single leaf. It has long disappeared from its old headquarters, but still occurs higher up the Trent Valley at Thrumpton. The Nottingham catchfly (*Silene nutans*), first recorded for Britain by Ray in 1670 as growing 'on the walls of Nottingham Castle,' was still common on the ruined walls of the old kitchens of the castle up to about fifteen years ago, but the recent restoration of this part of the castle has destroyed it. It is quite possible, however, that a few plants may still linger on the inaccessible parts of the castle rock.

The draining of the few small areas of bog which formerly existed in the county is responsible for the extinction or extreme rarity of a number of interesting species; such are the royal fern (*Osmunda regalis*), *Lastrea Thelypteris*, *L. uliginosa*, and *L. Oreopteris*, the bog orchis (*Epipactis palustris*), bladderwort (*Utricularia vulgaris*), butterwort (*Pinguicula vulgaris*), sundew (*Drosera rotundifolia*), cranberry (*Schollera Oxycoccos*), *Vaccinium Vitis-idaea*, buckbean (*Menyanthes*), the beautiful *Gentiana Pneumonanthe*, *Schoenus nigricans*, and others. On the other hand the rare crested fern (*Lastrea cristata*) still persists in its ancient station, along with the crowberry (*Empetrum*) ; the sweet-gale (*Myrica Gale*) also maintains its foothold in some quantity in a single locality; and the bog pimpernel (*Anagallis tenella*), and cotton grasses, *Eriophorum vaginatum* and *angustifolium*, may still be found.

Other interesting plants which formerly occurred, but have not been seen for many years, are *Viola stagnina* and *V. lutea*, *Dianthus deltoides*, *Cerastium quaternellum*, *Hypericum montanum*, *Geranium sanguineum* and *G. lucidum*, *Cicuta virosa*, *Myrrhis Odorata*, *Bupleurum rotundifolium*, *Antennaria dioica*, *Cnicus pratensis*, *Crepis paludosa*, *Pyrola minor*, *Rhinanthus major*, *Littorella juncea*, *Galeopsis ochroleuca*, *Rumex maritimus* and *R. pulcher*, *Cephalanthera ensifolia* and *C. pallens*, *Orchis ustulata*, *Stratiotes aloides*, *Scheuchzeria palustris*, *Carex digitata*, *Melica nutans*, *Hordeum sylvaticum*, *Ceterach officinarum*, *Cystopteris fragilis*, etc. Turning from this melancholy list of probable extinctions it is a pleasure to note that a fair number of species which have always been rare in the county still persist. Among these are *Arabis perfoliata*, *Lotus tenuis*, *Sium latifolium*, *Dipsacus pilosus*, *Inula Conyza*, *Monotropa Hypopitys*, *Samolus Valerandi*, *Melampyrum pratense*, *Ophrys apifera* and *O. muscifera*, *Gagea fascicularis*, *Acorus Calamus*, *Carex Pseudo-cyperus*, *Apera Spica-venti*, etc. Moreover, a number of truly native species which were unknown to or not distinguished by the earlier Nottinghamshire botanists

have been discovered in recent years; e.g., several Batrachian Ranunculi, *Cardamine flexuosa*, *Neckeria claviculata*, *Viola permixta*, *V. silvestris* and *V. ericetorum*, *Polygala serpyllacea* and *P. oxyptera*, *Stellaria umbrosa*, *Ulex Gallii*, *Agrimonia odorata*, *Callitriche stagnalis*, *C. obtusangula*, and *C. truncata* (the last-named a very remarkable and interesting addition to our flora, first found by Mr. H. Fisher in the Rainworth Water), *Epilobium angustifolium* and *E. adnatum*, *Carum segetum*, *Arctium majus* and *A. minus*, *Arnoseris pusilla*, *Hypochaeris glabra*, *Gentiana baltica*, *Mentha alopecuroides* and others, *Polygonum mite*, *Rumex limosus*, *Habenaria chloroleuca*, *Orchis incarnata*, *Potamogeton coloratus*, *P. falcatus*, *P. praelongus*, and *P. Cooperi*, *Scirpus Tabernaemontani* and *S. maritimus*, *Carex curta* and *C. binervis*, *Agrostis nigra*, *Glyceria plicata*, *Bromus erectus*, many Rubi, Roses, a few Hieracia, Willows, etc.

If we compare the flora of Nottinghamshire with that of Great Britain and of the counties bordering upon Nottinghamshire the result is at first sight somewhat disappointing. The number of species of flowering plants and vascular cryptogams enumerated in the ninth edition of the *London Catalogue of British Plants* is 1,930, but thirty-eight of these are confined to Ireland or the Channel Islands, leaving 1,892 species for Great Britain proper. But of this number between 230 and 240 have no claim to be regarded as native plants, and if we neglect these we are left with about 1,660 species indigenous to Great Britain. If now we turn to the counties forming the boundaries of Nottinghamshire we find the recorded species of 'wild' plants (including true natives, colonists, and denizens) to be as follows:—West Yorkshire, 1,042;[1] Derbyshire, 911;[2] Leicestershire, 825;[3] Lincolnshire, 1,040.[4] In Nottinghamshire the number of species which come under the same category is 854. In attempting to account for this apparent poverty in our flora it must be borne in mind that of the 1,660 or so vascular plants which occur in Great Britain in a wild state about 350 species are either purely maritime or are confined to high latitudes or mountains, and are therefore necessarily absent from Nottinghamshire. This reduces the number that could possibly be expected to occur in the county to little more than 1,300; but, as we have seen, we actually possess barely two-thirds of this number. The reason for this is to be sought in the comparative lack of variety in the physical conditions of Nottinghamshire combined with the highly cultivated state of most of its area. There is scarcely any uncultivated ground with the exception of parts of Sherwood Forest, and this being situated on the dry and arid Bunter sandstone possesses only a poor and scanty flora: even in the wooded parts of the forest the undergrowth consists almost entirely of bracken. There are few or no large sheets of water save the trimly-kept artificial lakes in the principal parks, and there is an almost complete absence of bog, so that lacustrine and bog-loving plants are largely wanting. Moreover, the Carboniferous, Jurassic, and Cretaceous

[1] Lees, *Flora of West Yorks.* [2] Linton, *Flora of Derb.* [3] *Flora of Leic.*

[4] *Lond. Catalogue*, marked for Lincolnshire by Rev. E. A. Woodruffe-Peacock. This number is probably excessive, as some of the species marked must be aliens or casuals in Lincolnshire.

limestones which bear so rich a flora in the neighbouring counties do not extend into Nottinghamshire, and their absence is only partially compensated for by the Permian Magnesian Limestone which occupies the western margin of the county, and, while possessing a moderately rich and varied flora, cannot compare in this respect with the more highly calcareous Chalk, Oolite, or Mountain Limestone of the counties around us.

West Yorkshire, with an area of 2,760 square miles, is more than three times the size of Nottinghamshire, and with its numerous hills—many of which are over 2,000 feet in height—possesses an extensive alpine or true mountain flora which could not exist with us; while the 'pavements,' terraces, and scars of the Mountain Limestone region, and the wide expanses of peat bog, are tenanted by numerous species which for lack of suitable conditions are absent from Nottinghamshire. The same remarks apply in a less degree to Derbyshire, which possesses a considerable number of montane plants on its high northern moorlands; the flora of its limestone dales also is a very rich and varied one. Lincolnshire, with an area greater even than that of West Yorkshire, with its long line of sea-coast, its salt-marshes, its chalk wolds and Jurassic limestones, has an enormous advantage, botanically, over Nottinghamshire, and it is not surprising that its flora is numerically so much stronger than that of its inland neighbour. Leicestershire has a slightly smaller area than Nottinghamshire, with a very similar flora, except that the Archaean rocks which form the high ground of Charnwood Forest support a few species which are not found with us.

In order to indicate the geographical distribution of our native plants throughout the British counties, Great Britain is divided up for botanical purposes into 112 areas consisting of counties and vice-counties, the latter being formed by sub-dividing the larger counties into two or more parts.[1] Taking the *London Catalogue of British Plants*, ed. 9, as our authority, we find that of our 1,930 species of native vascular plants seventy-nine have been recorded as occurring in every one of these 112 counties and vice-counties, and no fewer than 300 species are found in 100 or more divisions. Of these 300, 299 are recorded for Nottinghamshire, and the single unrecorded species, *Potamogeton polygonifolius*, is almost sure to be found, although up to the present it has been searched for in vain.

There are 102 species with a census number between 90 and 100, i.e., occurring in from 90 to 100 counties and vice-counties, and of these we have all but the following:—*Oenanthe crocata*, *Narthecium ossifragum*, *Juncus Gerardi*, and *Scirpus pauciflorus*. It is probable that the *Narthecium* once occurred, but it has not been seen for at least a century.

Of the eighty-five species with a census number between eighty and ninety, six are apparently wanting in Nottinghamshire, viz.: *Cochlearia officinalis* (a maritime and montane plant recorded by Deering, but probably in error), *Hypericum Androsaemum* (has occurred as a casual or garden escape), *Habenaria bifolia* (the species recorded under this name by the earlier Nottinghamshire botanists is *H. chloroleuca*, which was

[1] For a list of these divisions see Watson, *Top. Botany*, ed. 2.

formerly not distinguished from *bifolia*), *Scirpus fluitans*, *Carex fulva* (?), and *Festuca arundinacea*.

Of species with census numbers ranging from seventy to eighty there are 101, and seventeen of these are unknown in Nottinghamshire. Ten of the absentees, however, are plants that grow only by the sea, and therefore could not occur with us. The others are : *Utricularia minor* (recorded by Ordoyno, but not confirmed), *Scutellaria minor*, *Potamogeton alpinus*, *Eleocharis acicularis*, *Rhynchospora alba*, *Phegopteris Dryopteris*, and *P. polypodioides*.

The species occurring in from sixty to seventy counties or vice-counties number ninety-seven. The most conspicuous absentees with us are—besides a number of maritime and submontane plants—*Sagina subulata* and *S. ciliata*, *Hypericum elodes*, *Sedum anglicum* (?), *Hieracium murorum*, *Centunculus minimus*, *Carex laevigata*, and *Polystichum angulare* (?).

There are ninety-five species with a census number between fifty and sixty, and of these we necessarily lack the maritime species as well as a few northern forms such as *Geranium sylvaticum*, *Cnicus heterophyllus*, *Cryptogramme crispa*, *Lycopodium alpinum*, *Selaginella*, etc. In addition to these we want the following :—*Fumaria Boraei*, *Diplotaxis muralis* (has occurred as an alien), several Rubi, *Rosa involuta*, *Cotyledon Umbilicus*, *Drosera anglica* and *intermedia* (Howitt's locality for *D. intermedia* is almost certainly in Lincolnshire), *Euphorbia amygdaloides* (recorded by Deering, perhaps erroneously, and certainly not found since), *Listera cordata*, *Potamogeton obtusifolius*, *Carex divulsa*, *C. axillaris*, *C. extensa*, and *Pilularia globulifera*.

Of the species found in fewer than fifty vice-counties so many are wanting in Nottinghamshire that it will be sufficient to refer the reader to the list of the plants of the county at the end of this article.

The vast majority of our wild plants naturally belong to the British and English types of distribution, but there is a sprinkling of species representing other types. Thus of Germanic species we have *Myosurus minimus*,* *Hippuris vulgaris*, *Galium erectum* and *G. tricorne*, *Lactuca virosa*, *Campanula glomerata*, *Monotropa Hypopitys*, *Limosella aquatica*, *Orchis pyramidalis* and *O. ustulata*,* *Allium oleraceum*, *Bromus erectus*, *Brachypodium pinnatum*, *Hordeum sylvaticum*, etc. Of Scottish type are, among others, *Viola lutea*,* *Vicia sylvatica*, *Parnassia palustris*, *Antennaria dioica*,* *Crepis paludosa*,* *Campanula latifolia*, *Pyrola minor*,* *Pinguicula vulgaris*, *Salix pentandra*, *Empetrum nigrum*, *Melica nutans*.* Among species of Intermediate type we have *Poterium officinale*, *Gagea fascicularis*, *Crocus nudiflorus*, and *Scheuchzeria palustris*.* Plants of the Atlantic type are, as might be expected, few in number, and, indeed, not a single species is certainly known to occur now, at any rate as a native ; the recorded species are *Coronopus didymus*, *Erodium moschatum* and *E. maritimum*, *Sedum anglicum*, and *Verbascum virgatum*. *Vaccinium Vitis-idaea* is our only Highland species, and we have no representative of the Local type.

* Species marked with an asterisk have not been seen in the county for many years and are probably extinct.

BOTANICAL DISTRICTS

Nottinghamshire lies wholly within the drainage area of the Trent, so that the usual division of a county into river basins for botanical purposes is not possible in our case. The districts here adopted are therefore based on the geological structure of the county, and this division is a really natural one, for with the exception of the alluvial tracts bordering the Trent and its tributary streams very little drift occurs to obscure the older deposits, and consequently the surface soil is principally formed by the disintegration and decay *in situ* of the underlying rocks. The wide differences in the chemical composition of the resulting soils have of course a marked influence on the character of the flora of each formation.

Leaving out of consideration the superficial (drift and alluvial) deposits, the formations represented in Nottinghamshire are the Coal Measures, Permian, Trias (Bunter and Keuper), Rhaetic, and Lower Lias. These form bands running partially or completely through the county in a direction approximately north and south.

The outcrop of the Coal Measures forms a band 16 miles long between Stapleford in the south and Teversall in the north, and varying in width from 2 to about 4 miles. To the east it is succeeded by the Permian or Magnesian Limestone, which forms a narrow band running from Nottingham to the county boundary on the north—a distance of about 32 miles. At its maximum development it is about 4 miles in width, but for the most part is considerably narrower. The sandstones and conglomerates of the Bunter, which follow, occupy a much larger tract of land—nearly 40 miles long by 7 or 8 in width over the greater part of its extent, except in the immediate neighbourhood of Nottingham, where it is much narrower.

Quite half the area of the county is occupied by deposits of Keuper age, but as the valley of the Trent lies almost wholly in this formation it is a good deal covered by alluvial deposits. The Rhaetic shales form a band of insignificant extent along the eastern margin of the Keuper.

Finally, on the eastern and south-eastern border of the county for the southern two-thirds of its length the Keuper is succeeded by the lower beds of the Lias, which attain their maximum development south of Cotgrave and Cropwell Bishop. Two rather extensive outliers occur to the west of the main mass of the Lias in the extreme south of the county.

The botanical districts adopted, four in number, are as follows :—

District I

This comprises the area formed by the outcrops of the Coal Measures and Permian rocks on the western side of the county. It might seem at first sight that two such apparently dissimilar formations should constitute separate districts, but the area occupied by the Coal Measures is so small and its noteworthy plants so few in number that to make of it a separate district would be to ascribe to this formation an importance altogether out of proportion to its merits. Indeed, the Coal Measures can scarcely claim to possess a distinctive flora at all : not a single species appears to be confined to their outcrop, and the few conspicuous plants that do occur are equally common elsewhere. On the other hand, the Magnesian Limestone possesses a large number of characteristic species, some of which are peculiar to it. Among these the following may be mentioned, the species hitherto found only on this formation being indicated by an asterisk :—

*Ranunculus Lenormandi, F. Schultz
*Helleborus viridis, L.
*Aquilegia vulgaris, L.
*Arabis hirsuta, Scop.
Reseda lutea, L.
Helianthemum Chamaecistus, Mill.
Silene Cucubalus, Wib.
*Geranium sanguineum, L.
Trifolium medium, L.
Anthyllis Vulneraria, L.
Geum rivale, L.
Parnassia palustris, L.
*Ribes alpinum, L.
Hippuris vulgaris, L.
*Bupleurum rotundifolium, L.
Galium Mollugo, L.
Erigeron acre, L.
Inula Conyza, DC.
Centaurea Scabiosa, L.
Campanula Trachelium, L.
— latifolia, L.
Anagallis tenella, L.
Blackstonia perfoliata, Huds.
Gentiana Amarella, L.
*— baltica, Murb.
*Myosotis arvensis, Lam., var. umbrosa, Bab.
Lithospermum arvense, L.
Verbascum Thapsus, L.
*Linaria Elatina, Mill.
— viscida, Moench
Veronica montana, L.
Lathraea Squamaria, L.
Origanum vulgare, L.
Clinopodium Acinos, O. Kuntze
*Cephalanthera ensifolia, Rich.
*— pallens, Rich.
Epipactis palustris, Crantz
Orchis pyramidalis, L.
— ustulata, L.
*Ophrys muscifera, Huds.
Habenaria conopsea, Benth.
*Polygonatum multiflorum, All

Allium ursinum, L.
Gagea fascicularis, Salisb.
Paris quadrifolia, L.
*Potamogeton coloratus, Hornem.
*Eleocharis multicaulis, Sm.
*Eriophorum latifolium, Hoppe
*Carex digitata, L.
— pendula, Huds.
— sylvatica, Huds.
*— vesicaria, L.
*Avena pratensis, L.
*Melica nutans, L.
— uniflora, Retz.
*Hordeum sylvaticum, Huds.
Taxus baccata, L.

District II

This consists of the Bunter or lower division of the Trias, and includes the fine-grained red or variegated sands of the Lower Red and Mottled Sandstone, and the yellow or brownish sands and conglomerates of the Bunter Pebble-beds.

The district possesses a distinctive and characteristic flora, although, as will be seen from the list given below, only a few species are confined to it. This is due to the fact that most sand-loving plants find an equally suitable habitat in the sandy patches which occasionally occur in the Keuper Marl, in the tracts of sandy alluvium bordering the Trent in Division III, and in the drift sands which cover a part of District IV on the eastern edge of the county.

The existing remains of the once far more extensive Sherwood Forest lie entirely in this district, and consist chiefly of oak and birch timber with a dense undergrowth of bracken, and open spaces covered with ling (*Calluna*), heath (*Erica cinerea*), bracken (*Pteris*), *Deschampsia flexuosa*, etc., and dotted with old thorn trees much infested with mistletoe.

A few bits of boggy ground are still to be found along the course of some of the streams, as at Oxton and Rainworth, and to these we owe the survival of some of our most interesting plants. Of late years, however, owing partly to a succession of dry seasons and partly to the sinking of deep wells for the water supply of the surrounding towns, these bogs have become nearly dry at times, with the result that such things as the sundew (*Drosera*), butterwort (*Pinguicula*), cranberry (*Schollera Oxycoccus*), marsh fern (*Lastrea Thelypteris*), etc., are fast disappearing or have already gone.

Among the characteristic species of the district are the following :—

*Capnoides claviculata, Druce
*Arabis perfoliata, Lam.
Teesdalia nudicaulis, R. Br.
Viola palustris, L.
— ericetorum, Schrad.
*— tricolor, L.
Polygala serpyllacea, Weihe
*Dianthus deltoides, L.
Silene anglica, L.
*— nutans, L.
Cerastium quaternellum, Fenzl.
— semidecandrum, L.
— arvense, L.
Sagina nodosa, Fenzl.
Alsine rubra, Crantz
*Montia fontana, L.
Hypericum humifusum, L.
Erodium cicutarium, L'Hér.
Genista anglica, L.
*Ulex Gallii, Planch.
Trifolium subterraneum, L.
— arvense, L.
— striatum, L.
Ornithopus perpusillus, L.
*Vicia lathyroides, L.
Potentilla argentea, L.
— palustris, Scop.
Chrysosplenium alternifolium, L.
*Drosera rotundifolia, L.
*Callitriche truncata, Guss.
*Epilobium adnatum, Griseb.
Galium saxatile, L.
Filago germanica, L.
— minima, Fr.
*Antennaria dioica, R. Br.
Gnaphalium sylvaticum, L.
Senecio sylvaticus, L.
*Arnoseris pusilla, Gaertn.
*Hieracium tridentatum, Fr.
— umbellatum, L.
Jasione montana, L.
*Vaccinium Vitis-idaea, L.
— Myrtillus, L.
*Schollera Oxycoccus, Roth
Calluna Erica, DC.
Erica Tetralix, L.
— cinerea, L.
*Monotropa Hypopitys, L.
Lycopsis arvensis, L.
Myosotis collina, Hoffm.
— versicolor, Sm.
Echium vulgare, L.
Verbascum nigrum, L.
Digitalis purpurea, L.
Melampyrum pratense, L.
*Mentha alopecuroides, Hull.
Teucrium Scorodonia, L.
Plantago Coronopus, L.
Scleranthus annuus, L.
*Rumex limosus, Thuill.
— Acetosella, L.
*Empetrum nigrum, L.
Juncus squarrosus, L.
Juncoides multiflorum, Druce
*Scirpus maritimus, L.
*Carex teretiuscula, Good.
— paniculata, L.
*— curta, Good.
— leporina, L.
*— pilulifera, L.
*Apera Spica-venti, Beauv.
Aira caryophyllea, L.
Deschampsia flexuosa, Trin.
Molinia varia, Schrank
Nardus stricta, L.
Pteris aquilina, L.
*Lastrea Thelypteris, Presl.
*— Oreopteris, Presl.
*— cristata, Presl.
*— uliginosa, Newm.
*Lycopodium Selago, L.
*— inundatum, L.
*— clavatum, L.

District III

The Keuper deposits which underlie this extensive district are separable into two divisions. The lower of these, known as the 'Waterstones,' consists of alternations of dull

red marl and light-coloured greenish-grey sandstone; where the latter predominates the resulting soil is sufficiently sandy to suit many of the plants characteristic of District II (e.g., *Cerastium arvense*, *Cytisus scoparius*, *Saxifraga granulata*, *Artemisia vulgaris*, *Rumex Acetosella*, etc.), and we therefore find along the outcrop of the Lower Keuper an assemblage of species transitional in character between the flora of the Bunter and that of the upper beds of the Keuper. The upper division or Keuper Marl is a stiff bright-red clay with an occasional thin band of hard whitish sandstone. The heavy somewhat calcareous clay soil supports a flora very different from that of District II, but more nearly approximating to that of District I, with which it has a large number of species in common. Among the more prominent plants that occur with about equal frequency in Districts I and III, but are almost or entirely absent from Districts II and IV, are *Anemone nemorosa*, *Euonymus europaeus*, *Pimpinella major*, *Asperula odorata*, *Lactuca muralis*, *Campanula latifolia*, *Lysimachia nemorum*, *Erythraea Centaurium*, *Veronica montana*, *Lamium Galeobdolon*, *Mercurialis perennis*, *Allium ursinum*, *Paris quadrifolia*, *Carex pendula*, *C. sylvatica*, *Milium effusum* and *Melica uniflora*. Several rare or uncommon Nottinghamshire species are confined to District III; of such are *Ranunculus sardous* and *R. parviflorus*, *Vicia sylvatica*, *Lathyrus sylvestris*, *Caucalis nodosa*, *Dipsacus pilosus*, *Carduus pycnocephalus* and *C. pratensis*, *Campanula patula*, *Myosotis sylvatica*, *Mentha Pulegium*, *Carex pallescens* (?), etc.; while among commoner species which are most abundant in, but not absolutely confined to, the district are *Geranium pratense*, *Bidens tripartita*, *Chrysanthemum segetum*, *Tanacetum vulgare*, *Picris hieracioides*, *Veronica Anagallis*, *Habenaria chloroleuca*, *Epipactis latifolia*, etc.

A number of plants which have their headquarters in the Trent valley—which lies almost wholly in this district—owe their presence rather to their fondness for a moist or watery situation than to the chemical or physical nature of the soil; such are *Thalictrum flavum*, *Nasturtium sylvestre* and *N. amphibium*, *Erysimum cheiranthoides*, *Stellaria aquatica*, *Lythrum Salicaria*, *Apium graveolens*, *Oenanthe Phellandrium*, *Hottonia palustris*, *Symphytum officinale*, and *Polygonum Hydropiper*.

On the other hand the dry gravelly banks and terraces of old Trent alluvium offer a congenial home for many of the sand-loving plants characteristic of District II.

A few species which are more or less common in District III are of equally frequent occurrence in District IV, but almost or entirely unknown in Districts I and II. Among these are *Ononis spinosa*, *Conium maculatum*, *Sison Amomum*, *Peucedanum sativum*, *Dipsacus sylvestris*, *Senecio erucifolius*, *Picris echioides*, *Lactuca virosa*, *Hordeum secalinum*.

The Rhaetic deposits which are included in District III form a narrow band of such insignificant extent along the eastern edge of the Keuper as to be of no botanical importance, and may therefore be ignored.

District IV

The Liassic beds of Nottinghamshire consist of a series of blue clays and shales with bands of limestone, belonging to the lower part of the Lower Lias, and forming a long strip overlying the Triassic rocks along the south-eastern border of the county. There are also two considerable outliers capping the hills south of the Trent between Thrumpton and West Leake. *Sison*, *Peucedanum sativum*, *Senecio erucifolius*, and a few others are common plants in this district, as mentioned above; *Cnicus eriophorus* occurs in quantity in one or two stations, and is apparently now confined to the district, although formerly found in others; *Solidago Virgaurea*, which formerly occurred in several places in the county, seems now restricted to a single station on the Lias, where it is very rare; and among other scarce species almost or entirely confined to this formation are *Lotus tenuis*, *Carum segetum*, *Caucalis arvensis*, *Galium tricorne*, *Clinopodium Nepeta*, *Galeopsis Ladanum* and *Carex binervis*.

In parts of District IV, as at Langford and Wigsley, the Lias clay is covered by a mantle of gravelly drift supporting the usual assemblage of sand-loving plants, such as *Teesdalia*, *Cerastium semidecandrum* and *C. arvense*, *Polygala serpyllacea*, *Galium sylvestre*, *Filago minima*, *Gnaphalium sylvaticum*, *Senecio sylvaticus*, *Calluna*, *Erica cinerea*, *Myosotis versicolor*, *Salix repens*, *Nardus*, etc. Langford Moor and Wigsley Wood were formerly wet swampy moorland, and although long drained and planted with oak and fir still show traces of their ancient flora. *Erica Tetralix*, *Lysimachia vulgaris*, *Myrica Gale*, *Molinia varia* and *Lastrea spinulosa* still persist in fair quantity, as well as patches of *Sphagnum*, and a solitary plant of *Osmunda*—probably the last in the county—has only recently disappeared.

BOTANY

LIST OF NOTTINGHAMSHIRE VASCULAR PLANTS, WITH THEIR DISTRIBUTION THROUGH THE BOTANICAL DISTRICTS

In the following summary of the flora of Nottinghamshire species to which no sign is attached are to be regarded as 'wild' in the sense of being natives, colonists, or denizens: these number 854. Aliens and plants of recent introduction which maintain their ground more or less successfully, so forming permanent constituents of our flora, are indicated by an asterisk: of these there are seventy-two. Species of merely casual occurrence which are not likely to permanently establish themselves, or which were probably recorded in error, or have long been extinct are enclosed within square brackets: fifty-eight such are enumerated.[1]

DICOTYLEDONS

Ranunculaceae

[Clematis Vitalba, L.]
Thalictrum flavum, L. 1–4
Anemone nemorosa, L. 1–4
Myosurus minimus, L. 1, 3, 4 (?)
Ranunculus circinatus, Sibth. 1, 3
— fluitans, Lam. 3
— pseudo-fluitans, Bab. 2, 3
— trichophyllus, Chaix 1
— Drouetii, Godr. 1
— heterophyllus, Web. 3
— peltatus, Schrank 3
c. floribundus (Bab.) 3
— Lenormandi, F. Schultz 1
— hederaceus, L. 1–3
— sceleratus, L. 1–4
— Flammula, L. 1–4
— Lingua, L. 2
— auricomus, L. 1–4
— acris, L. 1–4
— repens, L. 1–4
— bulbosus, L. 1–4
— sardous, Crantz 3
— parviflorus, L. 3
— arvensis, L. 1–4
— Ficaria, L. 1–4
Caltha palustris, L. 1–4
*Helleborus viridis, L. 1
[— foetidus, L.] 1
*Cammarum hyemale, Greene (Eranthis hyemalis, Salisb.) 2, 3
Aquilegia vulgaris, L. 1
[Delphinium Ajacis, Gay] 2

Berberideae

Berberis vulgaris, L. 1, 3, 4

Nymphaeaceae

Nymphaea lutea, L. 1–3
Castalia speciosa, Salisb. 1–3

Papaveraceae

[Papaver somniferum, L.] 1 (?), 2
— Rhoeas, L. 1–4
— dubium, L. *a.* Lamottei (Bor.) 1–4
b. Lecoqii (Lamotte). 3, 4
— Argemone, L. 2–4
*Glaucium phoeniceum, Crantz 3
[Roemeria violacea, Medic. (R. hybrida, DC.)] 3
Chelidonium majus, L. 1–4

Fumariaceae

*Capnoides solida, Moench (Neckeria bulbosa, N.E. Br.) 1
[— lutea, Gaert. (N. lutea, Scop.)] 3
— claviculata, Druce (N. claviculata, N.E. Br.) 2
Fumaria capreolata, L. 2
— muralis, Sond. (?) 1
— officinalis, L. 1–4

Cruciferae

Cheiranthus Cheiri, L. 1–3
Radicula officinalis, Groves (Nasturtium officinale, R.Br.) 1–4
b. siifolia (Reichb.) 3
— pinnata, Moench (N. sylvestre, R. Br.) 2, 3
— palustris, Moench (N. palustre, DC.) 2, 3
— lancifolia, Moench (N. amphibium, R. Br.) 1–3
Barbarea vulgaris, R. Br. 1–4
Arabis hirsuta, Scop. 1
— perfoliata, Lam. 2
Cardamine amara, L. 1–3
— pratensis, L. 1–4
— hirsuta, L. 1, 2
— flexuosa, With. 1–3
[— impatiens, L.] 1
[Alyssum incanum, L.]
[— alyssoides, L. (A. calycinum, L.)] 2
Erophila vulgaris, DC. 2–4
[Cochlearia officinalis, L.] 1
[— Armoracia, L.] 3

[1] In the *British Association Handbook* issued at the Nottingham meeting in 1893 Mr. H. Fisher records a considerable number of plants found growing on waste ground about the wharves, malt-kilns, and grain-warehouses at Newark—evidently imported with grain from various foreign countries. Among these, in addition to many of the aliens included in the 'list,' are *Sisymbrium Columnae*, All., *Rapistrum rugosum*, All., *Euclydium syriacum*, R. Br., *Coriandum tordylioides*, Boiss., *Cnicus setosus*, Bess., *Centaurea melitensis*, L., *Gilia capitata*, Benth., *Salvia sylvestris*, L., *Panicum miliaceum*, L., and others, besides unidentified species of *Adonis*, *Delphinium*, *Papaver*, *Eschscholtzia*, *Sisymbrium*, *Dianthus*, *Silene*, *Stellaria*, *Malva*, *Medicago*, *Trifolium*, *Vicia*, *Lathyrus*, *Centaurea* and other Compositae, *Echium* and several other Boraginaceous genera, *Linaria*, *Veronica*, *Salvia*, *Atriplex*, *Euphorbia*, *Phleum*, *Bromus*, *Hordeum*, etc. Many of these will doubtless establish themselves and spread.

CRUCIFERAE (*continued*)

*Hesperis matronalis, L. 3
Sisymbrium Thalianum, Gay 1–4
— officinale, Scop. 1–4
— Sophia, L. 2, 3
[— pannonicum, Jacq.] 3
— Alliaria, Scop. 1–4
Erysimum cheiranthoides, L. 2, 3
*— perfoliatum, Crantz 3
[Camelina sativa, Crantz] 3
Brassica Napus, L. 1, 3
— Rapa, L. 2
b. sylvestris, H. C. Wats.
— Sinapioides, Roth 2, 3
— Sinapistrum, Boiss. 1–4
— alba, Boiss. 1, 3
*Diplotaxis muralis, DC. 2
* *b.* Babingtonii, Syme 2
Bursa pastoris, Weber 1–4
Senebiera pinnatifida, DC. (Coronopus didymus, Sm.) 1 or 2
— coronopus, Poir. (C. Ruellii All.) 3
Lepidium campestre, R. Br. 1–3
— heterophyllum, Benth. (L. hirtum, Sm.) 4 (?)
*— Draba, L. 2, 3
Thlaspi arvense, L. 3
Teesdalia nudicaulis, R. Br. 2, 3
Raphanus Raphanistrum, L. 1–3

RESEDACEAE

[Reseda alba, L.] 2
— lutea, L. 1, 3
— Luteola, L. 1–3

CISTINEAE

Helianthemum Chamaecistus, Mill. 1, 3

VIOLARIEAE

Viola palustris, L. 1, 2
— odorata, L. 1–4
f. alba (Lange). 1, 3, 4
— permixta, Jord. (? odorata × hirta) 1, 4
— hirta, L. 1–4
— silvestris, Reich. 1–3
— Riviniana, Reich. 1–4
— ericetorum, Schrad. 2, 4
— stagnina, Kit. 2 or 3
— tricolor, L. 2
— arvensis, Murr. 1–4
— lutea, Huds. (?) 2

POLYGALEAE

Polygala vulgaris, L. 1, 3
— oxyptera, Reich. 1, 3
— serpyllacea, Weihe 2, 4

CARYOPHYLLEAE

Dianthus deltoides, L. 2
*— Caryophyllus, L. 2
*Saponaria Vaccaria, L. 3
— officinalis, L. 1 or 2, 3
Silene Cucubalus, Wibel 1–4
b. puberula, Syme 1, 2
— anglica, L. 2, 4

CARYOPHYLLEAE (*continued*)

Silene nutans, L. 2
— noctiflora, L. 1, 3, 4.
Lychnis alba, Mill. 1–4
— dioica, L. 1–4
— Flos-cuculi, L. 1–4
— Githago, Scop. 2–4
Cerastium quaternellum, Fenzl. 2, 3 (?), 4 (?)
— semidecandrum, L. 2–4
— glomeratum, Thuill. 1–4
— triviale, Link 1–4
— arvense, L. 2, 3
Stellaria aquatica, Scop. 1–4
— media, Cyr. 1–4
c. major, Koch 3
— umbrosa, Opiz 1, 3
— Holostea, L. 1–4
— palustris, Retz. 2–4
— graminea, L. 1–4
— uliginosa, Murr. 1–4
Arenaria trinervia, L. 1–4
— serpyllifolia, L. 1–4
c. leptoclados (Guss.)
Sagina apetala, L. 2, 3
— procumbens, L. 1–4
— nodosa, Fenzl. 1–3
Spergula arvensis, L. *a.* vulgaris (Boenn.) 1–4
b. sativa (Boenn.) 2
Alsine rubra, Crantz (Buda rubra, Dum.) 2–4

PORTULACEAE

*Claytonia perfoliata, Donn 2
Montia fontana, L. 2

HYPERICINEAE

[Hypericum Androsaemum, L.] 2, 3
— perforatum, L. 1–4
— maculatum, Crantz (H. dubium, Leers) 3
— quadrangulum, L. (quadratum, Stokes) 1–4
— humifusum, L. 2–4
b. decumbens (Peterm.) 2
— pulchrum, L. 1–4
— hirsutum, L. 1–4
— montanum, L. 1, 3

MALVACEAE

Malva moschata, L. 1–3
— sylvestris, L. 1–4
— rotundifolia, L. 1–4

TILIACEAE

*Tilia platyphyllos, Scop.
*— europaea, L. (T. vulgaris, Hayne)
— cordata, Mill. 1–3

LINEAE

Radiola Linoides, Roth 2, 4
Linum catharticum, L. 1–4
[— usitatissimum, L.]

GERANIACEAE

Geranium sanguineum, L. 1
[— phaeum, L.] 1 ?
— pratense, L. 1–4

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Geraniaceae (*continued*)

Geranium pyrenaicum, Burm. fil. 3
— molle, L. 1–4
— pusillum, L. 2, 3
— dissectum, L. 1–4
— columbinum, L. 1–3
— lucidum, L. 2
— Robertianum, L. 1–4
Erodium cicutarium, L'Hér.
a. vulgatum, Syme 1–4
b. chaerophyllum (Cav.) 2
— moschatum, L'Hér. 2
— maritimum, L'Hér. 2
Oxalis Acetosella, L. 1–3

Ilicineae

Ilex Aquifolium, L. 1–4

Celastrineae

Euonymus europaeus, L. 1–4

Rhamneae

Rhamnus catharticus, L. 1–4
— Frangula, L. 1, 3, 4

Sapindaceae

*Acer Pseudo-platanus, L. 1–4
— campestre, L. 1–4

Leguminosae

Genista anglica, L. 1–4
— tinctoria, L. 1, 3, 4
Ulex europaeus, L. 1–4
— Gallii, Planch. 2
— minor, Roth (U. nanus, Forst.) 2
Sarothamnus vulgaris, Wimm. (Cytisus scoparius, Link). 1–4
Ononis repens, L. 1–4
— spinosa, L. 2–4
*Medicago sativa, L. 1–4
[— falcata, L.] 3
— lupulina, L. 1–4
— arabica, Huds. 3, 4
Melilotus officinalis, Lam. 1, 3, 4.
[— alba, Desr.] 4
*— arvensis, Wallr. 3
[— indica, All.]
Trifolium subterraneum, L. 2, 3
— pratense, L. 1–4
— medium, L. 1–4
[— ochroleucon, Huds.] 3
[— incarnatum, L.] 3
— arvense, L. 2, 3
— striatum, L. 2, 3
[— hybridum, L.] 1, 2
[*b.* elegans (Savi)] 3
— repens, L. 1–4
— fragiferum, L. 1, 3, 4
[— resupinatum, L.] 3
— procumbens, L. 1–4
— dubium, Sibth. 1–4
— filiforme, L.
Anthyllis Vulneraria, L. 1–4
Lotus corniculatus, L. 1–4
— tenuis, Wald. and Kit. 1 or 2, 4

Leguminosae (*continued*)

Lotus uliginosus, Schkuhr 1–4
Astragalus glycyphyllos, L. 2, 3
Ornithopus perpusillus, L. 2, 3
Hippocrepis comosa, L. (?) 2
Onobrychis viciaefolia, Scop. 1
Vicia hirsuta, Gray 1–4
— gemella, Crantz 3, 4
var. tenuissima, Druce 1
— Cracca, L. 1–4
— sylvatica, L. 3
— sepium, L. 1–4
*— sativa, L. 3.
— angustifolia, L. 2–4
— lathyroides, L. 2
[Lathyrus Aphaca, L.] 3
— Nissolia, L. 3 or 4
— pratensis, L. 1–4
— sylvestris, L. 3
— montanus, Bernh. 1, 3, 4

Rosaceae

Prunus spinosa, L. 1–4
— insititia, Huds. 2–4
[— domestica, L.]
— Avium, L. 3, 4
— Cerasus, L. 1 ?
— Padus, L. 1–3
Spiraea Ulmaria, L. 1–4
— Filipendula, L. 1, 3, 4
Rubus idaeus, L. 1–4
— suberectus, Anders. 2, 4
— Lindleianus, Lees 2, 3
— rhamnifolius, W. and N. 2
— pulcherrimus, Neum. 2, 4
— villicaulis, Koehl.
subsp. Selmeri (Lindeb.) 2
subsp. rhombifolius, Weihe 3
— gratus, Focke 3, 4
— rusticanus, Merc. 1–4
— pubescens, Weihe
— thyrsoideus, Wimm. 3
— macrophyllus, W. and N.
subsp. Schlechtendahlii (Weihe) 3
— leucostachys, Schleich. 1–3
— anglosaxonicus, Gelert 3
— radula, Weihe 2, 3
— echinatus, Lindl. 2, 3
— Koehleri, W. and N.
subsp. dasyphyllus, Rog. (pallidus, Bab.) 1, 2
— dumetorum, W. and N. 1–4
var. rubriflorus, Purch. 1
var. concinnus, Warr. 1
— corylifolius, Sm. 2
var. cyclophyllus, Lindeb. 3
— caesius, L. 1–4
Geum urbanum, L. 1–4
— rivale, L. 1, 3
— „ ×urbanum (intermedium, Ehrh.) 1, 3
Fragaria vesca, L. 1–4
*— moschata, Duch. (elatior, Ehrh.) 1
Potentilla Fragariastrum, Ehrh. 1–4
— silvestris, Neck. 1–4
— procumbens, Sibth. 2, 3

ROSACEAE (*continued*)

Potentilla reptans, L. 1–4
— Anserina, L. 1–4
— argentea, L. 2–4
— palustris, Scop. 2, 3
Alchemilla arvensis, Scop. 1–4
— vulgaris, L. 1–3
Agrimonia Eupatoria, L. 1–4
— odorata, Mill. 3
Poterium Sanguisorba, L. 1–4
— officinale, Hook. fil. 1–4
Rosa spinosissima, L. 1–4
— involuta, Sm., var. Sabini (Woods) 4
— villosa, L. (mollis, Sm.) 1
— tomentosa, Sm. 3
b. subglobosa (Sm.) 1 or 2, 4
d. scabriuscula (Sm.) 3
— Eglanteria, L. (rubiginosa, L.) 1–3
— micrantha, Sm. 1, 3
— agrestis, Savi (sepium, Thuill.) 3
— obtusifolia, Desv.
c. tomentella (Leman) 3
d. Borreri (Woods)
— canina, L.
a. lutetiana (Leman) 1–3
„ *f.* andegavensis (Bast.) 3
c. sphaerica (Gren.) 3
e. dumalis (Bechst.) 1–3
„ *f.* aspernata (Déségl.) 3
g. Blondaeana (Rip.) 3
i. urbica (Leman) 1, 3
k. arvatica, Baker 1 or 2
— glauca, Vill. 3
e. coriifolia (Fr.) 3
— stylosa, Desv. 2
— arvensis, Huds. 1–4
Pyrus torminalis, Ehrh. 3
[— Aria, Ehrh.] 2
[— domestica, Ehrh.]
— Aucuparia, Ehrh. 1–4
— communis, L. 3, 4
— Malus, L. 1–4
Crataegus Oxyacantha, L.
a. oxyacanthoides (Thuill.) 1–4
b. monogyna (Jacq.) 1–4

SAXIFRAGEAE

Saxifraga tridactylites, L. 1, 3, 4
— granulata, L. 2–4
Chrysosplenium oppositifolium, L. 1–3
— alternifolium, L. 2, 3
Parnassia palustris, L. 1–3
Ribes Grossularia, L. 1–4
*— alpinum, L. 1
— rubrum, L. 1–3
— nigrum, L. 2

CRASSULACEAE

Sedum Telephium, L. 1, 2
[— album, L.] 2
[— dasyphyllum, L.] 1
*— anglicum, Huds. 1 or 2
— acre, L. 1–3
*— reflexum, L. 2, 3
[*b.* albescens (Haw.)]
[Sempervivum tectorum, L.]

DROSERACEAE

Drosera rotundifolia, L. 2
[— longifolia, L. (intermedia, Hayne) 4 (?)]

HALORAGEAE

Hippuris vulgaris, L. 1–3
Myriophyllum verticillatum, L. 2, 3
— spicatum, L. 1–4
— alterniflorum, DC. 3
Callitriche vernalis, Koch
— stagnalis, Scop. 1–3
— obtusangula, Le Gall 3
— autumnalis, L. (?)
— truncata, Guss. 2

LYTHRARIEAE

Peplis Portula, L. 2–4
Lythrum Salicaria, L. 1–4
[— Hyssopifolia, L.]

ONAGRARIEAE

Epilobium angustifolium, L. 1–4
— hirsutum, L. 1–4
— parviflorum, Schreb. 1–4
— montanum, L. 1–4
— roseum, Schreb. 1–3
— adnatum, Griseb. 2
— obscurum, Schreb. 1–3
— palustre, L. 2, 3
Circaea lutetiana, L. 1, 3, 4

CUCURBITACEAE

Bryonia dioica, Jacq. 1–4

UMBELLIFERAE

Hydrocotyle vulgaris. L. 1–4
Sanicula europaea, L. 1–4
Conium maculatum, L. 1–4
*Smyrnium Olusatrum, L. 2
Bupleurum rotundifolium, L. 1
Apium graveolens, L. 3
— nodiflorum, Reich. fil. 1–4
c. ocreatum, Bab. 2
— inundatum, Reich. f. 1–3
Cicuta virosa, L. 2
*Carum Petroselinum, Benth. and Hook. 2
— segetum, Benth. and Hook. 4
*— Carvi, L. 1, 3
Sison Amomum, L. 3, 4
Sium latifolium, L. 2, 3
— erectum, Huds. 1–4
Ægopodium Podagraria, L. 1–4
Pimpinella Saxifraga, L. 1–4
c. dissecta, With.
— major, Huds. 1, 3, 4
Conopodium denudatum, Koch 1–4
Myrrhis Odorata, Scop. 2
Chaerophyllum temulum, L. 1–4
Scandix Pecten, L. 1, 3, 4
Anthriscus vulgaris, Bernh. 2, 3
— sylvestris, Hoffm. 1–4
*— Cerefolium, Hoffm. 1, 3
*Foeniculum vulgare, Mill. 2
Oenanthe fistulosa, L. 1–4

Umbelliferae (*continued*)

Oenanthe peucedanifolia, Poll. (silaifolia, Bieb.) 3
— Lachenalii, Gmel. 1–4
— Phellandrium, Lam. 1 (?), 2–4
Aethusa Cynapium, L. 1–4
Silaus flavescens, Bernh. 1, 3, 4
Angelica sylvestris, L. 1–4
*Archangelica officinalis, Hoffm. 3
Peucedanum palustre, Moench (?) 1
— sativum, Benth. and Hook. 1, 3, 4
Heracleum Sphondylium, L. 1–4
b. angustifolium, Huds. 1, 3
Daucus Carota, L. 1–4
*Caucalis latifolia, L. 3
*— daucoides, L. 3
— arvensis, Huds. 3, 4
— Anthriscus, Huds. 1–4
— nodosa, Scop. 3

Araliaceae

Hedera Helix, L. 1–4

Cornaceae

Cornus sanguinea, L. 1–4

Caprifoliaceae

Adoxa Moschatellina, L. 1–3
Sambucus nigra, L. 1–4
b. laciniata, L. 2
— Ebulus, L. 1–3
Viburnum Opulus, L. 1–4
— Lantana, L. 2, 3
Lonicera Periclymenum, L. 1–4

Rubiaceae

Galium Cruciata, Scop. 1–4
— verum, L. 1–4
— erectum, Huds. 4
— Mollugo, L. 1–4
— saxatile, L. 1–4
*— umbellatum, Lam. (sylvestre, Poll.)
— palustre, L. 2–4
b. elongatum (Presl.)
c. Witheringii (Sm.) 2
— uliginosum, L. 1–4
— Aparine, L. 1–4
— tricorne, Stokes 4
Asperula odorata, L. 1–3
*— arvensis, L. 3
Sherardia arvensis, L. 1–4

Valerianeae

Valeriana dioica, L. 1–4
— Mikanii, Syme 3
— sambucifolia, Willd. 1–4
Valerianella olitoria, Poll. 1–4
*— eriocarpa, Desv. 3
— dentata, Poll. 1–4

Dipsaceae

Dipsacus sylvestris, Huds. 1–4
— pilosus, L. 1, 3
Scabiosa Succisa, L. 1–4
— Columbaria, L. 1–4
— arvensis, L. 1–4

Compositae

Eupatorium cannabinum, L. 1–4
Solidago Virgaurea, L. 1 (?), 2, 4
Bellis perennis, L. 1–4
*Aster Tripolium, L. 2
Erigeron acre, L. 1, 2
Filago germanica, L. 1–4
— minima, Fr. 2, 3, 4
Antennaria dioica, R. Br. 2
Gnaphalium uliginosum, L. 1–4
— sylvaticum, L. 2, 4
*Inula Helenium, L. 3
— Conyza, DC. 1
Pulicaria dysenterica, Gaertn. 1–4
Bidens cernua, L. 2, 3
— tripartita, L. 1–3
Achillea Millefolium, L. 1–4
— Ptarmica, L. 1–4
[Anthemis tinctoria, L.] 3
— Cotula, L. 1–4
— arvensis, L. 2, 3
— nobilis, L. 1, 2
Chrysanthemum segetum, L. 2–4
— Leucanthemum, L. 1–4
*— Parthenium, Pers. 1–3
Matricaria inodora, L. 1–4
— Chamomilla, L. 1–4
Tanacetum vulgare, L. 1–4
Artemisia Absinthium, L. 1–3
— vulgaris, L. 1–4
Tussilago Farfara, L. 1–4
Petasites officinalis, Moench 1–3
*Doronicum Pardalianches, L. 2
Senecio vulgaris, L. 1–4
— sylvaticus, L. 1–4
— viscosus, L. (?) 2 (?)
— erucifolius, L. 1, 3, 4
— Jacobaea, L. 1–4
b. discoideus, Koch (flosculosus (Jord.)) 3
— aquaticus, Huds. 1–4
*— saracenicus, L. 1
Carlina vulgaris, L. 1, 2, 4
Arctium majus, Bernh. 1–4
— minus, Bernh. 1–4
Carduus pycnocephalus, L. (tenuiflorus, Curt.) 3
— nutans, L. 1–4
— crispus, L. 1–4
c. acanthoides (L.)
Cnicus lanceolatus, Willd. 1–4
— eriophorus, Roth 1, 3, 4
— palustris, Willd. 1–4
— pratensis, Willd. 3
— acaulis, Willd. 1–4
— arvensis, Hoffm. 1–4
Onopordon Acanthium, L. 2, 3
*Mariana lactea, Hill 2, 3
Serratula tinctoria, L. 1, 3, 4
Centaurea nigra, L. 1–4
— Scabiosa, L. 1–4
— Cyanus, L. 1–4
[— solstitialis, L.] 3
Cichorium Intybus, L. 2–4
Arnoseris pusilla, Gaertn. 2
Lapsana communis, L. 1–4
Picris hieracioides, L. 1, 3, 4

COMPOSITAE (*continued*)

Picris echioides, L. 3, 4
*Crepis taraxacifolia, Thuill. 4
[— setosa, Hall] 3
— virens, L. 1–4
— biennis, L. 3
— paludosa, Moench 1 or 2
Hieracium Pilosella, L. 1–4
— vulgatum, Fr. 1–4
— sciaphilum, Uechtr. 1–3
— rigidum, Hartm., var. tridentatum (Fr.) 2
— boreale, Fr. 1–4
— umbellatum, L. 2–4
Hypochaeris glabra, L. 2, 3
— radicata, L. 1–4
Leontodon hirtus, L. 1–4
— hispidus, L. 1–4
— autumnalis, L. 1–4
Taraxacum officinale, Web. 1–4
b. erythrospermum (Andrz.)
c. palustre (DC.). 1 or 2
Lactuca virosa, L. 2–4
[— saligna, L.] (?) 3
— muralis, Fresen. 1–3
Sonchus oleraceus, L. 1–4
— asper, Hoffm. 1–4
— arvensis, L. 1–4
Tragopogon pratense, L. 3
b. minus (Mill.) 1–4

CAMPANULACEAE

Jasione montana, L. 2, 3
Campanula glomerata, L. 1, 3
— Trachelium, L. 1, 4
— latifolia, L. 1, 3, 4
*— rapunculoides, L.
— rotundifolia, L. 1–4
*— Rapunculus, L. 4
— patula, L. 3

VACCINIACEAE

Vaccinium Vitis-idaea, L. 2
— Myrtillus, L. 2–4
Schollera Oxycoccus, Roth 2

ERICACEAE

Calluna Erica, DC. 2–4
b. pubescens, Koch 2
Erica Tetralix, L. 2, 4
— cinerea, L. 2, 4
Pyrola minor, L. 1 or 2

MONOTROPEAE

Monotropa Hypopitys, L. (Hypopitys Monotropa, Crantz) 2

PRIMULACEAE

Hottonia palustris, L. 2–4
Primula acaulis, L. 1–4
× veris. 1, 3
— veris, L. 1–4
*Cyclamen hederaefolium, Ait. 3 or 4
Lysimachia thyrsiflora, L. (?)

PRIMULACEAE (*continued*)

Lysimachia vulgaris, L. 2–4
— Nummularia, L. 1–4
— nemorum, L. 1–4
Anagallis arvensis, L. 1–4
— caerulea, Schreb. 3
— tenella, L. 1–4
Samolus Valerandi, L. 1–4

OLEACEAE

Fraxinus excelsior, L. 1–4
Ligustrum vulgare, L. 1–4

APOCYNACEAE

*Vinca major, L. 1, 3
— minor, L. 3, 4

GENTIANEAE

Blackstonia perfoliata, Huds. 1, 3, 4
Erythraea Centaurium, Pers. 1–4
Gentiana Pneumonanthe, L. 3, 4
— Amarella, L. 1, 3, 4
— campestris, L. 2 (?), 3
— baltica, Murb. 1
Menyanthes trifoliata, L. 1–3
*Limnanthemum peltatum, Gmel. 2

BORAGINEAE

Cynoglossum officinale, L. 1–4
*— montanum, L. (germanicum, Jacq.) (?) 2
*Asperugo procumbens, L. 3
Symphytum officinale, L. 3
*Borago officinalis, L. 1–3
*Anchusa sempervirens, L. 1–3
Lycopsis arvensis, L. 2, 3
Myosotis caespitosa, Schultz 1–4
— scorpioides, L. (palustris, Relh.) 1–4
b. strigulosa (Reich.) 3
— repens, G. Don 2, 3
— sylvatica, Hoffm. 3
— arvensis, Lam. 1–4
b. umbrosa, Bab. 1
— collina, Hoffm. 2, 3
— versicolor, Sm. 2, 4
Lithospermum officinale, L. 1–3
— arvense, L. 1, 3
Echium vulgare, L. 1, 2

CONVOLVULACEAE

Volvulus sepium, Jung. 1–4
Convolvulus arvensis, L. 1–4
Cuscuta Epithymum, Murr. 3
*—Trifolii, Bab. 3

SOLANACEAE

Solanum Dulcamara, L. 1–4
— nigrum, L. 2, 3
[Lycium chinense, Mill. (barbarum, L.)] 1–3
Atropa Belladonna, L. 1–3
[Datura Stramonium, L.] 3
Hyoscyamus niger, L. 2, 3

BOTANY

Scrophularinae

Verbascum Thapsus, L. 1–3
*— pulverulentum, L. 1, 2
[— Lychnitis, L.] 3
— nigrum, L. 1, 2
— virgatum, Stokes (?). 2
*Linaria Cymbalaria, Mill. 1, 3
— Elatina, Mill. 1
— spuria, Mill. 3, 4
— vulgaris, Mill. 1–4
— viscida, Moench 1, 3
*Antirrhinum majus, L. 3
*— Orontium, L. 3
Scrophularia aquatica, L. 1–4
— nodosa, L. 1–4
*Mimulus Langsdorffii, Donn (luteus, L.) 1, 2
Limosella aquatica, L. 3
Digitalis purpurea, L. 1–3
Veronica hederaefolia, L. 1–4
— didyma, Ten. (polita, Fr.). 1–3
— agrestis, L. 1–3
— Tournefortii, C. Gmel. 1–4
— triphyllos, L. (?) 2
— arvensis, L. 1–4
— serpyllifolia, L. 1–4
— officinalis, L. 1–4
— Chamaedrys, L. 1–4
— montana, L. 1, 3
— scutellata, L. 1–4
— Anagallis, L. 1–4
— Beccabunga, L. 1–4
Euphrasia officinalis, L. 1–4
Bartsia Odontites, Huds. 1–4
Pedicularis palustris, L. 2, 3
— sylvatica, L. 1–4
Rhinanthus Crista-galli, L. 1–4
— major, Ehrh., *b.* stenoptera, Fr. 4
Melampyrum pratense, L. 2–4

Orobanchaceae

Orobanche major, L. 2, 3
— rubra, Sm. (?) 2
— minor, Sm. 3, 4
Lathraea Squamaria, L. 1–3

Lentibularieae

Utricularia vulgaris, L. 2, 3
— minor, L. (?) 3
Pinguicula vulgaris, L. 1–3

Verbenaceae

Verbena officinalis, L. 2, 3

Labiatae

Mentha rotundifolia, Huds. 1
— alopecuroides, Hull. 2
— longifolia, Huds. 1–3
— piperita, L. 1–3
— hirsuta, Huds. 1–4
b. subglabra (Baker). 1, 2
— sativa, L. 1, 3, 4
— rubra, Sm. 2, 3
— arvensis, L. 1, 3, 4
var. Nummularia (Schreb.) 1, 4
— Pulegium, L. 3

Labiatae (*continued*)

Lycopus europaeus, L. 1–4
Origanum vulgare, L. 1, 3, 4
Thymus serpyllum, Fr. 1–3
Clinopodium vulgare, L. (Calamintha Clinopodium, Benth.) 1–4
— Acinos, O.Kuntze (Cal. arvensis, Lam.) 1, 2.
— Nepeta, O. Kuntze (Cal. parviflora, Lam.) (?) 4
— Calamintha, O. Kuntze (Cal. officinalis, Moench) 2, 3
Salvia Verbenaca, L. 2, 3
Nepeta Cataria, L. 1–4
— Glechoma, Benth. 1–4
b. parviflora, Benth. 2
Scutellaria galericulata, L. 1–4
Prunella vulgaris, L. 1–4
Marrubium vulgare, L. 1, 2.
Stachys Betonica, Benth. 1–4
— palustris, L. 1–3
— sylvatica, L. 1–4
— arvensis, L. 1, 3, 4
Galeopsis Ladanum, L. 4
— ochroleuca, Lam. 2, 4
— speciosa, Mill. (versicolor, Curt.) 2–4
— Tetrahit, L. 1–4
*Leonurus Cardiaca, L. 1, 2
Lamium amplexicaule, L. 2–4 (?)
— hybridum, Vill. 3
— purpureum, L. 1–4
— album, L. 1–4
— Galeobdolon, Crantz 1–3
Ballota nigra, L. 1–4
Teucrium Scorodonia, L. 1, 2, 4
Ajuga reptans, L. 1–4

Plantagineae

Plantago major, L. 1–4
— media, L. 1–4
— lanceolata, L. 1–4
— Coronopus, L. 2, 3
Littorella juncea, Berg. 1, 2

Illecebraceae

[Herniaria hirsuta, L.]. 3
Scleranthus annuus, L. 2–4
b. biennis (Reuter) 2
[— perennis, L.] 3

Amaranthaceae

[Amaranthus retroflexus, L.] 3
[— Blitum, L.] 3

Chenopodiaceae

Chenopodium polyspermum, L. 1, 3
— Vulvaria, L. 2, 3
— album, L. 1–4
b. viride (L.). 2, 3
c. viridescens, St. Am. (C. paganum, Reich.) 2, 3
*— opulifolium, Schrad. 3
— murale, L. 2, 3
*— hybridum, L. 3
*— urbicum, L. 3
— rubrum, L. 2–4
— Bonus-Henricus, L. 1–3

CHENOPODIACEAE (*continued*)

[Beta maritima, L.] (?)
[Atriplex littoralis, L.]. 3
— patula, L. 1–4
b. erecta, Huds. 1, 2
c. angustifolia (Sm.). 2, 3.
— hastata, Huds. (Smithii, Syme) 1, 3
— deltoidea, Bab. 3

POLYGONACEAE

Polygonum Convolvulus, L. 1–4
b. subalatum, V. Hall. 1, 3
— aviculare, L. 1–4
a. agrestinum (Jord.) 3
b. vulgatum, Syme 2, 3
e. rurivagum (Jord.) 3
f. littorale (Link) 3
— Hydropiper, L. 1–3
— minus, Huds. 2 (?), 3
— mite, Schrank 3
— Persicaria, L. 1–4
— lapathifolium, L. 2–4
— amphibium, L. 1–4
b. terrestre, Leers 1–4
— Bistorta, L. 1, 2
[Fagopyrum sagittatum, Gilib. (esculentum, Moench)] 1, 2
Rumex conglomeratus, Murr. 1–4
— sanguineus, L. 1 (?), 3
b. viridis (Sibth.). 1–4
— maritimus, L. 2 (?), 3
— limosus, Thuill. 2, 3 (?)
— pulcher, L. 2
— obtusifolius, L. 1–4
— crispus, L. 1–4
— acutus, L. (crispus × obtusifolius)
— domesticus, Hartm. (?)
— Hydrolapathum, Huds. 1–4
— Acetosa, L. 1–4
— Acetosella, L. 1–4

THYMELÆACEAE

Daphne Laureola, L. 1, 3, 4

LORANTHACEAE

Viscum album, L. 2, 3

EUPHORBIACEAE

Euphorbia Helioscopia, L. 1–4
[— amygdaloides, L.] (?) 3
— Peplus, L. 1–4
— exigua, L. 1–4
*— Lathyris, L. (?)
Mercurialis perennis, L. 1–4
— annua, L. 3

URTICACEAE

Ulmus glabra, Huds. (montana, Stokes) 1, 3, 4
— campestris, L. (surculosa, Stokes) 3
a. suberosa, Koch 3
b. glabra (Sm.) 2
Humulus Lupulus, L. 1–4
Urtica dioica, L 1–4
— urens, L. 1–4
Parietaria ramiflora, Moench (officinalis, L.) 1–3

MYRICACEAE

Myrica Gale, L. 4

CUPULIFERAE

Betula verrucosa Ehrh. 1, 2
— pubescens, Ehrh. 2, 4
Alnus glutinosa, Medic. 1–4
*Carpinus Betulus, L. 2
Corylus Avellana, L. 1–4
Quercus Robur, L. 1–4
a. pedunculata (Ehrh.) 2, 3
b. intermedia (D. Don) 3
c. sessiliflora (Salisb.) 2–4
*Castanea sativa, Mill. 2, 4
Fagus sylvatica, L. 1–4

SALICINEAE

Salix triandra, L. 3
— triandra × fragilis (decipiens, Hoffm.) 2 or 3
— triandra × viminalis (hippophaefolia, Wim. and Grab.) 3
— triandra × alba (undulata, Ehrh.) 3
— pentandra, L. 2
— fragilis, L. 2, 3
— alba, L. 3
b. vitellina, L. 3
— alba × fragilis (viridis, Fr.)
— purpurea, L. 3
f. Lambertiana (Sm.). 2
— purpurea × viminalis (rubra, Huds.) 3
„ „ f. Forbyana (Sm.) 3
— viminalis, L. 3
× Caprea (Smithiana, Willd.) (?)
var. acuminata (Sm.) 2, 3
— Caprea, L. 1–4
— aurita, L. 1–3
— cinerea, L. 1–4
b. aquatica (Sm.) (?) 2
— repens, L. 2–4
Populus alba, L. 3
— canescens, Sm.
— tremula, L. 1, 3
*— nigra, 1–4

EMPETRACEAE

Empetrum nigrum, L. 2

CERATOPHYLLEAE

Ceratophyllum demersum, L. 2 (?), 3

MONOCOTYLEDONS

HYDROCHARIDEAE

Elodea canadensis, Michx. 1–4
Hydrocharis Morsus-ranae, L. 2, 3
Stratiotes Aloides, L. 1, 3 (?)

ORCHIDEAE

Neottia Nidus-avis, Rich. 1, 3
Listera ovata, R. Br. 1–4
Spiranthes autumnalis, Rich. 3
Cephalanthera ensifolia, Rich. 1
— pallens, Rich. 1
Epipactis latifolia, All. 1, 3
— palustris, Crantz 1–4

BOTANY

Orchideae (*continued*)

Orchis pyramidalis, L. 1, 3
— ustulata, L. 1, 3 (?)
— Morio, L. 1–4
— mascula, L. 1, 3, 4
— incarnata, L. 1–3
— latifolia, L. (?) 3
— maculata, L. 1–4
Ophrys apifera, Huds. 1, 3, 4
— muscifera, Huds. 1
Habenaria conopsea, Benth. 1, 3
— viridis, R. Br. 1, 3
— chloroleuca, Ridley 3

Irideae

Iris Pseudacorus, L. 1–4
b. acoriformis (Bor.) 2, 3 (?)
Crocus vernus, All. 2, 3
— nudiflorus, Sm. 2, 3

Amaryllideae

*Narcissus Pseudo-narcissus, L. 2, 3
*Galanthus nivalis, L. 1–3

Dioscoreae

Tamus communis, L. 1–4

Liliaceae

[Ruscus aculeatus, L.]
Polygonatum multiflorum, All. 1
*— officinale, All. 1 or 2
Convallaria maialis, L. 2
Allium vineale, L. 2, 3
c. compactum (Thuill.). 3
— oleraceum, L. 1, 2
[— carinatum, L.] (?) 3 (?)
— ursinum, L. 1–3
Scilla festalis, Salisb. 1–4
*Ornithogalum nutans, L. 2 or 3
— umbellatum, L. 1, 2
Tulipa sylvestris, L. 3
Gagea fascicularis, Salisb. 1, 3
Colchicum autumnale, L. 1 or 2, 3
[Narthecium ossifragum, Huds. (?)]. 4
Paris quadrifolia, L. 1, 3.

Juncaceae

Juncus bufonius, L. 1–3
— squarrosus, L. 2, 4
— compressus, Jacq. 1–3
— inflexus, L. (glaucus, Leers) 1–4
— effusus, L. 1–3
— conglomeratus, L. 1–4
— bulbosus, L. (supinus, Moench) 2
— obtusiflorus, Ehrh. 1–3
— articulatus, L. (lamprocarpus, Ehrh.) 1–3
— acutiflorus, Ehrh. 1–3
Juncoides pilosum, O. Kuntze (Luzula vernalis, DC.) 1, 3
— sylvaticum, O. Kuntze (L. maxima, DC.) 1, 3
— campestre, O. Kuntze (L. campestris, DC.) 1–4
— multiflorum, Druce (L. erecta, Desv.) 2–4
b. congesta (L. congesta, Lej.) 2

Typhaceae

Typha latifolia, L. 1–4
— angustifolia, L. 1, 2(?), 3
Sparganium erectum, L. (ramosum, Huds.) 1–4
— simplex, Huds. 1–4
— minimum, Fr. 1, 2

Aroideae

Arum maculatum, L. 1–4
Acorus Calamus, L. 1–3

Lemnaceae

Lemna trisulca, L. 1–3
— minor, L. 1–4
— gibba, L. 2, 3
— polyrrhiza, L. 2, 3

Alismaceae

Alisma Plantago, L. 1–4
— ranunculoides, L. 1–3
Sagittaria sagittifolia, L. 1–4
Butomus umbellatus, L. 1–4

Naiadaceae

Triglochin palustre, L. 1–3
Scheuchzeria palustris, L. 2 or 3
Potamogeton natans, L. 1–4
— coloratus, Hornem. 1
— heterophyllus, Schreb. 2
— falcatus, Fryer 2
— lucens, L. 1, 3
— praelongus, Wulf. 2, 3
— perfoliatus, L. 1–4
— crispus, L. 1–3
— Cooperi, Fryer 3
— densus, L. 1, 2
— zosteraefolius, Schum. 1–4
— Friesii, Rupr. 1, 3
— pusillus, L. 1–3
— pectinatus, L. 1–3
— flabellatus, Bab. (interruptus, Kit.) 1–3
Zannichellia palustris, L. 1, 3

Cyperaceae

Eleocharis palustris, R. Br. 1–4
— multicaulis, Sm. 1
Scirpus caespitosus, L.
— setaceus, L. 2, 3
— lacustris, L. 1–3
— Tabernameontani, Gmel. 1–3
— maritimus, L. 2
— sylvaticus, L. 1–3
— Caricis, Retz. 1–3
Eriophorum vaginatum, L. 2
— angustifolium, Roth 2, 3
— latifolium, Hoppe 1
Schoenus nigricans, L. 1, 2
Carex dioica, L. 1, 2
— pulicaris, L. 1, 3
— disticha, Huds. 3
— teretiuscula, Good. 2
— paniculata, L. 1, 2
— vulpina, L. 1–4
— muricata, L. 1–4
[— divulsa, Good.] 2 or 3 (?)
— echinata, Murr. 2, 3

CYPERACEAE (*continued*)

Carex remota, L. 1–4
— curta, Good. 2
— leporina, L. (ovalis, Good.) 2–4
— elata, All. (Hudsonii, A. Benn.; stricta, Good.)
— acuta, L. 3
var. gracilescens, Almq. 3
— Goodenovii, J. Gay 2, 3
— flacca, Schreb. 1–4
— digitata, L. 1
— pilulifera, L. 2
— verna, Chaix 1, 3
— pallescens, L. 3
— panicea, L. 1–3
— pendula, Huds. 1, 3
— sylvatica, Huds. 1, 3, 4
— binervis, Sm. 4
— distans, L. 2, 3
— fulva, Good. (?) 1
— flava, L. 1–3
var. Oederi, Retz.
— hirta, L. 1–3
— Pseudo-cyperus, L. 1–4
— acutiformis, Ehrh. 1–4
var. Kochiana, Gaud. 1
— riparia, Curt. 2, 3
— rostrata, Stokes 1–3
— vesicaria, L. 1

GRAMINEAE

[Panicum Crus-galli, L.] 3
[Setaria viridis, Beauv.] 3
[— glauca, Beauv.] 3
[Phalaris canariensis, L.] 1–3
— arundinacea, L. 1–4
Anthoxanthum odoratum, L. 1–4
Alopecurus myosuroides, Huds. 3
— geniculatus, L. 1–4
— pratensis, L. 1–4
Milium effusum, L. 1, 3
Phleum pratense, L. 1–4
Agrostis canina, L. 3
— palustris, Huds. 1, 3
— vulgaris, With. 2, 3
var. nigra (With.) 1
Calamagrostis epigeios, Roth 1, 3
— lanceolata, Roth 1, 3
Apera Spica-venti, Beauv. 2
— interrupta, Beauv. 3
Aira caryophyllea, L. 2, 3
— praecox, L. 2, 3
[Weingaertneria canescens, Bernh.]
Deschampsia caespitosa, Beauv. 1–4
— flexuosa, Trin. 1–4
Holcus mollis, L. 1–4
— lanatus, L. 1–4
Trisetum pratense, Pers. 1–4
Avena pubescens, Huds. 1, 3, 4
— pratensis, L. 1
*— strigosa, Schreb. 3 or 4
*— fatua, L. 3
Arrhenatherum avenaceum, Beauv. 1–4
Sieglingia decumbens, Bernh. 1, 3
Phragmites communis, Trin. 2–4
Cynosurus cristatus, L. 1–4
Koeleria cristata, Pers. 1–3

GRAMINEAE (*continued*)

Molinia varia, Schrank 1, 2, 4
Catabrosa aquatica, Beauv. 1–3
Melica montana, Huds. (nutans, *Lon. Cat.*, ed. ix) 1
— nutans, L. (uniflora, Retz.) 1, 3
Dactylis glomerata, L. 1–4
Briza media, L. 1–4
Poa annua, L. 1–4
— nemoralis, L. 1, 3
— compressa, L. 1, 3
— pratensis, L. 1–3
var. strigosa (Gaud.) 3
— trivialis, L. 1, 3
Glyceria fluitans, R. Br. 1–3
— plicata, Fr. 3
— aquatica, Sm. 1–4
— distans, Wahl. 1, 3
Festuca rigida, Kunth 1, 2
— Myuros, L. 3
— sciuroides, Roth 2, 3
— ovina, L. 1–3
— rubra, L. 3
var. fallax, Thuill. 1
— elatior, L. 1–3
var. pratensis, Huds. 1, 3
× Lolium perenne (F. loliacea, Huds.) 3
Bromus giganteus, L. 1–3.
— ramosus, Huds. 1, 3, 4
— erectus, Huds. 1, 3
[— tectorum, L.]. 3
— sterilis, L. 1–3
— secalinus, L. 3, 4
— racemosus, L. 3
— commutatus, Schrad. 3
— mollis, L. 1–4
*— arvensis, L. 3
Brachypodium gracile, Beauv. 1, 3, 4
— pinnatum, Beauv. 1, 3, 4
Lolium perenne, L. 1–4
*var. italicum (Braun) 2, 3
— temulentum, L. 3
Agropyron caninum, Beauv. 1–3
— repens, Beauv. 1–4
Nardus stricta, L. 2, 4
Hordeum sylvaticum, Huds. 1
— nodosum, L. (H. secalinum, Schreb., H. pratense, Huds.) 1, 3, 4
— murinum, L. 1–4

GYMNOSPERMAE

CONIFERAE

Juniperus communis, L. 3 (?)
Taxus baccata, L. 1–4
*Pinus sylvestris, L. 2

PTERIDOPHYTA

FILICES

Pteris aquilina, L. 1–4
Blechnum spicant, With. (Lomaria Spicant, Desv.) 2–4
Asplenium Adiantum-nigrum, L. 1–3
— Trichomanes, L. 1–3
— Ruta-muraria, L. 1–3

FILICES (*continued*)

Athyrium Filix-foemina, Roth 1–4
Ceterach officinarum, Willd. 3
Phyllitis Scolopendrium, Greene (Scolopendrium vulgare, Symons) 1–3
Cystopteris fragilis, Bernh. 1, 2
Polystichum lobatum, Presl. 1–3
b. aculeatum, Syme 1–4
— angulare, Presl.
Lastrea Thelypteris, Presl. 2
— Oreopteris, Presl. 2
— Filix-mas, Presl. 1–4
b. affinis, Bab.
— cristata, Presl. 2
— uliginosa, Newm. 2
— spinulosa, Presl. 1–4
— dilatata, Presl. 1–4
b. tanacetifolia, Moore 1
c. dumetorum, Moore 1 (?), 2
d. collina, Bab. 1, 4

FILICES (*continued*)

Polypodium vulgare, L. 1–4
Osmunda regalis, L. 1 (?)–4
Ophioglossum vulgatum, L. 1, 3, 4
Botrychium Lunaria, Sw. 1–3

EQUISETACEAE

Equisetum maximum, Lam. 1–3
— arvense, L. 1–4
— sylvaticum, L. 3
— palustre, L. 1–3
— limosum, L. 3
b. fluviatile, L. 2
— hyemale, L. 1, 3

LYCOPODIACEAE

Lycopodium Selago, L. 2
— inundatum, L. 2
— clavatum, L. 2

MOSSES

The earliest references to the mosses of Nottinghamshire occur in the second edition of Ray's *Synopsis*, published in 1696. In this work Ray describes for the first time as British species *Aulacomnium androgynum* and *Encalypta vulgaris*, which had been sent to him by 'Mr. Pool, a mercer in Nottingham,' and 'a diligent enquirer into Natural History.' Practically, however, the foundations of our knowledge of the moss flora of the county were laid by Deering, whose *Catalogus Stirpium, etc.*, published in 1738, contains references to forty-three identifiable species. Nearly all of these still occur, but two of them, *Ptychomitrium polyphyllum* and *Cinclidotus fontinalioides*, the first possibly a mistake, have not been seen by any more recent observer.

The *Botanical Calendars* by Thomas Jowett, which appeared in a Nottingham newspaper during 1826, give localities for a large number of mosses, including most of those mentioned by Deering. Among the numerous species recorded for the first time was the so-called 'Luminous Moss' (*Schistostega osmundacea*), found abundantly in the sandstone caves on Nottingham Forest, on a site now occupied by the Church Cemetery.

About this time considerable interest seems to have been taken in this group of plants, and in 1833 Dr. Howitt and Wm. Valentine, F.L.S., commenced the publication of a work entitled *Muscologia Nottinghamiensis*, consisting of dried specimens of mosses with descriptive text. Three fasciculi, each containing eight species, were issued, but the work then came to an abrupt termination.

Six years later, in his *Nottinghamshire Flora*, Dr. Howitt enumerates all the species then known to occur in the county, adding to the records of Deering and Jowett a considerable number discovered by Valentine and himself. Up to the present time this has remained practically the only available source of information respecting the mosses of the county.

Some attention has been paid by the present writer to the moss flora of Nottinghamshire, and has resulted in the discovery of a considerable number of species not previously recorded. On the other hand, no fewer than forty of the 134 species given in Howitt's *Flora* still await re-discovery. A large proportion of these should certainly turn up again, but it is probable that some few were errors of identification. It is scarcely likely, for instance, that such species as *Dicranella secunda*, *Dicranoweisia crispula*, *Dicranum longifolium*, *Anoectangium compactum*, and *Orthothecium rufescens* ever really occurred in the county.

The moss flora of Nottinghamshire cannot be considered at all a rich one, only 192 species together with some two dozen well-marked varieties having as yet been recorded. The entire absence of the older Palaeozoic and of igneous rocks, and the almost total absence of bog, combined with the low elevation of the county, largely account for this comparative poverty.

Sphagna are rare as the natural result of the draining of the bogs in which they formerly flourished, and the few patches that still remain are confined to the margins of the streams that run through the reclaimed bog-land. The most noteworthy species is *Sphagnum fallax*, which has only recently been recorded as a British species.

The Magnesian Limestone is by far the most productive formation for mosses in Nottinghamshire, as many as 136 species occurring upon it, and forty-three of these have not as yet been found elsewhere in the county. The best localities are Creswell Crags, Pleasley Vale, and the old limestone quarries about Worksop, Warsop, Mansfield, Kirkby, and Bulwell. Among the more noteworthy species are; *Tetraphis pellucida*, abundant on tree stumps and banks at Pleasley Vale and elsewhere; *Pottia bryoides*; *Pottia Heimii*, a maritime species first found by the Rev. A. Thornley on a brick wall at South Leverton in the Trent Valley, and subsequently by the writer in a magnesian limestone quarry at Worksop; *Tortula aloides* and *T. marginata* at Creswell Crags and other localities; *Barbula gracilis*, gathered by Mr. C. T. Musson, F.L.S., on a magnesian limestone wall at Sutton in Ashfield, on 19 April, 1886; *Weisia tenuis*, abundant on a vertical face of rock in a stone quarry at Mansfield; *Zygodon Mougeotii* at Creswell Crags; *Bryum pendulum* and *B. pseudo-triquetrum* at Mansfield, etc.; *Mnium subglobosum* at Sutton in Ashfield; *Eurhynchium pumilum* at Creswell Crags, and *E. megapolitanum* near Newstead; *Plagiothecium depressum* at Grives Wood, Kirkby; *Amblystegium irriguum* and *Hypnum Sendtneri* in quarries about Worksop.

On the Bunter sandstone about thirty species are found which are peculiar to this formation. Most of the Sphagna are confined to it; *Dicranum montanum* occurs in the Birklands, Sherwood Forest; *Rhacomitrium heterostichum* on a vertical face of sandstone in the Church Cemetery at Nottingham; the beautiful 'luminous moss' (*Schistostega osmundacea*) is still to be found in the caves in the Church Cemetery where Jowett and Howitt first noticed it over eighty years ago; *Bryum roseum*, one of the handsomest of British mosses, grows abundantly by the stream at Budby in Sherwood Forest; *Brachythecium salebrosum* has been gathered near

Bawtry ; and *Hypnum cordifolium* occurs along the Rainworth Water, as well as on the Keuper marl at Leverton, where it was discovered by the Rev. A. Thornley.

The Keuper marl and Lias clays possess few distinctive mosses, *Fissidens exilis*, *Tortula papillosa*, *Barbula lurida*, *Weisia squarrosa*, *Mnium stellare* and *Brachythecium illecebrum* being among the more interesting Keuper species, while *Barbula recurvifolia* has only been found on the Lias at Gotham.

In the following list of the mosses of Nottinghamshire, the arrangement and nomenclature of Dixon's *Handbook of British Mosses* are adopted, except that in the genus *Sphagnum* Horrell's *European Sphagnaceae* has been followed. Species whose occurrence rests solely on the authority of Howitt and earlier botanists are distinguished by the addition of the name of the observer. For all others the present writer is responsible, and it may be well to mention that specimens of all these species (excepting the Sphagna) have been submitted to Mr. E. M. Holmes, and in the case of all obscure forms to Mr. H. N. Dixon also ; no doubtful species has been admitted to the list, and the identifications may therefore be regarded as authoritative. The Sphagna were kindly named by Mr. E. C. Horrell.

Sphagnaceae

Sphagnum acutifolium, Ehrh. (Howitt and Bohler) 2
— subnitens, Russ. and Warnst., var. pallescens, Warnst. 2
— squarrosum, Pers. (Valentine) 2
— fallax, Kling. 2.
— cuspidatum, Ehrh. (J. Bohler) 2
— recurvum, R. and W., var. mucronatum, Warnst. 2
— compactum, DC. (Howitt) 2
— rufescens, Warnst. 4
— cymbifolium, Warnst., var. glaucescens, Warnst. 2
var. pallescens, Warnst. 4
— papillosum, Lindb., var. sublaeve, Limpr. 2

Tetraphidaceae

Tetraphis pellucida, Hedw. 1, 3

Polytrichaceae

Catharinea undulata, Web. and Mohr 1–4
var. minor, W. and M. 2, 3
var. Haussknechtii, Dixon 1
Polytrichum nanum, Neck. (Howitt) 2
— aloides, Hedw. 1, 2
— urnigerum, L. (Howitt) 2
— piliferum, Schreb. 2
— juniperinum, Willd. 2–4
— formosum, Hedw. 3
— commune, L. 1–4

Dicranaceae

Pleuridium axillare, Lindb. 3
— subulatum, Rabenh. (Howitt)
Ceratodon purpureus, Brid. 1–4

Dicranaceae (*continued*)

Dichodontium pellucidum, Schimp. 3
Dicranella heteromalla, Schp. 1–4
— secunda, Lindb. (Jowett)
— varia, Schp. 1–3
Dicranoweisia cirrhata, Lindb. 2, 3
— crispula, Lindb. (Howitt) 1, 2
Campylopus flexuosus, Brid. 2
Dicranum Bonjeani, De Not. 2, 4
— scoparium, Hedw. 1–4
var. paludosum, Schp. 1, 4
var. spadiceum, Boul. 2
— montanum, Hedw. 2
— longifolium, Ehrh. (Howitt) 1
Leucobryum glaucum, Schp. 2, 4

Fissidentaceae

Fissidens exilis, Hedw. 3
— viridulus, Wahl. 1, 3
— incurvus, Starke 1, 3, 4
— bryoides, Hedw. 1, 3
— adiantoides, Hedw. 1, 2
— taxifolius, Hedw. 1, 3, 4

Grimmiaceae

Grimmia apocarpa, Ehrh. 3
— pulvinata, Sm. 1–4
Rhacomitrium heterostichum, Brid. 2
— canescens, Brid. (Valentine and Howitt) 2
Ptychomitrium polyphyllum, Fürnr. (Deering only)
Hedwigia ciliata, Ehrh. (Valentine) 2

Tortulaceae

Acaulon muticum, C.M. (Howitt) 2
Phascum cuspidatum, Schreb. 3

TORTULACEAE (*continued*)

Pottia recta, Mitt. (Valentine) 2
— bryoides, Mitt. 1, 3
— Heimii, Fürnr. 1, 3
— truncatula, Lindb. 2, 3
— intermedia, Fürnr. 1
— minutula, Fürnr. (Valentine)
— Starkeana, C.M. (Valentine)
— lanceolata, C.M. 1, 3
Tortulla pusilla, Mitt. (Valentine) 1, 3
— ambigua, Ångstr. 1
— aloides, De Not. 1, 3
— marginata, Spruce 1
— muralis, Hedw. 1–4
var. rupestris, Schultz 1
— subulata, Hedw. 1–3
— laevipila, Schwgr. 1, 2
— intermedia, Berk. 1
— ruralis, Ehrh. 3
— papillosa, Wils. 3
Barbula lurida, Lindb. 1, 3
— rubella, Mitt. 1, 4
var. dentata, Schp. 1
— tophacea, Mitt. 1, 3
— fallax, Hedw. 1, 3
var. brevifolia, Schultz 1
— recurvifolia, Schp. 4
— rigidula, Mitt. 1, 3
— cylindrica, Schp. 1, 3
— sinuosa, Braithw. 1
— gracilis, Schwgr. 1
— Hornschuchiana, Schultz 2, 3
— revoluta, Brid. 1
— convoluta, Hedw. 1
— unguiculata, Hedw. 1, 3
var. cuspidata, B. and S. 1, 3
Weisia crispa, Mitt. (Valentine)
— squarrosa, C. M. 3
— microstoma, C.M. (Valentine) 3
— verticillata, Brid. 1
— viridula, Hedw. 1–3
var. amblyodon, B. and S. 3
— tenuis, C.M. 1
Cinclidotus fontinalioides, P. Beauv. (Deering only) 1, 3

ENCALYPTACEAE

Encalypta vulgaris, Hedw. 1, 2
— streptocarpa, Hedw. 1

ORTHOTRICHACEAE

Anoectangium compactum, Schwgr. (Howitt) 1
Zygodon Mougeotii, B. and S. 1
Ulota crispa, Brid. (Valentine and Howitt) 1, 2
Orthotrichum anomalum, Hedw., var. saxatile, Milde 1
— leiocarpum, B. and S. (Howitt)
— Lyellii, H. and T. (Howitt) 2
— affine, Schrad. 1
— rivulare, Turn. (Howitt) 1
— diaphanum, Schrad. 1, 3, 4

SCHISTOSTEGACEAE

Schistostega osmundacea, Mohr 2

SPLACHNACEAE

Splachnum ampullaceum, L. (Jowett and Howitt) 2

FUNARIACEAE

Ephemerum serratum, Hpe. (Valentine)
Physcomitrella patens, B. and S. (Valentine, 1837) 3
Physcomitrium pyriforme, Brid. 1, 3
Funaria hygrometrica, Sibth. 1–4
var. calvescens, B. and S. 1

MEESIACEAE

Aulacomnium palustre, Schwgr. 2
— androgynum, Schwgr. 1–4

BARTRAMIACEAE

Bartramia pomiformis, Hedw. 2
Philonotis fontana, Brid. (Howitt)

BRYACEAE

Leptobryum pyriforme, Wils. 1–3
Webera nutans, Hedw. 1, 3, 4
— carnea, Schp. 1–3
— albicans, Schp. 2
Bryum pendulum, Schp. 1
— pallens, Sw. 1, 2
— bimum, Schreb. 2
— pseudo-triquetrum, Schwgr. 1, 2
— pallescens, Schleich. 1 (?), 3 (?)
— affine, Lindb. 1
— intermedium, Brid. 1
— caespiticium, L. 1, 3
— capillare, L. 1–4
— atropurpureum, W. and M. (bicolor, Dicks.) 1, 3
— argenteum, L. 1–3
— roseum, Schreb. 2
Mnium affine, Bland., var. elatum, B. and S. 2
var. rugicum, B. and S. 2
— cuspidatum, Hedw. 1, 3
— rostratum, Schrad. 1–4
— undulatum, L. 1–3
— hornum, L. 1–4
— stellare, Reich. 1, 3
— punctatum, L. 1, 2, 4
var. elatum, Schp. 1
— subglobosum, B. and S. 1

FONTINALACEAE

Fontinalis antipyretica, L. 1, 3

CRYPHAEACEAE

Cryphaea heteromalla, Mohr (Valentine) 3

NECKERACEAE

Neckera crispa, Hedw. (Howitt) 1
— pumila, Hedw. (Valentine and Bakewell) 3
— complanata, Hübn. 1, 3
Homalia trichomanoides, B. and S. 1

LEUCODONTACEAE

Leucodon sciuroides, Schwgr. (Valentine and Howitt) 1
Porotrichum alopecurum, Mitt. 1, 3

LESKEACEAE

Leskea polycarpa, Ehrh. (Howitt) 1, 3
Anomodon viticulosus, H. and T. 1, 3
Thuidium tamariscinum, B. and S. 1–4

HYPNACEAE

Climacium dendroides, W. and M. 1–3
Orthothecium rufescens, B. and S. (Jowett and Eddison) 1
Camptothecium sericeum, Kindb. 1–4
— lutescens, B. and S. 1, 2, 3 or 4
Brachythecium albicans, B. and S. (Howitt)
— salebrosum, B. and S. 2
— rutabulum, B. and S. 1–4
— rivulare, B. and S. 3
— velutinum, B. and S. 1, 3, 4
— plumosum, B. and S. 2 or 3
— illecebrum, De Not. 3
— purum, Dixon 1–4
Eurhynchium piliferum, B. and S. 1, 2
— praelongum, Hobk. 1–4
var. Stokesii, Brid. 2 or 3
— Swartzii, Hobk. 1–3
— pumilum, Schp. 1, 3
— tenellum, Milde 1, 2 or 3
— myosuroides, Schp. (Eddison) 1
— myurum, Dixon (Eddison) 1
— striatum, B. and S. 3, 4
— rusciforme, Milde 1, 3
var. atlanticum, Brid. 1
— murale, Milde 1, 2
var. complanatum, B. and S. 1
— confertum, Milde 1, 3, 4

HYPNACEAE (*continued*)

Eurhynchium megapolitanum, Milde 1
Plagiothecium depressum, Dixon 1
— denticulatum, B. and S. 1–4
— sylvaticum, B. and S. 1–3
— undulatum, B. and S. 1, 2, 4
Amblystegium serpens, B. and S. 1–4
— varium, Lindb. 2 or 3
— irriguum, B. and S. 1
— filicinum, De Not. 1, 3
Hypnum riparium, L. 1, 2
— stellatum, Schreb. 1
— chrysophyllum, Brid. 1
— aduncum, Hedw. 1, 3
— Sendtneri, Schp. 1
— fluitans, L. 1, 3
— exannulatum, Gümb. 1
— revolvens, Sw. 3
— commutatum, Hedw. 1
— cupressiforme, L. 1–4
var. resupinatum, Schp. 1, 3
„ filiforme, Brid. 3
„ minus, Wils. 3
„ ericetorum, B. and S. 1, 2
— molluscum, Hedw. 1, 3 or 4
— palustre, Huds. 1, 3
— cordifolium, Hedw. 2, 3
— cuspidatum, L. 1–4
— Schreberi, Willd. 1, 2
Hylocomium splendens, B. and S. 1–3, 4 (?)
— loreum, B. and S. (Howitt) 2
— squarrosum, B. and S. 1–4
— triquetrum, B. and S. 1, 3

LIVERWORTS AND SCALE MOSSES

HEPATICAE

The Liverworts of Nottinghamshire are only imperfectly known, few local botanists having made them the object of serious study. The earliest local observer of these plants was Charles Deering, who in his *Catalogus Stirpium* (1738) includes eight species, viz.:—*Frullania dilatata*, *Radula complanata*, *Cephalozia bicuspidata*, *Lophocolea bidentata*, *Plagiochila asplenioides*, *Marchantia polymorpha*, *Conocephalus conicus*, and *Reboulia hemisphaerica*. The correctness of the last record may perhaps be questioned, but the others are all more or less common and widely distributed. Jowett in 1826 only added a single species to Deering's list, this being *Cephalozia* (*Odontoschisma*) *sphagni*, which he found growing among *Sphagnum obtusifolium* in Oxton Bogs. This does not appear to have been noticed by any later observer. In Howitt's *Flora* (1839) *Pellia epiphylla* and *Metzgeria pubescens* are given on the authority of Mr. W. Valentine and Mr. R. Bakewell respectively. The former species is abundant everywhere in damp places at the present day, and the latter has recently been gathered at Creswell Crags. Howitt himself added four new species, viz. *Kantia trichomanis*, *Nardia scalaris*, *Aneura pinguis* and *Metzgeria furcata*; of these the first and last are fairly

common, *Aneura* is abundant in a quarry at Linby, but *Nardia* has not recently been found. Four additional species occur in a list of the plants of Sherwood Forest by John Bohler;[1] these are *Cephalozia connivens*, *Scapania nemorosa*, *Blasia pusilla*, and *Lunularia cruciata*. The last-named is one of our commonest liverworts, and it is difficult to account for its omission from the works of Deering, Jowett, and Howitt. During the last five or six years many new species have been found to occur in the county, but many more doubtless remain to be discovered. At best, however, our hepatic-flora cannot be otherwise than a poor one, owing to the absence from the county of the conditions most favourable to the growth of these plants. It is therefore not altogether surprising that of the 220 or so species recorded for the British Islands, we should at present be able to claim only about forty.

In the list which follows all species to which no observer's name is attached have been collected recently by the present writer, whose specimens have all been examined and their identity certified by Mr. D. McArdle.

Frullania Tamarisci, Dum. (H. Fisher)
— dilatata, Dum.
Radula complanata, Dum.
Porella platyphylla, Lindb.
Blepharozia ciliaris, Dum.
Lepidozia reptans, Dum. (H. Fisher)
Kantia trichomanis, Gr. and B.
Cephalozia bicuspidata, Dum.
— connivens, Spruce (Bohler)
— Sphagni, Spruce (Jowett)
— divaricata, Dum. (Fisher)
Scapania nemorosa, Dum. (Bohler)
Diplophyllum albicans, Dum.
Lophocolea bidentata, Dum.
— cuspidata, Limpr.
— heterophylla, Dum.
Chilocyphus polyanthos, Dum.
Pedinophyllum interruptum, Lindb.[2]
Plagiochila asplenioides, Dum.
var. humilis, Lindenb.
Jungermania riparia, Tayl.
Jungermania inflata, Huds. (Fisher)
— turbinata, Raddi
f. acutiloba, Spruce (= Jung. corcyracea, Nees)
— capitata, Hook. (Fisher)
— ventricosa, Dicks.
Nardia scalaris, Gr. and B. (Howitt)
Fossombronia pusilla, Dum. (Fisher)
Blasia pusilla, L. (Bohler)
Pellia epiphylla, Lindb.
— calycina, Tayl.
Aneura multifida, Dum.
— pinguis, Dum.
Metzgeria pubescens, Raddi
— furcata, Dum.
Marchantia polymorpha, L.
Conocephalus conicus, Dum.
Reboulia hemisphaerica, Raddi (Deering, Howitt, Bohler) Not seen recently[3]
Lunularia cruciata, Dum.
Ricciella fluitans, Braun

ALGAE

CHARACEAE (*Stoneworts*)

The Characeae of Nottinghamshire have not been systematically worked out, and only five species are certainly known to occur in the county. These are *Chara fragilis*, Desv., which grows in ponds and canals in the magnesian limestone district; *C. contraria*, Kuetz., found in a pond at Sutton in Ashfield, and, like the first-named species, now placed on record for the first time; *C. hispida*, L., first recorded by Deering, and of rather frequent occurrence; *C. vulgaris*, L., also noticed by Deering, and common in canals and ponds, with, occasionally, its variety *longibracteata*,

[1] In White's *Worksop, the Dukery, and Sherwood Forest*, 1875.
[2] This hepatic, which is rare as a British species, was collected at Creswell Crags, on 17 April, 1899.
[3] Is it possible that the following species (Lunularia cruciata) was meant?

Kuetz.; and *Nitella flexilis*, Ag., first found by Jowett at Bulwell, and recorded by Messrs. Groves as collected by Mr. H. Searle near Worksop, in 1885. *Tolypella glomerata* should certainly be found with us, as it grows in a pond just over the county border in Derbyshire. *T. intricata* also has occurred in Yorkshire, close to the Nottinghamshire boundary.

Of the Algae, other than Characeae, practically nothing is known; they have not been seriously studied by a single Nottinghamshire botanist, and only a few species which, by their abundance, force themselves upon the notice of the collector of other aquatic plants, or are looked for on account of their beauty as microscopic objects, have had any chance of being recorded. *Volvox globator* occurs in abundance in ponds in certain localities; desmids and diatoms of many and varied kinds may be found in profusion in suitable places, and species of *Zygnema*, *Spirogyra*, *Oedogonium*, etc., are common. *Cladophora glomerata* is abundant in canals; *Prasiola crispa* and *Enteromorpha intestinalis* are not uncommon. *Chroolepus aureus* is sometimes quite a feature of damp rock faces in magnesian limestone quarries. *Nostoc* occurs in extraordinary abundance in the stream in Shireoaks Park, and on damp ground in various places. *Batrachospermum moniliforme* has occurred in the lake at Newstead Abbey, and the curious *Hildenbrandtia rivularis*, which covers stones in streams with blood-red incrustations, is found in the River Poulter at Elksley near Retford, and probably elsewhere in North Nottinghamshire.

LICHENS

A few species of Lichens were recorded by Deering in 1738, and a century later Howitt, in his *Nottinghamshire Flora*, gave localities for many additional species, largely on the authority of Messrs. Deakin and Bohler. No more recent worker seems to have touched these plants, and the list which follows is taken almost entirely from Howitt's work. The names and arrangement adopted are those of Crombie's *British Lichens*, as far as published, i.e., up to and including *Urceolaria scruposa*; the remaining species are given under the names they bear in Leighton's *Lichen Flora*.

Collema cheileum, Ach.
— nigrescens, Ach.
Leptogium lacerum, Gray
— palmatum, Mont.
Calicium hyperellum, Ach.
— quercinum, Pers.
Sphaerophorus coralloides, Pers.
Baeomyces rufus, DC.
Cladonia pyxidata, Fr.
— fimbriata, Fr.
— gracilis, Hoffm.
— furcata, Hoffm.
— squamosa, Hoffm.
— delicata, Flörke
— coccifera, Schaer.
— deformis, Hoffm.
— macilenta, Hoffm.
Cladina rangiferina, Nyl.
— uncialis, Nyl.
Ramalina farinacea, Ach.
— fraxinea, Ach.
— fastigiata, Ach.
Usnea hirta, Hoffm.
Cetraria aculeata, Fr.
Platysma glaucum, Nyl.
Evernia prunastri, Ach.
— furfuracea, Fr.
Parmelia saxatilis, Ach.
— omphalodes, Ach.
— caperata, Ach.
— olivacea, L. (?)
— physodes, Ach.
Lobaria pulmonaria, Hoffm.
Peltigera canina, Hoffm.
Peltigera rufescens, Hoffm.
— spuria, Leight.
— polydactyla, Hoffm.
— horizontalis, Hoffm.
Physcia parietina, De Not.
— ciliaris, DC.
— pulverulenta, Nyl.
— stellaris, Nyl.
subsp. tenella, Nyl.
— ulothrix, Nyl., var. virella, Cromb.
Lecanora saxicola, Ach.
— laciniosa, Nyl.
— vitellina, Ach.
— citrina, Ach.
— aurantiaca, Nyl.
— cerina, Ach.

Lecanora sophodes, Ach.
— exigua, Nyl.
— subfusca, Nyl. (*?*)
— albella, Ach.
— sulphurea, Ach.
— varia, Ach.
— atra, Ach.
— parella, Ach.
— coccinea, Cromb.
— calcarea, Somm.
Pertusaria globulifera, Nyl.
— amara, Nyl.
— velata, *forma* aspergilla, Cromb
— communis, DC.
Pertusaria Wulfenii, DC.
— lutescens, Lamy
Phlyctis agelaea, Koerb.
Thelotrema lepadinum, Ach.
Urceolaria scruposa, Ach.
Lecidea dubia, Borr.
— quernea, Dicks.
— parasema, Ach.
— coarctata, Sm.
— canescens, Dicks.
— Lightfootii, Sm.
— anomala, Fr.
— lutea, Dicks.
— incompta, Borr.
Lecidea abietina, Ach.
Opegrapha herpetica, Ach., *f.* rufescens, Pers.
— atra, Pers.
— varia, Pers.
— lyncea, Sm.
Stigmatidium crassum, Duby (*?*)
Arthonia epipasta, Ach.
Graphis elegans, Sm. (*?*)
— scripta, Ach. (*?*)
Verrucaria epidermidis, Ach.
— cinerea, Pers.
— punctiformis, Ach.
— nitida, Weig.

FUNGI

The Mycology of Nottinghamshire has until quite recently been a much neglected study, and although various references to the fungi of the county exist, the records chiefly occur in obscure publications which are not readily accessible and are almost unknown to the majority of workers in the subject. Our previous knowledge of this interesting group of cryptogamic plants has been greatly augmented by the work done in Sherwood Forest in September, 1897, by the members of the British Mycological Society; indeed, the collections made on this occasion have furnished the greater part of the material for the list which follows.

The earliest writer on local fungi was the talented Nottingham physician, botanist, and historian, Charles Deering, who, in his remarkable work *Catalogus Stirpium, etc.*, published in 1738, enumerates some 100 or more species as occurring in the neighbourhood of Nottingham. In the absence of figures or descriptions it is, however, impossible in the great majority of cases to determine with any certainty the modern equivalents of Deering's names ; and his records, with a few exceptions, do not therefore appear in the subjoined list.

During the next hundred years a few references to fungi appear in local works, the most important being those by Thomas Jowett, a Nottingham surgeon, who, under the pseudonym of 'Il Rosajo,' published a series of 'Botanical Calendars' in the *Nottingham Journal* for 1826. Those of his records which can be determined without any doubt are here included.

In 1832 and 1833 the eminent mycologist M. J. Berkeley seems to have spent some time in Nottinghamshire, and noticed a number of fungi, several of which were new to science. These he describes in his work on British fungi which forms vol. v, part 2, of Smith's *English Flora.*

Nothing further seems to have been done until 1875, in which year John Bohler contributed to White's *Worksop, The Dukery, and Sherwood Forest* an extensive list of the fungi of that district; and a further account of the mycology of North Nottinghamshire is given by the Rev. Hilderic Friend in the *Transactions of the Nottingham Naturalists' Society* for 1886.

In this paper most of Bohler's records are repeated, and a number of new species noted.

In September, 1897, the British Mycological Society held its annual meeting at Worksop, and devoted four days to the systematic investigation of the fungi of Sherwood Forest, with the result that some 250 species were added to the fungus-flora of the district. All the specimens gathered on this occasion were identified by Mr. George Massee, Dr. C. B. Plowright, or Mr. Carleton Rea, B.C.L., M.A., who were present at the meeting. Lists of the species found were drawn up for me by Mr. C. Rea, Mr. A. Clarke, and Mr. C. T. M. Plowright, and to these gentlemen my thanks are due. To Mr. Rea especially I am indebted, not only for his valuable assistance on this occasion, but also for naming all my subsequent gatherings of fungi from the neighbourhood of Nottingham, many of which had not previously been found in the county.

A detailed list, with localities and authorities, of the Nottinghamshire basidiomycetous fungi will be found in the *Transactions of the Nottingham Naturalists' Society* for 1897–8. A few later additions have been incorporated in the present list.

The arrangement and nomenclature adopted are those of Mr. G. Massee in his *British Fungus Flora*, excepting that the Uredineae, etc., which are not included in that work, are arranged as in Dr. C. B. Plowright's *British Uredineae and Ustilagineae* :—

BASIDIOMYCETES

GASTROMYCETES

Scleroderma vulgare, Fr.
— verrucosum, Pers.
— bovista, Fr. (?)
Cyathus striatus, Hoffm.
— vernicosus, DC.
Crucibulum vulgare, Tul.
Sphaerobolus stellatus, Tode
Lycoperdon excipuliforme, Scop.
— saccatum, Vahl
— gemmatum, Batsch
— pyriforme, Schaeff.
— perlatum, Pers.
— caelatum, Bull.
— bovista, L.
— plumbeum, Pers.
— nigrescens, Vitt.
— pusillum, Fr.
Geaster Bryantii, Berk.
— limbatus, Fr.
— fornicatus, Fr.
Tulostoma mammosum, Fr. (?)
Ithyphallus impudicus, Fisch.
Mutinus caninus, Fr.

HYMENOMYCETES

Auricularia mesenterica, Fr.
Hirneola auricula-judae, Berk.
Exidia glandulosa, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Exidia albida, Bref.
Ulocolla foliacea, Bref.
Tremella frondosa, Fr.
— mesenterica, Retz.
— viscosa, Berk.
— versicolor, Berk.
— tuberculariа, Berk.
— sarcoides, Sm. (The conidial stage of Ombrophila sarcoides)
Dacryomyces deliquescens, Duby
— stillatus, Nees
Calocera viscosa, Fr.
Clavaria fastigiata, L.
— muscoides, L.
— coralloides, L.
— cinerea, Bull.
— cristata, Holmsk.
— rugosa, Bull.
— Kunzei, Fr.
— crocea, Pers. (?)
— fragilis, Holmsk.
— uncialis, Grev.
— pistillaris, L.
Pistillaria tenuipes, Mass.
Coniophora olivacea, Mass.
— sulphurea, Mass.
— puteana, Mass.
Thelephora palmata, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Thelephora terrestris, Ehrh.
— laciniata, Pers.
Soppittiella sebacea, Mass.
— crustacea, Mass.
Peniophora quercina, Cooke
— gigantea, Mass.
— rosea, Mass.
— incarnata, Mass.
— ochracea, Mass.
— cinerea Cooke
— velutina, Cooke
Hymenochaete rubiginosa, Lév.
Corticium sebaceum, Mass.
— lacteum, Fr.
— leve, Pers.
— arachnoideum, Berk.
— sambuci, Fr.
— lactescens, Berk.
— sanguineum, Fr.
— coeruleum, Fr.
— lividum, Pers.
— comedens, Fr.
Stereum hirsutum, Fr.
— purpureum, Pers.
— sanguinolentum, Fr.
— rugosum, Fr.
Craterellus cornucopioides, Pers.
Cyphella capula, Fr.
Solenia anomala, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Hydnum repandum, L.
— zonatum, Batsch
— coralloides, Scop.
— ochraceum, Pers.
— viride, Fr.
— udum, Fr.
— niveum, Pers.
— farinaceum, Pers.
Caldesiella ferruginosa, Sacc.
Irpex obliquus, Fr.
Radulum orbiculare, Fr.
— quercinum, Fr.
Phlebia merismoides, Fr.
Grandinia granulosa, Fr.
Porothelium Stevensoni, B. & Br
Merulius lachrymans, Fr.
— molluscus, Fr.
— corium, Fr.
Daedalea quercina, Pers.
— unicolor, Fr.
Trametes serpens, Fr.
Poria vaporaria, Fr.
— vulgaris, Fr. (?)
— medulla-panis, Fr.
— hibernica, B. & Br.
— blepharistoma, B. & Br.
— terrestris, Fr.
— purpurea, Fr.
Polystictus perennis, Fr.
— versicolor, Fr.
— velutinus, Fr.
— abietinus, Fr.
Fomes lucidus, Fr.
— ulmarius, Fr.
— applanatus, Wallr.
— connatus, Fr.
— fomentarius, Fr.
— igniarius, Fr.
— salicinus, Fr.
— fraxineus, Fr.
— annosus, Fr.
— conchatus, Fr.
Polyporus lentus, Berk.
— rufescens, Fr.
— squamosus, Fr.
— elegans, Fr.
— giganteus, Fr.
— sulphureus, Fr.
— dryadeus, Fr.
— hispidus, Fr.
— quercinus, Fr. (?)
— betulinus, Fr.
— adustus, Fr.
— caesius, Fr.
— spumeus, Fr.
— pallescens, Fr.
— fragilis, Fr.
— armeniacus, Berk.
Fistulina hepatica, Fr.
Boletus luteus, L.
— elegans, Schum.
— flavus, With.
— chrysenteron, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Boletus subtomentosus, L.
— impolitus, Fr.
— variecolor, B. and Br.
— castaneus, Bull.
— badius, L.
— piperatus, Bull.
— bovinus, L.
— granulatus, L.
— pachypus, Fr.
— edulis, Bull.
— crassus, Mass.
— satanas, Lenz.
— luridus, Schaeff.
„ var. erythropus, Fr.
— felleus, Bull.
— laricinus, Berk.
— scaber, Fr.
„ var. aurantiacus, Bull.
— versipellis, Fr.
Coprinus comatus, Fr.
— atramentarius, Fr.
— niveus, Fr.
— micaceus, Fr.
— macrocephalus, Fr. (?)
— domesticus, Fr.
— ephemerus, Fr.
— plicatilis, Fr.
Anellaria separata, Karst.
— fimiputris, Karst.
Panaeolus papilionaceus, Fr.
— campanulatus, L.
Psathyrella gracilis, Fr.
— atomata, Fr.
— disseminata, Pers.
Gomphidius glutinosus, Schaeff.
— viscidus, Fr.
Psathyra corrugis, Pers.
— semivestita, B. and Br.
Psilocybe semilanceata, Fr.
„ var. caerulescens, Cke.
— spadicea, Fr.
— foenisecii, Pers.
Hypholoma sublateritium, Schaeff.
— fasciculare, Huds.
— elaeodes, Fr.
— lachrymabundum, Fr.
— velutinum, Pers.
— pyrotrichum, Holmsk.
— appendiculatum, Bull.
— hydrophilum, Bull.
Stropharia aeruginosa, Curt.
— albo-cyanea, Desm.
— inuncta, Fr.
— coronilla, Bull.
— squamosa, Fr.
— semiglobata, Batsch
Agaricus campestris, L.
„ var. silvicola, Vitt.
— arvensis, Schaeff.
— silvaticus, Schaeff.
— haemorrhoidarius, Schulz.
— comptulus, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Agaricus xanthodermus, Genev.
Paxillus lepista, Fr.
— involutus, Fr.
— atro-tomentosus, Fr.
Cortinarius (Hygrocybe) leucopus, Bull.
— (Hygrocybe) obtusus, Fr.
— (Telamonia) hinnuleus, Fr.
— „ flexipes, Fr.
— „ hemitrichus, Fr.
— „ rigidus, Fr.
— (Dermocybe) caninus, Fr.
— „ lepidopus, Cke.
— „ sanguineus, Fr.
— (Inoloma) violaceus, L.
— „ alboviolaceus, Fr.
— „ pholideus, Fr.
— (Myxacium) elatior, Fr.
— (Phlegmacium) varius, Fr.
— „ caerulescens, Fr.
— „ purpurascens, Fr.
Tubaria furfuracea, Pers.
Flammula carbonaria, Fr.
— flavida, Schaeff.
— inopoda, Fr.
— sapinea, Fr.
— picrea, Fr.
Galera tenera, Schaeff.
— hypnorum, Batsch
— mniophila, Lasch.
Naucoria melinoides, Fr.
— badipes, Fr.
— escharoides, Fr.
Hebeloma fastibile, Fr.
— mesophaeum, Fr.
— crustuliniforme, Bull.
Inocybe pyriodora, Pers.
— incarnata, Bres.
— flocculosa, Berk.
— rimosa, Bull.
— asterospora, Quel.
— eutheles, B. and Br.
— geophylla, Fr.
Bolbitius fragilis, Fr.
Pholiota praecox, Pers.
— radicosa, Bull.
— pudica, Fr.
— aurivella, Batsch
— spectabilis, Fr.
— adiposa, Fr.
— mutabilis, Schaeff.
— marginata, Batsch
— unicolor, Fl. Dan.
Claudopus variabilis, Pers.
Clitopilus prunulus, Scop.
— orcella, Bull.
— mundulus, Lasch.
Leptonia lampropoda, Fr.
— serrulata, Fr.
— chloropolius, Fr.
— formosa, Fr.
Nolanea pascua, Pers.
— nigripes, Trog.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Entoloma prunuloides, Fr.
— jubatum, Fr.
— sericellum, Fr.
— majale, Fr.
— costatum, Fr.
— sericeum, Fr.
— nidorosum, Fr.
Pluteus cervinus, Schaeff.
„ var. patricius, Schulz.
„ var. eximius, Saund. & Sm.
Volvaria speciosa, Fr.
— gloiocephala, DC.
Lenzites betulina, Fr.
— flaccida, Fr.
Panus stypticus, Fr.
Lentinus cochleatus, Fr.
Cantharellus cibarius, Fr.
— aurantiacus, Fr.
— carbonarius, Fr.
— umbonatus, Fr.
— infundibuliformis, Fr.
— retirugus, Fr.
Nyctalis parasitica, Fr.
— asterophora, Fr.
Hygrophorus (Hygrocybe) ceraceus, Wulf.
—(Hygrocybe)coccineus,Schaeff.
— „ miniatus, Fr.
— „ puniceus, Fr.
— „ conicus, Fr.
— „ chlorophanus, Fr.
— „ psittacinus, Schaeff.
— (Camarophyllus) nemoreus, Fr.
— „ pratensis, Fr.
— „ virgineus, Wulf.
— „ niveus, Fr.
— „ ovinus, Bull.
— (Limacium) eburneus, Bull.
— „ cerasinus, Berk.
Pleurotus dryinus, Pers.
— ostreatus, Jacq.
— applicatus, Batsch
Omphalia hydrogramma, Fr.
— pyxidata, Bull.
— campanella, Batsch, var. badipus, Fr.
— grisea, Fr.
— fibula, Bull.
„ var. Swartzii, Fr.
Clitocybe nebularis, Batsch
— clavipes, Pers.
— odora, Sow.
— rivulosa, Pers.
— cerrusata, Fr.
— candicans, Pers.
— dealbata, Sow.
— gallinacea, Scop.
— decastes, Fr.
— fumosa, Pers.
— gigantea, Sow.
— infundibuliformis, Schaeff.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Clitocybe incilis, Fr.
— geotropa, Bull.
— tuba, Fr.
— cyathiformis, Bull.
— brumalis, Fr.
— fragrans, Sow.
— Sadleri, Berk.
Laccaria laccata, Scop.
Lactarius torminosus, Schaeff.
— turpis, Fr.
— insulsus, Fr.
— blennius, Fr.
— trivialis, Fr.
— chrysorrheus, Fr.
— acris, Fr.
— piperatus, Fr.
— vellereus, Fr.
— deliciosus, Fr.
— pallidus, Fr.
— quietus, Fr.
— aurantiacus, Fr.
— theiogalus, Bull.
— rufus, Scop.
— glyciosmus, Fr.
— fuliginosus, Fr.
— serifluus, Fr.
— mitissimus, Fr.
— subdulcis, Fr.
— camphoratus, Fr.
Russula integra, Fr.
— vitellina, Fr. (?)
— lutea, Fr.
— nitida, Fr.
„ var. cuprea, Cke.
— aurata, Fr.
— puellaris, Fr.
— nigricans, Fr.
— adusta, Fr.
— delica, Fr.
— heterophylla, Fr.
— azurea, Bres.
— virescens, Fr.
— furcata, Fr.
— lepida, Fr.
— vesca, Fr.
— depallens, Fr.
— cyanoxantha, Schaeff.
— fellea, Fr.
— rubra, Fr.
— drimeia, Cke.
— ochroleuca, Fr.
— granulosa, Cke.
— foetens, Fr.
— consobrina, Fr.
„ var. sororia, Fr.
— sardonia, Fr.
— emetica, Fr.
— rosacea, Fr.
— sanguinea, Fr.
— fragilis, Fr.
„ var. nivea, Cke.
„ var. violacea, Quel.
„ var. fallax (Cke.)

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Mycena capillaris, Fr.
— rorida, Fr.
— vulgaris, Pers.
— epipterygia, Scop.
— galopoda, Fr.
— sanguinolenta, A. and S.
— vitilis, Fr.
— amicta, Fr.
— iris, Berk.
— filopes, Bull.
— paupercula, Berk.
— alcalina, Fr.
— ammoniaca, Fr.
— stanneus, Fr.
— vitrea, Fr.
— rugosa, Fr.
— galericulata, Scop.
— polygramma, Bull
— lactea, Pers.
— luteoalba, Bolt.
— flavoalba, Fr.
— pura, Pers.
Collybia radicata, Relh.
— longipes, Bull.
— platyphylla, Fr.
— fusipes, Bull.
— maculata, A. and S.
— butyracea, Bull.
— velutipes, Fr.
— vertiruga, Cooke
— confluens, Pers.
— conigena, Pers.
— tuberosa, Bull.
— nummularia, Bull.
— tenacella, Pers.
— acervata, Fr.
— dryophila, Bull.
— ambusta, Fr.
Marasmius peronatus, Fr.
— oreades, Fr.
— erythropus, Fr.
— calopus, Fr.
— Vaillantii, Fr. (?)
— ramealis, Fr.
— rotula, Fr.
— androsaceus, Fr.
— insititius, Fr.
— epiphyllus, Fr.
Tricholoma albobrunneum, Pers.
— rutilans, Schaeff.
— columbetta, Fr.
— imbricatum, Fr.
— terreum, Schaeff.
— saponaceum, Fr.
— cuneifolium, Fr.
— crassifolium, Berk.
— sulphureum, Fr.
— carneum, Bull.
— album, Schaeff.
— personatum, Fr.
— nudum, Bull.
— panaeolum, Fr.

BASIDIOMYCETES (*cont.*)

HYMENOMYCETES (*cont.*)

Tricholoma melaleucum, Pers.
„ var. polioleucus, Fr.
— sordidum, Fr.
Armillaria mellea, Vahl
— mucida, Schrad.
Lepiota prominens, Viv.
— procera, Scop.
„ var. rachodes, Mass.
„ var. puellaris, Mass.
— gracilenta, Kromb.
— felina, Pers.
— metulaespora, B. and Br.
— cristata, A. and S.
— carcharias, Pers.
— granulosa, Batsch
Amanitopsis vaginata, Roze
„ var. fulva, Schaeff.
Amanita recutita, Fr.
— phalloides, Fr.
— mappa, Fr.
— pantherina, Fr.
— muscaria, Fr.
— rubescens, Fr.
— nitida, Fr.

HYPHOMYCETES

Trichoderma lignorum, Harz. (The conidial stage of *Hypocrea rufa*)
Aspergillus glaucus, Link.
Penicillium glaucum, Link.
Sepedonium chrysospermum, Fr.
Ramularia lapsanae, Sacc.
Torula pulveracea, Corda
Zygodesmus fuscus, Corda
Bispora monilioides, Corda
Helminthosporium fusisporum, Berk.
Stilbum tomentosum, Schr.
— fimetarium, B. and Br.
Isaria farinosa, Fr. (The conidial condition of *Cordiceps militaris*)
Tubercularia vulgaris, Tode
— granulata, Pers.
— nigricans, Link.

ASCOMYCETES

Ascomyces deformans, Berk.
— turgidus, Phil.
Hysterographium fraxini, De Not.
Hypoderma commune, Duby
— conigenum, Cke.
Coccomyces dentatus, Sacc.
Coccophacidium pini, Rehm.
Rhytisma acerinum, Fr.
— salicina, Fr.
— urticae, Fr.
Cryptomyces aureus, Mass.

ASCOMYCETES (*cont.*)

Cenangium furfuraceum, De Not.
Bulgaria polymorpha, Wett.
Ombrophila sarcoides, Karst.
Mollisia lignicola, Phil.
— stramineum, B. and Br.
— cinerea, Karst.
Helotium herbarum, Fr.
Ciboria ochroleuca, Mass.
Chlorosplenium aeruginosum, De Not.
Tapesia sanguinea, Fckl.
Lachnea scutellata, Gill
— vitellina, Gill
Dasyscypha virginea, Fckl.
— clandestina, Fckl.
— corticalis, Mass.
Geopyxis coccinea, Mass.
Peziza sepiatra, Cke.
Otidea leporina, Fckl.
— pleurota, Phil.
— cochleata, Fckl.
— aurantia, Mass.
Helvella crispa, Fr.
Leotia lubrica, Pers.
Morchella crassipes, Pers., var. Smithiana (Cke.)
— conica, Pers.
Mitrula viride, Karst.
Spathularia clavata, Sacc.
Geoglossum glabrum, Pers.
— difforme, Fr.
— hirsutum, Pers.

PYRENOMYCETES

Sphaeria pulvispyrius, Pers. [A long list of species of *Sphaeria* is given by Bohler, but as only the above-named species has been definitely determined by later workers it is thought best to omit the others here]
Hypoxylon fuscum, Fr.
Xylaria polymorpha, Grev.
— hypoxylon, Grev.
— digitata, Grev.
Dothidea spp. [several are mentioned by Bohler but require confirmation before they can be definitely accepted]
Nectria cinnabarina, Fr.
Hypocrea rufa, Fr.
Claviceps purpurea, Tul.

PHYCOMYCETES

Mucor mucedo, L.
Spinellus fusiger, V. T.
Pilobolus crystallinus, Tode
Cystopus candidus, Lév.
— cubicus, De B.

PHYCOMYCETES (*cont.*)

Phytophthora infestans, De B. and other species are recorded by Bohler
Empusa muscae, Cohn.

UREDINEAE[1]

Uromyces fabae (Pers.) (U. appendiculata, Lév., Trichobasis fabae, Lév., Puccinia fabae, Link.)
— polygoni (Pers.)
— trifolii (A. and S.) (Trichobasis fallens, Cke.)
— valerianae (Schum.) (Lecythea valerianae, Berk., Aecidium valerianacearum, Duby)
— poae, Rahb. (Aecidium ficariae, Pers.)
— rumicis (Schum.) (Uredo bifrons, Grev.) On *Rumex Acetosa*
— alchemillae (Pers.) (Uredo alchemillae, Pers., Uromyces intrusa, Lév.) On *Alchemilla vulgaris*
— scrophulariae (DC.). (Puccinia scrophulariae, Lév.)
— ficariae (Schum.)
— scillarum (Grev.) (U. concentrica, Lév.) On *Scilla festalis*
Puccinia galii (Pers.) (Trichobasis galii, Lév., Puccinia galiorum, Link.) On *Asperula odorata*
— calthae, Link. (P. calthae and Aecidium calthae, Grev.)
— lapsanae (Schultz) (P. and Aec. lapsanae, Purt., Trichobasis lapsanae, Fckl.)
— pulverulenta, Grev. (Aec. epilobii, DC., Trichobasis epilobii, Berk.) On *Epilobia*
— violae (Schum.). (Aec. violae Schum., Trichobasis violarum, Berk., Puccinia violarum, Link.)
— pimpinellae (Strauss) (Trichobasis heraclei, Cke.)
— menthae, Pers. (Aec. menthae, DC., Trichobasis labiatarum, Lév.)
— primulae (DC.). (Aec. primulae, DC.)
— saniculae, Grev. (P. saniculae and Aec. saniculae, Carm.)

[1] The whole of the records of Uredineae and Ustilagineae rest upon the authority of Messrs. Bohler and Friend.

UREDINEAE (*cont.*)

Puccinia graminis, Pers. (Trichobasis linearis, Lév., Aecidium berberidis, Pers.) Teleutospores on corn, aecidiospores on barberry (*Berberis vulgaris*)
— coronata, Corda (Aec. crassum, Pers.). Aecidiospores on buckthorn
— rubigo-vera (DC.) (Trichobasis, Lév., Puccinia straminis, De B.)
— poarum, Niel. (Aec. compositarum, Mart., var. tussilaginis, Pers.). Aecidiospores on coltsfoot (*Tussilago farfara*)
— caricis (Schum.) (Trich. caricina, Berk., Puccinia striola, Link., Aec. urticae, DC.)
— sylvatica, Schröt. (Aec. compositarum, var. taraxaci, Grev.). On *Taraxacum officinale*
— suaveolens (Pers.) (Trichobasis, Lév.)
— bullata (Pers.) (Trichobasis conii, Strauss., T. cynapii, DC., T. petroselini, Cke., Puccinia umbelliferarum, DC., P. conii, Fckl.)
— hieracii (Schum.) (P. hieracii and P. compositarum, Schl., Trich. hieracii, Schum.)
— centaureae, Mart.
— taraxaci, Plowr. (P. variabilis, Grev.)
— polygoni, Pers. (P. polygonorum, Link.)
— oblongata (Link.) (P. luzulae, Lib., Trich. oblongata, Berk.)
— lychnidearum, Link. (Pucc. & Trich. lychnidearum, Lév.)
— tragopogi (Pers.) (Aec. tragopogi, Pers., Pucc. sparsa, Cke.). On goatsbeard (*Tragopogon*).
— betonicae (A. and S.)
— campanulae, Carm. On harebell (*Campanula rotundifolia*)
— aegopodii (Schum.) On goutweed (*Aegopodium Podagraria*)
— fusca (Relh.) (P. anemones, Pers.). On wood anemone (*Anemone nemorosa*)
— adoxae, DC. On moschatel (*Adoxa*)
— senecionis, Lib.
— glomerata, Grev.

UREDINEAE (*cont.*)

Puccinia arenariae (Schum.) (P. moehringiae, Fckl.)
— chrysosplenii, Grev. On golden saxifrage (*Chrysosplenium alternifolium*)
— valantiae, Pers. On *Galium cruciata*
— malvacearum, Mont.
— circaeae, Pers.
— veronicarum, DC.
— glechomatis, DC.
— cardui, Plowr. (P. syngenesiarum, Link.)
— buxi, DC.
Triphragmium ulmariae (Schum.) (T. and Uromyces ulmariae, Lév.). On meadowsweet (*Spiraea Ulmaria*)
Phragmidium tormentillae, Fckl. (P. obtusatum, Fr., Uredo potentillarum, DC.). On strawberry, barren strawberry, etc.
— rubi (Pers.) (P. bulbosum, Fr., Lecythea ruborum, Lév.)
Phragmidium subcorticatum (Schrank.). (P. mucronatum, Fr., Coleosporium pingue, Lév., Lecythea rosae, Lév.)
— rubi-idaei (Pers.) (P. gracile, Berk.)
Xenodochus carbonarius, Schlecht. (X. carbonarius and Lecythea poterii, Lév.)
Gymnosporangium sabinae (Dicks.). (Roestelia cancellata, Reb.) On pear
— clavariaeforme (Jacq.). (Roestelia lacerata, Tul.). On hawthorn
— juniperinum (Linn.). (Roestelia cornuta, Tul.). On mountain ash
Melampsora helioscopiae (Pers.) (M. euphorbiae, Cast., Lecythea euphorbiae, Lév.)
— lini (Pers.). (Lecythea lini, Berk.). On *Linum catharticum*
— farinosa (Pers.). (M. salicina, Lév., Lecythea caprearum, Berk.)
— epitea, Thüm. (Lecythea epitea, Lév.)
— mixta (Schlecht.). (Lecythea mixta, Schlecht.)
— vitellinae (DC.). (Lecythea saliceti, Lév.)
— tremulae, Tul.
— populina (Jacq.) (M. populina and Lecythea populina, Lév.)

UREDINEAE (*cont.*)

Melampsora hypericorum (DC.) (Uredo hypericorum, DC.)
— betulina (Pers.)
— circaeae (Schum.). On *Circaea lutetiana*
Coleosporium senecionis (Pers.) (Peridermium pini, Chev., on fir. Col. senecionis on *Senecio sylvaticus*)
— sonchi (Pers.). (C. sonchi-arvensis, Lév., C. tussilaginis, Lév., C. petasitis, Lév.). On *Sonchus*, *Tussilago*, and *Petasites*
— campanulae (Pers.) On *Campanula rotundifolia*
Uredo quercus, Brond. Sherwood Forest (Brittain)
Caeoma mercurialis (Pers.). (Uredo confluens. DC.) On *Mercurialis perennis*
Æcidium grossulariae (Gmel.)
— periclymeni, Schum.
— punctatum, Pers. (Aec. quadrifidum DC.). On a garden anemone
— leucospermum, DC. On *Anemone nemorosa*

USTILAGINEAE

Ustilago longissima (Sow.)
— hypodytes, Fr.
— segetum (Bull.) (U. carbo, Tul.)
— bromivora, Waldh.
— utriculosa, Tul.
— violacea (Pers.). (U. antherarum, Fr.)
Tilletia tritici (Bjerk.) (T. caries, Tul.)
Urocystis agropyri (Preuss.)
— anemones (Pers.)
— violae (Sow.)
Entyloma ranunculi (Bon.) (Gloeosporium ficariae Berk.)
Tubercinia scabies, Berk. On potatoes

MYXOMYCETES[1]

Ceratiomyxa mucida, Schroeter
Badhamia hyalina, Berk.
— utricularis, Berk.
— panicea, Rost.

[1] This list is drawn up from the material collected in Sherwood Forest by the members of the British Mycological Society, and by the present writer chiefly in the neighbourhood of Nottingham. A few north Notts. records by Messrs. Bohler and Friend are also included.

MYXOMYCETES (*cont.*)

Physarum nutans, Pers., and
var. leucophaeum (Fr.)
Craterium pedunculatum, Trent.
Diachaea elegans, Fr.
Didymium difforme, Duby
— farinaceum, Schrad.
— nigripes, Fr., and
var. xanthopus (Fr.)
— effusum, Link.
Spumaria alba, DC.

MYXOMYCETES (*cont.*)

Stemonitis fusca, Roth
Comatricha obtusata, Preuss.
Brefeldia maxima, Rost.
Cribraria intricata, Schrad.
Tubulina fragiformis, Pers.
Reticularia Lycoperdon, Bull.
Trichia favoginea, Pers.
— scabra, Rost. (Massee, *Mon. Myx.*, p. 192.)
— varia, Pers.

MYXOMYCETES (*cont.*)

Trichia fallax, Pers.
— Botrytis, Pers.
Hemitrichia Serpula, Rost.
Arcyria punicea, Pers.
— incarnata, Pers.
— flava, Pers.
Prototrichia flagellifera, Rost. (Massee, *Mon. Myx.*, p. 130.)
Lycogala miniatum, Pers.

ZOOLOGY

MOLLUSCS

The soil of Nottinghamshire is not as a whole favourable to the development of molluscan life, the bed-rock of the greater portion being sandstone, while the drifts that cover it are not particularly rich in carbonate of lime. Along the western borders of the county, however, where the Permian limestones occur, the land-snails are abundant; whilst the streams everywhere, and especially the canals, are rich in freshwater forms.

Altogether 108 species, out of the 139 known to occur in the British Isles, have been recorded, and one or two more may yet be looked for.

In this list *Hygromia revelata* is not included; the record of examples said to have been found at Stanton-on-the-Wolds by Mr. E. J. Lowe being obviously due to some error of observation. *Pomatias elegans* is also omitted as not indigenous now, though a single subfossil example was found at Scarthing Moor in a superficial deposit. *Limnæa glabra* has been inserted, though there is some doubt as to its actual occurrence at the present day, only a single specimen having been met with. Some forms, which have only been found in the rejectamenta of streams, are added because they are all small species not easily found and probably occur living in the area.

One of these last, *Acanthinula lamellata*, is an interesting species that once spread as far south as the Channel, it having been found in a pleistocene deposit at West Wittering on the coast of Hampshire, but to-day it does not occur further south than Reading, in the neighbourhood of which a single example was found a short time ago. The occurrence of this pretty little species imparts a slightly northern quality to the otherwise typically British assemblage.

An introduction of note is *Stenogyra goodalli*, a West Indian form that occurs in hot-houses where it has been introduced in the soil with plants. It was first observed in this country and described from hothouses at Bristol by Miller; it has since been found at Kew Gardens and in nurseries in other parts of the country. Mr. Pearson obtained it at Chilwell near Nottingham feeding on the roots of the bulbs of *Eucharis*.

Two other introductions were obtained in 1883 from Mr. Thacker's orchid house on Blue Bell Hill, Nottingham, where they occurred plentifully in moss around orchids.

The one is an *Opeas*, a form closely allied to *Stenogyra*, and is very likely the *O. clavulus*, Fér., of Mauritius, while the other is *Zonitoides minusculus*, a widely distributed North American and West Indian form.

The literature on the molluscan fauna of Nottinghamshire is somewhat scattered and spread over many years, but the two latest papers, which collect very nearly all previous information on the subject, are those by Mr. W. A. Gain (*British Naturalist*, 1893) and Mr. B. Sturges Dodd (in *A Contribution to the Geology and Natural History of Nottinghamshire*, 8vo, 1893).

A. GASTROPODA

I. PULMONATA

a. Stylommatophora

Testacella maugei, Fér. Welbeck
— *haliotidea*, Drap. Carlton-on-Trent
— *scutulum*, Sby. Welbeck Abbey gardens
Limax maximus, Linn.
— *flavus*, Linn.
— *arborum*, Bouch.-Chant.
Agriolimax agrestis (Linn.)
— *lævis* (Müll.)
Amalia sowerbii (Fér.) Highfield House, near Nottingham
— *gagates* (Drap.) Tuxford
Vitrina pellucida (Müll.)
Vitrea crystallina (Müll.)
— *alliaria* (Miller)
— *glabra* (Brit. Auct.)
— *cellaria* (Müll.)
— *nitidula* (Drap.)
— *pura* (Ald.)
— *radiatula* (Ald.)
— *excavata* (Bean) Clifton; Attenborough
— *nitida* (Müll.)
— *fulva* (Müll.)
Arion ater (Linn.)
— *hortensis*, Fér.
— *circumscriptus*, John. Hunger Hill Gardens, Nottingham
— *subfuscus* (Drap.) Tuxford; West Markham
Punctum pygmæum (Drap.)
Pyramidula rupestris (Drap.)
— *rotundata* (Müll.)
Helicella virgata (Da C.)
— *itala* (Linn.) Newark; Stanton; Alverton; Cotham
— *caperata* (Mont.)
— *cantiana* (Mont.) Near Newark; Stanton
Hygromia fusca (Mont.) Rare: Highfield House estate
— *granulata* (Ald.)
— *hispida* (Linn.)
— *rufescens* (Penn.) Rare: Highfield House estate
Acanthinula aculeata (Müll.)
— *lamellata* (Jeff.) Rejectamenta of stream near Mansfield
Vallonia pulchella (Müll.)
Helicigona lapicida (Linn.) Debdale, Mansfield; Cresswell Crags; etc.
— *arbustorum* (Linn.)
Helix aspersa, Müll.
— *nemoralis*, Linn.
— *hortensis*, Müll.
Buliminus obscurus (Müll.)
Cochlicopa lubrica (Müll.)
Azeca tridens (Pult.) Rare; Pleasley Vale; Highfield House estate; Cresswell Crags
Cæcilianella acicula (Müll.)
Pupa secale, Drap. Nottingham Castle
— *anglica* (Fér.) Grives Wood, Kirkby-in-Ashfield; Highfield House
— *cylindracea* (Da C.)
— *muscorum* (Linn.)
Sphyradium edentulum (Drap.)
Vertigo antivertigo (Drap.)
— *substriata* (Jeff.) Rare: Haggonfields, Worksop; Bingham Moor; Highfield House estate; Cresswell
— *pygmæa* (Drap.)
— *moulinsiana* (Dup.) Crowhill, Mansfield; rejectamenta, Carlton-on-Trent; Darlton (one dead specimen)
— *pusilla*, Müll. Cresswell; rejectamenta, Carlton-on-Trent and Bingham Moor; Highfield House
— *angustior*, Jeff. Cresswell; rejectamenta, Carlton-on-Trent and Bingham Moor; Scarthing Moor
Balea perversa (Linn.) Local
Clausilia laminata (Mont.) Local and rare: Cresswell; Pleasley Vale
— *bidentata* (Ström.)
Succinea putris (Linn.)
— *elegans*, Risso.

b. Basommatophora

Carychium minimum, Müll.
Ancylus fluviatilis, Müll.

Velletia lacustris (Linn.)
Limnæa auricularia (Linn.)
— *pereger* (Müll.)
— *palustris* (Müll.)
— *truncatula* (Müll.)
— *stagnalis* (Linn.)
— *glabra* (Müll.) One specimen from river Leen, Bulwell
Amphipeplea glutinosa (Mull.) Pond between Beeston and Attenborough ; Beeston Lock, in backwater of Trent
Planorbis corneus (Linn.)
— *albus*, Müll.
— *glaber*, Jeff. Thoresby Lake ; Clumber ; Cresswell
— *nautileus* (Linn.)
— *carinatus*, Müll.
— *marginatus*, Drap.
— *vortex* (Linn.)
— *spirorbis*, Müll.
Planorbis contortus (Linn.)
— *fontanus* (Lightf.)
— *lineatus* (Walker) Oxton ; Highfield House Lake
Physa fontinalis (Linn.)
— *hypnorum* (Linn.) Beeston Rylands ; Wilford ; Lenton Meadows ; Worksop

II. PROSOBRANCHIATA

Bithynia tentaculata (Linn.)
— *leachii* (Shepp.)
Vivipara vivipara (Linn.)
— *contecta* (Millett) Dyke, Notts side of river Idle
Valvata piscinalis (Müll.)
— *cristata*, Müll. Local
Acicula lineata (Drap.) Rejectamenta, Cresswell Crags
Neritina fluviatilis (Linn.)

B. PELECYPODA

Dreissensia polymorpha (Pall.)
Unio pictorum (Linn.)
— *tumidus*, Retz.
Anodonta cygnæa (Linn.)
Sphærium rivicola (Leach)
— *corneum* (Linn.)
— *ovale* (Fér.) Nottingham Canal ; Marnham
— *lacustre* (Müll.)
Pisidium amnicum (Müll.)
— *pusillum* (Gmel.)
— *nitidum*, Jenyns.
— *fontinale* (Drap.) Besides the type, the var. *henslowiana* occurs at Retford and Shireoaks, and the var. *pulchella* at Beeston, Stanton and Thoresby Lake
— *milium* (Held.) Clumber Lake ; Mansfield ; Attenborough

INSECTS[1]

APTERA

The insects belonging to this order are small, soft-bodied, wingless creatures with no metamorphosis, and exhibiting throughout life a very general resemblance to the larval stage of many insects of higher groups. The antennæ are often large, and while all possess the three pairs of thoracic legs characteristic of insects in general, some have in addition short limb-like abdominal appendages and a pair of long bristle-like processes at the hind end of the body. Others are provided with a pair of abdominal appendages modified into a springing or leaping apparatus; many possess on the under side of the first abdominal segment a peculiar structure of doubtful function, known as the ventral tube; and some again have the body thickly clothed with scales, very similar to those of Lepidoptera.

The order Aptera comprises the two sub-orders *Thysanura* (bristle-tails) and *Collembola* (spring-tails). The Thysanura have the abdomen divided into ten segments, some of which—the number varies in different genera—bear short paired limb-like appendages, while the last segment has a pair of processes or cerci which are generally long, slender, many-jointed, and antenna-like, but in one family form a pair of forceps somewhat like those of earwigs. A single median tail appendage, similar to the cerci, occurs in some forms.

Of the five recorded British species of Thysanura four have occurred in Nottinghamshire. The best known of these is the common and active little 'silver fish' (*Lepisma saccharina*), found commonly in kitchens and bakehouses in Nottingham and elsewhere. *Lepisma* (or *Thermobia*) *domestica* has recently (November, 1904) been sent to me from West Bridgford, Nottingham, where it occurs in abundance among cinders under fire-grates in a dwelling-house. The curious *Campodea staphylinus*, a tiny white fragile insect suggesting a minute Myriapod in appearance and movements, is found very frequently under stones and logs and among damp loose soil in gardens and fields throughout the county. *Machilis polypoda* is common under stones in quarries throughout the whole of the Magnesian Limestone district. The remaining British species, *Machilis maritima*, is confined to the coast, where it occurs under stones at and above high-water mark.

The Collembola have only six abdominal segments, the first of these bearing a ventral tube or papilla from which in some species a pair of long delicate tubes or vesicles can be protruded. The function of this ventral tube is far from being satisfactorily settled. It has been suggested that it may assist the insect to adhere to smooth vertical surfaces, or may be a respiratory organ. The 'spring' is situated on the under side of the fourth or fifth segment of the abdomen, and consists of a basal unpaired portion and two free limbs. When not in use the spring lies parallel with the body, with the limbs or prongs pointing forward, and, in some genera at least, is kept in place by a 'catch' situated on the third abdominal segment. When the catch is removed the elastic spring suddenly extends, so that the limbs now point backward, and the insect is thus shot into the air. Besides this mode of progression by successive rapid leaps, most of the Collembola can run actively.

In some springtails the body is clothed with hairs, in others with flattened scales. The colour varies considerably, some species being pure white, others black, while various bright—often metallic—tints occur, and some species are beautifully variegated. They occur abundantly under bark, rotten wood, stones, amongst moss and foliage, in damp earth, etc. A few inhabit the surface of stagnant water, and one species at least is confined to the sea-shore. Their food appears to consist chiefly of decaying vegetable matter, but several species have recently attracted notice by their injuries to the roots and other parts of cultivated plants. Unlike the Thysanura, the Collembola are not at all intolerant of cold, and may be collected throughout the winter. Several species indeed occur in Spitzbergen, in Franz Josef Land, and on the Antarctic continent.

Extensive materials for a list of Nottinghamshire Collembola exist in the writer's collection, but as they have not yet been worked out no detailed account of them can be given here. The following species have, however, been identified by Professor G. H. Carpenter in material submitted to him.

[1] The nomenclature and arrangement adopted for the orders of insects are those of Dr. Sharp in the *Camb. Nat. Hist.*

SMINTHURIDAE

Sminthurus viridis (Linn.). *Ollerton*
Papirius cursor, Lubb. *Wollaton*
— ornatus, Nic. *Oxton Bogs; Strelley; Arnold*
— minutus (O. Fabr.). *Oxton Bogs*

ENTOMOBRYIDAE

Tomocerus vulgaris (Tullb.). *Bulwell Wood*
— tridentiferus (Tullb.). Generally distributed and very common
Lepidocyrtus curvicollis, Bourlet. *Nottingham* (in cellar of house)
— lanuginosus (Gmel.). *Widmerpool; Burton Joyce*, etc.
— cyaneus (Tullb.). *Strelley*.
Entomobrya nivalis (Linn.).
— muscorum (Nic.).
— multifasciata (Tullb.).
} All generally distributed and fairly common

ENTOMOBRYIDAE (*continued*)

Orchesella cincta (Linn.). Very common everywhere
— villosa (Geoff.). Rather widely distributed and not uncommon
Isotoma viridis, Bourlet. Common and widely distributed
— palustris (Müll.). *Nottingham; Daybrook; Bestwood Park; Burton Joyce*
— fimetaria (Linn.). *Nottingham*, under flower-pots in garden

ACHORUTIDAE

Achorutes viaticus (Linn.).
Lipura ambulans (Linn.).
— inermis, Tullb.
} Abundant under a board in a garden at *Bramcote*
Neanura muscorum (Templ.) *Mapperley Park; Basford*, etc.

ORTHOPTERA

The British insects of this order belong to the families *Forficulidae* (Earwigs), *Blattidae* (Cockroaches), *Acridiidae* (Grasshoppers), *Locustidae* (Green Grasshoppers), and *Gryllidae* (Crickets). The remarkable Praying insects (*Mantidae*) and Stick and Leaf insects (*Phasmidae*), which also belong to this order, are unrepresented in the British Islands. In Nottinghamshire the Orthoptera have hitherto received very little attention, and only sixteen species are on record for the county. Even of this small number we can only claim ten as truly native species, all our local Blattidae having been introduced by human agency. We have two members of the Forficulidae, the common and the lesser earwigs. The former is strictly nocturnal in its habits, and is remarkable for the fact that although possessed of most beautiful and elaborate wings it apparently rarely or never uses them, while the lesser earwig may often be seen flying freely in the daylight. The truly British species of Cockroaches, belonging to the genus *Ectobia*, are only three in number, and none of these have so far been detected in Nottinghamshire. They are relatively small insects found among dry leaves and moss and about the undergrowth in woods. The other species which are found here attach themselves to human habitations, greenhouses, and other places where artificial warmth is provided; of these the common cockroach or 'black-beetle,' found only too abundantly in kitchens and bake-houses, is the most familiar; but several other species occur, having been introduced with vegetable or other produce from abroad.

The Grasshoppers (*Acridiidae*) are also well-known insects, both on account of their jumping powers and their cheerful chirping notes; we possess most of the commoner species. Two species of the migratory locusts (*Acridium aegyptium* and *Schistocerca peregrina*) have occurred in the county, the latter apparently as a voluntary immigrant, the former as a mere casual imported with fruit. On the other hand, the Locustidae and Gryllidae are very poorly represented in Nottinghamshire, only two species of the former and one of the latter group having as yet been found.

A nearly complete list with localities and authorities is given by Mr. Eland Shaw in the *Entomologist's Monthly Magazine* for April, 1903, and forms the basis of the list which follows.

FORFICULIDAE

Earwigs

Labia minor, Linn. *Nottingham* and *Retford* districts
Forficula auricularia, Linn. This, the common earwig, is abundant everywhere

BLATTIDAE

Cockroaches

Periplaneta americana, Linn. *Worksop* (J. T. Houghton)
— australasiae, Fab. In greenhouses at *Wiseton* (E. Shaw)
Stylopyga orientalis. The common cockroach or 'black-beetle' is abundant
Stylopyga decorata, Brunner. This handsome species —an accidental importation—has been taken at *Worksop* by Mr. J. T. Houghton
Panchlora exoleta, Klug. *Nottingham* and *Worksop*, 1903; probably brought from the West Indies in bananas

INSECTS

ACRIDIIDAE

Grasshoppers

Stenobothrus viridulus, Linn.
— bicolor, Charp.
— parallelus, Zett.
Gomphocerus maculatus, Thunb.
} All of these have been taken in various localities, and are probably common throughout the county.

Acridium aegyptium, Linn. A fine specimen of this, the largest of the European Acridiidae, was captured in *Nottingham* market-place in 1902, and is supposed to have been imported with bananas from the Canary Isles

Schistocerca peregrina, Oliv. This North African locust visited England in 1869, and was taken in many English counties, including Nottinghamshire. (Roebuck in *Naturalist*, 1876–7, p. 129 et seq.)

Tettix bipunctatus, Linn. *Burton Joyce* and *Retford*

LOCUSTIDAE

Green or Long-horned Grasshoppers

Leptophyes punctatissima, Bosc. *N.* and *S. Leverton; Treswell Wood; Colston Bassett*
Meconema varium, Fab. *Aspley* and *Treswell Woods*

GRYLLIDAE

Crickets

Gryllus domesticus, Linn. The common cricket occurs in houses in *Nottingham* and *Retford* (and doubtless elsewhere)

NEUROPTERA

This order, as usually defined, is a somewhat heterogeneous assemblage of insects which are provided in most cases with two pairs of thin semi-transparent membranous wings with net-like venation. It includes among others the Stone-flies (*Perlidae*), Dragon-flies (*Odonata*), May-flies (*Ephemeridae*), Alder-flies and Snake-flies (*Sialidae*), Scorpion-flies (*Panorpidae*), Lacewing-flies (*Hemerobiidae*), and Caddis-flies (*Trichoptera*).

The Stone-flies may be known by the long narrow fore-wings and the much larger and broader hind-wings which are folded in repose. The larvae are aquatic, and found chiefly in swiftly-running streams and about waterfalls; hence we have very few species in Nottinghamshire, where such conditions scarcely exist. The Dragon-flies are perhaps the best known of the Neuroptera, owing to their conspicuous colouring and rapid flight while hawking for insects in the sunshine. They are easily recognized by their large and very mobile head with tiny, bristle-like antennae, large eyes, long slender abdomen, and wings of nearly equal size, which have a transparent glassy appearance and cannot be folded when the insect is at rest. About a dozen species have been taken in the county. In the May-flies the fore-wings are very much larger than the hind-wings, which indeed are sometimes wanting; the venation is very close and complex; the antennae are very small, and the body bears at its hinder extremity two or three very long slender tails. The larvae are aquatic, but unlike the exclusively carnivorous stone-flies and dragon-flies their food is largely vegetable. The adult insect takes no food during its brief life.

The Alder-flies (*Sialides*) have a squarish head, bearing a pair of rather long antennae; the wings are similar in character, the hinder pair being rather the smaller; in repose they meet together over the back like a roof, after the fashion of those of a noctuid moth. The larvae are aquatic and carnivorous. *Sialis lutaria*, a sober-looking insect with black body and pale brown wings, is very common amongst the vegetation about canals, slow streams, and ponds. The Snake-flies (*Raphidiides*) are easily recognized by the long constricted neck formed by the elongation of the prothorax and hinder part of the head. The larvae are terrestrial, living in rotten wood and feeding upon other insects. The Scorpion-flies (*Panorpa*) are distinguished by the prominent beak-like prolongation of the head, and—in the males—by the terminal segments of the abdomen being curved up like the tail of a scorpion. The antennae are long and slender, and the wings narrow and shining. The fore-wings are only slightly larger than the others. The larvae are terrestrial, very similar to those of the Saw-flies, and as well as the flies are carnivorous. The *Hemerobiidae*, to which family the beautiful Lace-wing flies or 'golden eyes' (*Chrysopa*) belong, are useful insects, inasmuch as the larvae feed exclusively on aphides or 'green fly,' whose juices they suck. The larvae of some of the species of both *Hemerobius* and *Chrysopa* have the curious habit of covering themselves with the empty skins of the aphides that they have sucked dry.

The Caddis-flies have the wings clothed with hairs, a feature which at once distinguishes them from all other Neuroptera; in repose the wings meet at an angle, roof-like, over the back, and this

attitude combined with their hairy covering gives the insects a moth-like appearance. The hind-wings are rather shorter but broader than the fore-wings, and have a folding anal area. The antennae are many-jointed, long, and slender. Caddis-flies have very feeble powers of flight, and are never found far from water. The larvae are aquatic and inhabit cases, constructed by themselves, of small stones or shells, grains of sand, bits of stems and leaves of water-plants, etc.; their food is mainly vegetable, but they are probably insect-eaters also.

The species enumerated in the subjoined lists have all been collected recently in Nottinghamshire, mostly by the Rev. Alfred Thornley (A.T.), Mr. Eland Shaw (E.S.), Miss Alderson (E.M.A.), Mr. J. T. Houghton (J.T.H.), and the present writer (J.W.C.). Very little attention has hitherto been given to these insects, and many more species will doubtless be added in the near future.

NEUROPTERA-AMPHIBIOTICA

PERLIDAE

Chloroperla grammatica, Poda. *Clumber* (S. Pegler)
Nemoura variegata, Oliv. *North* and *South Leverton* and *Treswell Wood* (A. T. and E. S.)
— meyeri, Pict. *S. Leverton* (A. T.)
— cinerea, Oliv. *Worksop* (E. M. A.); *Bulwell* (J. W. C.)

ODONATA

Sympetrum striolatum, Charp. *Retford, Treswell Wood* (A. T.)
Libellula depressa, Linn. *S. Leverton, Treswell Wood* (A. T.); *Widmerpool, Langford Moor* (J. W. C.)
— quadrimaculata, Linn. *N. Leverton* (E. S.)
Aeschna cyanea, Müll. *Treswell, S. Leverton, Stokeham* (A. T.); *Shireoaks* (J. T. H.)
— grandis, Linn. *Chilwell* (J. W. C.)
Calopteryx virgo, Linn. *Rainworth Water* (Rev. F. C. R. Jourdain)
— splendens, Harr. *Treswell Wood* (E. S.); *Cottam, Rampton, Littleborough, Wollaton* (J. W. C.)

ODONATA (*continued*)

Pyrrhosoma nymphula, Sulz. *Treswell Wood* (A. T.); *Shireoaks* (J. T. H.)
Ischnura elegans, Lind. *Retford, S. Leverton* (A. T.); *Saundby* (E. S.); *Shireoaks* (J. T. H.); *Nottingham* district, common (J. W. C.)
Agrion pulchellum, Lind. *Saundby* (E. S.)
— puella, Linn. Common in the *Retford* (A. T. and E. S.), *Worksop* (J. T. H.), and *Nottingham* (J. W. C.) districts
Enallagma cyathigerum, Charp. *Shireoaks* and *Welbeck* (E. M. A.)

EPHEMERIDAE

Ephemera vulgata, Linn. Canal at *Babworth* (J. W. C.)
— danica, Müll. *Gonalston*, Ollerton (J. W. C.)
Cloeon dipterum, Linn. *N.* and *S. Leverton* (A. T.)
— simile, Etn. *Osberton* (E. S.); *Cossall* (J. W. C.)
Baetis vernus, Curt. *Clifton Grove*, near *Nottingham* (J. W. C.)

NEUROPTERA-PLANIPENNIA

SIALIDES

Sialis lutaria, Linn. *Retford* (A. T.); *N. Leverton, Cottam* (E. S.); *Wollaton, Cossall, Trowell, Bulwell*, etc., common (J. W. C.)
— fuliginosa, Pict. *Eaton* (J. W. C.)
Raphidia notata, Fab. *Clumber* (E. M. A.); *Treswell Wood* (A. T.); *Sherwood Forest* (Rev. W. Becher)
— xanthostigma, Schum. *Worksop* (E. M. A.); *Treswell Wood* (A. T.); *Langford Moor* (J. W. C.)

HEMEROBIIDAE

Hemerobiides

Micromus paganus, Linn. *Treswell Wood* (A. T.); *Shireoaks* (J. T. H.); *Clumber* (E. M. A.)
Hemerobius elegans, Steph. *Burton Joyce* (J. W. C.); *Worksop* (E.M.A.)
— micans, Oliv. *N.* and *S. Leverton* (A. T.); *Treswell Wood* (E. S.); *Clumber* and *Shireoaks* (E. M. A.)
— humuli, Linn. *S. Leverton* (A. T.); *Treswell Wood* (E. S.); *Worksop* (J. T. H.); *Clumber* (E. M. A.)
— stigma, Steph. *Worksop* (E. M. A.)
— subnebulosus, Steph. *S. Leverton* (A. T.); *Worksop* (J. T. H.); *Nottingham* (J. W. C.)
— nervosus, Fab. *S. Leverton* (A. T.); *Shireoaks* (J. T. H.); *Worksop* (E. M. A.)

HEMEROBIIDAE (*continued*)

Chrysopides

Chrysopa flava, Scop. — alba, Linn. { *N.* and *S. Leverton, Treswell Wood* (A. T. and E. S.); *Shireoaks* (J. T. H.); *Worksop* (E. M. A.)
— tenella, Schnd. *Shireoaks* (J. T. H.); *Worksop* (E. M. A.)
— vulgaris, Schnd. *S. Leverton* (A. T.); *Shireoaks* (J. T. H.)
— septempunctata, Wesm. *N. Leverton* (E. S.); *Shireoaks* (J. T. H.); *Nottingham* (J. W. C.); *Worksop* (E. M. A.)
— aspersa, Wesm. *S. Leverton* (A. T.); *Worksop* (E. M. A.)
— ventralis, Curt. *S. Leverton* (A. T.); *Shireoaks* (J. T. H.)
— phyllochroma, Wesm. *Shireoaks* (J. T. H.)
— perla, Linn. *S. Leverton* (A. T.); *Treswell Wood* (E. S.); *Langford Moor, Budby Carr* (J.W.C.); *Shireoaks* (E. M. A.)

PANORPIDAE

Panorpa communis, Linn. *S. Leverton, Treswell Wood* (A. T.); *Worksop* (E. M. A.); *Strelley*, etc. (J. W. C.)
— germanica, Linn. *S. Leverton, Treswell Wood* (A. T.); *Sherwood Forest*, in many places; *Annesley* (J. W. C.)

INSECTS

TRICHOPTERA

INAEQUIPALPIA

Phryganeidae

Neuronia ruficrus, Scop. *Worksop* (J. T. H.) ; *Widmerpool* (J. W. C.)
Phryganea grandis, Linn. *Shireoaks* (J. T. H.) ; *Retford* (A. T.)
— varia, Fab. *Shireoaks* (J. T. H.)

Limnophilidae

Grammotaulius atomarius, Fab. *N.* and *S. Leverton* (E. S.); *Shireoaks* (J. T. H.) ; *Wellow* (J. W. C.)
Glyphotaelius pellucidus, Retz. *S. Leverton, Treswell* (E. S.)
Limnophilus rhombicus, Linn. *Shireoaks* (J. T. H.)
— flavicornis, Fab. *S. Leverton* (E. S.)
— marmoratus, Curt. *S. Leverton* (A. T.) ; *Shireoaks* (J. T. H.)
— lunatus, Curt. *S. Leverton* (A. T.) ; *N. Leverton, Cottam* (E. S.) ; *Shireoaks* (J. T. H.)
— politus, McLach. *Cottam* (E. S.); *Worksop* (E. M. A.)
— vittatus, Fab. *S. Leverton, Treswell Wood* (A. T.) ; *N. Leverton* (E. S.)
— affinis, Curt. *S. Leverton* (A. T.)
— auricula, Curt. *N.* and *S. Leverton* (A. T.) ; *Shireoaks* (J. T. H.) ; *Rampton* (E. S.)
— extricatus, McLach. *Worksop* (E. M. A.)
— hirsutus, Pict. *Shireoaks* (J. T. H.)
— sparsus, Curt. *S. Leverton* (A. T.) ; *Treswell Wood* (E. S.) ; *Shireoaks* (J. T. H.)
— fuscicornis, Ramb. *Burton Joyce* (J. W. C.)
Anabolia nervosa (Leach) Curt. *Retford, S. Leverton* (A. T.) ; *Edwinstowe* (E. S.) ; *Shireoaks* (J. T. H.)
Stenophylax stellatus, Curt. *Shireoaks* (J. T. H.)
— permistus, McLach. *S. Leverton* (A. T.) ; *Epperstone Park* (J. W. C.)
— concentricus, McLach. *Worksop* (E. M. A.)
Micropterna sequax, McLach. *S. Leverton* (A. T.)
Halesus radiatus, Curt. *Worksop* (J. T. H.) ; *Edwinstowe* (E. S.)

Sericostomatidae

Notidobia ciliaris, Linn. By canal, *Trowell* (J. W. C.)
Goera pilosa, Fab. *Shireoaks* (J. T. H.) ; *Fiskerton*, (J. W. C.)

INAEQUIPALPIA (*continued*)

Sericostomatidae (*continued*)

Silo pallipes, Fab. *Misterton* (A. T.) ; *Worksop* (E. M. A.) ; *Teversall* (J. W. C.)
Brachycentrus subnubilus, Curt. *Retford* (A. T.)

AEQUIPALPIA

Leptoceridae

Molanna angustata, Curt. *Clumber Park* (E. S.)
Odontocerum albicorne, Scop. *Shireoaks* (J. T. H.)
Leptocerus albo-guttatus, Hag. *Burton Joyce* (J. W. C.)
— aterrimus, Steph. *Rampton* (E. S.) ; *Shireoaks* (J. T. H.) ; *Edwinstowe, Annesley* (J. W. C.)
— cinereus, Curt. *West Drayton* (E. S.) ; *Worksop* (J. T. H.) ; *Burton Joyce* (J. W. C.)
— albifrons, Linn. *West Drayton* (E. S.)
— bilineatus, Linn. *Rampton* (E. S.)
Mystacides azurea, Linn. *Retford* (A. T.) ; *W. Drayton* (E. S.)
— longicornis, Linn. *W. Drayton* (E. S.) ; *Worksop* (E. M. A.) ; *Cossall, Wollaton* (J. W. C.)

Hydropsychidae

Hydropsyche instabilis, Curt. *Worksop* district (J. T. H.)
— angustipennis, Curt. *Retford* (A. T.) ; *Rampton, Cottam* (E. S.) ; *Worksop* (E. M. A.) ; *Radcliffe-on-Trent, Bunny* (J. W. C.)
— guttata, Pict. *Marnham* (A. T.) ; *Burton Joyce, Fiskerton, Nottingham* (J. W. C.)
Plectrocnemia conspersa, Curt. *Worksop* district (J. T. H.)
Polycentropus flavomaculatus, Pict. *Retford* (E. S.) ; *Radcliffe-on-Trent, Burton Joyce* (J. W. C.)
Cyrnus trimaculatus, Curt. *West Drayton* (E. S.)
Tinodes waeneri, Linn. *Worksop* and *Shireoaks* (J. T. H.) ; *Osberton* (E. S.)

Hydroptilidae

Agraylea multipunctata, Curt. *Rampton* (E. S.)
Hydroptila maclachlani, Klap. *Burton Joyce*, under stones on margin of *R. Trent* (J. W. C.)

HYMENOPTERA

The order Hymenoptera is one of enormous extent, including the ants, bees and wasps, sawflies, gall-flies, ruby-wasps, ichneumons, etc. They possess two pairs of membranous wings which are destitute of scales and more or less transparent ; the anterior wings are larger than the posterior. In some species, however, one or both of the sexes may be apterous. The females are in some families provided with a sting, in others with a sawing, boring, or piercing apparatus. In the sawflies the abdomen is broad at the base where it joins the thorax, and there is no sharp distinction between the two regions, the lateral outline of the body being therefore continuous ; but in the other groups the base of the abdomen is suddenly contracted into a slender 'waist' or petiole of varying length in different species. These differences are utilized as a means of dividing the order into two sub-orders : the *Sessiliventres*, in which the thorax passes almost imperceptibly into the abdomen, and the *Petiolata*, in which there is a deep constriction between them, and the transition is therefore abrupt and sharply defined.[1] This difference in structure is accompanied by striking

[1] The expressions 'thorax' and 'abdomen' are here used in a somewhat loose sense. In the Petiolate Hymenoptera the first segment of the abdomen is completely fused with the thorax, and the 'waist' or stalk is formed by the second (and sometimes the third) abdominal segment. The petiole or constriction is therefore, strictly speaking, not between the thorax and abdomen, but behind the first segment of the latter. It is usual to speak of the thorax, plus the first abdominal segment, as the alitrunk, and to restrict the term abdomen to the part behind which commences with the true second segment.

differences in the mode of life of the insects in the two groups. The Sessiliventres or Sawflies are vegetable feeders; the larvae mostly resemble the caterpillars of Lepidoptera, and usually feed exposed on the foliage of plants, while those of the Petiolata are maggot-like and incapable of obtaining food by their own exertions: a large proportion of them are carnivorous, living as parasites in the bodies of other insects. A remarkable feature in the economy of the Hymenoptera is the frequent occurrence of parthenogenesis, i.e. the production of young by the female insect without the co-operation of a male. While in some cases it may be of only occasional occurrence, in others, although intermittent, it occurs regularly, and still other species are apparently perpetually parthenogenetic. Thus in many of the Gall-flies (Cynipidae) a parthenogenetic generation alternates regularly with a sexual one, and in a few Tenthredinidae and Cynipidae the male insect is entirely unknown, all the individuals belonging to the female sex, so that reproduction must be entirely parthenogenetic, and the progeny always wholly female. In some Cynipidae, although the male is very rare it is occasionally produced, but is probably useless, the virgin females being able to dispense with the assistance of a male.

On the other hand in some cases of parthenogenesis the progeny is entirely male. The workers among the social ants, bees, and wasps sometimes lay unfertilized eggs, and these always give rise to male individuals The same thing occurs with the queen hive-bee before fertilization, and in some sawflies In a few species of the latter group, however, while the parthenogenetic broods usually consist entirely of males, a female very occasionally appears. Whatever may be the meaning of parthenogenesis—and its significance is still very obscure—it appears to tend to the production of a brood in which the individuals are all of one sex, sometimes male, sometimes female.

Among the higher Hymenoptera (ants, some bees and wasps) a remarkable development of social life occurs, the individuals of a species living together in great societies consisting mainly of imperfect females or 'workers' who perform all the ordinary duties of the community; they construct, maintain, and defend the nest, and feed and tend the young. The work of reproduction is undertaken by a single perfect female known as the queen, or by a small number of such females. The males are short-lived, and of use only in the fertilization of the queens.

HYMENOPTERA SESSILIVENTRES OR TENTHREDINIDAE

Sawflies

The Sawflies are as a rule sluggish insects with a weak heavy flight which is not long sustained. They are fond of settling on flowers, especially *Umbelliferae*, and feed chiefly on pollen; a few species, however, devour the small insects frequenting flowers. They all possess in the female sex a pair of remarkable sawing or piercing instruments which are used to cut or bore into the tissues of plants in which the eggs are deposited. The larvae are exclusively vegetable feeders; a few, like *Cephus*, which feeds internally in stems of corn, and *Sirex*, which lives in the solid wood of trees, are white fleshy grubs; a few others inhabit galls, or bore into fruits, or mine or roll up leaves; but the great majority are caterpillar-like, and feed exposed on plants. These have from six to eight pairs of prolegs in addition to the three pairs of thoracic legs, whereas a lepidopterous caterpillar never has more than five pairs of prolegs.

The larvae of some species of sawflies are at times very destructive to crops. *Pteronus ribesii* sometimes completely defoliates the gooseberry bushes in gardens, and the slimy slug-like larva of *Eriocampoides limacinus* occasionally does much damage to pear and other fruit trees. I have not heard of any other species causing damage in Nottinghamshire.

Parthenogenesis is very prevalent in this group, as has been repeatedly proved by rearing larvae from unfertilized eggs laid in confinement by bred females. In nearly all the species females are much more numerous than males; indeed in some species males are very rare, and in others quite unknown. On the other hand the parthenogenetically developed individuals of *Pteronus ribesii* are almost always males.

The list of Nottinghamshire sawflies is a somewhat meagre one, and will doubtless be greatly extended when the group is properly worked. *Tenthredopsis thornleyi* is interesting as having been founded by Pastor Konow on specimens collected by the Rev. A. Thornley in Nottinghamshire and Lincolnshire in May and June, 1897. Nearly all the species enumerated below have been determined either by Pastor Konow or the Rev. F. D. Morice. Unless otherwise stated they were all collected by the Rev. A. Thornley or myself.

LYDIDAE

Pamphilius sylvaticus, Linn. *S. Leverton; Treswell Wood*

— hortorum, Klug. *Treswell Wood*

— depressus, Schrk. *S. Leverton*

LYDIDAE (*continued*)

Cephus pygmaeus, Linn. *S. Leverton; Treswell Wood; Widmerpool*, abundant in buttercup flowers, 23 June, 1900

Macrocephus linearis, Schrk. *Treswell Wood*

SIRICIDAE

Sirex juvencus, Linn. *Worksop* (E. G. Alderson and J. T. Houghton); *Chilwell* (D. H. Pearson); *Nottingham*. Probably most of the specimens of this and the next species captured in the county have been introduced with foreign timber

— gigas, Linn. Generally distributed and by no means rare in the county

TENTHREDINIDAE

Trichiosoma lucorum, Linn. *S. Leverton; Bulwell Forest*, bred from larva found on birch

— tibialis, Steph. *S. Leverton*

Arge enodis, Linn. *Treswell Wood*

— ustulata, Linn. *N. Leverton; Widmerpool*

— cyaneocrocea, Först. *Bagthorpe, Nottingham*

Cladius pectinicornis, Fourcr.
Priophorus padi, Linn. } *S. Leverton*

Pontania gallarum, Htg.
— vallisnierii, Htg. } Bred from galls on osiers, *Wilford* (G. B. Rothera); the latter species is common and generally distributed

Pteronus myosotidis, Fab. *S. Leverton*

— ribesii, Scop. *Nottingham; Lowdham; Worksop*, etc. Often very destructive to gooseberry bushes

Croesus septentrionalis, Linn. *Treswell Wood*, larvae beaten from hazel, September, 1898; first imago emerged 30 May, 1899

Holcocneme lucida, Panz. *S. Leverton*, not uncommon

Pachynematus trisignatus, Först. *S. Leverton; Nottingham*

Eriocampoides limacinus, Retz. *Wellow*, causing damage to pear trees (Rev. W. Becher)

Hoplocampa testudinea, Klug. *S. Leverton*

Tomostethus nigritus, Fab. *Burton Joyce*, one female, 18 May, 1899

— ephippium, Panz. *Treswell Wood*

— fuscipennis, Fall. *Treswell Wood*

Monophadnus albipes, Gmel. *S. Leverton; Treswell Wood*

Athalia rosae, Linn. Universally distributed and very common

Selandria serva, Fab. *S. Leverton; Treswell Wood; Bunny*

Stromboceros delicatulus, Fall. *Worksop* (Miss Alderson); *Treswell Wood*

Strongylogaster cingulatus, Fab. *Edwinstowe*, common in the forest amongst bracken

Poecilosoma tridens, Knw. *S. Leverton*, 7 May, 1898

TENTHREDINIDAE (*continued*)

Emphytus succintus, Klug. (togatus, Cam.). *Treswell Wood; Littleborough*

— cinctus, Linn. *S. Leverton*

— calceatus, Klug. *Langford Moor, Newark*

— tener, Fall, *Blidworth*

Dolerus madidus, Klug. *Retford* (S. Pegler)

— pratensis, Fall. (eglanteriae, Klug., fulviventris Cam.). *Nottingham; Fulwood; Thorney; Sutton*, near *Retford*

— gonager, Fab. *Nottingham; Southwell; S. Leverton; Clarborough*

— haematodes, Schrk. *S. Leverton; Clifton*

— aeneus, Htg. Widely distributed and common

Rhogogastera viridis, Linn. *Langford Moor; Widmerpool; Budby; Treswell Wood; Cottam; Littleborough*

— lateralis, Fab. *Lambley; S. Leverton; Treswell Wood*

— aucupariae, Klug. *Nuthall* and *Broxtowe* (W. H. Freestone); *Gedling; Widmerpool*; *Annesley*

Tenthredopsis litterata, Geoff. Generally distributed and common; the female var. cordata at *Strelley*

— raddatzi, Knw. *Nottingham; Retford; S. Leverton*

— dorsalis, Lep. *Treswell*; *N. Leverton*

— scutellaris, Panz. *Southwell; Treswell Wood; S. Leverton*

— coqueberti, Klug. *Nottingham* district; *Southwell; Worksop* (Houghton)

— thornleyi, Knw. *S. Leverton*, two examples May and June, 1897 (Rev. A. Thornley)

Pachyprotasis rapae, Linn. *Strelley; S. Leverton*

Macrophya ribis, Schrk. *Edwinstowe; S. Leverton*

Allantus maculatus, Fourcr. *Treswell Wood* (Miss Alderson)

— temulus, Scop. Widely distributed and rather common

— vespa, Retz. *Treswell Wood; Rampton Marsh*

— scrophulariae, Linn. On flowers of Scrophularia aquatica at *Kingston-on-Soar; Budby; Bunny; W. Burton; Treswell; Cottam; Broadholme; Wheatley*, etc.

— arcuatus, Först. Universally distributed and very common, generally on flowers of Heracleum sphondylium; var. nitidior, Knw., *Treswell Wood*

Tenthredo rufiventris, Panz. *Langford Moor*

— atra, Linn., var. dispar, Klug. *S. Leverton*

— livida, Linn. *S. Leverton; Treswell Wood; Southwell; Cossall*

— solitaria, Scop. *Langford Moor*

— mesomelaena, Linn. Widely distributed and common

HYMENOPTERA PETIOLATA

Cynipidae

The Cynipidae are very small hymenopterous insects, usually black or dark in colour, which according to their mode of life may be divided into three groups:—(1) those whose eggs are laid, and the resulting larvae feed, in the tissues of a living plant, the presence of the egg or larva usually resulting in the formation of a 'gall'—a peculiar abnormal growth in the merismatic tissue of the plant. The succulent internal substance of the gall furnishes the larva with food. The oak-apple, marble gall, oak-spangle, and Robin's pincushion or bedeguar gall of the wild rose are familiar

examples of such galls. (2) Inquilines: uninvited guests which do not themselves originate galls, though their action tends to modify the normal gall, but lay their eggs in the galls formed by the members of the first group, the larvae feeding internally upon the substance of the gall. (3) Parasites, which have similar habits to those of the ichneumon flies, living and feeding inside the bodies of other insects, chiefly aphides and the larvae of Diptera.

The Cynipidae are of special interest on account of their varying modes of reproduction. The parasitic forms are developed from eggs fertilized in the usual manner, and this is also true of some of the gall-makers and inquilines. In others, however, reproduction is partially or completely parthenogenetic, the individuals of some species consisting mainly, of others entirely, of females which produce fertile eggs without the co-operation of a male. But besides parthenogenesis some of the gall-making species exhibit the phenomenon of 'alternation of generations.' Such species have a spring brood consisting of males and females, reproducing sexually and giving rise to an autumnal unisexual or wholly female brood which reproduces parthenogenetically and originates the bisexual brood of the following spring. The two generations frequently differ so materially in structural details, and moreover produce galls of such different form and structure, that they were formerly regarded as totally distinct species and received different names.

The appended list of the gall-making and inquiline Cynipidae of Nottinghamshire is due to the researches of Mr. G. B. Rothera of Nottingham, who had the advantage of the co-operation of Mr. E. A. Fitch in the determination of the species. The names bracketed together in pairs represent respectively the agamic or unisexual, and the sexual generations of those species which exhibit cyclical reproduction or alternation of generations.

CYNIPIDAE

[List of species bred from the Galls by G. B. Rothera]

Rhodites eglanteriae, Htg. Forms smooth, round, pea-like galls on leaves of Rosa canina. *Arnold; Lenton; Elton*, etc.; *S. Leverton* (Thornley)

— rosae, L. Causes the familiar 'bedeguar' or 'Robin's pincushion' on Rosa canina. Common

— nervosus, Curt. (R. rosarum, Gir.). Gall pea-shaped, but beset with three to six stout spines, on leaf of Rosa canina. *Trent Lane, Lenton; Beauvale Woods*, August, 1904 (Carr); *S. Leverton, Kingston* (Thornley)

— Aulax glechomae, Htg. Forms soft, rounded or irregular swellings on leaves or stem of Nepeta glechoma. *Linby*

— hieracii, Bouché. Produces large, green, hairy swellings on the stem of Hieracium

Periclistus brandti, Ratz. Inquiline in galls of Rhodites rosae (Robin's pincushion)

— caninae, Htg. Inquiline in galls of Rhodites eglanteriae and R. nervosus

Synergus melanopus, Htg. Inquiline in galls of Cynips kollari

— reinhardi, Mayr. Same as last

— tscheki, Mayr. Inquiline in galls of Biorhiza terminalis (oak-apples)

— albipes, Htg. Inquiline in, and bred from galls of, Dryophanta folii, D. divisa, Neuroterus fumipennis, Andricus curvator, and Trigonaspis megaptera—all on oak; also from galls of Cynips kollari

— facialis, Htg. Inquiline in oak apples (Biorhiza terminalis) and oak currant galls of Spathegaster baccarum

— thaumacera, Dal. Inquiline in galls of Trigonaspis megaptera

Diastrophus rubi, Htg. Forms large irregular fusiform swellings on stems of brambles. *Strelley*

Andricus ostreus, Gir. Galls on leaves of Quercus robur. *Nottingham Forest; Bulwell Lane*, etc.

CYNIPIDAE (*continued*)

Andricus fecundatrix, Htg. (agamic form). Forms the 'artichoke galls' in oak buds. *Ollerton*, etc.

— globuli, Htg. (agamic form). *Clifton; Ruddington; Ollerton*

— inflator, Htg. (sexual form). *Sherwood Lodge*. Galls in leaf-buds of Quercus

— radicis, Fab. (agamic form). Galls on root of Quercus

— corticis, L. (agamic form). Galls in bark of Quercus. *Mapperley Park, Nottingham*

— collaris, Htg. (agamic form). Galls in buds of Quercus

— curvator, Htg. (sexual form). Galls on leaves of Quercus. *Bulwell Lane*

— ramuli, Schenck (sexual form). Cottony galls on catkins of Quercus. *Bulwell Lane plantation; Ruddington*

— autumnalis, Htg. (agamic form). Galls in terminal buds of Quercus. *Stapleford Hill*

— quadrilineatus, Htg. Galls on male catkins of Quercus

— marginalis, Schlecht. Galls on leaves of Quercus. *Gedling*

— cirratus, Adl. The agamic form (Andricus callidoma, Thoms.) produces stalked galls from leaf-buds of Quercus. Between *Clifton* and *Ruddington*

— albopunctata, Schlecht. Forms green, white-spotted bud galls on Quercus. *Gedling*

— glandulae, Schenck. The galls are developed from lateral buds of Quercus and are clothed with white silky hairs. *Birklands, Sherwood Forest*

— solitarius, Fonsc. Gall covered with ferruginous hair, from leaf-buds of Quercus. *Ollerton*

Cynips kollari, Htg. Forms the familiar spherical marble-like galls on oak buds. *Clifton; Ruddington; Bulwell Lane*, etc., common

Trigonaspis megaptera, Pz. (sexual form). Galls on roots or trunks of Quercus. *Sherwood Forest*

— renum, Mayr (=Biorhiza renum, Gir.) (agamic form). Forms kidney-shaped galls on leaves of Quercus. *Ollerton*

CYNIPIDAE (*continued*)

Biorhiza terminalis, Fab. (sexual form). Oak-apple gall on buds of Quercus. *Mapperley Park; Bulwell Lane; Kingston; Southwell;* etc., common.
— aptera, Fab. (agamic form). Galls on rootlets of Quercus. *Gedling; Bulwell Lane*
Dryophanta folii, Htg. (agamic form). Forms the 'cherry gall' on leaves of Quercus. *Bestwood Park; Ollerton*
— longiventris, Htg. (agamic form). Galls on leaves of Quercus. *Tollerton*
— agama, Htg. Galls on leaves of Quercus. *Nottingham Forest*
— divisa, Htg. (agamic form). Galls on leaves of Quercus. *Clifton; Nottingham Forest*
Neuroterus lenticularis, Oliv. (agamic form). Originates the galls known as 'oak spangles' on leaves of Quercus. *Clifton Spinney; Birklands*
— baccarum, Htg. (=Spathegaster baccarum) (sexual form). Forms 'oak currant galls' on catkins or leaves of Quercus. *Nottingham Forest; Clifton; Oxton Wood; Manton Woods, Worksop* (Thornley)

CYNIPIDAE (*continued*)

Neuroterus fumipennis, Htg. (agamic form). Causes spangles on leaves of Quercus. *Ollerton*
— tricolor, Htg. (=Spathegaster tricolor) (sexual form). Forms rounded hairy galls on Quercus leaves. *Clifton; Ruddington; Balloon Houses, Wollaton*
— laeviusculis, Schenck (agamic form). Produces splangles on leaves of Quercus. *Ollerton*
— albipes, Schenck (=Spathegaster albipes) (sexual form). Gives rise to small galls on edges of leaves of Quercus
— numismatis, Oliv. (agamic form). Forms silky 'button galls' on leaves of Quercus. *Ollerton*
— vesicatrix, Schlecht. (=Spathegaster vesicatrix) (sexual form). The galls are small blister-like swellings on leaves of Quercus. *Nottingham Forest*
— aprilinus, Gir. Galls on Quercus. *Sherwood Forest*

CHALCIDIDAE

A very large group of small Hymenoptera, often brilliantly coloured, and of parasitic habits. The larvae of many species inhabit galls, and feed on the larvae of the gall-makers or inquilines; others live in the nests of bees, whose grubs they devour; others attack the caterpillars or pupae of Lepidoptera, and some destroy aphides. Very few species have been obtained in Nottinghamshire, and these were bred by Mr. G. B. Rothera from galls of various Cynipidae, etc. They are the following :—

Tetrastichus diaphantus, Walk.
Entedon sosarmus, Walk.
Olinx gallarum, Linn.
} In oak-apple galls (Biorhiza terminalis)

Eulophus westwoodii, Steph. In galls of Nematus gallicola
Pteromalus fuscopalpus, Först. In rose bedeguar gall
— tibialis, West. In oak currant gall (Spathegaster baccarum)
Mesopolobus fasciiventris, West. In galls of Trigonaspis megaptera and Neuroterus fumipennis
Eupelmus urozonus, Dalm. In oak-apple galls
Megastigmus dorsalis, Fab.
— stigmatizans, Fab.
} In oak-apple and marble (Cynips kollari) galls

Syntomaspis sapphyrina, Boh. In oak-apple galls
Torymus abbreviatus, Boh. In the galls of Cecidomyia rosae on rose leaves
— abdominalis, Boh. In oak-apples
— auratus, Fourcr. In oak-apples; also in the rounded hairy galls of Neuroterus fumipennis on oak leaves and in the 'oak currant galls' (Neuroterus lenticularis)
Torymus bedeguaris, Linn. In rose bedeguar galls (Rhodites rosae)
— hibernans, Mayr ? In oak-apples
— nigricornis, Boh. In oak-apple (B. terminalis) and marble (Cynips kollari) galls
— tipularium, Zett. In galls of Nematus gallicola on willow leaves
— viridis, Först. In the pea-like galls of Rhodites eglanteriae on rose leaves
Eurytoma aethiops, Boh. In galls of Rhodites eglanteriae and R. nervosus
— curta, Walk. In galls of Rhodites eglanteriae
— rosae, Nees. In bedeguar galls (Rhodites rosae)
— rufipes, Walk. In galls of Rhodites eglanteriae and R. rosae

The Proctotrypid, Perisemus fulvicornis, Curt., was also bred from oak-apple galls by Mr. Rothera

ICHNEUMONIDAE

Ichneumon-flies [1]

The Ichneumon-flies constitute an exceedingly large family of parasitic insects, most of them living in the larval stage inside the bodies of lepidopterous caterpillars. In common with the next family they are therefore of considerable economic importance, keeping in check the destroying hosts of vegetable-feeding caterpillars which might otherwise eat up the produce of our gardens and fields. The long, straight, many-jointed antennae, the position of the stalked abdomen which arises from the lower part of the hind end of the alitrunk or 'thorax,' and of the middle and hind legs which are inserted close together, are distinguishing features of the insects of this family. The wings also have a characteristic and somewhat complex network of veins. The female possesses an ovipositor which in some species is several times as long as the body, as, *e.g.* in species of *Rhyssa* and *Thalessa*

[1] The arrangement and nomenclature adopted here are those of Dalla Torre's *Catalogus Hymenopterorum.*

which are parasitic on the wood-boring grubs of *Sirex*. The small somewhat ant-like Ichneumons belonging to the genus *Pezomachus* are peculiar in being destitute of wings.

Very little work has been done among the Ichneumons in Nottinghamshire, as will appear from the meagre list below. Acknowledgements are due to Mr. Claude Morley for much kindly and valuable assistance in naming these, but many more still await identification.

Orthopelma luteolator (Grav.) Tasch. *Nottingham* district, bred from galls of Rhodites rosae and R. eglanteriae (G. B. Rothera)

Banchus falcatorius, Fabr. *Aldercar Wood, Newstead* (Carr)

Exetastes cinctipes (Retz.) Thoms. *Worksop* district (Miss Alderson and J. T. Houghton); *S. Leverton* and *Sutton*, near *Retford* (Thornley); *Nottingham* (Carr)

— guttatorius, Grav. *Nether Langwith* (Carr)

— illusor, Grav. *Worksop* (J. T. Houghton)

Parabates virgatus (Fourc.) Thoms. (Paniscus virgatus, Grav.). *Retford* district (Thornley); *Worksop* (Houghton)

Paniscus cephalotes, Holmgr. *S. Leverton*, a male bred from larva of Cerura vinula (Thornley)

— fuscicornis Holmgr. *Treswell Wood* (Thornley)

— testaceus, Grav. *S. Leverton* (Thornley); *Worksop* (Houghton); *Retford*, bred from Cerura vinula (S. Pegler)

Spudastica kriechbaumeri (Bridgm.) D. T. (Limneria, Bridgm). *Worksop* (Miss Alderson)

Campoplex pugillator (Linn.) Grav. *Worksop* (Miss Alderson)

Blaptocampus perspicuus (Wesm.) Thoms. (Anomalon perspicuum, Wesm.) *Retford* district (Thornley)

Anomalon fibulator, Grav. *Worksop* and *Edwinstowe* (Miss Alderson)

— flavifrons (Grav.) D. T. (A. cerinops, Grav.) (?) *Nottingham* (Carr)

Allocamptus undulatus (Grav.) Brauns. (Ophion undulatus, Grav.). *Worksop* (Houghton)

Ophion luteus (Linn.) Fabr. *Worksop* (Miss Alderson); *S. Leverton* (Thornley); *Wellow* (Rev. W. Becher)

— obscurus, Fabr. *S. Leverton* (Thornley); *Nottingham* (Carr). A very common species in the autumn

Homotropus lateralis (Grav.) D. T. *S. Leverton* (Thornley)

— pictus (Grav.) D. T. *Nottingham* (Carr).

— tarsatorius (Panz.) D. T. (Bassus exsultans, Grav.). *Worksop* (Miss Alderson); *S. Leverton* (Thornley)

Promethes pulchellus (Holmgr.) Thoms. *Worksop* (Miss Alderson)

Bassus areolatus, Holmgr. *Treswell Wood* (Thornley)

— deplanatus, Grav. *Bagthorpe, Nottingham* (Carr)

— graculus, Grav. *Worksop* (Houghton)

— laetatorius (Fabr.) Panz. *Nottingham* (Carr)

— nemoralis, Holmgr. *Nottingham* (Carr)

Tryphon rutilator (Linn.) Grav. *Thorney* (Carr.)

Polytrera virgultorum (Grav.) Holmgr. *Edwinstowe* (Miss Alderson)

Diaborus lituratorius (Linn.) Thoms. *S. Leverton* (Thornley)

Alexeter testaceus (Fabr.) Thoms. *S. Leverton* (Thornley)

Hadrodactylus fugax (Grav.) Thoms. *Worksop* (Miss Alderson)

Mesoleptus cingulatus, Grav. *Worksop* (Miss Alderson)

Catoglyptus fortipes (Grav.) Holmgr. *Treswell Wood* (Thornley)

Spanotecnus filicornis (Grav.) Thoms. *Worksop* (Miss Alderson)

Sterotrichus pilicornis (Grav.) Schmkn. *S. Leverton* (Thornley)

Glypta flavolineata, Grav. *Treswell* (Thornley)

— mensurator (Fabr.) Grav. *Treswell Wood* (Thornley)

Pimpla examinator (Fabr.) Grav. *Treswell Wood* (Thornley)

— instigator (Fabr.) Grav. *S. Leverton* (Thornley); *Nottingham; Hucknall Torkard; Arnold*, etc. (Carr)

— maculator (Fabr.) Grav. (P. scanica, Grav.). *Worksop* (Houghton)

— pomorum, Ratz. *S. Leverton* (Thornley)

— rufata (Gmel.) Grav. (incl. P. flavonotata, Holmgr.). *Bunny*, ♀ bred from pupa of Thecla w-album ('rufata') (Carr). *Treswell Wood*, ♂ ('flavonotata') (Carr)

— turionellae (Linn.) Grav. *S. Leverton* (Thornley); *Kirkby-in-Ashfield* (Carr.)

Dyspetes praerogator (Linn.) Thoms. *Treswell Wood* (Thornley)

Rhyssa persuasoria (Linn.) Grav. *Worksop* (Miss Alderson); *Langford Moor* (Carr)

Meniscus impressor (Grav.) Tasch. *Clumber* (Miss Alderson)

— murinus (Grav.) Schiödte. *N.* and *S. Leverton*, and *Treswell Wood* (Thornley)

Lissonota bellator, Grav. *Treswell Wood* (Thornley); *Nottingham* (Carr)

— cylindrator (Fabr.) Grav. *Bulwell Forest* (Carr)

— sulphurifera, Grav. *S. Leverton* (Thornley)

Hybophanes scabriculus (Grav.) Schmkn. *Worksop* (Houghton); also bred from Tortrix forsterana by Miss Alderson

Collyria calcitrator (Grav.) Schiödte. *S. Leverton* and *Treswell Wood* (Thornley); *Widmerpool* (Carr)

Chaeretymma anatorium (Grav.) Schmkn. (Cryptus anatorius, Grav.). *Treswell Wood* (Thornley)

Cryptus lugubris, Grav. *S. Leverton* (Thornley)

— minator, Grav. *Clumber* (Miss Alderson)

— tarsoleucus (Schrk.) Grav. *S. Leverton* (Thornley)

Habrocryptus porrectorius (Fabr.) D. T. *Treswell Wood* (Thornley)

Pezomachus melanocephalus (Schrk.) Kriechb. (Hemimachus fasciatus (Fab.) Marshall). *Retford* district (Pegler)

Hemiteles areator (Panz.) Grav. *Treswell Wood* (Thornley)

— bicolorinus, Grav. *Worksop* (Houghton)

— similis (Gmel.) Grav. *S. Leverton* (Thornley)

Microcryptus abdominator (Grav.) Thoms. *Clumber* (Miss Alderson)

Plectocryptus digitatus (Gmel.) Thoms. *Southwell* (Carr)

Glyphicnemis vagabundus (Grav.) Ashm. *S. Leverton* (Thornley); *Hucknall Torkard, Thorney* (Carr)

Phaeogenes stimulator (Grav.) Wesm. *Retford, Treswell* (Carr)
Mevesia argutus (Wesm.) Holmgr. *Clumber* (Miss Alderson)
Herpestomus bruneicornis (Grav.) Wesm. *Treswell Wood* (Thornley)
Alomyia debellator (Fabr.) Panz. *Worksop* (Miss Alderson); *S. Leverton* and *Treswell Wood* (Thornley)
Eurylabus dirus, Wesm. *S. Leverton* (Thornley); *Treswell* (Carr)
Probolus alticola (Grav.) Wesm. *S. Leverton* (Thornley)
Epiopelmus leucostigmus (Grav.) Wesm. *Treswell Wood* (Thornley)
Amblyteles armatorius (Först.) Holmgr. *Worksop* (Miss Alderson and J. T. Houghton); *S. Leverton* and *Treswell Wood* (Thornley)
— negatorius (Fabr.) Wesm. *S. Leverton* (Carr)
— occisor (Fabr.) Wesm. *Arnold* (Carr)
— palliatorius (Grav.) Wesm. *S. Leverton* (Thornley); *Nottingham, Retford, Creswell Crags* (Carr)
Var. erythropygus (Grav.) Berth. *Arnold* (Carr)
— septemguttatus (Grav.) Thoms. *S. Leverton* (Thornley); *Treswell* (Carr)
Ichneumon anator, Fab. *Worksop* (Miss Alderson)
Ichneumon annulator, Fabr. (I. curvinervis, Holmgr.). *S. Leverton* (Thornley)
— bilineatus, Gmel. *S. Leverton* (Thornley)
— confusorius, Grav. *Hucknall Torkard, Edwinstowe* (Carr)
— deliratorius, Linn. (I. multiannulatus, Grav.). *Treswell Wood* (Thornley)
— extensorius, Linn. (I. luctatorius, Linn.). *S. Leverton* and *Treswell Wood* (Thornley); *Wigsley, Bulwell Forest* (Carr)
— fabricator, Fabr. *S. Leverton* and *Treswell Wood* (Thornley); *Southwell, Strelley* (Carr)
— fuscipes, Gmel. *Langford Moor*, bred from larva of Acronycta leporina (Carr)
— gracilentus, Wesm. *Treswell Wood* (Thornley)
— lanius, Grav. *Strelley* (Carr)
— latrator, Fabr. *S. Leverton* (Thornley)
— lineator, Fab. *Clumber* (Miss Alderson)
— nigritarius, Grav. *Treswell Wood* (Thornley)
— ochropis, Gmel. *Worksop* (Houghton)
— sarcitorius, Linn. (I. vaginatorius, Linn.) *Retford* (Pegler); *S. Leverton* (Thornley); *Widmerpool* (Carr)
— terminatorius, Grav. *Retford* (S. Pegler); *S. Leverton* (Thornley); *Winkburn* (Carr)
— trilineatus, Gmel. *S. Leverton* (Thornley); *Hucknall Torkard* (Carr)

BRACONIDAE

The Braconidae form another very extensive family of parasitic Hymenoptera. They are closely allied to the Ichneumonidae both in structure and habits, the larvae inhabiting the bodies of larvae or pupae of other insects, especially butterflies and moths.

Scarcely anything is known of these insects in Nottinghamshire. Several species of *Bracon* have been identified, including *B. caudatus*, Ratz., bred by Mr. G. B. Rothera from oak-apple galls. *Apanteles glomeratus* is as abundant here as elsewhere, and may be bred in hundreds from the larvae of the cabbage white butterflies. A year or two ago, wishing to obtain some pupae of *Pieris brassicae* for experimental purposes, I procured three dozen of the larvae, from which I only succeeded in rearing two pupae; all the rest yielded an abundance of the tiny yellow cocoons of the Apanteles! *Macrocentrus collaris*, *M. marginator* and other species have been bred from Tortrix larvae, and *Microdus tumidulus* from the larva of *Catoptria hypericana* at Worksop by Miss Alderson, who has also taken *Meteorus ictericus* at Worksop. *Chaenon circulator* and *Zele testaceator* have occurred at Treswell Wood and other places, and a large number of unknown Braconids in the writer's and the Rev. A. Thornley's collections still await identification.

TUBULIFERA OR CHRYSIDIDAE

Ruby-Wasps

The members of this comparatively small family are distinguished by the gorgeous coloration of their exceedingly hard, coarsely-sculptured integument, the prevailing hues being brilliant metallic green, blue, and crimson. In spite of their rather small size they are therefore conspicuous objects as they fly rapidly about in the hot sunshine. The eggs are laid in the nests of bees and wasps and the resulting larvae feed on the bee- or wasp-grubs, and in some cases also on the food stored up in the nest for the sustenance of its rightful occupants. Of the twenty-one British species the following eight have so far been detected in the county by the Rev. A. Thornley and myself:—

Ellampus auratus, Linn. *S. Leverton; Treswell Wood*
Hedychridium minutum, Lep. *Langford Moor, Newark*
Chrysis neglecta, Shuck. *Treswell*, about the burrows of Odynerus spinipes
— pustulosa, Ab. *S. Leverton*
— cyanea, Linn. *Thorney; Budby*
— viridula, Linn. (= bidentata, Linn.). *Treswell* and *Treswell Wood;* in some numbers about the burrows of Odynerus spinipes
Chrysis ignita, Linn. Widely distributed and common. At *Bagthorpe, Nottingham*, it occurs about the burrows of Colletes daviesana, and at *Treswell Wood* it accompanies C. viridula about the nests of Odynerus spinipes. The Rev. A. Thornley captured some very large females at *Elksley* on 16 July, 1900, which appeared to be parasitic on Odynerus antilope, and suggests that this may possibly account for their large size
— ruddii, Shuck. *S. Leverton*

ACULEATA

The principal feature which separates the Aculeata from other Hymenoptera is the modification of the ovipositor into a retractile sting which is entirely hidden within the abdomen when withdrawn. The larvae are soft legless grubs, either living under the protection of the adult insects or in cells constructed by them. The series comprises four divisions, viz., Heterogyna (ants), Fossores (solitary or digging wasps), Diploptera (wasps), and Anthophila (bees).

The ants are characterized by the presence of one or two small nodular swellings between the 'thorax' and the 'abdomen' in the place of the simple petiole or stalk of other Petiolata. They live in extensive communities consisting of males, females, and workers or imperfectly developed females. The males and females are winged, but the workers—which are by far the most numerous—are wingless. After pairing, the males die and the females cast their wings and devote themselves to egg-laying. The eggs and the helpless maggots hatched from them are tended by the workers, which feed the larvae and also the fertile females. The nests are made by the workers, and are irregular chambers connected by numerous galleries constructed underground, beneath stones, in rotten wood, etc. *Formica rufa*, occurring commonly in fir-woods, builds large mounds of twigs and pine-needles, often two feet high and a yard in diameter. The Heterogyna are not very well represented in Nottinghamshire, only five native and two introduced species being recorded. The Isopod Crustacean or Woodlouse, *Platyarthrus hoffmannseggii*, is common in many places in the nests of certain species.[1]

Among the fossorial Hymenoptera each species consists of male and female only; they are neither social nor gregarious, and are of carnivorous habits. The females construct nests by burrowing in sandy ground or in wood or plant-stems; in these burrows they lay up a store of food for the use of their offspring, consisting of spiders, aphides, larvae of Lepidoptera, Diptera, beetles, other Hymenoptera, etc.; these are usually not killed, but paralysed by being stung. So far, about forty-five species have been collected in the county.

The Diploptera or true wasps may be distinguished from the other groups by the anterior wings being longitudinally folded when at rest. Some species are solitary, consisting only of males and females, and build earthen nests which they provision with caterpillars. The species of *Odynerus* make their nests in holes in walls or woodwork, in plant-stems, or in burrows in the ground. *O. spinipes* burrows in clay banks and builds a beautiful projecting trumpet-shaped approach to its nest. The Vespidae or social wasps live in communities consisting of males, females and workers. The nest is fashioned of paper manufactured by the wasps from the woody tissue of plants, and the 'comb' or mass of cells in which the larvae are reared is usually in several distinct layers or plates situated one above the other. The grubs are fed on insects or fruit, or both. In the autumn the males and workers die off, but the young fertile females hibernate, and each founds a new nest in the following spring, lays eggs, and rears a brood of workers which add largely to the size of the nest and tend the succeeding broods of larvae. For long only workers are produced, but late in the summer males and perfect females are developed. We possess five of the eight British species of *Vespa* in Nottinghamshire. Of these *V. crabro*, the formidable hornet, is by far the rarest; indeed the only local specimen I have seen is one captured on the river bank at Ollerton by a man who was cutting the water weeds; it was taken by him to the Rev. W. Becher, who kindly presented it to the Nottingham Museum. *Vespa sylvestris*, which suspends its nest from the branches of trees and bushes, is very common with us, and may often be seen in numbers at the flowers of the Water Betony (*Scrophularia aquatica*). *Vespa vulgaris*, *V. germanica* and *V. rufa*, which construct their nests underground, are all common.

The Anthophila or bees may in general be known from the other Aculeate Hymenoptera by the plumose or feathery hairs with which they are more or less clothed, by the flat and broad basal segment of the hind foot, and by the long 'tongue' adapted for sucking nectar from flowers; moreover the abdomen is never narrowed at the base to form an elongated stalk as it so often is in the other groups. The majority of the Anthophila are solitary, but innumerable nests are frequently constructed in close proximity. A soft sandstone road-cutting at Bagthorpe, Nottingham, exhibits over a considerable area many hundreds of the burrows of *Colletes daviesana* to the square yard of surface. Some burrow in wood or excavate bramble stems, others construct nests of clay in cavities of walls or posts, or even utilize empty snail shells for the purpose. The writer has bred nearly fifty specimens of *Osmia rufa* from a door lock which was completely filled with the clay cells of this species. Some species live parasitically in the nests of other bees; thus *Epeolus productus* occurs in abundance with the *Colletes daviesana* mentioned above, and the species of *Nomada* live at the expense of species of *Andrena*. *Anthophora* acts as host to the parasitic *Melecta*, and *Coelioxys* is

[1] It occurs most frequently in company with *Lasius niger*, less often it is associated with *Lasius flavus* and *Myrmica rubra*.

parasitic upon *Megachile* chiefly. The humble bees (*Bombus*) and the honey bee (*Apis mellifica*) are social, living in societies consisting of males, females and workers. *Psithyrus* is an 'unbidden guest' in the nests of *Bombus*.

In the following list, unless otherwise stated, the species have all been seen by the writer in the localities given.

HETEROGYNA (*Ants*)

Formicidae

Formica rufa, Linn. The large dome-shaped nests of this species are common in fir-woods about *Thorney* and *Wigsley*
— fusca, Latr. Quarry at *Creswell Crags; Oxton Bogs*
Lasius flavus, De Geer. Common
— niger, Linn. Common
[Plagiolepis flavidula, Reg. In greenhouse at *Bramcote*, introduced]

Myrmicidae

[Tetramorium guineense, Fab. *Retford*, introduced, S. Pegler]
Myrmica rubra, Linn., race *laevinodis*. Common
" " " *ruginodis*. Common

FOSSORES (*Sand-wasps*)

Sapygidae

Sapyga quinquepunctata, Fab. *S. Leverton*, common on walls, June, 1902 (Thornley)
— clavicornis, Linn. *Nottingham* (R. Bakewell), not seen in recent years

Pompilidae

Pompilus plumbeus, Fabr. *Nottingham; Worksop; Everton; Treswell*
— gibbus, Fab. *Bagthorpe* and *Bulwell Forest; Langford Moor; Worksop; Everton*
Salius fuscus, Linn. *Treswell* (Thornley); *Bulwell; Thorney*
— exaltatus, Fab. *Langford Moor*
— pusillus, Schiödte. *Bulwell Forest; Thorney; Widmerpool*, etc.
— parvulus, Dahl. *Bulwell Forest*, common

Sphegidae

Trypoxylon figulus, Linn. *S. Leverton* (Thornley); *Treswell; Budby*
— attenuatum, Sm. *Treswell Wood* (Thornley)
Ammophila sabulosa, Linn. *Langford Moor*
Spilomena troglodytes, V. d. Lind. *S. Leverton* (Thornley)
Stigmus solskyi, Moraw. *Bagthorpe, Nottingham*
Pemphredon lugubris, Latr. *S. Leverton*, common (Thornley); *Wigsley; Lowdham*
— shuckardi, Moraw. *S. Leverton* (Thornley); *Hucknall Torkard; Thorney*
— lethifer, Shuck. *Nottingham; Hucknall Torkard; Bramcote; Thorney*
[Diodontus minutus, Fab. *Newark* (?) (Hadfield)]
— luperus, Shuck. *Bagthorpe, Nottingham*
— tristis, V. d. Lind. *S. Leverton* (Thornley)
Passaloecus corniger, Shuck. *S. Leverton* (Thornley)
— gracilis, Curt. *S. Leverton* (Thornley); *Thorney*
Mimesa equestris, Fab. *Thorney*
— bicolor, Fab. *Bulwell Forest*, very common; *Hollinwell*

FOSSORES (*Sand-wasps*) (continued)

Sphegidae (*continued*)

Psen pallipes, Panz. *S. Leverton*, common (Thornley); *Styrrup*
Gorytes mystaceus, Linn. *Southwell*
— quadrifasciatus, Fab. *Thorney*
Nysson dimidiatus, Jur. *Barrow Hills, Everton*, 26 Aug. 1904 (Thornley)
Mellinus arvensis, Linn. Rare in Nottinghamshire; *Barrow Hills, Everton*, 4 September, 1903
— sabulosus, Fab. *Rampton; Thorney;* on Umbelliferous flowers
Oxybelus uniglumis, Linn. Widely distributed and common
Crabro clavipes, Linn. *S. Leverton* (Thornley)
— leucostomus, Linn. *S. Leverton* (Thornley); *Treswell; Edwinstowe*
— podagricus, V. d. Lind. *S. Leverton* (Thornley)
— palmipes, Linn. *Bagthorpe* and *Bulwell Forest, Nottingham*
— varius, Lep. Widely distributed
— wesmaeli, V. d. Lind. *Nottingham*
— elongatulus, V. d. Lind. Widely distributed
— quadrimaculatus, Dahl. *Langford Moor; Worksop; Sutton*, nr. *Retford*
[— signatus, Panz. *Newark* (?) (Hadfield)]
— dimidiatus, Fab. Common
— cephalotes, Panz. *S. Leverton* (Thornley)
— chrysostomus, Lep. Widely distributed and not uncommon
— cribrarius, Linn. Very common in the sandy district to the north of *Nottingham*, as at *Bagthorpe, Basford, Bulwell Forest*, etc.; also about *Harby, Thorney* and *Wigsley*. Six females captured on *Bulwell Forest* as they were entering their burrows were taking home the following species of Diptera with which to provision their nests :—Calliphora erythrocephala, Hylemyia strigosa, Pollenia rudis (two), and Thereva nobilitata (two)
— peltarius, Schreb. *Bulwell Forest; Langford Moor*
— interruptus, De Geer. *Treswell Wood* (E. Shaw); *Nottingham*
— albilabris, Fab. Widely distributed, but not common
Entomognathus brevis, V. d. Lind. *Worksop*

DIPLOPTERA (*Wasps*)

Vespidae

Vespa crabro, Linn. *Ollerton* (Rev. W. Becher)
— vulgaris, Linn. This and the two following species are all of common occurrence throughout the county.
— germanica, Fab.
— rufa, Linn.
— sylvestris, Scop. Common on flowers of Scrophularia aquatica in many places throughout the county

DIPLOPTERA (*Wasps*) (continued)

Eumenidae

Odynerus spinipes, Linn. *Treswell Wood*, abundant, July, 1899, burrowing into the soil among the branches of old upturned tree-roots. The beautiful external tubular structures forming the entrances to the burrows were very numerous. The parasites Chrysis ignita and C. viridula (bidentata) were rather common about the burrows. Numerous nests were also found in the clay banks of the *Lea Beck* in *Treswell* village; in and about these several Chrysis viridula and C. neglecta were captured. O. spinipes has also been taken, although less commonly, in several other localities.
— callosus, Thoms. *S. Leverton* (Thornley)
— parietum, Linn. Widely distributed and common
— pictus, Curt. *S. Leverton* and *Treswell Wood* (Thornley)
— trifasciatus, Oliv. Occurs in many places, but not commonly
— parietinus, Linn. *S. Leverton* (Thornley); *Treswell*
— antilope, Panz. *S. Leverton* and *Elksley* (Thornley); *Harby*
— gracilis, Brullé. *N. Wheatley* and *Treswell*, on flowers of Scrophularia aquatica, fairly common
— sinuatus, Fab. *S. Leverton* (Thornley); *Treswell*

ANTHOPHILA (*Bees*)

OBTUSILINGUES

Colletidae

Colletes succincta, Linn. *Bulwell Forest*, flying over Erica cinerea
— daviesana, Sm. Widely distributed. At *Bagthorpe, Nottingham*, it occurs in profusion, burrowing in the sandstone rock at the sides of the road-cutting near the prison. The parasites Epeolus productus and Chrysis ignita infest the burrows in considerable numbers; indeed, in 1900 the Epeolus was almost as abundant as the Colletes, which as a consequence has been less common since
Prosopis communis, Nyl. Common
— hyalinata, Sm. *S. Leverton* (Thornley)
— pictipes, Nyl. *Treswell Wood* (Thornley); *Holbeck*, near *Welbeck*

ACUTILINGUES

Andrenidae

Sphecodes gibbus, Linn.
— subquadratus, Sm.
— pilifrons, Thoms.
} All widely distributed and common
— similis, Wesm. *S. Leverton* (Thornley)
— ferruginatus, Schenck. *S. Leverton* (Thornley)
— variegatus, v. Hag. *Blidworth*
— dimidiatus, v. Hag. *Langford Moor*
— affinis, v. Hag. *Bagthorpe; Blidworth; Thorney; Sutton*, nr. *Retford*
Halictus rubicundus, Christ. Abundant everywhere
[— leucozonius, Schrank. *Newark* (?) (Hadfield)]
— quadrinotatus, Kirb. Not uncommon in several localities
— cylindricus, Fab. Of common and widespread occurrence
— albipes, Kirb. *Arnold; Bulwell; Bunny*

ANTHOPHILA (*Bees*) (continued)

ACUTILINGUES (continued)

Andrenidae (*continued*)

Halictus villosulus, Kirb. *Clarborough* (Thornley); *Cottam; Treswell*
— punctatissimus, Schenck. *Blidworth*
— nitidiusculus, Kirb. Widely distributed and common
— minutus, Kirb. *Bunny*
— atricornis, Sm. *Thorney; Sherwood Forest*, nr. *Edwinstowe*
— tumulorum, Linn. Common in various localities
— smeathmanellus, Kirb. *S. Leverton* (Thornley); *Wheatley* (Rev. T. C. B. Chamberlin); *Worksop* (Miss Alderson)
— morio, Fab. *Blyth*
— leucopus, Kirb. Not common, but widely distributed
Andrena albicans, Kirb. Very common everywhere
— rosae, Panz. var. trimmerana, Kirb. Very common
— nitida, Fourc. *N.* and *S. Leverton* (Thornley); *Gedling*
— cineraria, Linn. *Babworth* (Pegler); common at *Langford Moor*
— fulva, Schr. Universally distributed, and abundant in some localities
— clarkella, Kirb. *S. Leverton* and *Treswell Wood* (Thornley)
— nigroaenia, Kirb. Common
— gwynana, Kirb. Common
— varians, Rossi. *Thorney; Bilsthorpe*
— fucata, Sm. Widely spread, but not common
— denticulata, Kirb. *Edwinstowe; Wigsley; Thorney*
— albicrus, Kirb. Common in a few localities, as at *Bulwell Forest*
— chrysosceles, Kirb. Common
— analis, Panz. *Langford Moor*
— coitana, Kirb. *Thorney*
— humilis, Imhoff. *Bulwell Forest*, common
— labialis, Kirb. *N.* and *S. Leverton* and *Treswell Wood*, common (Thornley); *Winkburn*
— minutula, Kirb. *Bagthorpe; Widmerpool; Langford Moor*
— nana, Kirb. *S. Leverton* and *Treswell* (Thornley); *Burton Joyce; Strelley; Southwell*
— wilkella, Kirb. Widely distributed, and common in some localities
[— tibialis, Kirb.; A. bimaculata, Kirb.; A. thoracica, Fab.; A. fulvicrus, Kirb.; A. similis, Sm.; and A. afzeliana, Kirb., in the late Mr. Hadfield's collection (now in the possession of the Rev. A. Thornley), were all probably collected in the *Newark* district]
Nomada solidaginis, Panz. *Wigsley; Thorney; Langford Moor*
— succincta, Panz. Fairly common throughout the county
— alternata, Kirb. Widely distributed and not uncommon
— jacobaeae, Panz. *Worksop*
— lathburiana, Kirb. *Langford Moor*, common, flying in company with Andrena cineraria
— ruficornis, Linn. Not rare
— bifida, Thoms. *Treswell Wood; S. Leverton; Clarborough* (Thornley)

ANTHOPHILA (*Bees*) (continued)

ACUTILINGUES (continued)

ANDRENIDAE (*continued*)

Nomada borealis, Zett. *Treswell Wood* (Thornley)
— ochrostoma, Kirb. *Bulwell Forest; Langford Moor*
— fabriciana, Linn. *Clarborough* (Thornley); *Strelley; Widmerpool; Epperstone*
— flavoguttata, Kirb. *Treswell Wood* (Thornley); *Strelley*

APIDAE

Epeolus productus, Thoms. Very common in certain localities
— rufipes, Thoms. *Blidworth*
Chelostoma florisomne, Linn. Not uncommon
Coelioxys rufescens, Lep. *S. Leverton* (Thornley)
— elongata, Lep. *Bulwell Forest; Langford Moor*
Megachile willughbiella, Kirb. *Newark* (*i*) (Hadfield); *Nottingham*, 1905 (Thornley)
— circumcincta, Lep. *S. Leverton* (Thornley); *Sutton*, nr. *Retford*
— centuncularis, Linn. *S. Leverton* (Thornley); *Nottingham*
Osmia rufa, Linn. *Nottingham*, *Worksop*, and *Retford* districts, common. In 1898 the writer bred forty-eight specimens from a nest in the door-lock of an outbuilding in *Nottingham*. Of this number forty-three were males, and only five females—a remarkable numerical discrepancy in the sexes. The nest contained fifteen other cocoons from which the bees failed to emerge, and these on investigation were found to contain nine males, five females, and a larva—all dead. The high mortality among the females is noteworthy
Osmia caerulescens, Linn. *S. Leverton* and *Treswell Wood* (Thornley)
[— fulviventris, Panz., and O. aurulenta, Panz., are both represented in the Hadfield collection, and are probably from the *Newark* district]
Melecta armata, Panz. *Treswell Wood* (Thornley)
Anthophora retusa, Linn. *Nottingham* (Davis, in Loudon's *Mag. N. H.*, vol. v, 1832)
— pilipes, Fab. Rather common
Psithyrus rupestris, Fab. *Retford* (Pegler); *Treswell Wood* (Thornley)
— vestalis, Fourc. Occurs throughout the county
— campestris, Panz. *Retford* (Pegler)
— quadricolor, Lep. *S. Leverton* and *Grove* (Thornley)
Bombus venustus, Sm. Moderately common
— agrorum, Fab. Common everywhere
— hortorum, Linn. Common. The var. harrisellus, Kirb., is not rare
— sylvarum, Linn. *S. Leverton* (Thornley); *Bunny; Widmerpool*
— lapidarius, Linn. Of common occurrence
— pratorum, Linn. Of common occurrence
— terrestris, Linn. Both the varieties, virginalis and lucorum, are common
Apis mellifica, Linn. Abundant in a domesticated state

COLEOPTERA

The Coleoptera or Beetles constitute a very large and distinct order of insects, easily distinguished by their firm integument, and especially by the hard and rigid character of the fore-wings (elytra), which are not used for flight, but serve as protecting shields for the soft upper surface of the abdomen and for the thin membranous posterior wings which are folded together beneath the elytra and are alone concerned with flight.

The beetles of Nottinghamshire have been well worked out, thanks mainly to the exertions of the Rev. Alfred Thornley, M.A., who has devoted many years to the investigation of the Coleoptera of the county, and who has generously placed all his records at the writer's disposal. The rich district of Sherwood Forest—perhaps one of the best collecting grounds in the country—has been thoroughly investigated by the Rev. Canon Fowler, the Rev. A. Matthews, Mr. W. G. Blatch, Mr. J. Kidson Taylor, Dr. G. W. Chaster, Mr. J. R. le B. Tomlin, and others, who have discovered many rare species in this region, some of which have not occurred elsewhere in the British Isles. The neighbourhood of Nottingham has been successfully worked by Mr. W. E. Ryles and others, and Messrs. Stephen Pegler and J. T. Houghton have collected extensively in the Retford and Worksop districts respectively. Many good species have also been discovered in the extreme north of the county by the Rev. T. C. B. Chamberlin.

The following list comprises some 1,280 species out of an approximate total for Britain of 3,300 species. Localities are given for the rarer or more local species only. Where a locality is given without an authority the species is to be regarded as of frequent occurrence in that locality, or has been seen there by the writer. The arrangement and nomenclature followed are those of Sharp and Fowler's *Catalogue of British Coleoptera*.

CICINDELIDAE

Cicindela campestris, L.

CARABIDAE

Cychrus rostratus, L. *Aspley Woods, Nottingham* (Ryles)
Carabus catenulatus, Scop. *Sherwood Forest* (W. H. Freestone); *Worksop* (J. T. Houghton)

CARABIDAE (*continued*)

Carabus nemoralis, Müll.
— violaceus, L.
— granulatus, L.
— monilis, Fab.
Notiophilus biguttatus, Fab.
— substriatus, Wat. } *Nottingham* (Ryles); *S. Leverton* (Thornley)
— quadripunctatus, Dej. }

CARABIDAE (*continued*)

Notiophilus aquaticus, L. Not nearly so common in *Nottinghamshire* as the next species
— palustris, Duft.
Leistus spinibarbis, Fab.
— fulvibarbis, Dej.
— ferrugineus, L.
— rufescens, Fab.
Nebria brevicollis, Fab.
— gyllenhali, Sch. *Nottingham*, 1898 (B. S. Dodd)
Blethisa multipunctata, L. *S. Leverton* (Pegler); *Nottingham* and *Beeston* (Ryles)
Elaphrus riparius, L.
— cupreus, Duft.
Loricera pilicornis, Fab.
Clivina fossor, L.
— collaris, Herbst. *Nottingham* (Ryles)
Broscus cephalotes, L. In Oct. 1895, Mr. Stephen Pegler discovered a colony of this shore-loving species in a sandy tract near *Retford* railway station, in the parish of *Ordsall*
Badister unipustulatus, Bon. *Newark* (Fowler, *Brit. Coleop.* i, 30)
— bipustulatus, Fab.
— sodalis, Duft. *Aspley, Nottingham*, 4 Oct. 1899 (Ryles)
Licinus depressus, Payk. *Sherwood Forest* (Ryles); an interesting record, as this species is scarcely known away from the chalk districts of the south of England
Chlaenius nigricornis, Fab.
Acupalpus dorsalis, Fab. *Stapleford Common*, nr. *Newark* (Fowler, *Brit. Coleop.* i, 38). This is a somewhat doubtful Nottinghamshire record, as a large part of the district thus designated lies over the border in Lincolnshire
— exiguus, Dej., var. luridus, Dej. *S. Leverton*
— meridianus, L.
— consputus, Duft. Near *Newark* in plenty (J. F. Dawson, *Ent. Ann.* 1856)
Bradycellus placidus, Gyll. *Treswell Wood* (Thornley); *Grove* (Pegler)
— cognatus, Gyll. *Treswell Wood* (Thornley); *Retford* (Pegler)
— distinctus, Dej.
— verbasci, Duft.
— harpalinus, Dej.
— similis, Dej.
Harpalus punctatulus, Duft. *Newark* (Fowler, *Brit. Coleop.* i. 45); *Burton Joyce*, several examples (Ryles)
— azureus, Fab. *Edwalton* and *Burton Joyce* (Ryles)
— rufibarbis, Fab.
— puncticollis, Payk.
— ruficornis, Fab.
— aeneus, Fab.
— rubripes, Duft.
— discoideus, Fab. } *Barrow Hills, Everton*
— latus, L.
— tardus, Panz.
Stomis pumicatus, Panz.
Platyderus ruficollis, Marsh. *Nottingham, Lambley, Clifton*
Pterostichus cupreus, L.
— versicolor, Sturm. Much less common than the last
— madidus, Fab.
— niger, Schall.

CARABIDAE (*continued*)

Pterostichus vulgaris, L.
— nigrita, Fab.
— minor, Gyll.
— strenuus, Panz.
— diligens, Sturm.
— picimanus, Duft. *S. Leverton* (Thornley); *Nottingham* (Ryles)
— inaequalis, Marsh. *Newark* (Fowler, *Brit. Coleop.* i, 67)
— vernalis, Gyll.
— striola, Fab.
Amara fulva, Dej. *Nottingham* district (Ryles)
— apricaria, Sturm.
— consularis, Duft. *Nottingham* (Ryles)
— aulica, Panz.
— bifrons, Gyll (=livida, Fab.)
— ovata, Fab.
— similata, Gyll.
— acuminata, Payk. *S. Leverton* (Thornley); *Nottingham*
— tibialis, Payk.
— familiaris, Duft.
— trivialis, Gyll.
— communis, Panz.
— plebeia, Gyll.
Calathus cisteloides, Panz.
— fuscus, Fab. *Babworth*, 1897 (S. Pegler)
— flavipes, Fourc. *Nottingham* (Ryles)
— melanocephalus, L.
— micropterus, Duft. *Barrow Hills, Everton*, 8 Aug., 1904 (Chamberlin)
— piceus, Marsh.
Taphria nivalis, Panz. { *S. Leverton* (Thornley); *Retford* (Pegler); *Sherwood Forest* (Ryles)
Pristonychus terricola, Herbst.
Anchomenus angusticollis, Fab.
— dorsalis, Müll.
— albipes, Fab.
— oblongus, Sturm. *Worksop* (Ryles)
— marginatus, L. *Moor Green Reservoir*, etc.
— sexpunctatus, L. *Newark, Nottinghamshire* (near *Stapleford Common*, Fowler, *Brit. Coleop.* i, 90)
— parumpunctatus, Fabr.
— viduus, Panz., var. moestus, Duft.
— micans, Nic.
— fuliginosus, Panz.
— piceus, L.
— puellus, Dej. Not uncommon in early spring by the *Trent* side, *Nottingham* (Ryles)
Olisthopus rotundatus, Payk.
Bembidium rufescens, Guér.
— quinquestriatum, Gyll. *S. Leverton* (Thornley)
— obtusum, Sturm.
— guttula, Fab.
— mannerheimi, Sahl. Common in early spring in flood refuse by the *Trent, Nottingham* (Ryles)
— biguttatum, Fab.
— riparium, Ol.
— aeneum, Germ.
— clarki, Daws. *Moor Green Reservoir*
— doris, Panz. '*Newark*, in plenty' (J. F. Dawson, *Ent. Ann.* 1856); not seen since
— gilvipes, Sturm.
— lampros, Herbst.
— tibiale, Duft. *Thurgarton* (W. E. Ryles)
— decorum, Panz.

INSECTS

CARABIDAE (*continued*)

Bembidium nitidulum, Marsh. *Moor Green Reservoir*, etc.
— stomoides, Dej. *Trent* side at *Cottam* and *Rampton*, among the roots of Alopecurus geniculatus, close to the water's edge, July, 1899, and subsequently, not uncommon (A. Thornley); also at *Littleborough* and *W. Burton* (Pegler)
— quadriguttatum, Fab.
— quadrimaculatum, Gyll.
— lunatum, Duft. Not uncommon in the same localities as B. stomoides, especially at *Cottam* (Thornley)
— femoratum, Sturm.
— littorale, Ol.
— fluviatile, Dej. Banks of *Trent* near *Newark* (Fowler, *Brit. Coleop.* i, 117); *Nottingham*, *Colwick*, etc.
— punctulatum, Drap. *Barton*, *Beeston*, *Colwick* (Ryles)
— flammulatum, Clairv. *Nottingham*, not uncommon (Ryles); *W. Burton* (Pegler); *Moor Green Reservoir*
Tachypus flavipes, L.
Trechus discus, Fab. Banks of *Trent*, *Newark* (Fowler, *Brit. Coleop.* i, 126); banks of *Trent*, opposite *Gainsborough* (Pegler); *Nottingham* (Pope)
— micros, Herbst. *Retford* and *Cottam* (Pegler)
— minutus, Fab.
„ var. obtusus, Er. *Beeston* (Ryles)
— secalis, Payk.
Patrobus excavatus, Payk.
Demetrias atricapillus, L.
Dromius linearis, Ol.
— agilis, Fab. Commoner in the *Nottingham* district than the next species (Ryles)
— meridionalis, Dej.
— quadrimaculatus, L.
— quadrinotatus, Panz.
— melanocephalus, Dej.
Metabletus foveola, Gyll.
— truncatellus, L. *Bramcote*, nr. *Nottingham*, one example (Ryles)

HALIPLIDAE

Brychius elevatus, Panz.
Haliplus flavicollis, Sturm.
— fulvus, Fab.
— ruficollis, De G.
— fluviatilis, Aubé. *Littleborough* (Thornley); *Nottingham* district (Ryles)
— lineatocollis, Marsh.

DYTISCIDAE

Noterus clavicornis, De G. *Beeston* (Ryles)
— sparsus, Marsh. *Radcliffe-on-Trent* (Ryles)
Laccophilus interruptus, Panz. } *S. Leverton* (Thornley);
— obscurus, Panz. } *Nottingham* (Ryles)
Hyphydrus ovatus, L.
Coelambus versicolor, Schall. *Nottingham* (W. H. Freestone)
— inaequalis, Fab.
— confluens, Fab. *N. Wheatley*, 21 Sept. 1903 (Rev. T. C. B. Chamberlin)
Deronectes assimilis, Payk. *Edwinstowe* (Pegler)
— depressus, Fab.
— duodecimpustulatus, Fab.

DYTISCIDAE (*continued*)

Hydroporus pictus, Fab.
— granularis, L. *S. Leverton* (Thornley); *Cossall*
— lepidus, Ol.
— rivalis, Gyll. *Edwinstowe* (Pegler)
— halensis, Fab. *S. Leverton*, a single example from the *Catchwater drain*, Nov. 1895 (Thornley)
— dorsalis, Fab.
— lineatus, Fab.
— gyllenhali, Schiödte. *S. Leverton* (Thornley)
— palustris, L.
— erythrocephalus, L.
— memnonius, Nic. *Broadholme* (Pegler)
— pubescens, Gyll.
— planus, Fab.
— lituratus, Fab.
Agabus guttatus, Payk.
— paludosus, Fab.
— didymus, Ol. *Retford* district, not uncommon (Thornley)
— nebulosus, Forst.
— sturmii, Gyll.
— chalconotus, Panz.
— bipustulatus, Linn.
Platambus maculatus, L.
Ilybius fuliginosus, Fab.
— fenestratus, Fab. *Wollaton* (Ryles)
— ater, De G. *Nottingham* (Ryles); *S. Leverton* (Thornley)
— obscurus, Marsh. *Beeston* (Ryles)
Colymbetes fuscus, L.
Dytiscus marginalis, L.
Acilius sulcatus, L.

GYRINIDAE

Gyrinus natator, Scop.
— marinus, Gyll. *Cossall*, etc., not uncommon.
Orectochilus villosus, Müll. *Nottingham*, common in the *Trent* in places (Ryles)

HYDROPHILIDAE

Hydrobius fuscipes, L.
Paracymus nigroaeneus, Sahl. *Cottam*
Anacaena globulus, Payk.
— limbata, Fab.
Cymbiodyta ovalis, Thoms. *S. Leverton; Cottam*
Enochrus bicolor, Gyll. *Newark* (?) (Hadfield)
Chaetarthria seminulum, Herbst. *S. Leverton*
Laccobius sinuatus, Mots. *Cinder-hill Brickyard* near *Nottingham*
— bipunctatus, Fab. *Cossall*
Helophorus rugosus, Ol. *Newark* (?) (Hadfield)
— nubilus, Fab.
— aquaticus, L.
— aeneipennis, Thoms.
— brevipalpis, Bedel
Hydrochus elongatus, Schall.
Octhebius rufimarginatus, Steph. *Radcliffe-on-Trent* (Ryles)
Hydraena nigrita, Germ. *S. Leverton* (Thornley)
Cyclonotum orbiculare, Fab.
Sphaeridium scarabaeoides, Fab.
— bipustulatum, Fab.
„ var. marginatum, Fab. *S. Leverton* (Thornley)

HYDROPHILIDAE (*continued*)

Cercyon haemorrhoidalis, Herbst.
— obsoletus, Gyll. *Sherwood Forest* (Tomlin)
— flavipes, Fab.
— lateralis, Marsh.
— melanocephalus, L.
— unipunctatus, L.
— quisquilius, L.
— nigriceps, Marsh. *Nottingham* (Ryles)
— analis, Payk.
— lugubris, Payk. *Beeston*, in flood refuse (Ryles)
Megasternum boletophagum, Marsh.
Cryptopleurum atomarium, Fab.

STAPHYLINIDAE

Aleochara fuscipes, Fab.
— lanuginosa, Grav.
— moesta, Grav.
— nitida, Grav.
— morion, Grav.
Microglossa suturalis, Sahl.
— pulla, Gyll. } *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 24)
Oxypoda spectabilis, Maerk. }
— lividipennis, Mann.
— opaca, Grav. *Sherwood Forest* (Tomlin)
— alternans, Grav.
— umbrata, Grav.
— haemorrhoa, Mann.
— annularis, Sahl. *Sherwood Forest* (Chaster)
Ischnoglossa corticina, Er. } *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 40, 41)
Ocyusa incrassata, Kr. }
— picina, Aubé. *Clumber* (Pegler)
Phloeopora reptans, Grav. *Sherwood Forest* (Tomlin)
— corticalis, Grav. *Sherwood Forest* (Fowler, Chaster, Tomlin)
Ocalea castanea, Er. *Sherwood Forest* (Blatch and Horner)
Ilyobates nigricollis, Payk. *Sherwood Forest* (Chaster)
Chilopora longitarsis, Steph.
Myrmedonia limbata, Payk. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 56) ; *S. Leverton* (Thornley)
Astilbus canaliculatus, Fab.
Callicerus rigidicornis, Er. *Sherwood Forest* (Chaster)
Alianta incana, Er. *S. Leverton* (Thornley)
Homalota vicina, Steph.
— graminicola, Gyll. *Sherwood Forest* (Tomlin)
— fungivora, Thoms. *Sherwood Forest* (Blatch and Horner)
— nigella, Er. *S. Leverton* (Thornley)
— picipes, Thoms.
— aequata, Er.
— linearis, Grav.
— pilicornis, Thoms. } *Sherwood Forest* (Blatch, Horner, Fowler, and others)
— circellaris, Grav.
— immersa, Er. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 94)
— cuspidata, Er. *Sherwood Forest* (Tomlin)
— analis, Grav.
— depressa, Gyll. *S. Leverton*, on walls (Thornley)
— aeneicollis, Sharp. *Sherwood Forest* (Blatch, Horner, etc.)
— xanthoptera, Steph.
— euryptera, Steph.
— trinotata, Kr.
— xanthopus, Thoms. *Sherwood Forest* (Blatch and Horner)
— fungicola, Thoms.

STAPHYLINIDAE (*continued*)

Homalota ignobilis, Sharp
— boletobia, Thoms.
— humeralis, Kr.
— gagatina, Baudi
— divisa, Maerk.
— nigricornis, Thoms.
— ravilla, Er.
— corvina, Thoms. } *Sherwood Forest* (Blatch, Horner, and others)
— sericea, Muls.
— subtilis, Scriba. *Sherwood Forest* (Blatch)
— indubia, Sharp. *Sherwood Forest* (Blatch and Horner)
— atricolor, Sharp. Abundant under elm bark in *Sherwood Forest* (Blatch)
— germana, Sharp
— celata, Er.
— canescens, Sharp
— cauta, Er.
— setigera, Sharp
— macrocera, Thoms. } *Sherwood Forest* (Blatch and others)
— atramentaria, Gyll.
— cadaverina, Bris. } *Sherwood Forest* (Blatch)
— marcida, Er. }
— longicornis, Grav.
— sordida, Marsh.
— aterrima, Grav.
— muscorum, Bris. *S. Leverton* (Thornley) ; *Sherwood Forest* (Blatch)
— pilosiventris, Thoms. *Sherwood Forest*, under bark (Blatch)
— fungi, Grav.
— cribrata, Kr. ? *Sherwood Forest* (Horner)
Falagria sulcata, Payk.
— obscura, Grav.
Autalia impressa, Ol. } *Sherwood Forest* (Tomlin)
— rivularis, Grav. }
Encephalus complicans, Westw. *S. Leverton* (Thornley) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 152)
Gyrophaena nana, Payk. *Treswell Wood*, common in fungi (Thornley)
Agaricochara laevicollis, Kr.
Placusa pumilio, Grav.
— denticulata, Sharp
Epipeda plana, Gyll. } *Sherwood Forest*
Leptusa fumida, Er. *Sherwood Forest* (Tomlin)
Sipalia ruficollis, Er. *Sherwood Forest* (Blatch)
Bolitochara lucida, Grav. *Sherwood Forest* (J. K. Taylor, Blatch, etc.)
— obliqua, Er. *Sherwood Forest* (Tomlin)
Hygronoma dimidiata, Grav. *Clumber* (Pegler)
Oligota inflata, Mann. *Retford* district and *Sherwood Forest*
— pusillima, Grav. } *Sherwood Forest* (Blatch, Horner, etc.)
— apicata, Er. }
Myllaena fowleri, Matth. *Sherwood Forest*, Rev. A. Matthews (Fowler, *Brit. Coleop.* ii, 178)
Hypocyptus longicornis, Payk.
Conosoma littoreum, L.
— pubescens, Grav.
— immaculatum, Steph. *Sherwood Forest* (Chaster)
— lividum, Er.
Tachyporus obtusus, L.
„ var. nitidicollis, Steph. *Sherwood Forest*, 1871 (J. R. Hardy)
— solutus, Er. *S. Leverton* (Thornley)
— chrysomelinus, L.

STAPHYLINIDAE (*continued*)

Tachyporus humerosus, Er.
— hypnorum, Fab.
— pusillus, Grav.
— brunneus, Fab.
Lamprinus saginatus, Grav. *S. Leverton*, a single specimen in vicarage garden, 1895 (Thornley)
Cilea silphoides, L.
Tachinus humeralis, Grav.
— rufipes, L.
— subterraneus, L.
„ var. bicolor, Grav. *Retford*, with type (Pegler)
— marginellus, Fab.
— collaris, Grav. *S. Leverton* (Thornley); *Nottingham* (Ryles)
Megacronus cingulatus, Mann. *Sherwood Forest* (Blatch, Horner, Fowler)
— analis, Fab.
Bolitobius lunulatus, L.
— trinotatus, Er.
— exoletus, Er. *Sherwood Forest* (Tomlin)
— pygmaeus, Fab.
Mycetoporus lucidus, Er. *Sherwood Forest* (Blatch and Horner)
— punctus, Gyll. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 215)
— lepidus, Grav. } *Sherwood Forest* (Chaster and Tomlin)
— longulus, Mann. }
— splendidus, Grav. *S. Leverton* (Thornley)
Habrocerus capillaricornis, Grav. *Colwick* (Ryles)
Trichophya pilicornis, Gyll. *Sherwood Forest* (Blatch and Horner)
Heterothops dissimilis, Grav. *S. Leverton* (Thornley)
Quedius ventralis, Ar. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 231)
— lateralis, Grav. *Sherwood Forest*
— mesomelinus, Marsh.
— fulgidus, Fab. } *Sherwood Forest* (Fowler,
— puncticollis, Thoms. } *Brit. Coleop.* ii, 233)
— cruentus, Ol. *Retford* (Pegler); *Wheatley* (H. B. Chamberlin); *Sherwood Forest* (Blatch and Horner)
— xanthopus, Er. *Sherwood Forest*
— scitus, Grav. *Sherwood Forest* (Blatch and Horner); *Broadholme* (Pegler)
— cinctus, Payk.
— fuliginosus, Grav.
— tristis, Grav.
— molochinus, Grav.
— nigriceps, Kr.
— maurorufus, Grav.
— rufipes, Grav.
— semiaeneus, Steph. *Nottingham* (Ryles)
— boops, Grav.
Creophilus maxillosus, L.
Leistotrophus nebulosus, Fab.
— murinus, L. *Kingston-on-Soar* (Thornley)
Staphylinus pubescens, De G.
— fulvipes, Scop. *Sherwood Forest*
— stercorarius, Ol. *Kingston-on-Soar* (Thornley)
Ocypus olens, Müll.
— cyaneus, Payk. *Sherwood Forest* (Rev. H. Matthews); *Newark*, several specimens taken by Mr. Hadfield (Fowler, *Brit. Coleop.* ii, 255)
— brunnipes, Fab.
— cupreus, Rossi

STAPHYLINIDAE (*continued*)

Ocypus ater, Grav. *Retford* (Pegler)
— morio, Grav.
— compressus, Marsh. *S. Leverton* (Thornley); *Nottingham* (Ryles); *Barrow Hills, Everton*
Philonthus splendens, Fab.
— intermedius, Boisd. *Retford* (Pegler)
— laminatus, Creutz.
— aeneus, Rossi
— proximus, Kr. { *S. Leverton* and *Kingston-on-Soar* (Thornley); *Sherwood Forest* (Chaster and Tomlin)
— addendus, Sharp. *Sherwood Forest* (Blatch)
— decorus, Grav. *Retford* and *Nottingham* districts
— politus, Fab.
— varius, Gyll.
— marginatus, Fab.
— albipes, Fab. *S. Leverton* (Thornley)
— cephalotes, Grav. *S. Leverton* (Thornley); *Sherwood Forest* (Blatch and Horner)
— fimetarius, Grav.
— sordidus, Grav.
— debilis, Grav.
— sanguinolentus, Grav. *S. Leverton* (Thornley);
— *Nottingham* (Ryles)
— cruentatus, Gmel. *Sherwood Forest*
— varians, Payk.
— ventralis, Grav. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 274)
— discoideus, Grav. *S. Leverton* (Thornley)
— splendidulus, Grav. *Sherwood Forest* (Chaster, Tomlin); abundant under oak bark (Blatch)
— trossulus, Nord.
— puella, Nord. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 280); *S. Leverton* (Thornley); *Retford* (Pegler)
Actobius cinerascens, Grav. *S. Leverton* (Thornley)
Xantholinus glabratus, Grav.
— punctulatus, Payk.
— linearis, Ol.
Leptacinus parumpunctatus, Gyll. *S. Leverton* (Thornley)
— linearis, Grav.
Baptolinus alternans, Grav. *Sherwood Forest* (Tomlin)
Othius fulvipennis, Fab.
— laeviusculus, Steph. *Sherwood Forest* (Fowler and Tomlin)
— melanocephalus, Grav. *Retford* (Thornley and Pegler); *Sherwood Forest* (Tomlin)
— myrmecophilus, Kies.
Lathrobium elongatum, L.
— fulvipenne, Grav.
— brunnipes, Fab.
— longulum, Grav. *Beeston* (Ryles)
— quadratum, Payk. *S. Leverton* (Thornley)
Stilicus rufipes, Germ.
— orbiculatus, Er. *Sherwood Forest* (Blatch and Horner); *Retford* (Pegler)
— affinis, Er.
Lithocharis ochracea, Grav.
Sunius angustatus, Payk.
Stenus biguttatus, L. *Trent* bank, *Cottam* and *Littleborough*; *Clumber* (Pegler)
— guttula, Müll. *Retford* and *Nottingham* districts
— bimaculatus, Gyll.
— juno, Fab.
— speculator, Er.
— buphthalmus, Grav.

STAPHYLINIDAE (*continued*)

Stenus canaliculatus, Gyll. *Trent* bank, *Beeston* and *Radcliffe* (Ryles)
— brunnipes, Steph.
— fuscicornis, Er. *Grove* (Pegler)
— impressus, Germ.
— flavipes, Steph.
— nitidiusculus, Steph.
— picipes, Steph.
— similis, Herbst.
— tarsalis, Ljungh
— paganus, Er.
Oxyporus rufus, L.
Platystethus arenarius, Fourc.
Oxytelus rugosus, Grav.
— sculptus, Grav.
— laqueatus, Marsh.
— sculpturatus, Grav.
— nitidulus, Grav.
— tetracarinatus, Block.
Haploderus coelatus, Grav. *S. Leverton*, on hawthorn bloom (Thornley)
Trogophloeus bilineatus, Steph.
— corticinus, Grav. *S. Leverton* (Pegler)
Syntomium aeneum, Müll. *Radcliffe-on-Trent* (Ryles)
Coprophilus striatulus, Fab.
Lesteva longelytrata, Goeze
Olophrum piceum, Gyll.
— fuscum, Grav. *Clumber*, three examples (Pegler)
Lathrimaeum atrocephalum, Gyll.
— unicolor, Steph.
Philorhinum sordidum, Steph. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 408)
Coryphium angusticolle, Steph. *Sherwood Forest* (Blatch, Pegler, etc.)
Omalium rivulare, Payk.
— allardi, Fairm. *Sherwood Forest* (Chaster)
— exiguum, Gyll. } *Sherwood Forest* (Fowler, *Brit.*
— oxyacanthae, Grav. } *Coleop.* ii, 414, 415)
— excavatum, Steph.
— caesum, Grav.
— pusillum, Grav.
— punctipenne, Thoms.
— rufipes, Fourc. *S. Leverton*, very common (Thornley); *Sherwood Forest*
„ var. nigrum, Grav. *Sherwood Forest* (Blatch and Horner)
— salicis, Gyll. *Sherwood Forest* (Blatch)
— iopterum, Steph. *S. Leverton* (Thornley); *Retford* (Pegler); *Sherwood Forest*
— planum, Payk. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 421)
— concinnum, Marsh.
— deplanatum, Gyll. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 422)
— striatum, Grav. *Sherwood Forest* (Tomlin)
Anthobium minutum, Fab. *S. Leverton* (Thornley)
— ophthalmicum, Payk.
— torquatum, Marsh
Proteinus ovalis, Steph.
— brachypterus, Fab.
Megarthrus denticollis, Beck. *Sherwood Forest* (Fowler, *Brit. Coleop.* ii, 429)
— depressus, Lac.
— sinuatocollis, Lac.
Phloeocharis subtilissima, Mann. *Sherwood Forest*

STAPHYLINIDAE (*continued*)

Pseudopsis sulcata, Newm. *S. Leverton*, one example in haystack refuse, 4 Oct. 1899 (Thornley)
Prognatha quadricornis, Lac. { *Sherwood Forest*, very abundant (Blatch)

PSELAPHIDAE

Pselaphus heisei, Herbst.
Tychus niger, Payk.
„ var. ibericus. *Treswell* (Thornley)
Bythinus curtisi, Denny. *Sherwood Forest* (Blatch and Horner)
Batrisus venustus, Reich. *Sherwood Forest*, taken by many collectors. 'In a nest of *Formica fuliginosa* in an old tree' (Fowler, *Brit. Coleop.* iii, 93)
Bryaxis fossulata, Reich. *S. Leverton* (Thornley)
— haematica, Reich. *Cottam* (Pegler)
Bibloporus bicolor, Denny. *Sherwood Forest* (Blatch and Horner)
Euplectus punctatus, Muls. }
— karsteni, Reich. }
— signatus, Reich. } *Sherwood Forest* (Blatch,
— nanus, Reich. } Horner, Fowler, and
— sanguineus, Denny } others)
— piceus, Mots. }
— nubigena, Reitt. }

SCYDMAENIDAE

Neuraphes elongatulus, Müll. } *Sherwood Forest* (Fowler,
— angulatus, Müll. } *Brit. Coleop.* iii, 74)
— planifrons, Blatch. *Sherwood Forest*, under bark of birch stumps (Blatch)
Scydmaenus godarti, Latr. } *Sherwood Forest* (Chaster,
— scutellaris, Müll. } Tomlin, etc.), (also
— collaris, Müll. } Fowler, *Brit. Coleop.* iii,
— exilis, Er. } 77–79)
Eumicrus tarsatus, Müll.
Eutheia clavata, Reitt. *Sherwood Forest*, under bark of oak and birch logs, rare; first taken by Mr. Blatch in 1883, and subsequently by Mr. Blatch, Mr. Horner, Canon Fowler, and Dr. Chaster

SILPHIDAE

Calyptomerus dubius, Marsh. *S. Leverton* (Thornley); *Clumber* (Pegler)
Agathidium nigripenne, Kug. { *Sherwood Forest* (Blatch,
— atrum, Payk. { Horner, etc., Fow-
— seminulum, L. { ler, *Brit. Coleop.* iii,
{ 15, 16)
— laevigatum, Er. *Clumber* (Pegler)
— varians, Beck. *Newark* (?) (Hadfield)
— rotundatum, Gyll. *Sherwood Forest* (Fowler, Chaster)
— nigrinum, Sturm. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 18–20)
Amphicyllis globus, Fab. *Sherwood Forest* (Fowler, Chaster, Tomlin)
Liodes humeralis, Kug. *Sherwood Forest; Treswell Wood*
— orbicularis, Herbst. *Sherwood Forest*
Anisotoma oblonga, Er. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 27)
— dubia, Kug. *Sherwood Forest* (Blatch)

SILPHIDAE (*continued*)

Anisotoma obesa, Schmidt. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 29)
— calcarata, Er.
Colenis dentipes, Gyll. *Sherwood Forest* (Blatch)
Necrophorus humator, Fab.
— mortuorum, Fab.
— vestigator, Heer. *Newstead* (Wm. Allen); *Clumber* (Pegler); *Nottingham*
— ruspator, Er. *Nottingham*, *Worksop*, and *Retford* districts
„ var. microcephalus, Thoms. *Aspley Woods* (Ryles)
— interruptus, Steph. Near *Nottingham*, rare (Dr. G. Howitt)
— vespillo, L.
Necrodes littoralis, L. In dead animals in the *Vale of Trent* (Dr. G. Howitt); *Kingston-on-Soar*, in dead squirrel, 1905 (Thornley)
Silpha tristis, Ill. *Nottinghamshire* (Fowler, *Brit. Coleop.* iii, 48)
— nigrita, Creutz. *Nottingham* (Howitt, Ryles, Dodd, etc.)
— obscura, L. *Nottinghamshire* (Fowler, *Brit. Coleop.* iii, 49)
— quadripunctata, L. *Sherwood Forest*
— reticulata, Fab. *Nottinghamshire* (Fowler, *Brit. Coleop.* iii, 50)
— opaca, L. *S. Leverton* (Thornley); *Nottingham* (Dr. G. Howitt)
— thoracica, L.
— rugosa, L.
— sinuata, Fab.
— atrata, L.
„ var. brunnea, Herbst. *Clifton Grove* (Ryles)
Choleva angustata, Fab. *Nottingham* (Dr. Howitt)
— cisteloides, Fröhl.
— intermedia, Kr. *Nottingham* (Ryles)
— spadicea, Sturm. *Nottingham* (T. Ludgrove; specimen named by Canon Fowler); *Sherwood Forest*
— agilis, Ill.
— velox, Spence
— anisotomoides, Spence. *Treswell* (Thornley); *Retford* (Pegler)
— fusca, Panz.
— nigricans, Spence
— morio, Fab. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 62)
— grandicollis, Er.
— nigrita, Er.
— tristis, Panz.
— kirbyi, Spence
— chrysomeloides, Panz.
— fumata, Spence
— watsoni, Spence
Ptomaphagus sericeus, Fab.
— varicornis, Ros. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 66); *Retford* (Pegler)

HISTERIDAE

Hister unicolor, L. *Nottingham* and *Retford* districts (Thornley and Ryles)
— merdarius, Hoff. *S. Leverton* (Thornley); *Sherwood Forest* (Blatch)
— cadaverinus, Hoff. *Nottingham*, *Worksop*, and *Retford* districts

HISTERIDAE (*continued*)

— stercorarius, Hoff. *Newark* (?) (Hadfield coll.)
Hister succicola, Thoms. *Sherwood Forest*
— purpurascens, Herbst. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 202); *Fiskerton* (Ryles); there were numerous specimens in the late Mr. Hadfield's collection, presumably from the *Newark* district
— marginatus, Er. *Sherwood Forest* (Chaster)
— neglectus, Germ. *Nottingham Forest* (Dr. Godfrey Howitt); *Newark* district (?) (Hadfield coll.)
— carbonarius, Ill.
— 12-striatus, Schr.
— bimaculatus, L.
Carcinops 14-striata, Steph. *Sherwood Forest* (Blatch); *Retford*, in old corn-mill (Pegler)
Dendrophilus punctatus, Herbst. One specimen from dead bird, *Nottinghamshire*, 1828 (Dr. Howitt); *Sherwood Forest* (Tomlin and Chaster)
Gnathoncus punctulatus, Thoms. *Retford*, not uncommon in old corn-mill (Pegler); *S. Leverton*, one example, 20 May, 1901 (Thornley)
Saprinus nitidulus, Payk.
— aeneus, Fab. *Bulwell Forest*, 3 June, 1899; abundant in *Nottinghamshire* (Dr. Howitt); now rare
— virescens, Payk. Once taken by Mr. Marlow at *Welbeck* (Dr. Howitt); taken recently in the *Retford* district by Rev. T. C. B. Chamberlin
— rugifrons, Payk. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 212)
Plegaderus dissectus, Er. *Sherwood Forest*, taken on various occasions from 1870 onwards by several collectors
Abraeus globosus, Hoff. *Retford* (Pegler); *Sherwood Forest* (Blatch)
— granulum, Er. *Sherwood Forest* (Blatch)
Acritus minutus, Herbst.
Onthophilus sulcatus, Fab. Nr. *Nottingham* (A. H. Davis, in *Loudon's Mag. N. H.*, April, 1832); *Nottinghamshire*, Stephens (Fowler, *Brit. Coleop.* iii, 217)
— striatus, Fab.

SCAPHIDIIDAE

Scaphidium quadrimaculatum, Ol. *Sherwood Forest*; *Langford Moor*
Scaphisoma agaricinum, L. *Retford* (Pegler); *Sherwood Forest* (Blatch, Horner, etc.)
— boleti, Panz. *Sherwood Forest* (Blatch and Horner)

TRICHOPTERYGIDAE

Pteryx suturalis, Heer. *Sherwood Forest*
Ptinella testacea, Heer. 'Under bark of dead beech; taken in great abundance by Rev. A. Matthews in *Sherwood Forest*, and also by Mr. Blatch' (Fowler, *Brit. Coleop.* iii, 111)
— denticollis, Fairm.
— aptera, Guer.
— angustula, Gill.
} *Sherwood Forest* (Blatch, Horner, and Fowler)
— tenella, Er. A single example under bark of dead oak in *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 113)
Trichopteryx sarae, Matth. 'Two specimens were taken in *Nottinghamshire* by the Rev. H. Matthews in 1861; the species has not been found since that time' (Fowler, *Brit. Coleop.* iii, 116)

TRICHOPTERYGIDAE (*continued*)

Trichopteryx anthracina, Matth. — seminitens, Matth. — attenuata, Gill. — picicornis, Mann. } *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 118–123)

— carbonaria, Matth. 'A single example was taken in Aug., 1868, by the Rev. A. Matthews in *Thoresby Park*, Nottinghamshire, by sweeping under oaks' (Fowler, *Brit. Coleop.* iii, 123)

— obscaena, Woll. 'Has once been taken in faggots by Mr. Matthews in *Sherwood Forest*' (Fowler, *Brit. Coleop.* iii, 124)

Ptilium marginatum, Aubé. *Sherwood Forest* (Blatch)

— halidayi, Matth. 'A single example was taken by Mr. Matthews under bark of dead oak in *Sherwood Forest*' (Fowler, *Brit. Coleop.* iii, 134)

Ptenidium nitidum, Heer

— evanescens, Marsh.

— turgidum, Thoms. *Sherwood Forest* (Blatch)

— gressneri, Er. *Sherwood Forest* (Blatch)

CORYLOPHIDAE

Orthoperus brunnipes, Gyll. *Sherwood Forest*

— corticalis, Redt. Two specimens taken by the Rev. A. Matthews in *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 144)

— atomus, Gyll. *Sherwood Forest* (Blatch)

Corylophus cassidioides, Marsh. *Clumber* (Pegler)

COCCINELLIDAE

Subcoccinella 24-punctata, L. Hippodamia variegata, Goeze Anisosticta 19-punctata, L. } *S. Leverton* (Thornley)

Adalia obliterata, L. Type common; var. fenestrata, Weise, taken in *Sherwood Forest* by Canon Fowler

— bipunctata, L.

Anatis ocellata, L. *Langford Moor*, common on firs (Thornley); *Clumber* (Pegler)

Coccinella 10-punctata, L.

— hieroglyphica, L.

— 11-punctata, L.

— 7-punctata, L.

Halyzia 14-guttata, Poda

— 18-guttata, L.

— conglobata, L.

— 22-punctata, L.

Scymnus nigrinus, Kug. — capitatus, F. } *Sherwood Forest* (Chaster)

— haemorrhoidalis, Herbst. *Sherwood Forest* (Tomlin)

— testaceus, Mots., var. scutellaris, Muls. Canal bank, *Retford* (Pegler)

Platynaspis luteorubra, Goeze. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 175)

Chilocorus similis, Rossi. *Treswell; Grove*

— bipustulatus, Ill. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 176); *Barrow Hills, Everton* (Thornley)

Exochomus quadripustulatus, L. Occurs throughout the county

Rhizobius litura, Fab.

Coccidula rufa, Herbst. *S. Leverton* (Thornley); *Retford* (Pegler)

ENDOMYCHIDAE

Mycetaea hirta, Marsh. *S. Leverton* (Thornley); *Retford* (Pegler)

EROTYLIDAE

Dacne rufifrons, Fab. Very widely distributed in *Nottinghamshire*

Triplax russica, L. *Sherwood Forest* (Fowler); on ash trees near *Nottingham* (Dr. G. Howitt)

— aenea, Schall. *Littleborough* (Thornley); *Nottingham*, in numbers in company with Tetratoma fungorum (Ryles)

Cyrtotriplax bipustulata, Fab. *Sherwood Forest* (J. K. Taylor, Chaster, and Tomlin)

PHALACRIDAE

Phalacrus caricis, Sturm. *Retford* district (Pegler)

Olibrus corticalis, Panz. *Sherwood Forest* (Tomlin)

— aeneus, Fab.

Eustilbus testaceus, Panz.

MICROPEPLIDAE

Micropeplus porcatus, Payk.

— staphylinoides, Marsh.

— margaritae, Duv.

— tesserula, Curt. *Sherwood Forest* (Fowler, Blatch, Tomlin, etc.); 36 specimens taken off an oak stump, June, 1889 (Blatch)

NITIDULIDAE

Brachypterus pubescens, Er.

— urticae, Fab.

Cercus pedicularius, L. *Retford* district (Pegler)

— bipustulatus, Payk. *Sherwood Forest*, in Cossus burrows (Fowler, *Brit. Coleop.* iii, 223)

Carpophilus hemipterus, L. *Newark* district (?) (Hadfield coll.)

— mutilatus, Er. Sparingly in Cossus burrows in *Sherwood Forest;* Mr. J. R. Hardy (Fowler, *Brit. Coleop.* iii, 224)

Epuraea decemguttata, Fab. *Sherwood Forest*

— aestiva, L.

— melina, Er. *S. Leverton; Treswell Wood* (Thornley)

— longula, Er. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 229)

— deleta, Er.

— parvula, Sturm. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 231)

— obsoleta, Fab.

Omosiphora limbata, Fab. *Retford* district (Thornley and Pegler)

Nitidula bipustulata, L.

— rufipes, L. *Nottinghamshire*, rare (Dr. Howitt)

Soronia grisea, L. *Retford* district (Thornley and Pegler)

Omosita depressa, L. *Retford* (Pegler); *Sherwood Forest* (Blatch)

— colon, L.

— discoidea, Fab.

Pocadius ferrugineus, Fab. *Sherwood Forest; Treswell Wood, etc.*

Meligethes rufipes, Gyll.

— lumbaris, Sturm. *Treswell Wood* (Thornley)

— aeneus, Fab.

— viridescens, Fab.

— morosus, Er. *Sherwood Forest* (Blatch)

— picipes, Sturm.

— murinus, Er. *Barrow Hills, Everton*

INSECTS

NITIDULIDAE (*continued*)

Cychramus luteus, Fab.
— fungicola, Heer
Cryptarcha strigata, Fab. *Sherwood Forest* (Tomlin)
Ips quadriguttata, Fab. *Sherwood Forest*
Pityophagus ferrugineus, Fab. *Sherwood Forest* (Tomlin)

TROGOSITIDAE

Nemosoma elongatum, L. *Beeston*, Mr. J. Sidebotham (Fowler, *Brit. Coleop.* iii, 268). One specimen beaten from bramble at *Colwick*, near *Nottingham*, 1828 (Dr. G. Howitt)
Tenebrioides mauritanicus, L.
Thymalus limbatus, Fab. *Sherwood Forest*

COLYDIIDAE

Teredus nitidus, Fab. *Sherwood Forest* (Blatch and Tomlin)
Cerylon histeroides, Fab. Under bark of willows, *Nottinghamshire* (Dr. G. Howitt); *Sherwood Forest* (Tomlin)
— fagi, Bris. *Wollaton; Nottingham* (Ryles)
— ferrugineum, Steph. *Wollaton* (Freestone); *Retford* (Pegler); *Sherwood Forest*

CUCUJIDAE

Rhizophagus cribratus, Gyll.
— depressus, Fab.
— perforatus, Er.
— parallelocollis, Er.
— oblongocollis, Blatch
— ferrugineus, Payk.
— nitidulus, Fab.
} *Sherwood Forest* (Blatch, Horner, Fowler, and others)
— dispar, Gyll.
— bipustulatus, Fab.
— politus, Hellw. *Sherwood Forest* (Blatch and Gorham)
Pediacus dermestoides, Fab. *Sherwood Forest* (Fowler, Chaster, and Tomlin)
Laemophloeus ferrugineus, Steph. *Grove* (Pegler); *Worksop* (Houghton)
Psammoechus bipunctatus, Fab. *Clumber* (Pegler)
Silvanus surinamensis, L. *Retford* district (Pegler)

MONOTOMIDAE

Monotoma picipes, Herbst. *S. Leverton*, in hot frame (Thornley)
— longicollis, Gyll. *S. Leverton*, in hot frame (Thornley); *Sherwood Forest* (Blatch)

LATHRIDIIDAE

Lathridius lardarius, De G.
— bergrothi, Reitt. On 13 November, 1900, I found several examples of this beetle feeding on a dried specimen of burdock in a parcel of British plants which I was incorporating in the herbarium at *Nottingham University College*. Accompanying it were Cartodere filum and Corticaria fulva, both in some numbers. All the species were identified by Mr. G. C. Champion
Coninomus nodifer, Westw.
Enicmus minutus, L.
— transversus, Ol.

LATHRIDIIDAE (*continued*)

Enicmus rugosus, Herbst. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 284)
— testaceus, Steph. *Sherwood Forest* (J. K. Taylor and W. G. Blatch); *Tuxford* (S. Pegler)
— 'consimilis, Mann.' (= brevicornis, Mann.). *Sherwood Forest* (see Fowler, *Brit. Coleop.* iii, 283)
Cartodere ruficollis, Marsh.
— elongata, Curt. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 286)
— filiformis, Gyll. *Sherwood Forest* (Tomlin)
— filum, Aubé. Several specimens feeding on dried burdock in *University College, Nottingham* (see note under Lathridius bergrothi above)
Corticaria pubescens, Gyll.
— denticulata, Gyll. *Sherwood Forest* (Fowler); *Tuxford, Ordsall,* and *Lound* (Pegler)
— serrata, Payk. *Clarborough* (Thornley); *Sherwood Forest* (Blatch)
— fulva, Com. Found in numbers feeding on dried burdock, *University College, Nottingham* (see note under Lathridius bergrothi above)
— elongata, Humm.
Melanophthalma gibbosa, Herbst.
— fuscula, Humm.

CRYPTOPHAGIDAE

Telmatophilus caricis, Ol.
Antherophagus nigricornis, Fab. *Budby, Sherwood Forest* (J. Golding, etc.)
Cryptophagus lycoperdi, Herbst.
— setulosus, Sturm. *Treswell* (Thornley)
— pilosus, Gyll.
— ruficornis, Steph. *Sherwood Forest* (Chaster)
— saginatus, Sturm.
— scanicus, L.
— acutangulus, Gyll. *Retford* district (Pegler)
— cellaris, Scop.
— pubescens, Sturm. *Sherwood Forest* (Fowler, *Brit. Coleop.* iii, 325)
— bicolor, Sturm. *S. Leverton* (Thornley)
Micrambe vini, Panz.
Henoticus serratus, Gyll. *Sherwood Forest* (J. K. Taylor and Blatch)
Paramecosoma melanocephalum, Herbst. *Cottam* (Pegler)
Atomaria nigriventris, Steph.
— elongatula, Er. *Sherwood Forest* (Blatch)
— nigripennis, Payk.
— munda, Er. *S. Leverton* (Thornley)
— fuscata, Schön.
— atra, Herbst. *Radcliffe-on-Trent* (Ryles)
— pusilla, Payk.
— atricapilla, Steph.
— basalis, Er. *Clumber* (Pegler)
— apicalis, Er.
— analis, Er.
— ruficornis, Marsh.
Ephistemus gyrinoides, Marsh.

MYCETOPHAGIDAE

Typhaea fumata, L.
Triphyllus suturalis, Fab. *Newark* (Ryles); *Retford* district (Pegler); *Sherwood Forest* (Blatch and Horner)
— punctatus, Fab. *Sherwood Forest* (Blatch and Horner)

MYCETOPHAGIDAE (*continued*)

Litargus bifasciatus, Fab. *Clifton Grove*, nr. *Nottingham* (Ryles)
Mycetophagus quadripustulatus, L. *Nottingham*, *Worksop*, and *Retford* districts
— piceus, Fab. *Lound*, near *Retford* (Pegler); *Sherwood Forest*
— atomarius, Fab. *Clifton Grove* (Ryles)
— quadriguttatus, Müll. *Retford*, in old corn mill (Pegler)
— multipunctatus, Hellw. *Littleborough* (Thornley)

BYTURIDAE

Byturus tomentosus, Fab.

DERMESTIDAE

Dermestes vulpinus, Fab. Bone works at *Nottingham* (Ryles) and *Retford* (Thornley and Pegler); *Worksop* (Houghton)
— murinus, L. Has occurred throughout the county in dead birds, etc.
— lardarius, L.
Attagenus pellio, L.
Megatoma undata, Er. Nr. *Nottingham* (Dr. Howitt); *Sherwood Forest* (Fowler and Ryles); *Retford* district (Pegler)
Tiresias serra, Fab. *Sherwood Forest* (Blatch)
Anthrenus musaeorum, L.
— claviger, Er. *Nottingham*, *Worksop*, and *Retford* districts, common; 'sometimes swarms at parsley flowers at *S. Leverton*' (Thornley)

BYRRHIDAE

Byrrhus pilula, L.
— fasciatus, Fab.
— murinus, Fab. *Nottingham*, once taken (Dr. Howitt)
Cytilus varius, Fab.
Simplocaria semistriata, Fab.
Aspidiphorus orbiculatus, Gyll. *Sherwood Forest*

PARNIDAE

Elmis aeneus, Müll.
— cupreus, Müll. *Treswell* (Thornley)
Parnus prolifericornis, Fab.
— auriculatus, Panz. *Newark* district (?) (Hadfield coll.)

HETEROCERIDAE

Heterocerus marginatus, Fab. *Barton-in-Fabis* (Pope)

LUCANIDAE

Dorcus parallelopipedus, L. *Nottingham* district (*Wollaton*, *Clifton Grove*, etc.); *Wheatley* (Rev. T. C. B. Chamberlin); *Retford* district (Pegler); *Sherwood Forest* (Fowler, *Brit. Coleop.* iv, 6)
Sinodendron cylindricum, L.

SCARABAEIDAE

Onthophagus ovatus, L. *Mansfield* (Dr. G. Howitt)
— coenobita, Herbst. Rare near *Nottingham* (Dr. Howitt)
— nuchicornis, L. *Nottingham*, abundant, 1830 (Dr. Howitt); *Retford* district (Pegler)

SCARABAEIDAE (*continued*)

Aphodius erraticus, L.
— subterraneus, L.
— fossor, L.
— haemorrhoidalis, L.
— foetens, Fab.
— fimetarius, L.
— scybalarius, Fab.
— ater, De G.
— constans, Duft. *Colwick*, fairly common in early spring (Ryles)
— granarius, L.
— rufescens, Fab. *Nottingham* and *Retford* districts
— porcus, Fab. *Clumber* (Pegler); not uncommon near *Nottingham* (Dr. G. Howitt)
— pusillus, Herbst. *Nottingham* and *Retford* districts
— merdarius, Fab.
— inquinatus, Fab.
— sticticus, Panz. *S. Leverton*, common (Thornley)
— punctato-sulcatus, Sturm.
— prodromus, Brahm.
— contaminatus, Herbst. *Nottingham* and *Retford* districts, often abundant.
— luridus, Fab. (The black var. also occurs)
— rufipes, L.
— depressus, Kug.
Geotrupes typhoeus, L. Common throughout the *Forest* district of *Nottinghamshire*; Dr. Howitt (Stephens)
— spiniger, Marsh.
— stercorarius, L.
— sylvaticus, Panz.
— vernalis, L. *Mansfield Forest* (Dr. Howitt)
Trox scaber, L. *Nottingham* and *Retford* districts
Hoplia philanthus, Füss. '*Nottinghamshire*' (Fowler, *Brit. Coleop.* iv, 48)
Serica brunnea, L.
Rhizotrogus solstitialis, L. *Nottingham*, sometimes common; *Worksop* (Houghton)
Melolontha vulgaris, Fab.
Phyllopertha horticola, L.
Cetonia aurata, L. *Mansfield* (Dr. G. Howitt)

BUPRESTIDAE

Agrilus laticornis, Ill. (?) *Treswell Wood* (Pegler)
— angustulus, Ill. *Sherwood Forest* (Tomlin)

THROSCIDAE

Throscus dermestoides, L. *Langford Moor*, common (Thornley); *Nottingham* (Ryles); *Sherwood Forest*, common

EUCNEMIDAE

Melasis buprestoides, L. *Sherwood Forest* (Tomlin)

ELATERIDAE

Lacon murinus, L.
Cryptohypnus riparius, Fab.
— quadripustulatus, Fab. *Nottingham* district (Ryles)
Elater lythropterus, Germ. *Sherwood Forest*
— coccinatus, Rye. *Sherwood Forest* (Blatch; Fowler, *Brit. Coleop.* iv, 90)
— pomonae, Steph. *Sherwood Forest* (J. Ray Hardy) [See *Ent. Month. Mag.* April, 1873, p. 268]
— pomorum, Herbst. *Sherwood Forest*; first taken in 1836 by Dr. Howitt and T. Desvignes, and from 1886 to the present time by Fowler, Blatch, Horner, and others

INSECTS

ELATERIDAE (*continued*)

Melanotus rufipes, Herbst.
„ var. castanipes, Payk. *Sherwood Forest* (Trueman ; Fowler, *Brit. Coleop.* iv, 97)
Athous rhombeus, Ol. *Sherwood Forest* (Blatch)
— niger, L.
— longicollis, Ol.
— haemorrhoidalis, Fab.
— vittatus, Fab.
Limonius minutus, L.
Adrastus limbatus, Fab.
Agriotes sputator, L.
— obscurus, L.
— lineatus, L.
— sobrinus, Kies.
— pallidulus, Ill.
Dolopius marginatus, L.
Corymbites pectinicornis, L. *Worksop* (Houghton) ; *Retford* (Pegler) ; *Grove* (Rev. G. Shipton) ; *Wheatley* (Rev. T. C. B. Chamberlin) ; *Barton* (Ryles)
— cupreus, Fab. *Nottingham*, with var. aeruginosus, Fab. (Ryles); *Lowdham* (C. E. Pearson)
— tessellatus, Fab. *Southwell* (Ryles)
— quercus, Gyll. *Nottingham* district, with var. ochropterus, Steph. (Ryles) ; *Worksop* (Houghton)
— holosericeus, Fab.
— aeneus, L. *Nottingham* (Ryles) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* iv, 114) ; *Bulwell Forest*
— bipustulatus, L. *Sherwood Forest* (Turner ; Fowler, *Brit. Coleop.* iv, 115)
Campylus linearis, L. *Aspley ; Nottingham ; Hazleford* (Ryles) ; *Treswell* and *Gringley Woods* (Thornley)

DASCILLIDAE

Dascillus cervinus, L. *Clumber* (Pegler) ; *Wheatley* (Rev. T. C. B. Chamberlin) ; *Nottingham* (Ryles)
Helodes minuta, L.
Microcara livida, Fab.
Cyphon variabilis, Thunb.
Prionocyphon serricornis, Müll. *Sherwood Forest*
Scirtes hemisphaericus, L. *Sutton*, nr. *Retford*, abundant among Equisetum (Thornley)

MALACODERMIDAE

Pyropterus affinis, Payk. *Sherwood Forest*, 1869 (J. R. Hardy) ; also taken there in 1869 and 1870 by J. Kidson Taylor, and subsequently by Rev. A. Matthews and others (see Fowler, *Brit. Coleop.* iv, 128)
Platycis minutus, Fab. *Treswell Wood* (Thornley)
Lampyris noctiluca, L. *Retford* district (Pegler) ; *Sherwood Forest ; Kingston-on-Soar*
Podabrus alpinus, Payk. *Aspley, Nottingham* (Ryles) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* iv, 133)
Telephorus rusticus, Fall.
— lividus, L.
— pellucidus, Fab.
— nigricans, Müll., and var. discoideus, Steph.
— obscurus, L. *Nottingham* (Ryles) ; *Retford* district (Pegler) ; *Sherwood Forest* (Turner and Blatch ; Fowler, *Brit. Coleop.* iv, 138)
— lituratus, Fab.
— bicolor, Fab.

MALACODERMIDAE (*continued*)

Telephorus haemorrhoidalis, Fab. *Nottingham* (Ryles) ; *Retford* (Pegler) ; *S. Leverton*, common on hawthorn flowers (Thornley)
— oralis, Germ. *Nottingham* (Ryles) ; *S. Leverton* (Thornley)
— flavilabris, Fall.
— thoracicus, Ol. *Nottingham* (Pope)
Rhagonycha fuscicornis, Ol.
— fulva, Scop.
— testacea, L. *Nottingham* (Ryles) and *Retford* (Thornley) districts
— limbata, Thoms.
— pallida, Fab.
Malthinus punctatus, Fourc.
— fasciatus, Ol. *Langford Moor* (Thornley) ; *Sherwood Forest*
Malthodes marginatus, Latr.
— minimus, L.
— fibulatus, Kies. *Sherwood Forest* (Fowler, *Brit. Coleop.* iv, 152)
Malachius bipustulatus, L.
Dasytes flavipes, Fab. *Nottingham* district (Ryles) ; *S. Leverton* (Thornley)
— oculatus, Kies. *Sherwood Forest* (E. C. Rye ; and Fowler, *Brit. Coleop.* iv, 161)
— aerosus, Kies.
Phloeophilus edwardsi, Steph. *Sherwood Forest* (Rev. A. Matthews) (Fowler, *Brit. Coleop.* iv, 165)

CLERIDAE

Opilo mollis, L. *Nottingham Park* (Ryles)
Thanasimus formicarius, L. *Sherwood Forest* (Tomlin)
Necrobia ruficollis, Fab. } *Nottingham*, in profusion in bone mill (Ryles) ; *Retford*, common in bone mill (Pegler) ; *Sherwood Forest* (Blatch and Horner)
— rufipes, De G. }
Corynetes coeruleus, De G. *S. Leverton*, very common in the old church (Thornley) ; *Retford* (Pegler)

LYMEXYLONIDAE

Hylecoetus dermestoides, L. *Sherwood Forest*, locally common

PTINIDAE

Ptinus sexpunctatus, Panz. *Nottingham University College*, 9 November 1897 ; many examples found feeding on specimens of Draba in a parcel of dried plants collected by Mr. H. Fisher in Franz Josef Land. The origin of the insect is, however, quite uncertain, and may be local
— fur, L.
Niptus hololeucus, Fald.
— crenatus, Fab. *Nottingham* (Ryles)
Hedobia imperialis, L. *S. Leverton*, often common (Thornley) ; *Nottingham* district (Ryles and Freestone)
Dryophilus pusillus, Gyll. } *Sherwood Forest* (Ryles)
— anobioides, Chevr. }
Priobium castaneum, Fab.
Anobium domesticum, Fourc.
— fulvicorne, Sturm. *Beeston* (Ryles) ; *S. Leverton* (Thornley)
— paniceum, L.

PTINIDAE (*continued*)

Xestobium tessellatum, Fab. *S. Leverton*, was common in the old church (Thornley); *Retford* (Pegler); *Cokwick* (Ryles)
Ernobius mollis, L.
Ptilinus pectinicornis, L.
Ochina hederae, Müll. *Chilwell* (Ryles); *Retford* (Pegler)
Xyletinus ater, Panz. On old palings at *Newark*, not uncommon (Hadfield; Fowler, *Brit. Coleop.* iv, 195)
Dorcatoma flavicornis, Fab. *Sherwood Forest* (Matthews; Fowler, *Brit. Coleop.* iv, 198)
Anitys rubens, Hoff. *Sherwood Forest* (Rev. A. Matthews, Dr. Chaster, and J. R. le B. Tomlin)

BOSTRICHIDAE

Rhizopertha pusilla, Fab. Old corn mill, *Retford* (Pegler)
Bostrichus capucinus, L. '*Nottinghamshire*,' Stephens (Fowler, *Brit. Coleop.* iv, 201)

LYCTIDAE

Lyctus canaliculatus, Fab. *Worksop* (Houghton); 'Very abundant during the summer in *Nottinghamshire*; Dr. Howitt' (Stephens)
— brunneus, Steph. '*Nottingham*, one specimen in a shop window, 1829; Dr. Howitt' (Stephens)

SPHINDIDAE

Sphindus dubius, Gyll. *Sherwood Forest* (J. K. Taylor and Blatch)

CISSIDAE

Cis boleti, Scop.
— micans, Fab. *Sherwood Forest* (Fowler, Chaster, Tomlin, etc.)
— hispidus, Payk. *Sherwood Forest* (Blatch and Horner, Chaster)
— bidentatus, Ol. *Retford* (Pegler); *Sherwood Forest* (Blatch and Horner)
— nitidus, Herbst.
— festivus, Panz.
— fuscatus, Mell. } *Sherwood Forest* (Blatch and Horner)
Ennearthron cornutum, Gyll. *Sherwood Forest* (Chaster)
Octotemnus glabriculus, Gyll.

CERAMBYCIDAE

Aromia moschata, L. *Nottingham* and *Retford* districts
Callidium violaceum, L. *Ruddington* (W. H. Freestone); *Worksop* (Houghton)
— variabile, L. *Sherwood Forest* (Blatch, Tomlin)
Clytus arietis, L.
— mysticus, L. *Chilwell* (Ryles); *S. Leverton* (Thornley); *Retford* (Pegler)
[Cyllene crinicornis, Chev. A fine example of this Central American longicorn was captured in *Retford* railway station in September, 1899, and taken to Mr. Stephen Pegler. It was identified by Mr. E. J. Gahan of the British Museum]
Gracilia minuta, Fab. *Retford*, in great quantity in an old hamper (Pegler)
Molorchus umbellatarum, L. *Kingston-on-Soar*, August 1903 (Thornley)

CERAMBYCIDAE (*continued*)

Rhagium bifasciatum, Fab.
Toxotus meridianus, Panz.
Leptura scutellata, Fab. *Sherwood Forest*, June, 1869 (J. K. Taylor)
— livida, Fab. *Cottam*, 6 July, 1901 (Eland Shaw)
Strangalia quadrifasciata, L. *Langford Moor*; *Sherwood Forest*
— armata, Herbst. *Treswell Wood*, rather common; *Sherwood Forest*; *Wellow Park*
Grammoptera tabacicolor, De G. *Treswell* and *Gringley Woods* (Thornley); *Sherwood Forest* (Ryles)
— analis, Panz. *Cokwick* (Ryles)
— ruficornis, Fab.
Acanthocinus aedilis, L. *Cossall*; *Wilford*; *Clifton*; in all cases not far from a colliery, and probably imported in pit-props; *Worksop* (Houghton)
Leiopus nebulosus, L. *Bramcote* and *Sherwood Forest* (Ryles); *S. Leverton* (Thornley); *Clumber* (Pegler)
Pogonochaerus bidentatus, Thoms. *S. Leverton*, not uncommon in late autumn (Thornley)
— dentatus, Fourc. *S. Leverton* (Thornley)
Monochammus sutor, L. Near *Clifton colliery*, *Nottingham*, one specimen, probably imported (Walker)
Saperda carcharias, L. *Worksop* (Houghton); *Cinder Hill*
— scalaris, L. *Sherwood Forest*, June, 1869 (J. K. Taylor), and two specimens in 1889 (W. G. Blatch); also taken by Mr. Tomlin and Dr. Chaster
Tetrops praeusta, L.
Stenostola ferrea, Schrank. Taken at *Nottingham*, abundantly in June, 1828, sparingly in 1829 (G. Howitt: see *Entomologist* for 1878, p. 177). Near *Nottingham*, 1831 (A. H. Davis in *Loudon's Mag. N. H.* April, 1832); *Newark* (Fowler, *Brit. Coleop.* iv, 254)
Phytoecia cylindrica, L. *Newark* (Hadfield; Fowler, *Brit. Coleop.* iv, 255)

BRUCHIDAE

Bruchus rufimanus, Boh.
— villosus, Fab. *Sherwood Forest* (Tomlin)

CHRYSOMELIDAE

Donacia simplex, Fab.
— semicuprea, Panz. Canal, *Retford*, common (Thornley); *Wollaton Canal* (Ryles); *Worksop* (Houghton)
— sericea, L.
Haemonia appendiculata, Panz. (= equiseti, Fab.) *Holme Pierrepont*, one specimen (W. H. Freestone, confirmed by Rev. A. Thornley)
Lema lichenis, Voet. *Nottingham* and *Retford* districts
— melanopa, L.
Crioceris lilii, Scop. (=merdigera, Fab.) *Newark* district (?) [Hadfield coll.]
Cryptocephalus coryli, L. *Langford Moor*, a single specimen beaten from birch, 29 June, 1899 (Thornley)
— pusillus, Fab. *Sherwood Forest* (Fowler, *Brit. Coleop.* iv, 295)
— labiatus, L.
— querceti, Suffr. *Sherwood Forest* (Matthews, Blatch, Ryles, and others)

CHRYSOMELIDAE (*continued*)

Timarcha tenebricosa, Fab.
— violaceonigra, De G.
Chrysomela staphylea, L.
— polita, L.
— orichalcia, Müll. *S. Leverton* (Thornley)
„ var. hobsoni, Steph. *Nottingham* (B. S. Dodd)
— goettingensis, L. *Sherwood Forest* (Fowler)
— fastuosa, Scop. *Ruddington* (Ryles and others)
— didymata, Scriba. *Barrow Hills, Everton*, 11 July, 1903 (Thornley)
— hyperici, Forst. *S. Leverton* (Thornley); *Sherwood Forest* (Ryles)
Phytodecta viminalis, L. *Newark* district (?) [Hadfield coll.]
— olivacea, Forst.
Gastroidea viridula, De G.
— polygoni, L.
Phaedon tumidulus, Germ.
— cochleariae, Fab.
Phyllodecta vulgatissima, L.
— vitellinae, L.
Hydrothassa aucta, Fab. *Treswell Wood* (Thornley)
— marginella, L.
Prasocuris junci, Brahm
— phellandrii, L.
Phyllobrotica quadrimaculata, L. *Retford* (Pegler)
Luperus rufipes, Scop.
— flavipes, L.
Lochmaea suturalis, Thoms. *Retford* district (Pegler)
— crataegi, Forst. *Clumber* (Pegler)
Galerucella nymphaeae, L. *S. Leverton* (Thornley)
— lineola, Fab. *S. Leverton; Rampton; Cottam;* common (Thornley)
Adimonia tanaceti, L. *Barrow Hills, Everton*, in profusion, 1902 (Thornley)
Sermyla halensis, L.
Longitarsus anchusae, Payk. *Clumber* (Pegler)
— holsaticus, L. *Newark* district (?) [Hadfield coll.]
— luridus, Scop.
— suturellus, Duft.
„ var. fuscicollis, Steph.
— atricillus, L. *Retford* district (Thornley)
— melanocephalus, All.
— flavicornis, Steph. } *Newark* district (?) [Hadfield
— tabidus, Fab. } coll.]
— jacobaeae, Wat.
— gracilis, Kuts. *Kingston-on-Soar*, common (Thornley)
— laevis, Duft. *S. Leverton*, common (Thornley)
Haltica lythri, Aubé } *Newark* district (?) [Hadfield
— pusilla, Duft. } coll.]
Phyllotreta nodicornis, Marsh. *Nottingham* and *Radcliffe* (Ryles)
— consobrina, Curt. } *Newark* district (?) [Had-
— punctulata, Marsh. } field coll.]
— vittula, Redt. *Treswell Wood* (Thornley)
— undulata, Kuts.
— nemorum, L.
— ochripes, Curt. *Newark* district (?) [Hadfield coll.]
— tetrastigma, Com. *Clumber* (Pegler)
— exclamationis, Thunb.
Aphthona nonstriata, Goeze. *Newark* district (?) [Hadfield coll.]
— atrocoerulea, Steph. *S. Leverton* (Thornley)
Batophila rubi, Payk. *S. Leverton* (Thornley); *Retford* (Pegler); *Radcliffe* (Ryles)

CHRYSOMELIDAE (*continued*)

Sphaeroderma testaceum, Fab.
— cardui, Gyll.
Apteropeda orbiculata, Marsh.
Mantura rustica, L.
— matthewsi, Curt. *Newark* district (?) [Hadfield coll.]
Crepidodera transversa, Marsh.
— ferruginea, Scop.
— rufipes, L.
— aurata, Marsh.
Chaetocnema subcoerulea, Kuts. *Newark* district (?) [Hadfield coll.]
— hortensis, Fourc.
Plectroscelis concinna, Marsh.
Psylliodes attenuata, Koch. } *Newark* district (?) [Had-
— chrysocephala, L. } field coll.]
— napi, Koch.
— cuprea, Koch.
— affinis, Payk.
— marcida, Ill. *Newark* district (?) [Hadfield coll.]
— luteola, Müll. *Sherwood Forest*, Rev. A. Matthews (Fowler, *Brit. Coleop.* iv, 394)
— picina, Marsh. *Tuxford* (Pegler)
Cassida vittata, Vill.
— flaveola, Thunb.
— viridis, Fab.

TENEBRIONIDAE

Blaps mucronata, Latr.
Heledona agaricola, Fab. *Sherwood Forest*
Scaphidema metallicum, Fab. *S. Leverton* (Thornley); *Beeston* and *Radcliffe* (Ryles)
Tenebrio molitor, L.
— obscurus, Fab. *Nottingham* (Ryles); *Retford* (Pegler)
Gnathocerus cornutus, Fab. *Nottingham, Worksop*, and *Retford* districts
Tribolium ferrugineum, Fab. *Retford*, in old flour mill (Pegler)
Hypophloeus castaneus, Fab. *Nottingham*, 30 November, 1835, R. Bakewell (Stephens, *Ent. Mag.* January, 1836, iii, 415); *Sherwood Forest*, June, 1869 and 1870 (J. K. Taylor); also taken there subsequently by various collectors (Fowler, *Brit. Coleop.* v, 22)
Helops striatus, Fourc.

CISTELIDAE

Cistela ceramboides, L. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 29, and Tomlin)
— murina, L.
Eryx ater, Fab. *Sherwood Forest* (Blatch)
Mycetochares bipustulata, Ill. *Sherwood Forest* (Tomlin)
Cteniopus sulphureus, L. *Barrow Hills, Everton; Marnham* (Thornley)

LAGRIIDAE

Lagria hirta, L.

MELANDRYIDAE

Tetratoma fungorum, Fab. *Nottingham*, 1898–99, in abundance (Ryles); *Sherwood Forest*
— desmaresti, Latr. *Sherwood Forest* (Matthews and Blatch)

MELANDRYIDAE (*continued*)

Clinocara undulata, Kr. *Sherwood Forest* (Blatch and Tomlin)
Hallomenus humeralis, Panz. *Sherwood Forest* (Tomlin)
Conopalpus testaceus, Ol., and var. vigorsi, Steph. *Sherwood Forest*
Melandrya caraboides, L. *Nottingham* (Ryles); *S. Leverton* (Thornley)
Phloeotrya rufipes, Gyll. *Sherwood Forest*

PYTHIDAE

Salpingus castaneus, Panz. *Clumber* (Pegler)
Rhinosimus ruficollis, L.
— viridipennis, Steph.
— planirostris, Fab.
} *Nottingham*, *Worksop*, and *Retford* districts.

OEDEMERIDAE

Oedemera nobilis, Scop. *Clumber* (Pegler)
Ischnomera coerulea, L. *Clifton Grove*, *Nottingham* (Ryles)
— sanguinicollis, Fab. *Sherwood Forest*, on mountain ash flowers (Blatch)

PYROCHROIDAE

Pyrochroa serraticornis, Scop.

SCRAPTIIDAE

Scraptia fuscula, Müll. *Sherwood Forest*, June, 1870 (J. Kidson Taylor)

MORDELLIDAE

Anaspis frontalis, L.
— rufilabris, Gyll. *Aspley Woods*, *Nottingham* (Ryles)
— geoffroyi, Müll. *Nottingham*; *Gunthorpe* (Ryles); *Retford* district, common (Thornley)
— ruficollis, Fab.
— subtestacea, Steph. *Nottingham* (Ryles); *S. Leverton* (Thornley); *Retford* (Pegler)
— maculata, Fourc.

ANTHICIDAE

Anthicus floralis, L.
— antherinus, L. *Newark* district (?) [Hadfield coll.]

XYLOPHILIDAE

Xylophilus oculatus, Gyll. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 92)

MELOÏDAE

Meloë proscarabaeus, L.
— violaceus, Marsh. *Bulwell Forest*

ANTHRIBIDAE

Brachytarsus fasciatus, Forst. Occurs in many places
— varius, Fab. *Langford Moor*, not uncommon on firs; *S. Leverton*; *Treswell Wood* (Thornley); *Sherwood Forest* (Ryles, Chaster, and Tomlin)

CURCULIONIDAE

Apoderus coryli, L. *Treswell Wood* (Thornley)
Attelabus curculionoides, L. *Sherwood Forest* (Ryles)

CURCULIONIDAE (*continued*)

Rhynchites cupreus, L. *Sherwood Forest* (Stevens, Blatch, and others)
— aequatus, L. *Radcliffe-on-Trent* (Ryles); *S. Leverton* (Thornley); *Retford* (Pegler)
— aeneovirens, Marsh. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 124, and Tomlin)
— minutus, Herbst. *S. Leverton*, common (Thornley); *Sherwood Forest* (Ryles)
— interpunctatus, Steph. *Newark* district (?) [Hadfield coll.]
— nanus, Payk.
— pubescens, Fab. *Sherwood Forest* (Ryles); *Gamston Wood* (Pegler)
Deporaüs megacephalus, Germ. *Langford Moor*, on birch with next species (Thornley)
— betulae, L.
Apion pomonae, Fab.
— craccae, L. *S. Leverton* and *Treswell Wood* (Thornley); *Hazelford* (Ryles)
— subulatum, Kirby. *Treswell Wood* (Thornley)
— ulicis, Forst.
— miniatum, Germ.
— cruentatum, Walt. *Sherwood Forest* (Ryles)
— haematodes, Kirby
— rubens, Steph. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 143)
— viciae, Payk. *Treswell Wood* (Thornley)
— difforme, Germ. *Sherwood Forest* (Ryles)
— apricans, Herbst.
— dichroum, Bedel
— nigritarse, Kirby
— hookeri, Kirby. *Treswell Wood* (Thornley); *Grove* (Pegler)
— aeneum, Fab.
— radiolus, Kirby
— onopordi, Kirby
— carduorum, Kirby
— virens, Herbst.
— astragali, Payk. *Cottam*, in a grass field (Pegler)
— pisi, Fab.
— aethiops, Herbst.
— striatum, Kirby
— immune, Kirby. Gravel-pit, *Sutton*, near *Retford* (Thornley)
— ervi, Kirby
— vorax, Herbst.
— seniculum, Kirby
— simile, Kirby. *Grove* (Pegler)
— marchicum, Herbst. *Sherwood Forest* (Blatch and Ryles)
— violaceum, Kirby
— hydrolapathi, Kirby
— humile, Germ.
Otiorrhynchus atroapterus, De G. *Newark* district (?) [Hadfield coll.]
— raucus, Fab. *Clumber* (Pegler)
— ligneus, Ol. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 178)
— picipes, Fab.
— sulcatus, Fab.
— ovatus, L.
Trachyphloeus scabriculus, L. *Newark* district (?) [Hadfield coll.]
Strophosomus coryli, Fab.
— capitatus, De G.
— retusus, Marsh.
— faber, Herbst. *Newark* district (?) [Hadfield coll.]

CURCULIONIDAE (*continued*)

Exomias araneiformis, Schr.
Omias mollinus, Boh. *S. Leverton*, common in hayfields (Thornley)
Brachysomus echinatus, Bonsd. *S. Leverton* (Thornley) ; *Clumber* (Pegler)
Sciaphilus muricatus, Fab.
Tropiphorus tomentosus, Marsh. *S. Leverton* (Thornley) ; *Beeston* (Ryles) ; *Nottingham* (Pope)
Liophloeus nubilus, Fab.
Polydrusus micans, Fab. *Nottingham* (Ryles) ; *Treswell Wood* (Thornley)
— pterygomalis, Boh.
— cervinus, L.
Phyllobius oblongus, L.
— calcaratus, Fab.
— urticae, De G.
— pyri, L.
— argentatus, L.
— maculicornis, Germ.
— pomonae, Ol.
— viridiaeris, Laich.
Tanymecus palliatus, Fab. *S. Leverton* (Thornley) ; *Grove* (Pegler)
Philopedon geminatus, Fab. *Sherwood Forest* (Tomlin)
Atactogenus exaratus, Marsh. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 209)
Barynotus obscurus, Fab.
— schönherri, Zett. *Newark* district (?) [Hadfield coll.]
— elevatus, Marsh. Widely distributed and common in places
Alophus triguttatus, Fab.
Sitones regensteinensis, Herbst.
— crinitus, Herbst. *Broadholme* (Pegler)
— tibialis, Herbst.
— hispidulus, Fab.
— humeralis, Steph. *Barrow Hills, Everton*, 4 September, 1903
— meliloti, Walt. *Colwick* (Ryles)
— flavescens, Marsh.
— puncticollis, Steph.
— suturalis, Steph.
— lineatus, L.
— sulcifrons, Thunb.
Gronops lunatus, L. *Newark* district (?) [Hadfield coll.]
Hypera punctata, Fab.
— rumicis, L.
— polygoni, L.
— suspiciosa, Herbst. *Retford* (Pegler) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 234)
— variabilis, Herbst.
— murina, Fab. *Clumber* (Pegler)
— plantaginis, De G.
— trilineata, Marsh. *Sherwood Forest* (Ryles)
— nigrirostris, Fab.
Liosoma ovatulum, Clairv.
Hylobius abietis, L.
Tracodes hispidus, L. *Sherwood Forest* (Tomlin)
Orchestes quercus, L.
— alni, L. *Nottingham* (Freestone) ; *Sherwood Forest* (Ryles)
„ var. ferrugineus, Marsh. *Nottingham* (Ryles)
— ilicis, Fab, var. nigripes, Fowler. *Treswell Wood* (Thornley)
— avellanae, Don. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 260)

CURCULIONIDAE (*continued*)

Orchestes fagi, L.
— rusci, Herbst. *Newark* district (?) [Hadfield coll.]
— stigma, Germ. *Treswell Wood* (Thornley)
— salicis, L.
Rhamphus flavicornis, Clairv.
Grypidius equiseti, Fab. *Aspley, Nottingham* (Ryles) ; *S. Leverton* and *Treswell* (Thornley)
Erirrhinus bimaculatus, Fab. *Clifton Grove, Nottingham* (Pope)
— acridulus, L.
Dorytomus vorax, Fab. *Nottingham* and *Retford* districts
— tortrix, L. *Nottingham* (Pope)
— maculatus, Marsh.
— melanophthalmus, Payk, var. agnathus, Boh. *Littleborough*
Tanysphyrus lemnae, Fab.
Bagous alismatis, Marsh. *S. Leverton* (Thornley) ; *Cossall*
Anoplus plantaris, Naez.
Elleschus bipunctatus, L. *Newark* district (?) [Hadfield coll.]
Tychius meliloti, Steph. *Newark*, in profusion on Melilotus officinalis in brickyard (Thornley and Carr)
Miccotrogus picirostris, Fab.
Gymnetron pascuorum, Gyll. *Retford* district (Pegler); *Sherwood Forest* (Fowler, Chaster, and Tomlin) ; *Worksop* (Houghton)
— antirrhini, Payk. *Trent-bank, Rampton*, in flowers of Linaria vulgaris, common
Mecinus pyraster, Herbst.
Anthonomus ulmi, De G.
— pedicularius, L.
— pomorum, L.
— rubi, Herbst.
Nanophyes lythri, Fab. *Newark* district (?) [Hadfield coll.]
Cionus scrophulariae, L. Common in many localities on Scrophularia nodosa and S. aquatica
— tuberculosus, Scop. *Newark* district (?) [Hadfield coll.]
— hortulanus, Marsh. *Treswell Wood*, on Scroph. nodosa
— blattariae, Fab.
— pulchellus, Herbst.
Orobitis cyaneus, L. On violets, *Treswell Wood* (Thornley); *Clumber Park* (Pegler)
Cryptorrhynchus lapathi, L. *Nottingham* (Pope) ; *Littleborough* (Thornley)
Acalles ptinoides, Marsh. *Newark* district (?) [Hadfield coll.]
Coeliodes rubicundus, Herbst. *Sherwood Forest* (Ryles)
— quercus, Fab.
— erythroleucus, Gmel. *Littleborough* (Thornley)
— quadrimaculatus, L.
— geranii, Payk. *N. Leverton* and *Treswell*, on Geranium pratense (Thornley)
Poophagus sisymbrii, Fab.
— nasturtii, Germ. *Nottinghamshire* (Stephens)
Ceuthorrhynchus assimilis, Payk.
— cochleariae, Gyll. *Nottingham* (Ryles)
— ericae, Gyll. *Newark* district (?) [Hadfield coll.]
— erysimi, Fab.
— contractus, Marsh.
— chalybaeus, Germ. *Retford* district (Pegler)

CURCULIONIDAE (*continued*)

Ceuthorrhynchus quadridens, Panz. *S. Leverton* (Thornley) ; *Widmerpool* (Ryles)
— pollinarius, Forst.
— viduatus, Gyll. *Sherwood Forest* (Hardy ; Fowler, *Brit. Coleop.* v, 252)
— pleurostigma, Marsh.
— alliariae, Bris. *S. Leverton* and *Retford* (Thornley)
— melanostictus, Marsh. *Retford* district (Pegler)
— arcuatus, Herbst. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 257)
— litura, Fab.
Ceuthorrhynchidius floralis, Payk.
— pyrrhorhynchus, Marsh. *Beeston* (Ryles)
— horridus, Fab. *Newark* district (?) [Hadfield coll.]
— troglodytes, Fab.
Rhinoncus pericarpius, L.
— gramineus, Herbst. *Cottam* and *Retford* (Pegler)
— perpendicularis, Reich.
— castor, Fab. *Littleborough* (Thornley) ; *Sherwood Forest*
Litodactylus leucogaster, Marsh. *Sherwood Forest* (Ryles and Pegler)
Phytobius quadrituberculatus, Fab.
Baris lepidii, Germ. *Hazelford* (Ryles)
Balaninus venosus, Grav. *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 384)
— nucum, L. *S. Leverton* (Thornley) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 385)
— turbatus, Gyll. *Newark* district (?) [Hadfield coll.]
— villosus, Fab. *Treswell Wood* (Thornley) ; *N. Leverton* (E. Shaw) ; *Sherwood Forest* (Fowler and Tomlin)

CURCULIONIDAE (*continued*)

Balaninus salicovorus, Payk.
— pyrrhoceras, Marsh.
Magdalis armigera, Fourc. *Nottingham* (Ryles) ; *S. Leverton* (Thornley) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 398 ; and Chaster)
— pruni, L.
Calandra granaria, L.
— oryzae, L.
Cossonus ferrugineus, Clairv. *Sherwood Forest* (Blatch)
Rhyncolus lignarius, Marsh. *Grove* (Pegler) ; *Sherwood Forest* (Blatch and Tomlin)
— gracilis, Ros. *Sherwood Forest* (Blatch)
— ater, L. *Sherwood Forest* (Turner ; Fowler, *Brit. Coleop.* v, 394)

SCOLYTIDAE

Scolytus destructor, Ol.
— intricatus, Ratz. *Sherwood Forest* (Blatch)
— multistriatus, Marsh. *Sherwood Forest* (Chaster and Tomlin)
Hylastes ater, Payk.
— opacus, Er. *Worksop* (Houghton) ; *Sherwood Forest* (Fowler, *Brit. Coleop.* v, 413)
Hylesinus crenatus, Fab. *Tuxford* (Pegler) ; *Worksop* (Houghton)
— oleiperda, Fab. *Burton Joyce* (Ryles)
— fraxini, Panz.
Myelophilus piniperda, L.
Dryocaetes villosus, Fab.
Tomicus laricis, Fab. *Sherwood Forest* (Blatch)
Trypodendron domesticum, L. *Sherwood Forest*, etc.
— quercus, Eich. *Sherwood Forest* (Blatch and Horner)

LEPIDOPTERA

The insects belonging to this group have, as usual, owing to their attractive appearance, received more attention from collectors than the other orders ; but although our knowledge of the butterflies and larger moths of the county is now fairly complete, much still remains to be done before anything like an exhaustive list of the so-called Micro-Lepidoptera can be given. The earliest published account of Nottinghamshire Lepidoptera is contained in White's *Worksop, the Dukery, and Sherwood Forest*, published in 1875. In this work two lists are given, one by W. J. Sterland of 'Lepidoptera taken in Sherwood Forest by the late John Trueman' ; the other, by R. E. Brameld, enumerates the species captured by himself 'in or about Sherwood Forest, from 1859 to 1874.' Mr. Sterland's list, although it professes to include only those species which Trueman himself collected within the limits of the forest, contains so many improbable records that one is forced to the conclusion that numerous species are included which were collected by Trueman in other parts of the kingdom or received by him from correspondents. I have therefore felt compelled to ignore most of Sterland's records unless confirmed by Brameld or later observers. Other lists of Nottinghamshire Lepidoptera have been published by the present writer[1] and by Mr. J. R. Hardy.[2]

In addition to the information derived from these sources I have received much help from numerous entomological friends and correspondents. My thanks are especially due to Miss Alderson of Worksop, whose labours in the Worksop and Sherwood Forest districts have resulted in the addition of very many new species to the county records, and whose co-operation in this work has been of the utmost value ; to the Rev. Alfred Thornley, whose unrivalled knowledge of the insect fauna of Nottinghamshire has been freely placed at my disposal ; and also to the Revs. E. G. Alderson and W. Becher, and Messrs. B. A. Bower, W. Daws, J. R. Hardy, G. Henderson, J. T. Houghton, A. R. Leivers, D. H. Pearson, G. Pike, and A. Simmons. To all these friends I am indebted for much valuable and generous assistance.

The arrangement and nomenclature adopted in this list are those of South's '*Entomologist*' *List of British Lepidoptera*. Of the 2,081 species therein enumerated, 903 species have been recorded on good authority as occurring in Nottinghamshire.

[1] *A Contribution to the Geology and Natural History of Nottinghamshire*, 1893.
[2] *Manchester Memoirs*, vol. 45 (1901).

INSECTS

RHOPALOCERA

Butterflies

PIERIDAE

The beautiful Black-veined White (*Aporia crataegi*) can only be claimed as a Nottinghamshire insect on the strength of Sterland's statement ('Zoology of Sherwood Forest,' in White's *Worksop, the Dukery, and Sherwood Forest*) that 'a single specimen of the Black-veined White (*P. crataegi*) was taken by J. Trueman, but he does not give in his memoranda the precise locality, though I gather it was in Thoresby Park.' The large and small Cabbage Whites (*Pieris brassicae* and *P. rapae*) and the Green-veined White (*P. napi*) are all very common both in spring and autumn. The larvae of *P. brassicae* have been observed feeding gregariously on horse-radish, *Tropaeolum canariense* and other species, as well as on the more usual cabbages and cauliflowers. *P. rapae* is very partial to the common garden mignonette, and has also been seen feeding on charlock and horse-radish as well as the various forms of cabbage. The aberration *immaculata* of this species occurs occasionally. *P. napi* is more partial to the ridings of woods than are the other two species. The Orange Tip (*Euchloë cardamines*) is widely distributed in the county, frequenting the country lanes and wood ridings; in some localities it is very common. The aberration *turritis* frequently occurs. The favourite food-plants in this district appear to be charlock (*Brassica Sinapistrum*) and garlic mustard (*Sisymbrium Alliaria*). The delicate and fragile-looking Wood White (*Leucophasia sinapis*) used to occur occasionally in Sherwood Forest according to Sterland, and a single specimen was taken at Newark many years ago (G. Gascoyne, in Newman's *British Butterflies*). No modern entomologist has seen it. The Pale Clouded Yellow (*Colias hyale*) is usually very rare, but occurs in small numbers at wide intervals. Several were taken at Mansfield in 1875, and at Southwell in 1877, but no more were seen, as far as I can ascertain, until 1900, when it occurred in several localities in the Nottingham district. The Clouded Yellow (*C. edusa*) is of much more frequent occurrence, occasionally becoming quite common, but it is very uncertain and erratic. It was common about Mansfield in 1859, occurred at Nottingham in 1875, and in profusion all over the county in 1877. A few specimens were seen in 1878, 1883, 1885, and 1889; and in 1892 it again appeared in numbers in every part of the county. In 1895 it occurred about Mansfield, accompanied by a few var. *helice* (Daws); and finally in 1900 it once more appeared in many localities. On the Foss road at Cotgrave it was so abundant that one collector secured fifty specimens in perfect condition in two hours on 18 August. *Gonopteryx rhamni*, the Brimstone butterfly, occurs somewhat sparingly throughout the county, and is occasionally common, as in 1900.

NYMPHALIDAE

Of the Fritillaries the Pearl-bordered (*Argynnis euphrosyne*) and Small Pearl-bordered (*A. selene*) occur in various localities, the former being much the commoner. *A. aglaia*, the Dark Green Fritillary, is widely distributed, but scarce; the High Brown Fritillary (*A. adippe*) is still fairly common in Sherwood Forest and was formerly so in many places where it is now scarce. The Silver-washed Fritillary (*A. paphia*) is now also an uncommon insect, but several specimens were seen in a wood near Retford in 1901. All the Argynnidae, except perhaps *A. euphrosyne*, seem indeed to be gradually getting scarcer in Nottinghamshire. The Greasy Fritillary (*Melitaea aurinia*) was several times taken in Sherwood Forest by J. Trueman, according to Sterland, and a single specimen was taken at Worksop in 1883 by Miss Alderson. The singularly-shaped Comma Butterfly (*Vanessa c-album*) seems to have been not uncommon formerly, but is now very rare; it has occurred in recent years at Thieves Wood and Mansfield (Daws), and one specimen was taken at Worksop on 15 September, 1893, by Miss Alderson. The Large Tortoiseshell (*V. polychloros*) is occasionally seen, and the Small Tortoiseshell (*V. urticae*) is very common everywhere. The variety *ichnusoides* has been taken at Mansfield by Mr. Daws. The Peacock (*V. io*) is usually very scarce and uncertain in its appearance, but in 1900 it was quite common. Records of the occurrence of the Camberwell Beauty (*V. antiopa*) in Nottinghamshire are fairly numerous: one at Worksop and one at Southwell in 1846, and one taken some years before near Nottingham (J. Wolley); two at Welbeck and two at Edwinstowe in 1860 (Sterland). 'In 1860 this species was common about Mansfield. I have two taken here. A nice series was taken at Berry Hill by the late Lady Walker; they were feeding on fallen ripe plums. They were again fairly numerous in 1864' (W. Daws). Several specimens were taken in Nottinghamshire in 1872 (Brameld), and a specimen was seen flying in Nottingham in or about 1890. The Red Admiral (*V. atalanta*) is common throughout the county, in some seasons extremely so, and the Painted Lady (*V. cardui*), though usually very scarce, is sometimes just as common. It was abundant in 1883 and 1892, and common in South Nottinghamshire in 1900. It was again common in the autumn of 1903.

APATURIDAE

The Purple Emperor (*Apatura iris*) is now rare, but has been seen and taken many times in various parts of Sherwood Forest. It has also occurred in woods near Newark and Southwell, and at Thieves Wood near Mansfield Mr. Daws has seen it on several occasions up to 1895.

SATYRIDAE

Another rare species is the Marbled White (*Melanargia galatea*), the last specimens of which, as far as I can learn, were captured near Bingham about 1890. It was formerly common in one or two places near Tuxford, and also at Warsop and Mansfield, but has apparently died out in all these places. The Wood Argus (*Pararge egeria*) occurs sparingly near Mansfield, and has been taken in the Birklands, also near Carlton-in-Lindrick, and at Widmerpool. The Wall Butterfly (*Pararge megaera*) has almost disappeared from some districts where it was formerly plentiful, but still occurs rather commonly in the Mansfield district, and I have lately seen it in some numbers in the lanes about Wigsley and Thorney. The Grayling (*Satyrus semele*) used to be very abundant on sandy ground at Thieves Wood, but has not been seen lately (Daws). The Meadow Brown (*Epinephele ianira*) is abundant nearly everywhere, and the Gatekeeper (*E. tithonus*) occurs in profusion in many places, but is quite absent from some districts and rare in others. The Ringlet (*E. hyperanthes*) is also locally common in damp lanes and woods, but like many other butterflies has disappeared from some districts where it was formerly common. 'About 1882 this species simply swarmed in the grass ridings of Clumber and Welbeck Parks; since that time it has entirely disappeared from the neighbourhood' (Miss Alderson). The Small Heath (*Coenonympha pamphilus*) is very common and universally distributed.

LYCAENIDAE

Three of the Hairstreaks occur in Nottinghamshire. *Thecla w-album* is taken sparingly in Sherwood Forest and elsewhere in the north, and is locally abundant in the south of the county. Barrett's statement, 'very rare in Nottinghamshire' (*British Lepidoptera*, vol. i, p. 47), is certainly very far from the truth. The Purple Hairstreak (*Thecla quercus*) is much less common, but occurs in Sherwood Forest, in a wood near Mansfield, and in certain woods in the east of the county, in one of which I have recently seen it flying in considerable numbers round the tops of the oak trees. The Green Hairstreak (*Thecla rubi*) also occurs in Sherwood Forest and in woods near Mansfield and Newark, but in only one place have I seen it in any quantity. The Small Copper (*Polyommatus phloeas*) is very common, especially in the dry Triassic sandstone area of the central and northern parts of the county, and may be seen from the beginning of May until well into October. Some beautiful varieties have been taken, including the aberration *schmidtii*. Among the 'Blues' *Lycaena argon* used to be common not very many years ago in Clumber Park, and has also been taken sparingly in one or two places near Mansfield. It is now apparently very rare. The Common Blue (*L. icarus*) is widely distributed and abundant in many places, occurring throughout the summer from early in May until sometimes the end of October. The Holly Blue (*L. argiolus*) is said by Sterland to be not uncommon in Sherwood Forest. It certainly is not so now, since no later observer has seen it, although holly bushes are abundant in parts of Sherwood.

HESPERIIDAE

Of the Skippers, *Syrichthus malvae*, the Grizzled Skipper, occurs rather commonly at Bunny and about Cotgrave and Widmerpool. It is also found sparingly about Newark, Southwell, Newstead, and Wellow. The Dingy Skipper (*Nisoniades tages*) is fairly common in the Mansfield district (Daws), and occurs rarely in Sherwood Forest. The Small Skipper (*Hesperia thaumas*) is widely distributed, often occurring abundantly in the south of the county, but rather more sparingly in the north. I know of only a single capture of *Hesperia lineola* in Nottinghamshire, that by Mr. J. N. Young in 1880 at Clumber, as recorded by Barrett (*Brit. Lepid.* i, 282). The Large Skipper (*Hesperia sylvanus*) is locally abundant in woods and lanes in the south of the county, and also near Retford and Mansfield. In Sherwood Forest and about Worksop, and elsewhere on the Bunter sandstone, it is much less common. It appears to be at least partially doubled-brooded, occurring from about 1 June until the middle of August.

HETEROCERA

Moths

SPHINGES

SPHINGIDAE

The Death's Head Moth (*Acherontia atropos*) is very irregular in its appearance, some years being quite common or even abundant, in others almost absent. In 1899 and 1900 it was common

throughout the county in the larval stage. The Convolvulus Hawk Moth (*Sphinx convolvuli*) is another erratic insect, but is never really common. I have many recent records of its occurrence, singly or in small numbers, in the Nottingham, Mansfield, Southwell, Tuxford, Edwinstowe, and Worksop districts. The Privet Hawk Moth (*Sphinx ligustri*) is of frequent occurrence. A single specimen of the Bedstraw Hawk Moth (*Deilephila galii*) is recorded by Sterland as having been taken in Sherwood Forest. Mr. W. Daws captured two specimens of this species at flowers of honeysuckle in his garden at Mansfield, on 20 and 24 June, 1866, and a third specimen was taken in the same neighbourhood by another collector about the same date. The rare *Choerocampa celerio* has been taken several times in the county, my notes recording captures of single specimens at Chilwell, at Edwinstowe in 1876, at Retford in 1884, and again in 1885, and in Nottingham in 1860 and 1892. The Small Elephant Hawk Moth (*Choerocampa porcellus*) occurs most seasons in the Mansfield district (Daws); specimens were also taken at Worksop and Wellow in 1901, and in Nottingham in 1902. The Large Elephant Hawk (*C. elpenor*) is much more frequent and generally distributed, larvae being sometimes fairly common about Mansfield (Daws). The Eyed Hawk (*Smerinthus ocellatus*) and the Poplar Hawk (*S. populi*) are both fairly plentiful, especially in the larval stage, the former feeding on wild crab and willow, and on apple trees in orchards, and the latter chiefly on poplar, but once found on ash at Worksop (Miss Alderson). *S. populi* appears to be partially doubled-brooded, eggs deposited in June, 1898, produced imagines in the following September (Daws). The Lime Hawk (*S. tiliae*) is rare, but is recorded from Mansfield (Daws) and Marnham, where several specimens were bred by the Rev. E. Cunningham from larvae found on lime trees in his garden. The Humming-Bird Hawk Moth (*Macroglossa stellatarum*) occurs throughout the county and is frequently common. In 1899 and 1900 it was particularly plentiful all over the county. The Broad-bordered Bee Hawk (*Macroglossa fuciformis*) occurs in two woods, many miles apart, on the eastern side of the county, and is a recent addition to our list, the first authentic specimens having been taken in May, 1895. It has since been seen in all stages, sometimes plentifully.

SESIIDAE

The Hornet Clearwings (*Trochilium apiformis* and *T. crabroniformis*) have both been taken in the county several times, but are very rare. Of the smaller Clearwings *Sesia tipuliformis* is widely distributed and often common in gardens where currant bushes grow, but the other recorded species are very rare. *Sesia asiliformis*, *S. myopiformis*, and *S. culiciformis* are all recorded from Sherwood Forest, and *S. myopiformis* has also been taken by Daws at Mansfield.

ZYGAENIDAE

The Forester (*Ino statices*), at one time common in Sherwood Forest, is now rare there, if indeed it still exists. It has, however, been taken recently in the south of the county, near Bunny. Of the Burnets, *Zygaena trifolii* is reported from Sherwood Forest and Gedling, but is certainly very rare. *Z. lonicerae* is in some seasons very plentiful but extremely local in the Mansfield district; it also occurs in old pastures at Welham near Retford. The Six-Spot Burnet (*Z. filipendulae*) is widely distributed in the county, but has a knack of disappearing suddenly from localities where it was formerly common. It occurred in a single meadow at Gedling some years ago in the utmost profusion, but has not been seen there lately. It is also found more or less commonly in the Retford, Southwell, and Mansfield districts, and in several places south of Nottingham. In Sherwood Forest it is now apparently rare.

BOMBYCES

NYCTEOLIDAE

Hylophila prasinana occurs throughout the county, but is nowhere common.

NOLIDAE

Nola cucullatella is widely distributed, variable in its appearance, but some years very abundant. In 1899 it swarmed in gardens at Mansfield, from 20 June to the middle of July (Daws). *N. confusalis* was taken in the north of Nottinghamshire by Brameld many years ago, but there are no recent records.

LITHOSIIDAE

Nudaria senex has been taken 'on the railings near the Normanton Hotel [Clumber Park], several times,' (J. R. Hardy), and *N. mundana* occurs in Sherwood Forest and near Worksop. *Calligenia miniata*, *Lithosia mesomella*, and *L. deplana*, are all reported from Sherwood Forest, the last named only once, however. *L. lurideola* is widely diffused and common in one or two localities. Mr. J. R. Hardy took nine specimens of *L. complana* by beating larches near Worksop, in June,

1887, and it was again obtained in the same locality in 1894. The Large Footman (*Gnophria quadra*) is said by Sterland to have been taken several times in Sherwood Forest; and the Red-necked Footman (*G. rubricollis*) occurs in the same district.

EUCHELIIDAE

The gorgeous Cinnabar Moth (*Euchelia jacobaeae*) is common in Sherwood Forest and at Langford Moor, and occurs with more or less frequency in all parts of the county. The conspicuously-coloured larvae are often very abundant on *Senecio jacobaea* (Ragwort).

CHELONIIDAE

The Clouded Buff (*Nemeophila russula*) was common in Clumber Park within the last twenty years, but is now scarce there. It was also taken in Mansfield Forest in 1886 and 1887, and has occurred recently at Ollerton. The Wood Tiger (*N. plantaginis*) occurs at Thieves Wood near Mansfield (Daws), and I took a specimen in a wood on the opposite side of the county on 26 May, 1896. It used to occur in Sherwood Forest, but has not been seen there of late years. The Common Tiger (*Arctia caia*) is found commonly throughout the county, but is much more abundant in the larval than in the perfect stage. The Ruby Tiger (*Spilosoma fuliginosa*) occurs sparingly in Sherwood Forest and in the Mansfield and Nottingham districts. Of the Ermines *Spilosoma mendica* is occasionally taken in various places in the northern half of the county, and *S. lubricipeda* and *S. menthastri* are common and universally distributed.

HEPIALIDAE

All the British 'Swifts' occur with us. *Hepialus humuli* is common everywhere, and *H. sylvanus* moderately so. *H. velleda* occurs abundantly and in great variety (including the var. *carnus*) in Clumber Park and the woods at Sparken Hill near Worksop (Miss Alderson); elsewhere in the county it is only occasionally found. *H. lupulinus* and *H. hectus* are both very common and universally distributed.

COSSIDAE

The Goat Moth (*Cossus ligniperda*) occurs commonly in many places in the larval state, and the imago is frequently taken. The Leopard Moth (*Zeuzera pyrina*) is not rare, and has occurred all over the county.

COCHLIOPODIDAE

The rare *Heterogenea asella* is said by Sterland to have been taken 'in Trueman's garden at Edwinstowe'—a statement hard to believe.

LIPARIDAE

The Brown-Tail Moth (*Porthesia chrysorrhoea*) has occurred in several places, and the Gold-Tail (*P. similis*) is generally abundant. The Satin Moth (*Leucoma salicis*) and the Black Arches (*Psilura monacha*) occur in the county, but are rare. The Pale Tussock (*Dasychira pudibunda*) is rather frequent in Sherwood Forest and one or two other localities, but the Dark Tussock (*D. fascelina*) is recorded only by Sterland and must be considered doubtful. The Vapourer (*Orgyia antiqua*) is found everywhere, and is often so abundant as to be a destructive pest in gardens. Mr. J. R. Hardy some years ago took several larvae of *O. gonostigma* at Edwinstowe from which two males and a female were bred.

BOMBYCIDAE

Trichiura crataegi occurs sparingly throughout the county, and is usually captured at gas lamps or in the larval stage on hawthorn hedges. The December Moth (*Poecilocampa populi*) is irregular in appearance, but is sometimes seen in abundance on gas-lamps in various places. *Eriogaster lanestris* is widely diffused, the nests of the gregarious larvae being often very abundant; the moth is however rarely seen. Larvae of the Lackey (*Bombyx neustria*) are also frequently common. *Bombyx rubi* is rare, and recorded from Sherwood Forest only, but *B. quercus* (the Oak Eggar) is frequent and sometimes common in both larval and perfect states. The Drinker (*Odonestis potatoria*) is very common, especially in the larval stage. The Lappet (*Lasiocampa quercifolia*) has been taken in the larval stage at Mansfield by Daws.

SATURNIIDAE

The Emperor Moth (*Saturnia pavonia*), once common, has now become rare.

INSECTS

DREPANULIDAE

Drepana falcataria is frequent in Sherwood Forest and about Mansfield, and rather common at Langford Moor. *Cilix glaucata* is found throughout the county, and is occasionally very common in some districts.

DICRANURIDAE

The Kittens, *Dicranura furcula* and *D. bifida* both occur, though not commonly, but the Puss Moth (*D. vinula*) is much more plentiful. The Lobster Moth (*Stauropus fagi*) has been taken in the larval stage in Sherwood Forest.

NOTODONTIDAE

Pterostoma palpina is rare, *Lophopteryx camelina* of frequent occurrence, and *Notodonta dictaea*, *N. dictaeoides*, *N. dromedarius*, *N. ziczac*, *N. trepida*, *N. chaonia*, and *N. trimacula*, are all found in the county.

PYGAERIDAE

Phalera bucephala is universally distributed and is often excessively abundant in the larval stage. *Pygaera curtula* is recorded for Sherwood Forest by Sterland.

CYMATOPHORIDAE

Thyatira derasa and *T. batis* (the Peach Blossom) are of frequent occurrence, and sometimes fairly common. *Cymatophora or* and *C. duplaris* have both been taken in Sherwood Forest and at Thieves Wood near Mansfield, though only very occasionally. *Asphalia diluta* is confined to Sherwood Forest so far as Nottinghamshire is concerned, and may generally be taken in small numbers at 'sugar' in the proper season. *A. flavicornis* is sometimes common about Worksop and in the Forest, and occurs also at S. Leverton and at Thieves Wood near Mansfield. *A. ridens* rested upon Sterland's authority alone until 1894, when one specimen was taken by Miss Alderson in Clumber Park.

NOCTUAE

BRYOPHILIDAE

Bryophila perla is widely distributed and fairly common, but no other species of the genus occurs in the county.

BOMBYCOIDAE

Demas coryli has been taken at Ollerton and Mansfield. *Acronycta tridens* is rather scarce. *A. psi* is common everywhere. *A. leporina* occurs at Langford Moor, in Sherwood Forest, and at Thieves Wood near Mansfield, where Mr. Daws has taken both the type and the variety *bradyporina*. *A. aceris* is recorded for South Scarle by Mr. G. M. A. Hewett, who states that he has taken it both in spring and autumn. *A. megacephala* is curiously scarce in Nottinghamshire: I have very few records of its occurrence, and most of these are for larvae only. *A. alni* is occasionally taken, most frequently in the larval state; my numerous records for the last thirty years show that it has occurred all over the county. *A. ligustri* is very rare, but has been taken in Sherwood Forest. *A. rumicis* is frequently taken, but cannot be called common. Mr. J. R. Hardy tells me that in July, 1897, he took seven specimens of *A. menyanthidis* among heather at Edwinstowe, and has also taken the larvae several times by sweeping in the same place. *Diloba caeruleocephala* is abundant nearly everywhere, the moth sometimes swarming on gas-lamps, and the larvae occurring in profusion on the hawthorn hedges.

LEUCANIIDAE

Of the 'wainscots' we have *Leucania turca* (one specimen under log near the Major Oak, Edwinstowe, 19 June, 1896, J. R. Hardy), *L. conigera*, *L. lithargyria*, *L. comma*, *L. impura*, and *L. pallens*, most of which are common, the last named in particular being sometimes excessively abundant. *Tapinostola fulva* and *Nonagria arundinis* are of frequent occurrence, and Mr. Daws of Mansfield writes of *N. lutosa*, 'I have a series taken in my garden here at sugar, 12 August, 1894.'

APAMEIDAE

Gortyna ochracea, *Hydroecia nictitans*, *H. micacea*, *Axylia putris*, *Xylophasia rurea* with its var. *alopecurus*, *X. lithoxylea*, *X. sublustris*, and *X. hepatica*, are all more or less common; *X. monoglypha* is abundant everywhere and extremely variable, and *X. scolopacina* occurs sparingly in Sherwood Forest and at Mansfield. *Neuria reticulata* and *Neuronia popularis* are not uncommon. *Charaeas graminis* is widely distributed and abounds in some seasons in Sherwood Forest, where it frequents

the Ragwort flowers by day, while in other years it is scarce. *Cerigo matura* is widely distributed but not very common. *Luperina testacea* is common, but *L. cespitis* seems to be almost confined to Sherwood Forest, where it is of frequent occurrence. *Mamestra sordida* is widely distributed, and by no means rare. *M. albicolon* formerly occurred in Sherwood Forest, but has not been seen of late years. *M. furva*, recorded by Sterland as having been taken on one occasion in Sherwood Forest, remained unconfirmed for many years, but in 1891 was taken by the Rev. E. G. Alderson at Sparken Hill near Worksop, and again on 30 June, 1894, by Miss E. M. Alderson in the garden at Park House, Worksop. *M. brassicae*, the well-known Cabbage Moth, is of course very common everywhere; the vars. *unicolor*, Tutt, and *albidilinea*, Haw., have also occurred. *M. persicariae* is common in some parts of the county, but appears to be absent from others. *Apamea basilinea*, *A. gemina*, and *A. didyma* are common. Several specimens of *A. connexa* were taken between Worksop and Edwinstowe in 1885 and 1886 by Mr. J. R. Hardy and others. *A. unanimis* has occurred at Chilwell and in Sherwood Forest, and *A. leucostigma* var. *fibrosa* is reported by both Sterland and Brameld from Sherwood Forest, but has not been seen for many years. *Miana strigilis* is abundant; *M. fasciuncula* and *M. arcuosa* pretty common; but *M. literosa*, formerly common in Sherwood Forest, does not appear to have been taken lately; and the same may be said of *M. bicoloria*, formerly reported 'common' in the Forest and at Nottingham.

CARADRINIDAE

Grammesia trigrammica is moderately common. *Stilbia anomala*, recorded by Sterland, was again taken in Clumber Park by Miss Alderson on 23 August, 1895. *Caradrina morpheus*, *C. taraxaci*, and *C. quadripunctata* all occur with greater or less frequency, and *C. alsines* was captured at Shireoaks near Worksop in July, 1900, by Mr. J. T. Houghton. *Rusina tenebrosa* is frequent, especially in the northern parts of the county.

NOCTUIDAE

The genus *Agrotis* is well represented. *A. vestigialis*, generally a coast insect, has been taken in Sherwood Forest, and Mr. Daws captured one at Mansfield at 'sugar' on 11 July, 1894. *A. suffusa* and *A. saucia* are frequent, *A. segetum* very common, *A. exclamationis* abundant, *A. corticea* and *A. nigricans* not uncommon, *A. tritici* frequent, and the Rev. W. Becher reports having taken *A. aquilina* at Edwinstowe and Wellow. *A. obelisca* has occurred in Sherwood Forest, according to Sterland and Brameld, but possibly one of the allied species may have been mistaken for it. *A. agathina* is stated by Barrett (*Brit. Lepid.* iii, 362) to be 'rare in Nottinghamshire,' but I have no details of its occurrence. *A. strigula* has been taken frequently at Mansfield and in Sherwood Forest, and twice at Shireoaks in 1900. *A. praecox* is said by Sterland to have been taken on one occasion in Sherwood Forest, but this is probably a mistake; the Rev. A. Thornley has however seen an undoubted specimen taken at Marnham in the Trent Valley by the Rev. E. Cunningham. *A. obscura* occurs rarely in Sherwood Forest, and has been taken several times recently by Mr. Thornley at 'sugar' in the vicarage garden at South Leverton. The genus *Noctua* is also well represented in Nottinghamshire, *N. glareosa* occurring sparingly at Mansfield, but sometimes plentifully in Sherwood Forest; *N. augur*, *N. plecta*, *N. c-nigrum*, *N. brunnea*, *N. festiva*, *N. dahlii*, *N. rubi*, *N. umbrosa*, *N. baia*, and *N. xanthographa* all occur in various localities, and are most of them common. *N. triangulum* is rare, but has been taken in Sherwood Forest by Miss Alderson, and at Chilwell by Mr. D. H. Pearson. *N. castanea*, var. *neglecta*, stated by Sterland to be 'not uncommon' in Sherwood Forest, is not reported by any other collector. All the species of *Triphaena* are found with us. *T. ianthina* and *T. interjecta* are widely distributed but not very common, the latter indeed being scarce; *T. fimbria* is frequent in Sherwood Forest and about Mansfield; *T. orbona* (*subsequa*), first recorded by Sterland, has more recently been taken at sugar in Sherwood Forest on several occasions by Mr. J. R. Hardy; *T. comes* is fairly common, and *T. pronuba* is everywhere abundant.

AMPHIPYRIDAE

Amphipyra pyramidea is fairly plentiful at 'sugar' in Sherwood Forest, and has been taken occasionally at Mansfield. *A. tragopoginis* is common, and *Mania typica* fairly so, while *M. maura* is not rare.

ORTHOSIIDAE

Panolis piniperda occurs frequently in Scots-pine woods in Sherwood Forest, at Berry Hill, Mansfield, and at Langford Moor. *Pachnobia leucographa* formerly occurred, but very rarely, in Sherwood Forest, but has not been taken recently; *P. rubricosa*, once frequent in the same locality, was again taken in 1899, 1900, and 1901, also in April, 1902, at South Leverton (Thornley).

Taeniocampa gothica, *T. incerta*, *T. stabilis*, and *T. pulverulenta* are all common; *T. munda* and *T. gracilis* frequent, but *T. populeti* and *T. miniosa* are very rare. We possess all the species of *Orthosia* and *Anchocelis*, but none of the Orthosias are really common. *O. lota* is only moderately so, *O. macilenta* frequent, but *O. suspecta* and *O. upsilon* are very rare, and have only been taken in Sherwood Forest. *Anchocelis rufina* seems fairly common about Mansfield, and has been taken in a few other localities; *A. pistacina* is decidedly common, *A. litura* moderately so, and *A. lunosa* occurs pretty freely in one or two places, but seems to be local. *Cerastis vaccinii*, *C. spadicea*, and *Scoleposoma satellitia* are all of common occurrence. The following are rare :—*Dasycampa rubiginea* (Mansfield, W. Daws), *Oporina croceago* (Sherwood Forest, J. R. Hardy), *Xanthia citrago* (Rufford Abbey, Rev. W. Becher), and *X. aurago* (Mansfield, Daws). *X. fulvago*, *X. flavago*, and *X. circellaris* are not uncommon, and *X. gilvago* has occurred frequently in some localities. *Cirrhoedia xerampelina* is occasionally quite common in several localities about Nottingham; in August 1900 one collector took forty-three specimens in a single evening! The var. *unicolor* has also occurred.

COSMIIDAE

Tethea subtusa and *T. retusa* are both recorded by Mr. J. R. Hardy as taken by him at sugar between Worksop and Edwinstowe in July, 1896. One of the most noted Nottinghamshire insects is *Cosmia paleacea*, which in favourable years is abundant at sugar in Sherwood Forest; it has also been taken at Langford Moor. *Calymnia trapezina* is another abundant Sherwood Forest species, and also occurs, though more sparingly, in several other localities. *Calymnia diffinis* and *C. affinis* are both of frequent occurrence.

HADENIDAE

Eremobia ochroleuca was taken many years ago in Sherwood Forest by Mr. R. E. Brameld. *Dianthoecia capsincola* is rather common, especially in the larval stage, but *D. cucubali* and *D. carpophaga* seem to be rare. *Hecatera serena* is rare, but formerly occurred in Sherwood Forest, and three specimens were taken at Basford in 1900 (G. Henderson). *Polia chi* is common in most parts of the county but, curiously enough, is not nearly so common at S. Leverton as *P. flavicincta*, which the Rev. A. Thornley takes there commonly every year both at sugar and light, although it is scarcely known in any other part of the county. *Dasypolia templi*, although according to Barrett 'found only in rocky districts, on high hills, and upon the coast,' has several times occurred in Nottinghamshire. Mr. W. Daws, of Mansfield, reports it as 'taken close to my house at gas lights, and found amongst gas-coke at Sherwood Foundry, probably attracted by the light from the furnace, 10 October, 1890.' Miss Alderson took one specimen on the doorstep of Park House, Worksop, about 1894 or 1895, and Mr. D. H. Pearson captured a specimen at a gas-lamp at Chilwell, on 6 October, 1894. *Epunda nigra* occurs occasionally at Edwinstowe and Wellow. *Cleoceris viminalis* is found in various localities. *Miselia oxyacanthae* is common, the var. *capucina* being also of frequent occurrence. *Agriopis aprilina* occurs sparingly in Sherwood Forest and about Mansfield. *Euplexia lucipara* and *Phlogophora meticulosa* are common; of the latter species Mr. Daws took a good series at Thieves Wood near Mansfield, between 7 and 10 December, 1895! Of the species of *Aplecta*, which are all found in Nottinghamshire, *A. prasina* is rare in Sherwood Forest and at Mansfield, but more frequent in the extreme south of the county; *A. occulta* has occurred singly in Sherwood Forest, at Thieves Wood near Mansfield, and twice at Southwell; *A. nebulosa* is moderately common; *A. tincta*, recorded by Sterland as found occasionally in Sherwood Forest, has since been taken by Mr. J. R. Hardy, who captured six specimens among bilberry near Worksop, on 19 June, 1897; and *A. advena* is taken in several localities. *Hadena oleracea* is abundant, and *H. adusta*, *H. protea*, *H. dentina*, *H. trifolii*, *H. dissimilis*, *H. pisi*, *H. thalassina*, *H. contigua* and *H. genistae* are all found in the county; while *H. rectilinea* is said by Sterland to have been once taken in Sherwood Forest, a not improbable record, as it used to be taken near Sheffield.

XYLINIDAE

Xylocampa areola occurs at Rufford and Mansfield, and is not uncommon at South Leverton (Thornley). *Calocampa vetusta* has been taken recently at Mansfield (Daws) and Chilwell (Pearson); *C. exoleta* is of frequent occurrence; and a single example of *C. solidaginis* is recorded as taken by Mr. J. R. Hardy in Sherwood Forest on 27 July, 1898. *Xylina ornithopus* and *X. socia* are extremely rare, the former being recorded, possibly in error, by Sterland only ('occasional in Sherwood Forest'), while a single specimen of the latter is said by Hardy to have been taken by him near Worksop. *Asteroscopus sphinx*, also recorded for the Forest by Sterland, was taken by Daws at Mansfield ('a few at light') on 10 October 1890. *Cucullia verbasci* is sometimes very common in the larval state in various localities; *C. chamomillae* is rather scarce, but *C. umbratica* not at all uncommon.

GONOPTERIDAE

Gonoptera libatrix (the 'Herald') is not uncommon, and is frequently found hybernating in outhouses in the winter.

PLUSIIDAE

Habrostola tripartita and *H. triplasia*, *Plusia chrysitis*, *P. iota* and *P. pulchrina* are all fairly common, *P. chrysitis* often indeed very abundant at Worksop (Miss Alderson); *P. gamma* occurs some years in the utmost profusion; *P. festucae* is rare, and confined to Sherwood Forest; and Sterland records *P. bractea* ('a few times') and *P. interrogationis* ('once in a garden at Edwinstowe') for the same district.

HELIOTHIDAE

Anarta myrtilli and *Heliaca tenebrata* are of frequent occurrence, especially the latter, which is reported by the Rev. A. Thornley to be common at South Leverton in hay-fields, and abundant in the green drives at Treswell Wood. *Heliothis dipsacea* has occurred in Sherwood Forest and at Mansfield (Daws).

POAPHILIDAE

Phytometra viridaria is widely distributed, but not common.

EUCLIDIIDAE

Euclidia mi is rather common, and *E. glyphica* is by no means rare.

HERMINIIDAE

Zanclognatha griscalis, *Z. tarsipennalis*, and *Pechypogon barbalis* are all of more or less common occurrence.

HYPENIDAE

Hypena proboscidalis occurs commonly in the county.

BREPHIDES

Brephos parthenias is common in Sherwood Forest and one or two other localities, and *B. notha* is recorded by Sterland for Sherwood Forest. The latter record, however, requires confirmation before it can be accepted.

GEOMETRAE

UROPTERYGIDAE

The Swallow-tail Moth (*Uropteryx sambucaria*) is fairly common in all parts of the county.

ENNOMIDAE

Epione apiciaria, although not common, is very widely distributed. *Rumia luteolata* is very common everywhere. *Venilia macularia* is rare, the only records being Clumber Park (Miss Alderson), Sherwood Forest (Hardy), and Marnham in the Trent Valley (Rev. E. Cunningham). *Angeronia prunaria*, another scarce species, which was recorded for Sherwood Forest many years ago by Sterland, has been taken singly at Ollerton and Edwinstowe by Mr. J. R. Hardy, and sparingly at Thorney in 1896 by Mr. G. Henderson. *Metrocampa margaritaria* is well distributed and frequent. *Ellopia prosapiaria* is fairly frequent among Scotch firs in Clumber Park, where the specimens are small and dark-coloured (Miss Alderson), and is scarce about Mansfield and Newark. *Eurymena dolabraria* occurs sparingly in Sherwood Forest, and single specimens have recently been taken at Mansfield, Cotgrave, and Langford Moor. *Pericallia syringaria* is another scarce species, met with occasionally about Nottingham, Mansfield, Southwell, Worksop, and Retford. *Selenia bilunaria* is fairly common and widely distributed, while *S. lunaria* is rare, the only recent record being Worksop (Miss Alderson). *Odontopera bidentata* is pretty common everywhere, as are *Crocallis elinguaria* and *Eugonia alniaria*. *Eugonia fuscantaria* sometimes occurs rather freely at South Leverton (Thornley), and is also taken about Worksop, Southwell, and Nottingham, but not commonly. *E. quercinaria* is found occasionally in Sherwood Forest and other places in the north of the county, and *E. erosaria* occurs at Worksop and Chilwell. *Himera pennaria* is not rare.

AMPHIDASYDAE

Phigalia pedaria is widely distributed and frequent, but *Nyssia hispidaria* seems confined to the northern half of the county, having been taken at Worksop, Ollerton, S. Leverton, and Mansfield.

Amphidasys strataria has been taken in Clumber Park by Miss Alderson; at Southwell and Wellow by the Rev. W. Becher; and at Thieves Wood near Mansfield by Mr. Daws. *A. betularia* is far more common, though more so in the north than in the south of the county; it is noteworthy that the var. *doubledayaria* is much more common than the type, which it seems to be gradually replacing.

BOARMIIDAE

Hemerophila abruptaria is widely diffused, and in some places common. *Boarmia repandata* and *B. gemmaria* are well distributed and common, and *B. roboraria* has been taken in the Forest near Edwinstowe, and at Thieves Wood near Mansfield. *Tephrosia punctularia* and *T. biundularia* (including *crepuscularia*) are both rather common, the latter occurring in great variety, some specimens being almost black.

GEOMETRIDAE

Pseudoterpna pruinata has been taken in several places, and *Geometra papilionaria* is widely distributed though not common. *Phorodesma pustulata* is rather scarce, but has been taken in several localities in both north and south Nottinghamshire. *Iodis lactearia* and *Hemithea strigata* are pretty common in certain localities.

EPHYRIDAE

Zonosoma punctaria is frequent; *Z. porata* is recorded for the Birklands by Mr. J. R. Hardy; *Z. linearia* is frequent in Sherwood Forest, where also, according to Brameld, *Z. annulata* is common; *Z. orbicularia* is recorded for the same district by Sterland and Hardy; and *Z. pendularia* occurs in the Forest and elsewhere.

ACIDALIIDAE

Asthena luteata and *A. candidata* are rather common, and *Venusia cambrica* has been taken at Worksop by Mr. J. R. Hardy. *Acidalia dimidiata*, *A. bisetata*, *A. virgularia*, *A. remutaria*, *A. imitaria* and *A. aversata* occur in varying degrees of frequency or commonness; *A. trigeminata* and *A. subsericeata* occur at Mansfield (Daws), *A. dilutaria* at Southwell and Wellow (Becher), and *A. emarginata* in Sherwood Forest (Brameld). *Timandra amataria* is not uncommon.

CABERIDAE

Cabera pusaria and *C. exanthemata* are common, and *C. rotundaria* occurs in the Birklands (J. R. Hardy). *Bapta temerata* is of frequent occurrence.

MACARIIDAE

Macaria notata has been taken near Worksop by Hardy, and *M. liturata* is frequent. *Halia vauaria* is everywhere common.

FIDONIIDAE

Strenia clathrata has occurred at Sherwood Forest (Sterland) and Langford Moor (A. R. Leivers). *Panagra petraria* occurs in many places among bracken, especially in Sherwood Forest, and is generally abundant where found. *Numeria pulveraria* has been taken recently at Mansfield and Wellow, and plentifully at Thorney. *Ematurga atomaria* is common in heathy places, as at Sherwood Forest, Fountain Dale, Langford Moor, etc. *Bupalus piniaria* is abundant in Scotch fir plantations, in various parts of Sherwood Forest, at Mansfield, Newstead, Wigsley, and Langford Moor. All three species of *Aspilates* (*A. strigillaria*, *A. ochrearia*, and *A. gilvaria*) occur about Mansfield but are rare (Daws).

ZERENIDAE

Abraxas grossulariata is common in gardens everywhere, and *A. sylvata*, although of rather uncertain appearance, is widely distributed and in some years extremely abundant. *Ligdia adustata* is not very common, but *Lomaspilis marginata* is fairly plentiful.

HYBERNIIDAE

All the Hyberniidae (*Hybernia rupicapraria*, *H. leucophearia*, *H. aurantiaria*, *H. marginaria*, *H. defoliaria* and *Anisopteryx aescularia*) are very common, excepting *aurantiaria*, which is however by no means scarce; and many beautiful varieties of *leucophearia*, *marginaria*, and *defoliaria* have been taken in Sherwood Forest and elsewhere.

LARENTIIDAE

Cheimatobia brumata is abundant, and *C. boreata* common in several places. *Oporabia dilutata* is pretty common, but *O. filigrammaria* and *O. autumnaria* are scarce, and occur chiefly about Mansfield. *Larentia didymata* is abundant, *L. multistrigaria* and *L. viridaria* fairly common. *Emmelesia affinitata*, *E. alchemillata*, *E. albulata*, and *E. decolorata* are all of frequent occurrence. Twenty-six species of 'Pugs' are on record for the county, viz., *Eupithecia venosata*, rare but widely distributed; *E. linariata*, scarce in the Mansfield district; *E. pulchellata* and *E. oblongata* frequent in several places; *E. succenturiata*, Southwell and Sherwood Forest; *E. subfulvata* at Nottingham, Mansfield, and Worksop; *E. scabiosata* and *E. pygmaeata* taken on several occasions in different years at Mansfield (Daws); *E. castigata* fairly common at Mansfield and in Sherwood Forest; *E. fraxinata* and *E. innotata* rather scarce at Mansfield (Daws); *E. indigata* common in Sherwood Forest (Miss Alderson) and also found at Mansfield; *E. nanata* frequent at Edwinstowe (Hardy) and Mansfield (Daws); *E. subnotata* at Chilwell (D. H. Pearson) and in Sherwood Forest; *E. vulgata* very common everywhere; *E. albipunctata*, rare at Worksop and Mansfield; *E. absinthiata* in Sherwood Forest, where the larva feeds on ragwort flowers in company with *E. oblongata*; *E. minutata*, a few some seasons at Mansfield (Daws); *E. assimilata* at Worksop and Clumber (Miss Alderson); *E. lariciata*, fairly common in Clumber Park (Miss Alderson); *E. abbreviata* common at Worksop and Mansfield; *E. dodoneata*, a single female found on an oak tree in Sherwood Forest in 1896 by J. R. Hardy; *E. exiguata* frequent at Clumber (Miss Alderson) and Mansfield (Daws); *E. pumilata*, Mansfield (Daws); *E. coronata*, Clumber and Mansfield; and *E. rectangulata*, widely distributed and fairly common.

Thera simulata is recorded as taken at Berry Hill, near Mansfield, on 26 May, 1896, by Mr. W. Daws; *T. variata* is common in fir plantations in Sherwood Forest and elsewhere; and *T. firmata* has been taken in the Forest and near Mansfield. *Hypsipetes trifasciata* has occurred at Newstead and Wollaton, and *H. sordidata* is generally distributed and common. *Melanthia albicillata*, *M. ocellata*, and *M. bicolorata* are all of general occurrence. *Melanippe hastata* is recorded for Sherwood Forest by Sterland only, and needs confirmation; *M. tristata* is rather scarce about Mansfield (Daws); *M. rivata* has been taken in some numbers in woods near Mansfield and Nottingham; *M. sociata* and *M. montanata* are widely distributed and common; *M. galiata* has occurred at Newstead, and *M. fluctuata* is perhaps our commonest geometer, being especially abundant in gardens in Nottingham. *Anticlea badiata* and *A. nigrofasciaria* are frequent, especially the former; but *A. rubidata* is represented only by three specimens taken at Edwinstowe on 4 June, 1896, by Mr. Hardy. *Coremia designata* occurs sparingly in Wellow Park and in Sherwood Forest, and I have taken it in Epperstone and Beauvale Woods. *C. ferrugata* and *C. unidentaria* are rather common, but *C. quadrifasciaria* has only been taken in Sherwood Forest by Mr. R. E. Brameld. *Camptogramma bilineata* is common everywhere. *Phibalapteryx vittata* is recorded for Sherwood Forest by both Sterland and Brameld, and Mr. Daws has taken *P. vitalbata* in gardens at Mansfield. *Triphosa dubitata* occurs throughout the county, sometimes commonly. *Eucosmia certata* has been taken several times by the Rev. A. Thornley in his garden at South Leverton; and *E. undulata* has occurred in Sherwood Forest and at Mansfield, but only very rarely. *Scotosia vetulata* has only once been taken, by the Rev. W. Becher, at Southwell; but *S. rhamnata* has been taken sparingly in several localities.

Cidaria siderata is 'occasional in Sherwood Forest' (Sterland), while *C. miata*, *C. corylata*, *C. truncata*, *C. immanata*, *C. suffumata*, *C. silaceata*, *C. prunata*, *C. testata*, *C. populata*, *C. fulvata*, *C. dotata*, *C. associata*, and *Pelurga comitata* all occur in various localities, most of them commonly.

EUBOLIIDAE

Eubolia cervinata, *E. limitata*, and *E. plumbaria* are all of frequent occurrence, and *E. bipunctaria* has been taken in several localities. *Anaitis plagiata* is found in several places, but is not common. *Chesias spartiata* is rather rare, and *C. rufata* has occurred only in Sherwood Forest (Brameld).

SIONIDAE

Tanagra atrata is widely distributed, and in some localities common.

PYRALIDES

PYRALIDIDAE

Aglossa pinguinalis and *Pyralis farinalis* are common in stables and outbuildings throughout the county. *P. costalis* occurs at Worksop, and *P. glaucinalis* is rather scarce in Sherwood Forest and the Mansfield and Retford districts; it is generally taken at sugar. *Scoparia ambigualis* is everywhere

common, and *S. cembrae*, *S. murana*, *S. dubitalis*, *S. mercurella*, *S. crataegella*, *S. resinea*, *S. truncicolella*, and *S. angustea* all occur with more or less frequency; *S. lineola* has, however, only been taken in Sherwood Forest by Mr. R. E. Brameld. *Nomophila noctuella* occurs in the Worksop district. *Pyraustra purpuralis*, *P. ostrinalis*, and *Herbula cespitalis* are frequent.

BOTYDAE

Eurrhypara urticata is common everywhere among nettles. *Scopula lutealis* and *S. olivalis* are widespread and common, and *S. prunalis* of frequent occurrence. *Botys ruralis* is another common species; but of *B. asinalis* only a single specimen has been taken by Mr. Daws at Mansfield. *Ebulea crocealis* occurs in the Worksop district, and *E. sambucalis* is common. *Spilodes sticticalis* is represented by a single specimen captured at Mansfield by Mr. Daws. *Pionea forficalis* is common nearly everywhere.

HYDROCAMPIDAE

Cataclysta lemnata occurs in plenty in suitable localities. *Paraponyx stratiotata* is found about Worksop. *Hydrocampa nymphaeata* and *H. stagnata* occur in the Mansfield and Worksop districts.

ACENTROPODIDAE

Acentropus niveus has been taken near Worksop and Mansfield.

PTEROPHORI

The Plume moths are only moderately well represented in Nottinghamshire. *Platyptilia gonodactyla*, *Mimaeseoptilus bipunctidactylus*, and *M. pterodactylus* occur in Sherwood Forest and the Mansfield district; *M. zophodactylus* and *Oedematophorus lithodactylus* at Worksop; *Pterophorus monodactylus*, *Leioptilus osteodactylus*, and *Aciptilia tetradactyla* in Sherwood Forest; *A. galactodactyla* in Wellow Park, where the Rev. W. Becher finds the larvae on burdock; *A. pentadactyla* is everywhere common; and *Alucita hexadactyla* is plentiful in some localities.

CRAMBI

CHILIDAE

Schoenobius forficellus occurs in the Worksop district.

CRAMBIDAE

Crambus pratellus, *C. tristellus*, *C. culmellus*, and *C. hortuellus* are widely distributed and common; *C. pinellus*, *C. perlellus*, and *C. inquinatellus* occur at Mansfield, Worksop, and in Sherwood Forest; *C. falsellus* has been taken at South Leverton by Rev. A. Thornley; *C. pascuellus* in Sherwood Forest by Mr. R. E. Brameld; *C. selasellus* at Worksop by Mr. Houghton; and *C. sylvellus*, *C. uliginosellus*, *C. warringtonellus*, *C. contaminellus*, *C. geniculeus*, *C. chrysonuchellus*, and *C. craterellus* are all reported from the Mansfield district by Mr. W. Daws.

PHYCIDAE

Myelophila cribrum is reported by Mr. Daws as bred from pupae found in thistles in the Mansfield district. *Homoeosoma nimbella* and *H. nebulella* were both taken at Worksop in 1901 by Mr. J. T. Houghton. *Ephestia elutella* occurs at Worksop, where it has been taken by Miss Alderson and Mr. Houghton; *E. ficella* and *E. kuhniella* are reported by Daws from Mansfield, the former bred from dried fruits, the latter probably introduced in flour. *Euzophera pinguis* is recorded by Brameld for Sherwood Forest. *Cryptoblabes bistriga* has been taken in Clumber Park by Miss Alderson. *Phycis fusca* occurs at Worksop (Houghton), and *P. betulae* was taken for the first time in 1902 at Edwinstowe by Miss Alderson.

Nephopteryx spissicella, *Rhodophaea consociella*, *R. advenella*, and *R. tumidella* all occur, but rarely, in Sherwood Forest.

GALLERIDAE

Aphomia sociella is not uncommon in the vicarage garden at S. Leverton (Thornley), and *Achroea grisella* is found at Worksop (Houghton).

TORTRICES

TORTRICIDAE

Tortrix podana, *T. rosana*, *T. heparana*, *T. unifasciana*, *T. ministrana*, and *T. forsterana* are all more or less common. *T. viridana* is an abundant and destructive pest in oak woods, sometimes

almost stripping the trees of their foliage. *T. crataegana*, *T. xylosteana*, *T. sorbiana*, *T. cinnamomeana*, *T. ribeana*, *T. corylana*, *T. costana*, and *T. palleana*, all occur in the northern half of the county from Mansfield to Worksop; and *T. dumetana* and *T. viburnana* are reported from Mansfield (Daws). *Dichelia grotiana* was taken in 1903 at Clumber by Miss Alderson. *Peronea schalleriana*, *P. comparana*, and *P. logiana* occur in Sherwood Forest and the Worksop district; *P. variegana* is rather common in the Forest, and at Mansfield and South Leverton; *P. ferrugana* common in Sherwood Forest; *P. sponsana* recorded as rare in the same locality by Brameld; *P. cristana* and *P. hastiana* are said by Daws to be frequent in the Mansfield district. *Rhacodia caudana* is stated by Brameld to be frequent in Sherwood Forest. *Teras contaminana* has been taken in various places; the larvae occurred in great numbers on apple trees at Southwell in 1884, and were largely picked off and eaten by sparrows (Captain Becher, in *Zoologist*, Sept. 1884, p. 342). *Dictyopteryx loeflingiana*, *D. holmiana*, *D. bergmanniana*, *D. forskaleana*, *Argyrotoxa conwayana*, and *Ptycholoma lecheana* are all more or less common in the county.

PENTHINIDAE

Penthina corticana has been taken at Worksop and in Clumber Park by Miss Alderson; *P. betulaetana* and *P. sororculana* occur in the Worksop district; *P. pruniana* and *P. variegana* are common; and *P. ochroleucana* has occurred at South Leverton and in Sherwood Forest.

SPILONOTIDAE

Hedya ocellana is very common; *H. aceriana* has only been taken in my garden in Nottingham; *H. dealbana* occurs at Worksop and in Clumber Park. *Spilonota trimaculana* used to be taken in Sherwood Forest, but has not occurred lately; *S. roborana* is not uncommon. *Pardia tripunctana* is common.

SERICORIDAE

Aspis udmanniana and *Sericoris lacunana* are both common; *S. urticana* is frequent at Mansfield (Daws) and in Sherwood Forest (Brameld), and *S. bifasciana* was taken in 1902 in Clumber Park by Miss Alderson. *Euchromia purpurana* and *Orthotaenia striana* both occur in the Worksop district (Houghton), and *O. ericetana* was taken for the first time in 1904 at Shireoaks by Miss Alderson.

SCIAPHILIDAE

Phtheochroa rugosana is recorded for Sherwood Forest by Brameld. *Cnephasia musculana* is widely distributed and rather common. *Sciaphila conspersana* occurs in the Worksop district (Houghton); *S. subjectana* is common, and *S. virgaureana*, *S. hybridana*, and *S. octomaculana* also occur, but less frequently. *Sphaleroptera ictericana* is widely distributed, but apparently uncommon. *Capua favillaceana* is common in Clumber Park (Miss Alderson).

GRAPHOLITHIDAE

Bactra lanceolana, *Phoxopteryx lundana*, and *P. mitterpacheriana* are not uncommon, and *P. lactana* has been taken by Miss Alderson in Clumber Park. *Grapholitha ramella* occurred at Worksop in 1901 (Houghton), *G. nigromaculana* in 1904, near Worksop (Miss Alderson), and *G. trimaculana* is reported for the same district by Miss Alderson, and I have taken it recently at Chilwell. *G. subocellana*, *G. penkleriana*, and *G. naevana* occur in various localities. *Hypermecia cruciana* is locally common about Worksop (Houghton). *Batodes angustiorana* occurs throughout the county. *Paedisca bilunana*, *P. profundana*, and *P. solandriana* have hitherto been taken only in Sherwood Forest, where also *P. corticana* is excessively common and variable, as well as at South Leverton; *P. occultana* was taken at Shireoaks in 1901 (Houghton). Seven species of *Ephippiphora* occur in the north of the county, viz., *E. similana*, *E. cirsiana*, *E. pflugiana*, *E. brunnichiana*, *E. nigricostana*, *E. trigeminana* and *E. populana*, the two latter taken at Worksop by Miss Alderson in 1904 and 1905 respectively. *Olindia ulmana* and *Semasia ianthinana* were taken by Mr. Houghton at Worksop in 1901; *S. spiniana* is recorded for Sherwood Forest, and *S. woeberiana* is common in the Nottingham district. *Coccyx splendidulana* occurs in the Worksop and Retford districts; *C. argyrana* is well distributed; *C. taedella* is reported from Sherwood Forest; and *C. nanana* is found in the Nottingham and Worksop districts. *Retinia pinivorana* is reported by Brameld from Sherwood Forest, and on 21 May, 1905, Miss Alderson bred a specimen from a larva found in Clumber Park. *Carpocapsa pomonella* is frequent. *Endopisa nigricana* is only recorded in the imago stage for South Leverton. *Stigmonota coniferana*, *S. perlepidana*, *S. nitidana*, and *S. regiana*, *Dicrorampha petiverella*, *D. plumbana*, *D. plumbagana*, and *D. acuminatana*, *Pyrodes rheediella*, *Catoptria hypericana*, *C. scopoliana*, and *C. expallidana* all occur in the county, but are mostly scarce or local. *Catoptria cana* is rather common, and *C. ulicetana* abundant.

INSECTS

PYRALOIDIDAE

Choreutes myllerana and *Symaethis pariana* are rare, but *S. oxyacanthella* is abundant everywhere.

CONCHYLIDAE

Eupoecilia nana, *E. dubitana*, and *E. atricapitana* all occur at Worksop (Miss Alderson), and *E. angustana* is reported from Mansfield (Daws). *Xanthosetia zoegana* has been taken at Mansfield and in Sherwood Forest, and *X. hamana* is widely distributed and common in places. *Lobesia reliquana*, *Argyrolepia hartmanniana*, *A. badiana*, *A. cnicana*, *Conchylis francillana*, and *C. straminea* have all been taken in Sherwood Forest by Brameld, and all but the second of these by Miss Alderson in Clumber Park and at Shireoaks.

APHELIIDAE

Tortricodes hyemana occurs abundantly in the Worksop and Mansfield districts.

TINEÆ

EPIGRAPHIIDAE

Lemnatophila phryganella is recorded for Sherwood Forest by Brameld. *Dasystoma salicella* occurs commonly in several localities. *Exapate congelatella* has been taken at S. Leverton (Thornley). *Diurnea fagella* is very common everywhere, and excessively variable in colour, every gradation occurring from pale buff to nearly black. *Semioscopus avellanella* is common in Sherwood Forest. *Epigraphia steinkellneriana* is rare at Mansfield (Daws).

PSYCHIDAE

Talaeporia pseudo-bombycella, *Fumea intermediella*, and *Solenobia inconspicuella* have been taken in Clumber Park by Miss Alderson, and *S. triquetrella* is reported from the Mansfield district (Daws).

TINEIDAE

Xysmatodoma melanella was taken in Clumber Park in the summer of 1902 by Miss Alderson, and *Ochsenheimeria birdella* in the Worksop district by Mr. Houghton. Of the genus *Scardia* we have *S. boleti* (Mansfield, Daws), *S. corticella*, *S. granella*, *S. cloacella*, *S. ruricolella*, and *S. arcella*, all of which have been taken in Sherwood Forest, and most of them in other localities as well. *Blabophanes fenestratella* is reported by Daws to be frequent in the Mansfield district, and *B. rusticella* is widely distributed. The genus *Tinea* is rather poorly represented with us. *T. fulvimitrella* was taken many years ago by Brameld in Clumber Park, and several specimens have been taken recently in the same place by Miss Alderson; *T. tapetzella* is very common, and sometimes destructive in houses; *T. pellionella* has occurred at South Leverton in the vicarage (Thornley); *T. fuscipunctella* is reported from Sherwood Forest and Chilwell; *T. pallescentella* and *T. lapella* from Worksop and Sherwood Forest, the latter occurring also not uncommonly at S. Leverton; and *T. semifulvella* is not rare in Clumber Park (Miss Alderson). *Tineola biselliella* is frequent in the Mansfield and Worksop districts. *Lampronia luzella* occurs at Treswell and Osberton (Miss Alderson), and *L. rubiella* at Mansfield and S. Leverton. *Incurvaria muscalella* is widely distributed and common; *I. pectinea* has been taken commonly by Miss Alderson in Sherwood Forest; and *I. capitella* has been bred freely from currant shoots at Kingston-on-Soar, by Mr. F. Wakerley. *Micropteryx calthella* swarms in some localities on buttercup and marsh-marigold flowers; *M. thunbergella* was found by the Rev. A. Thornley flying in numbers about the grassy drives of Treswell Wood on 16 May, 1901; *M. sepella*, *M. semipurpurella*, *M. unimaculella* and *M. subpurpurella* have all been taken in Clumber Park by Miss Alderson, and the last-named species also occurs in Treswell Wood (Thornley); *M. sangii* was taken in the spring of 1903 in the Worksop district, also by Miss Alderson. *Nemophora swammerdammella* is common, and *N. schwarziella* frequent in one or two localities.

ADELIDAE

Adela fibulella has occurred recently (1903) at Treswell Wood (Miss Alderson); *A. rufimitrella* seems to be widely distributed but not common; *A. degeerella* is reported from Sherwood Forest, and is common at Thieves Wood, near Mansfield (Daws), and I have lately taken it at Strelley; *A. viridella* occurs plentifully in most parts of the county.

HYPONOMEUTIDAE

Swammerdammia pyrella is of general occurrence, but *S. combinella* and *S. caesiella* are apparently local and rare. *Hyponomeuta padellus* is wide-spread and common; *H. evonymellus* occurs in the

Worksop and Mansfield districts; and *H. plumbellus* is reported from Worksop and Sherwood Forest. I netted a single specimen of *Anesychia funerella* in Epperstone Park on 19 May, 1901—a fact worthy of note owing to the entire absence of the usual food-plant, *Symphytum officinale*, from the district.

Prays curtisellus is found in the Worksop and Retford districts.

PLUTELLIDAE

Plutella cruciferarum is sometimes only too common, and *P. porrectella* occurs at Mansfield, Worksop, and South Leverton. *Cerostoma sequella* is reported as rare in Sherwood Forest; *C. vittella* occurs at Worksop; and both *C. radiatella* and *C. costella* have been taken commonly in Sherwood Forest and Thieves Wood near Mansfield.

We possess all the three species of *Harpipteryx*, *H. scabrella* and *H. nemorella* having been taken in the Worksop district by Mr. Houghton, while *H. xylostella* occurs commonly in several localities on honeysuckle.

GELECHIIDAE

Orthotelia sparganella is recorded by Brameld for Sherwood Forest. *Phibalocera quercana* is common in the Forest, and at S. Leverton. We have sixteen species of *Depressaria*, two of which, *D. costosa* and *D. propinquella*, are recorded only by Brameld for Sherwood Forest; four, viz., *D. umbellana*, *D. subpropinquella*, *D. ciliella*, and *D. depressella*, are reported from Mansfield by Daws; *D. assimilella* and *D. liturella* have been taken at Clumber and Worksop by Miss Alderson, both in 1903; *D. angelicella* at Worksop (Houghton) and Treswell (Thornley); and the remainder, viz., *D. flavella*, *D. arenella*, *D. alstroemeriana*, *D. yeatiana*, *D. applana*, *D. weirella*, and *D. heracleana* occur in various localities. *Gelechia nigra* is said by Daws to be frequent in the Mansfield district, *G. ericetella* occurs at Clumber and elsewhere in Sherwood Forest, *G. diffinis* is found at Bulwell Forest and Worksop, *G. rhombella* has so far only occurred in my garden at Nottingham, *G. distinctella* near Worksop in 1904 (Miss Alderson), and *G. scalella* has been taken in Clumber Park and Treswell Wood. *Brachmia mouffetella* is rare in Sherwood Forest (Brameld). *Bryotropha terrella* is widely distributed, *B. desertella* used to be common in Sherwood Forest (Brameld), and *B. domestica* occurs at Mansfield (Daws). *Teleia luculella* is not uncommon at S. Leverton and in Treswell Wood (Thornley), and has been taken, together with *T. proximella*, in Clumber Park by Miss Alderson. *T. humeralis* is said by Brameld to be rare in Sherwood Forest, and the same statement applies to *Recurvaria leucatella*, *Poecilia nivea*, and *Nannodia stipella*, var. *naeviferella*. *Recurvaria nanella* occurs at Osberton. *Lamprotes atrella* and *Anacampsis ligulella* have been taken at Worksop by Mr. Houghton, and *A. immaculatella* is said by Daws to be common in the Mansfield district. *Tachyptilia populella* occurs about Worksop and in Treswell Wood. *Ceratophora rufescens* is another of Brameld's Sherwood Forest captures. *Parasia metzneriella*, *Chelaria hübnerella* and *Anarsia spartiella* have all occurred in the Worksop district (Houghton). *Sophronia parenthesella* is rare in Sherwood Forest (Brameld). *Harpella geoffrella* occurs among honeysuckle at Mansfield (Daws), and a single specimen of *H. bracteella* was taken at Worksop in 1901 by Mr. J. T. Houghton. *Dasycera sulphurella* is widely distributed and common. *Oecophora fulviguttella* and *Oe. lambdella* occur in the north of the county, and *Oe. pseudospretella* and *Endrosis fenestrella* are only too common.

GLYPHIPTERYGIDAE

Glyphipteryx fuscoviridella and *G. fischeriella* are not uncommon, and *G. forsterella* occurs in the Mansfield district (Daws). *Heliozele sericiella* was taken by Miss Alderson in Clumber Park on 19 May, 1902.

ARGYRESTHIIDAE

The genus *Argyresthia* is well represented in Nottinghamshire, the following species having been taken quite recently in the localities specified: *A. ephippella* and *A. pygmaeella* (Worksop, Houghton); *A. nitidella*, *A. spiniella*, and *A. albistria* (S. Leverton, Thornley); *A. conjugella*, *A. semifusca*, and *A. brochella* (Worksop district, Miss Alderson); *A. glaucinella* (Treswell Wood, Thornley); *A. curvella* (Worksop and Nottingham); and *A. goedartella* (common and widely distributed); the variety *literella* of the last species occurs in my garden in Nottingham. In addition to the above Brameld records *A. semitestacella* and *A. mendica* for Sherwood Forest, and Mr. W. Daws reports *A. dilectella*, *A. arceuthina*, *A. praecocella* and *A. aurulentella* from the Mansfield district. *Cedestis farinatella* occurs at Clumber and Mansfield, and *Ocnerostoma piniariella* at Mansfield (Daws).

GRACILARIIDAE

Gracilaria alchimiella and *G. syringella* are common, *G. elongella* and *G. tringipennella* occur near Worksop, and *G. auroguttella* in the Retford district. *Ornix avellanella*, *O. anglicella*, *O. betulae*,

and *O. torquillella* are all recorded for Sherwood Forest by Brameld, and the two first-named have been taken commonly elsewhere in the county.

COLEOPHORIDAE

The large genus *Coleophora* is not very well represented with us, only the following species having been so far identified, but doubtless many other species will ultimately be discovered in the county :—*C. fabriciella*, *C. alcyonipennella*, *C. albicosta*, *C. palliatella*, *C. discordella*, *C. saturatella*, *C. caespititiella*, *C. virgaureae*, *C. laricella*, *C. albitarsella*, *C. nigricella*, *C. fuscedinella*, *C. gryphipennella*, *C. olivaceella*, *C. lutipennella*, *C. adjunctella*, and *C. limosipennella*.

ELACHISTIDAE

Batrachedra pinicolella was taken in the Worksop district on 19 July, 1902, by Miss Alderson, and *Chauliodus chaerophyllellus* at Fenton, near Sturton, in 1901 by the Rev. A. Thornley. *Laverna raschkiella* occurs at Osberton, and *L. epilobiella* is common at Welbeck (Miss Alderson); *L. ochraceella* has been taken at Chilwell (D. H. Pearson), *L. hellerella* at Nottingham and near Worksop, and *L. atra* at Nottingham. *Chrysoclysta schrankella* is reported from Mansfield (Daws), and *C. aurifrontella* is sometimes very common about North and South Leverton (Thornley), and also occurs at Worksop. The genus *Elachista* is represented by *E. apicipunctella* (Nottingham and Clumber), *E. nigrella* (S. Leverton, Thornley), *E. triatomea* (Worksop, Houghton), *E. rufocinerea* (very common everywhere), *E. subalbidella* (N. Leverton, Thornley), and *E. argentella* (common) ; *E. albifrontella* and *E. cerussella* are, in addition, recorded by Brameld for Sherwood Forest, but have not yet been noted by more recent observers. *Tischeria complanella* has been taken in Clumber Park by Miss Alderson.

LITHOCOLLETIDAE

Lithocolletis is another genus rather poorly represented in Nottinghamshire. *L. roboris* *L. cavella*, *L. ulmifoliella*, and *L. heegeriella* have all been taken recently in Clumber Park by Miss Alderson; *L. pomifoliella* occurs in the Nottingham district, and *L. salicicolella* at Clarborough (Thornley); *L. quercifoliella* and *L. cramerella* are common, as also is *L. messaniella* on Quercus ilex at Worksop (Miss Alderson); *L. tenella* and *L. nicellii* have been taken in Treswell Wood (Thornley), and Brameld gives *L. faginella* and *L. alnifoliella* in his Sherwood Forest list.

LYONETIIDAE

Lyonetia clerckella, said by Brameld to be rare in Sherwood Forest, is common at Worksop, according to Miss Alderson. *Cemiostoma laburnella* is abundant on laburnum trees in Nottingham gardens, and also occurs at Mansfield and S. Leverton. Only a single species of *Bucculatrix*, viz., *B. nigricomella*, which occurs in the Worksop and Retford districts, has so far been detected in Nottinghamshire.

NEPTICULIDAE

The Nepticulidae have been almost entirely neglected : indeed, only four species of *Nepticula* are on record. *N. anomalella* and *N. sub-bimaculella* occur in the vicarage garden at South Leverton, and the latter species occurs also not uncommonly on oak trunks in Treswell Wood (Thornley) and in Clumber Park (Miss Alderson). *N. argentipedella* is taken in the Worksop district by Miss Alderson, and *N. fragariella* has been captured in the same district by Mr. J. T. Houghton. *Trifurcula immundella* has recently been taken in Clumber Park by Miss Alderson. But for the difficulty in pinning and setting these minute moths we should doubtless have had many more species to record.

DIPTERA

Flies

The insects belonging to this order are easily known by their possessing only one pair of membranous and nearly transparent wings; behind these, in the place of the hind wings, are a pair of stalked knobs—the halteres or 'balancers.' The fleas and a few parasitic flies are, however, wingless. The head is remarkable for its great mobility, being connected with the thorax by a neck which is so slender and flexible as to permit of nearly complete rotation. The eyes are very large, often occupying the greater part of the visible surface of the head. The mouth is suctorial. The larvae are usually legless grubs or maggots, feeding on all kinds of animal and vegetable refuse, or inside living plant tissues, where they sometimes give rise to galls, or they are predaceous or parasitic ;

some are aquatic. The mature insects are equally diverse in their habits. Many live by sucking the blood of vertebrate animals, others prey upon other insects, and an enormous number live on decaying animal or vegetable matter, or suck nectar from flowers.

The Diptera have been comparatively neglected in Nottinghamshire, and most of our knowledge of the group we owe to the exertions of the Rev. A. Thornley, who, together with the present writer, is responsible for all the records in the following list unless otherwise stated. Much unidentified material exists in the writer's collection which could not be worked out in time for use in this article.

The arrangement and nomenclature adopted are those of Verrall's *List of British Diptera*, 2nd edition.

ORTHORRHAPHA

NEMATOCERA

Pulicidae

Pulex irritans, Linn. Abundant everywhere

Trichopsylla gallinae, Schrk. *S. Leverton*, abundant in old fowl-house

Cecidomyidae

Cecidomyia bursaria, Bremi. *Linby*, bred from galls on Nepeta glechoma (G. B. Rothera)

— clausilia, Meade. Bred from galls on willow leaves (G. B. Rothera)

— crataegi, Winn. *Wilford*, *Ruddington* (G. B. Rothera) ; *S. Leverton*, abundant

— galii, Lw. *Wilford*, bred from galls on Galium verum (G. B. Rothera)

— marginemtorquens, Bremi. Common on willows near *Leverton Station*

— plicatrix, Lw. *Oxton*, galls on Rubus (G. B. Rothera)

— rosaria, Lw. Forms the well-known and conspicuous leaf rosettes on the ends of willow twigs ; common

— rosarum, Hardy. *Nottingham* district, bred from galls on leaves of Rosa canina (G. B. Rothera)

— salicis, Schrk. *Oxton* (G. B. Rothera), forms tumours on twigs of Salix caprea and other willows

— taxi, Inch. Galls on yew hedge at *S. Leverton*

— tiliae, Schrk. *Nottingham*, *Arnold*, bred from galls on lime (G. B. Rothera) ; *Beauvale Woods*

— tilicola, Rud. *Manton Woods*

— ulmariae, Bremi. *Linby*, bred from galls on Spiraea ulmaria (G. B. Rothera) ; *S. Leverton* and other parishes around, not uncommon

— urticae, Perris. Galls on stinging nettle (Urtica dioica), *Nottingham* (Rothera) ; *S. Leverton* and other parishes nr. *Retford*, common

— veronicae, Vallot. *S. Leverton;* all the Veronica Chamoedrys in this parish seem to be affected with this gall. Common throughout the *Retford* district

Hormomyia capreae, Winn. Bred from galls on leaves of Salix caprea, *Linby* (G. B. Rothera)

Mycetophilidae

Mycetophila punctata, Mg. — cingulum, Mg. } *S. Leverton*

Glaphyroptera fascipennis, Mg. *S. Leverton*, rare

Bibionidae

Scatopse notata, Linn. *S. Leverton*

Dilophus febrilis, Linn. *Nottingham* ; early in 1899 this insect completely destroyed a large crop of spring lettuces in a market garden ; *S. Leverton*, abundant

ORTHORRHAPHA (*continued*)

NEMATOCERA (continued)

Bibionidae (*continued*)

Bibio marci, Linn. Universally distributed and abundant

— varipes, Mg. *S. Leverton*

— johannis, Linn. Abundant and widely distributed

Simulidae

Simulium reptans, Linn. *S. Leverton ; Treswell Wood*, abundant

Culicidae

Anopheles maculipennis, Mg. *S. Leverton*

Culex annulatus, Schrk. Common ; in 1905 this species was excessively common in *Nottingham*, and many persons were badly bitten by it

— nemorosus, Mg. *S. Leverton*

— pipiens, Linn. Common everywhere

Ptychopteridae

Ptychoptera contaminata, Linn. *Worksop* (J. T. Houghton) ; *S. Leverton*

— paludosa, Mg. *S. Leverton*

— albimana, Fab. *S. Leverton*

Limnobidae

Limnobia quadrinotata, Mg. *Treswell Wood*

— nubeculosa, Mg. *S. Leverton*

— analis, Mg. *Sherwood Forest* (R. C. Bradley)

— tripunctata, Fab. *S. Leverton*

Dicranomyia chorea, Mg. *S. Leverton*, common

Rhypholophus lineatus, Mg. — nodulosus, Mcq. } *S. Leverton*

Poecilostola punctata, Schrk. *S. Leverton*

Trichocera hiemalis, Deg. Common and widely distributed

Tipulidae

Pachyrrhina crocata, Linn. *Worksop* (Miss Alderson) ; *Sherwood Forest*, common (R. C. Bradley and C. J. Wainwright)

— histrio, Fab. *S. Leverton ; Fledborough*

— maculosa, Mg. *N.* and *S. Leverton ; Grove ; Nottingham*

— quadrifaria, Mg. *S. Leverton*

Tipula pabulina, Mg. (?) 'This small species occurs commonly in the autumn on the windows and walls of the vicarage at *S. Leverton*, and has to all appearance a subapterous female. Dr. Meade names it doubtfully pabulina' (A. Thornley)

— lunata, Linn. *S. Leverton*

— vernalis, Mg. *N.* and *S. Leverton ; Treswell Wood*

— vittata, Mg. *S. Leverton ; Treswell Wood*

— gigantea, Schrk. Widely distributed and common

— ochracea, Mg. *S. Leverton ; Treswell Wood ; Clumber* (Miss Alderson)

INSECTS

ORTHORRHAPHA (*continued*)

NEMATOCERA (continued)

Tipulidae (*continued*)

Dictenidia bimaculata, Linn. *Sherwood Forest* (C. J. Wainwright); *S. Leverton*
Xiphura nigricornis, Mg. *Sherwood Forest* (R. C. Bradley)

Rhyphidae

Rhyphus fenestralis, Scop. *Nottingham; S. Leverton*
— punctatus, Fab. *S. Leverton*, common

BRACHYCERA

Stratiomyidae

Nemotelus nigrinus, Fln. *Saundby* (Eland Shaw)
Oxycera pygmaea, Fln. *Misterton*
Chrysonotus bipunctatus, Scop. *Worksop* (Houghton)
Sargus cuprarius, Linn. *Worksop* (Houghton); *Nottingham; Treswell.* Var. nubeculosus, Ztt., common at *S. Leverton* and in *Treswell Wood*
Chloromyia formosa, Scop. *Worksop* (Houghton); *Retford* district, common.
Microchrysa polita, Linn. } *S. Leverton*
— flavicornis, Mg. }
Beris vallata, Forst. *S. Leverton*
— fuscipes, Mg. *Treswell Wood*

Tabanidae

Haematopota pluvialis, Linn. *Worksop* (Houghton); *S. Leverton; Treswell Wood*, etc. common
Therioplectes solstitialis, Mg. } *Clumber* (Miss Alderson)
Tabanus bovinus, Linn. }
Tabanus bromius, Linn. *S. Leverton; Treswell Wood*
Chrysops caecutiens, Linn. *Langford Moor, Newark; Retford* district, common

Leptidae

Leptis scolopacea, Linn. *S. Leverton*, common on the boles of willow trees
— tringaria, Linn. *Worksop* (Houghton); *S. Leverton; Treswell Wood*
Chrysopilus aureus, Mg. *Sutton* near *Retford; Treswell Wood*, common
Xylophagus ater, Fab. *Sherwood Forest* (R. C. Bradley)

Asilidae

Leptogaster cylindrica, Deg. Generally distributed
Dioctria oelandica, Linn. *Sherwood Forest* (C. J. Wainwright)
— atricapilla, Mg. *Rampton Marsh*
— rufipes, Deg. Generally distributed and common
— baumhaueri, Mg. *Sherwood Forest* (C. J. Wainwright)
— linearis, Fab. *Treswell Wood*
Laphria marginata, Linn. *Treswell Wood*
Asilus crabroniformis, Linn. *Bulwell Forest, Nottingham*, several specimens taken some years ago
Neoitamus cyanurus, Lw. *Sherwood Forest* (Wainwright); *Langford Moor, Newark; Clumber* (Miss Alderson)
Machimus atricapillus, Fln. *Thorney; Treswell Wood; Clumber* (Miss Alderson)
Dysmachus trigonus, Mg. *Bulwell Forest; Worksop* (Houghton)

ORTHORRHAPHA (*continued*)

BRACHYCERA (continued)

Bombylidae

Bombylius major, Linn. *Roe Wood, Winkburn*, rather common at primrose flowers; *Treswell Wood*, and in vicarage garden at *S. Leverton*, at primroses; *Eakring Brail Wood*

Therevidae

Thereva nobilitata, Fab. *Sherwood Forest* (C. J. Wainwright)

Empidae

Cyrtoma spuria, Fln. *Treswell Wood*
Rhamphomyia sulcata, Fln. *Nottingham; Retford* district
— flava, Fln. *S. Leverton*
Empis tessellata, Fab. Common throughout the county
— livida, Linn. *S. Leverton; Treswell; Grove; Langford Moor.* In *Treswell Wood* numerous examples were seen capturing specimens of a species of Tortrix
— opaca, Fab. *Clifton; S. Leverton*
— stercorea, Linn. *N. Leverton; Treswell Wood*, common
— trigramma, Mg. *N.* and *S. Leverton; Treswell Wood; Gedling*, common
— pennipes, Linn. *Treswell Wood*, common
— vernalis, Mg. *Treswell Wood*
— chioptera, Fln. *N.* and *S. Leverton*
Pachymeria femorata, Fab. *S. Leverton*
Hilara pilosa, Ztt. *Treswell Wood*
— maura, Fab. *S. Leverton*
Ocydromia glabricula, Fln. *S. Leverton*

Dolichopodidae

Dolichopus griseipennis, Stan. *Treswell Wood*
— trivialis, Hal. *S. Leverton; Treswell Wood*
— aeneus, Deg. *Worksop* and *Retford* districts, abundant
Chrysotus gramineus, Fln. *Treswell Wood*
Argyra diaphana, Fab. *S. Leverton*
— argyria, Mg. *Treswell Wood*
Scellus notatus, Fab. *S. Leverton*

Lonchopteridae

Lonchoptera lacustris, Mg. *S. Leverton*

CYCLORRHAPHA

PROBOSCIDEA

Platypezidae

Pipunculus campestris, Ltr. *S. Leverton; Treswell Wood*

Syrphidae

Pipizella heringi, Ztt. *Treswell Wood*, 9 June, 1900
Pipiza luteitarsis, Ztt. *S. Leverton*
— noctiluca, Linn. *S. Leverton*, not uncommon
— lugubris, Fab. *Treswell Wood*
Cnemodon vitripennis, Mg. *Worksop* (Houghton); *S. Leverton*
Liogaster metallina, Fab. *S. Leverton; Treswell Wood*

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

SYRPHIDAE (*continued*)

Chrysogaster splendens, Mg. *S. Leverton; Treswell Wood*
— hirtella, Lw. *Retford; S. Leverton*
— chalybeata, Mg. *S. Leverton*
Chilosia sparsa, Lw. *Treswell Wood*, rather common
— antiqua, Mg. *Treswell Wood*
— longula, Ztt. *Kingston-on-Soar*
— scutellata, Fln. *Sherwood Forest* (C. J. Wainwright)
— pulchripes, Lw. *S. Leverton; Treswell Wood; Widmerpool*
— variabilis, Pz. *Treswell Wood*, rather common; *S. Leverton*
— illustrata, Harr. *Rampton*
— grossa, Fln. *Retford* (Pegler); *S. Leverton; Winkburn*
— albitarsis, Mg. *Retford* district, common; *Gedling*
— fraterna, Mg. *Treswell Wood*
— praecox, Zett. *Treswell Wood*
— vernalis, Fln. *S. Leverton*
Platychirus manicatus, Mg.
— peltatus, Mg.
— scutatus, Mg.
— albimanus, Mg.
} Common and widely distributed
— scambus, Staeg. *S. Leverton*
— clypeatus, Mg. *S. Leverton*, Sept. 1897, in profusion; *Saundby* (Eland Shaw); *Worksop* (Houghton)
— angustatus, Ztt. *S. Leverton; Treswell*
Pyrophaena granditarsa, Forst. *S. Leverton*
Melanostoma ambiguum, Fln. *S. Leverton*
— dubium, Ztt. *Worksop* (Miss Alderson)
— mellinum, Linn. Common
— scalare, Fab. *N. Leverton; Treswell Wood*
Melangyna quadrimaculata, Verr. *Clumber* (Miss Alderson)
Leucozona lucorum, Linn. *N.* and *S. Leverton; Treswell Wood; Worksop* (Houghton)
Ischyrosyrphus laternarius, Müll. *Treswell Wood; Aspley Woods, Nottingham; Nether Langwith*
Catabomba pyrastri, Linn. *Nottingham* and *Retford* districts; *Thorney*
Syrphus albostriatus, Fln. *Retford* district and *Sherwood Forest*, not uncommon
— tricinctus, Fln. *Treswell Wood; Sherwood Forest*, near *Edwinstowe*
— venustus, Mg. *Sherwood Forest* (Wainwright); *S. Leverton* and *Treswell Wood*, common
— lunulatus, Mg. *S. Leverton*
— nigricornis, Verr. *Sherwood Forest* (C. J. Wainwright)
— torvus, O.-S. *Treswell Wood*
— annulatus, Ztt. *Sherwood Forest* (C. J. Wainwright)
— lineola, Ztt. *Sherwood Forest* (C. J. Wainwright)
— ribesii, Linn. Common everywhere
— vitripennis, Mg. *S. Leverton*, not uncommon; *Treswell Wood*
— latifasciatus, Mcq. *S. Leverton; Treswell Wood*
— nitidicollis, Mg. *S. Leverton*
— corollae, Fab.
— luniger, Mg.
} Widely distributed and common
— bifasciatus, Fab. *Worksop* (Houghton); *S. Leverton*, common; *Treswell Wood*

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

SYRPHIDAE (*continued*)

Syrphus balteatus, Deg. Widely distributed and common
— cinctellus, Ztt. Woods at *Kingston-on-Soar*, not uncommon on flowers of wild parsnip
— auricollis, Mg., var. maculicornis, Ztt. *Sherwood Forest* (C. J. Wainwright); *S. Leverton*, common in the vicarage garden.
— umbellatarum, Fab. *Worksop* (Houghton); *S. Leverton*
— lasiophthalmus, Ztt. *S. Leverton*
Sphaerophoria scripta, Linn. *S. Leverton*, abundant; *Treswell; Thorney*
— menthastri, Linn., var. picta, Mg. *N.* and *S. Leverton; Blidworth*
— flavicauda, Ztt., var. nitidicollis, Zett. *S. Leverton*
Baccha obscuripennis, Mg. *S. Leverton* and *Treswell Wood*, not uncommon; *Strelley*
Ascia podagrica, Fab. *S. Leverton*, common; *Worksop* (Houghton)
Rhingia campestris, Mg. *N.* and *S. Leverton*, etc., common
Volucella bombylans, Linn.
— pellucens, Linn.
} Both widely distributed and common in the county
Eristalis sepulchralis, Linn. *S. Leverton*
— tenax, Linn. Widely distributed and very common
— intricarius, Linn. *Kingston; Newstead; S. Leverton; Everton*
— arbustorum, Linn. Common everywhere
— nemorum, Linn. *S. Leverton; Treswell Wood; Edwinstowe*
— pertinax, Scop. Everywhere, very common
— horticola, Deg. *Treswell Wood; Newstead; Blidworth; Sherwood Forest; Marnham*
Myiatropa florea, Linn. Widely distributed in the county
Helophilus trivittatus, Fab. *Bunny*, 23 Aug. 1899
— pendulus, Linn. Of common occurrence.
— transfugus, Linn. *Marnham*, several specimens flying about watercress flowers in the old bed of the *Trent*, 19 July, 1901
Merodon equestris, Fab. *Bulwell Forest; N. Wheatley*, type and var. narcissi, Fab.
var. narcissi, *Worksop* (Miss Alderson)
Criorrhina ranunculi, Pz.
— berberina, Fab.
} *Sherwood Forest* (W. Harrison and C. J. Wainwright)
— oxyacanthae, Mg. *S. Leverton*
— floccosa, Mg. *Sherwood Forest* (Bradley and Wainwright); *S. Leverton*
Brachypalpus bimaculatus, Mcq. *Sherwood Forest* (Bradley and Wainwright)
Xylota segnis, Linn. *Treswell Wood; Langford Moor*
— lenta, Mg. *Southwell*
— sylvarum, Linn. *Treswell Wood; Langford Moor; Wigsley Wood*
Syritta pipiens, Linn. Common everywhere
Chrysochlamys cuprea, Scop. *Treswell Wood*
Chrysotoxum cautum, Harr. *Sherwood Forest* (Bradley and Wainwright); *S. Leverton; Treswell Wood*
— arcuatum, Linn. *Sherwood Forest* (Wainwright)
— bicinctum, Linn. *S. Leverton; Treswell Wood; Widmerpool;* not uncommon

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

Conopidae

Conops vesicularis, Linn. *Langford Moor*, 10 June, 1900
— strigata, Mg. *Langford Moor*, 12 Aug. 1899
— flavipes, Linn. Widely distributed, but not very common
Physocephala rufipes, Fab. *Wigsley ; Treswell*
Sicus ferrugineus, Linn. *Wigsley*, 7 Aug. 1899
Myopa buccata, Linn. *Bulwell* and *Sherwood Forests ; Treswell Wood*
— testacea, Linn. *Bulwell Forest ; Rainworth ; S. Leverton*

Oestridae

Oestrus ovis, Linn. *S. Leverton*

Tachinidae

Phorocera cilipeda, Rnd. *S. Leverton*
Tachina rustica, Mg.
Thelaira leucozona, Pz. } *S. Leverton ; Treswell Wood*
Olivieria lateralis, Fab. *Worksop* (Houghton) ; *S. Leverton ; Rampton ; Kingston ; Wigsley ; Thorney*
Micropalpus vulpinus, Fln. *Blidworth*
Echinomyia fera, Linn. *Edwinstowe, Sherwood Forest*
Plagia ruralis, Fln. *Treswell*
Siphona geniculata, Deg. *S. Leverton*, common ; *Gedling*
Trixa oestroidea, Dsv. *Treswell Wood ; Clarborough*
Fortisia foeda, Mg. *S. Leverton*
Cynomyia mortuorum, Linn. *S. Leverton*
Sarcophaga carnaria, Linn. Widely distributed and common
— atropos, Mg. *Edwinstowe*
— agricola, Mg. *S. Leverton*
— haemorrhoidalis, Mg. *S. Leverton*
Metopia leucocephala, Rossi
Sphixapata conica, Fln. } *Bulwell Forest*
Dexia vacua, Fln. *Thorney*

Muscidae

Stomoxys calcitrans, Linn. *S. Leverton ; Nottingham ;* common
Pollenia rudis, Fab. *Worksop* (Houghton) ; *S. Leverton ; Treswell ; Linby ;* common
Myiospila meditabunda, Fab. *S. Leverton*
Graphomyia maculata, Scop. *S. Leverton ; Sutton*, nr. *Retford ;* common
Musca domestica, Linn.
— corvina, Fab. } Generally distributed and common
Cyrtoneura stabulans, Fln. *Nottingham ; S. Leverton ;* common
— pabulorum, Fln.
— caesia, Mg. } *S. Leverton*
Morellia hortorum, Fln. *Nottingham ; S. Leverton*, abundant
Mesembrina meridiana, Linn. *Newstead ; S. Leverton ; Cottam ;* common
Pyrellia lasiophthalma, Mcq. *S. Leverton ; Treswell ; Winkburn*
Protocalliphora azurea, Fln. *Nottingham*
Calliphora erythrocephala, Mg. Abundant everywhere
— vomitoria, Linn. Common
Euphoria cornicina, Fab. *S. Leverton*, common ; *Linby*

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

Muscidae (*continued*)

Lucilia caesar, Linn. Widely distributed and common
— sylvarum, Mg. *Marnham*, flying about watercress flowers in bed of old *Trent*
— sericata, Mg. *Nottingham ; Worksop ; S. Leverton*

Anthomyidae

Polietes lardaria, Fab.
— albolineata, Fln. } *S. Leverton*, etc., very common
Hyetodesia incana, Wdm. *S. Leverton*, common
— lucorum, Fln. *S. Leverton ; Grove ; Edwinstowe ; Winkburn*
— marmorata, Ztt.
— serva, Mg. } *S. Leverton*
— variabilis, Fln. *Treswell Wood*
— umbratica, Mg.
— laeta, Fln.
— lasiophthalma, Mcq. } *S. Leverton*
— erratica, Fln. *Worksop* (Houghton) ; *S. Leverton ; Treswell Wood*
— basalis, Ztt. *Worksop* (Houghton) ; *Treswell Wood*
— scutellaris, Fln. *S. Leverton ; Treswell Wood*
— pallida, Fab. *Kingston-on-Soar*
Alloeostylus flaveola, Fln. *Clumber* (Miss Alderson)
Mydaea urbana, Mg. *S. Leverton*, not uncommon
— impuncta, Fln. *S. Leverton ; Treswell Wood*
— separata, Mg. *S. Leverton ; Treswell Wood ; Nottingham*
Spilogaster communis, Dsv. *Worksop* (Houghton) ; *S. Leverton*
Hydrotaea irritans, Fln.
— dentipes, Fab.
— armipes, Fab. } *S. Leverton*, the two first species common
Ophyra leucostoma, Wdm. *S. Leverton ; Worksop* (Miss Alderson)
Drymia hamata, Fln. *S. Leverton*
Hydrophoria conica, Wdm. *Treswell Wood*
Hylemyia variata, Fln. *Worksop* (Houghton) ; *Lambley* (W. H. Freestone) ; *S. Leverton*
— strigosa, Fab. *S. Leverton* ; *Worksop* (Miss Alderson)
Anthomyia pluvialis, Linn. *S. Leverton ; Treswell Wood*
— radicum, Linn. *S. Leverton*. In 1901 some young cabbages were badly attacked by the grub of this fly, producing an appearance like 'anbury' (Thornley)
Pegomyia rufipes, Fln. *S. Leverton*
— bicolor, Wdm. *S. Leverton ; Treswell*
Homalomyia hamata, Mcq. *S. Leverton*
— scalaris, Fab. Common
— canicularis, Linn. *S. Leverton*
Azelia macquarti, Staeg.
— zetterstedti, Rnd.
— triquetra, Wdm.
Coenosia sexnotata, Mg. } *S. Leverton*

Cordyluridae

Amaurosoma fasciata, Mg. *Treswell Wood*
Norellia spinimana, Fln. *S. Leverton*
Scatophaga lutaria, Fab. *S. Leverton*
— stercoraria, Linn. Everywhere abundant

Helomyzidae

Helomyza ustulata, Mg. *S. Leverton*
Blepharoptera serrata, Linn. *S. Leverton*, abundant ; *Nottingham ; Winkburn*

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

HELOMYZIDAE (*continued*)

Tephrochlamys rufiventris, Mg. *S. Leverton; Treswell Wood*
— flavipes, Ztt. *S. Leverton*

SCIOMYZIDAE

Dryomyza flaveola, Fab. *Retford; S. Leverton*
Tetanocera elata, Fab.
— sylvatica, Mg.
— punctulata, Scop. } *Treswell Wood*
Limnia unguicornis, Scop. *S. Leverton; Treswell Wood*
— obliterata, Fab. *S. Leverton*
Elgiva albiseta, Scop. *S. Leverton; Linby*
— rufa, Pz. *Cottam*
Sepedon sphegeus, Fab. *S. Leverton; Clarborough*

PSILIDAE

Psila fimetaria, Linn. *S. Leverton; Widmerpool*
— rufa, Mg. *Worksop* (Houghton)
Chyliza leptogaster, Pz. *Treswell Wood*

MICROPEZIDAE

Calobata cibaria, Linn.
— petronella, Linn. } *S. Leverton*

ORTALIDAE

Ptilonota centralis, Fab. *S. Leverton; Treswell Wood; Gamston*, nr. *Retford* (S. Pegler)
Platystoma seminationis, Fab. River-bank, *Littleborough*, common
Rivellia syngenesiae, Fab. *Worksop* (Houghton)
Seoptera vibrans, Linn. *S. Leverton*

TRYPETIDAE

Acidia cognata, Wdm. *Treswell Wood*
— heraclei, Linn. *S. Leverton*
Spilographa zoë, Mg. *S. Leverton; Sherwood Forest* (?) (Wainwright)
Trypeta onotrophes, Lw. *N.* and *S. Leverton; Treswell Wood*
Urophora solstitialis, Linn. *Littleborough; Treswell Wood*
Tephritis miliaria, Schrk. *Treswell Wood*
— bardanae, Schrk. *Sherwood Forest* (C. J. Wainwright)

LONCHAEIDAE

Lonchaea vaginalis, Fln.
— chorea, Fab.
Palloptera ustulata, Fln. } *S. Leverton*
— trimacula, Mg. *Sherwood Forest* (C. J. Wainwright)
— arcuata, Fln. *S. Leverton; Saundby* (E. Shaw)

CYCLORRHAPHA (*continued*)

PROBOSCIDEA (continued)

SAPROMYZIDAE

Lauxania aenea, Fln. *S. Leverton*

OPOMYZIDAE

Balioptera combinata, Linn. *Treswell Wood*
Opomyza germinationis, Linn. *S. Leverton; Treswell Wood*
Pelethophila flava, Linn. *S. Leverton*

SEPSIDAE

Sepsis violacea, Mg. } *Worksop* (Houghton); *S. Leverton; Nottingham*
— cynipsea, Linn. }
Nemopoda cylindrica, Fab. *S. Leverton*

PIOPHILIDAE

Piophila casei, Linn. *S. Leverton; Kingston-on-Soar*, abundant at the Dairy Institute; *Nottingham.*

EPHYDRIDAE

Hydrellia griseola, Fln. *S. Leverton; Treswell Wood*
Scatella quadrata, Fln. *S. Leverton*

DROSOPHILIDAE

Drosophila funebris, Fab. *S. Leverton*

CHLOROPIDAE

Meromyza pratorum, Mg. *Cottam; Treswell Wood*
— laeta, Mg. *Cottam*
Chlorops taeniopus, Mg. *S. Leverton*
— speciosa, Mg. *Treswell Wood*
— laeta, Mg. *S. Leverton*
Siphonella laevigata, Fln. *S. Leverton*

AGROMYZIDAE

Ochthiphila polystigma, Mg. *Treswell Wood*

BORBORIDAE

Borborus nitidus, Mg.
— niger, Mg.
— vitripennis, Mg.
— equinus, Fln.
— geniculatus, Mcq.
Sphaerocera subsultans, Fab. } *S. Leverton*

PHORIDAE

Trineura aterrima, Fab.
Phora rufipes, Mg. } *S. Leverton*

EPROBOSCIDEA

HIPPOBOSCIDAE

Ornithomyia avicularia, Linn. *Nottingham*, on starlings

HEMIPTERA

This order comprises the bugs, cicads, frog-hoppers, plant-lice, scale-insects, etc., insects of small or moderate size, all of which are characterized by the modification of the mouth parts into a piercing and sucking proboscis or beak. Two pairs of wings are usually present, and these exhibit important differences in the two main groups into which the order is divided. In the Hemiptera Heteroptera the anterior wings (elytra) are more or less horny except at the tip, which is membranous, and they fold flat on the back, covering over the more delicate and entirely membranous hind wings. In the Hemiptera Homoptera, on the other hand, the forewings are not horny, and scarcely differ in texture from the hind wings; they slope over the back in a roof-like manner when at rest. In this group, moreover, the face slopes downwards and back-

wards, thus bringing the beak close to the bases of the fore legs. The Heteroptera are almost without metamorphosis, the newly-hatched young closely resembling the adult except for the absence of wings, which are gradually developed as the insect approaches maturity. Among the Homoptera, however, metamorphosis is more marked, the young frequently bearing little resemblance to their parents.

The great majority of the British Hemiptera are vegetable feeders, living on the juices of plants; a few of the Heteroptera, however, are blood-suckers. Some of the Homoptera have the remarkable habit of enveloping themselves in their earlier stages in a mass of white froth, as in the well-known 'cuckoo-spit' frog-hoppers.

The Heteroptera are sub-divided into two groups: (1) the Gymnocerata, comprising all the terrestrial forms, and the 'pond-skaters,' which live on the surface of water, are characterized by possessing large and conspicuous antennae; (2) the Cryptocerata are truly aquatic insects with very small antennae which are hidden beneath the head. To this group belong the water-scorpion and the water-boatmen, the latter having the curious habit of swimming on their backs.

Unless otherwise stated the species enumerated below have all been collected by the Rev. Alfred Thornley, with the exception of a few species collected by myself. The Aphides and Coccidae of Nottinghamshire are practically untouched, and no list of these can yet be given.

The arrangement and nomenclature adopted are those of the *Catalogue of British Hemiptera*, by E. Saunders and J. Edwards.

HETEROPTERA

GYMNOCERATA

Pentatomina

Sehirus bicolor, Linn. *Sherwood Forest* (Ryles)
Pentatoma juniperina, Linn. *Nottingham* (Ryles)
Piezodorus lituratus, Fab. *Sherwood Forest* (Ryles)
Tropicoris rufipes, Linn. *Treswell Wood; Markham; Sherwood Forest*, common
Picromerus bidens, Linn. *Kingston* (Miss Challans)
Acanthosoma haemorrhoidale, Linn. *S. Leverton*
— dentatum, De G. *Sherwood Forest* (Ryles)
— interstinctum, Linn. *Langford Moor*, common on birch; *Sherwood Forest*, common

Coreina

Myrmus myriformis, Fall. *Langford Moor*

Berytina

Neides tipularius, Linn. *Barrow Hills, Everton*

Lygaeina

Cymus glandicolor, Hahn. *Clumber Park* (Pegler)
Stygnus rusticus, Fall. *Clumber Park* (Pegler); *S. Leverton; Treswell Wood*
— arenius, Hahn. *Clumber Park* (Pegler)
Drymus sylvaticus, Fab. *Leverton; Treswell Wood; Clumber Park* and *Retford* (Pegler)
— brunneus, Sahlb. *Sutton*, near *Retford* (Pegler)
Notochilus contractus, H. S. *Treswell Wood*
Scolopostethus affinis, Schill. *Leverton; Sutton* near *Retford* (Pegler)

Tingidina

Piesma capitata, Wolff. *S. Leverton* and *Treswell Wood*, common
Orthostira parvula, Fall. *Bramcote* (Ryles)
Monanthia ampliata, Fieb. *Sutton*, near *Retford* (Pegler); *Langford Moor*
— cardui, Linn. *Sutton*, near *Retford* (Pegler); *S. Leverton; Treswell Wood*

GYMNOCERATA (*continued*)

Hydrometrina

Hydrometra stagnorum, Linn. *S. Leverton; Kingston; Thrumpton; Nottingham*
Velia currens, Fab. *Nottingham* and *Retford* districts, common
Gerris thoracica, Schum. Common
— gibbifera, Schum. *S. Leverton; Nottingham; Cossall*
— lacustris, Linn. *Retford; S. Leverton*, common
— odontogaster, Zett. *Retford* (Pegler); *Cossall*

Reduviina

Ploiaria vagabunda, Linn. *Treswell Wood*
— culiciformis, De G. *S. Leverton*
Nabis brevipennis, Hahn. *Treswell Wood*, on Corylus
— major, Cost. *Retford* district, not uncommon; *Barrow Hills, Everton*
— flavomarginatus, Scholtz. *S. Leverton; Treswell; Cottam*
— limbatus, Dahlb. *Treswell Wood*
— ferus, Linn. *Retford* district
— rugosus, Linn. *Retford* district, common; *Langford Moor*

Saldina

Salda saltatoria, Linn. *Cottam* (Pegler)
— orthochila, Fieb. *S. Leverton*
— cincta, H. S. *S. Leverton* and *Clumber* (Pegler)
— cocksii, Curt. *Clumber Park* (Pegler)

Cimicina

Cimex lectularius, Linn. *Nottingham*, etc.
Piezostethus cursitans, Fall. *Sherwood Forest* (Blatch)
Lyctocoris campestris, Fall. *S. Leverton*
Anthocoris nemoralis, Fab. *Clumber* (Pegler); *Treswell*
— sylvestris, Linn. *Retford* district, common

GYMNOCERATA (*continued*)

Cimicina (*continued*)

Triphleps minuta, Linn. *S. Leverton; Treswell*
Microphysa pselaphiformis, Curt. *Colwick* (Ryles)
— elegantula, Baer. *S. Leverton*, on oak trunks

Capsina

Pithanus maerkeli, H. S. *S. Leverton; Sutton* near *Retford; Treswell Wood*, common
Miris calcaratus, Fall. *Nottingham* and *Retford* districts, common
— laevigatus, Linn. *S. Leverton; Treswell; Tuxford* (Pegler); *Sherwood Forest* (Ryles), etc.
— holsatus, Fab. *Treswell Wood*, common
Megaloceroea erratica, Linn. *S. Leverton; Treswell; Littleborough*
— longicornis, Fall. *Cottam*
— ruficornis, Fourc. *S. Leverton; Treswell Wood*
Leptopterna ferrugata, Fall. *Sutton*, near *Retford*
— dolobrata, Linn. *Retford* district, common; *Langford Moor*
Monalocoris filicis, Linn. *Sherwood Forest*, abundant amongst bracken
Pantilius tunicatus, Fab. *S. Leverton*, on Corylus
Lopus gothicus, Linn. *Langford Moor; Sherwood Forest* (Ryles)
Phytocoris populi, Linn. *S. Leverton*, on tree trunks
— tiliae, Fab. *S. Leverton; Treswell Wood; Edwinstowe*
— longipennis, Flor. *Treswell Wood*
— reuteri, Saund. *Treswell Wood*
— ulmi, Linn. *Retford* district; *Kingston-on-Soar*, common on Senecio jacobaea
Calocoris striatellus, Fab. *Southwell; Sherwood Forest*; *Aspley* (W. E. Ryles)
— sexguttatus, Fab. *Nottingham* and *Retford* districts, common
— fulvomaculatus, De G. *Treswell Wood*
— alpestris, Mey. *Treswell Wood; Sherwood Forest*, etc.
— bipunctatus, Fab. *Retford* district, common; *Nottingham* district
— chenopodii, Fall. *Clarborough; Sherwood Forest*
— infusus, H. S. *Treswell Wood; Radcliffe*
— striatus, Linn. *Treswell Wood; Sherwood Forest*
Oncognathus binotatus, Fab. *Cottam*, abundant in a grassy lane
Dichrooscytus rufipennis, Fall. *Beeston* (Ryles)
Plesiocoris rugicollis, Fall. *S. Leverton; Treswell Wood*
Lygus pratensis, Fab. *Retford* and *Worksop* districts (Thornley and Pegler)
— contaminatus, Fall. *Langford Moor*, common on birch
— pabulinus, Linn. *Gunthorpe* (Ryles); *S. Leverton; Treswell Wood*, common
— pastinacae, Fall. *Nottingham* district (Ryles)
— kalmii, Linn. *Gunthorpe* (Ryles)
Liocoris tripustulatus, Fab. *Radcliffe-on-Trent* (Ryles); *Clumber* (Pegler); *S. Leverton*
Capsus laniarius, Linn. *Nottingham, Radcliffe* (Ryles)
Rhopalotomus ater, Linn. *Aspley Woods, Nottingham* (Ryles); *S. Leverton*, on rushes; *Treswell Wood*
Dicyphus epilobii, Reut. *S. Leverton; Sutton*, near *Retford*

GYMNOCERATA (*continued*)

Capsina (*continued*)

Dicyphus stachydis, Reut. *S. Leverton*, common in vicarage garden
— globulifer, Fall. *Clumber* (Pegler)
Campyloneura virgula, H.S. *Radcliffe* (Ryles)
Cyllocoris histrionicus, Linn. *Beeston* (Ryles); *Treswell Wood; Langford Moor*
— flavonotatus, Boh. *Southwell* (Ryles)
Aetorhinus angulatus, Fab. *Treswell Wood*, common; *Nottingham* district, common
Mecomma ambulans, Fall. *Treswell Wood*, common; *Sutton*, near *Retford*
Orthotylus nassatus, Fab. *S. Leverton; Littleborough*
Loxops coccinea, Mey. *Radcliffe* (Ryles)
Heterotoma merioptera, Scop. *S. Leverton*, common; *Sutton*, near *Retford; Nottingham* district, common
Heterocordylus tibialis, Hahn. *Clumber* (Pegler); *Treswell Wood*
Malacocoris chlorizans, Fall. *Treswell Wood*, common
Harpocera thoracica, Fall. *Sherwood Forest* (Ryles)
Byrsoptera rutifrons, Fall. *Southwell* (J. E. Mason)
Phylus palliceps, Fieb. *Aspley Woods, Nottingham* (Ryles); *Treswell Wood*
— melanocephalus, Linn. *Treswell Wood; Edwinstowe*
— coryli, Linn. *Treswell Wood*
Psallus betuleti, Fall. *Clumber* (Pegler); *Edwinstowe*, common on birch; *Langford Moor*
— variabilis, Fall. *Sherwood Forest* (Ryles)
— varians, H. S. *Treswell Wood*
— salicellus, Mey. *S. Leverton; Treswell Wood*
Plagiognathus arbustorum, Fab. *Retford* district
— viridulus, Fall. *Sherwood Forest* (Ryles)

CRYPTOCERATA

Naucoridina

Naucoris cimicoides, Linn. *N. Wheatley* (Rev. T. C. B. Chamberlin)

Nepina

Nepa cinerea, Linn. Widely distributed

Notonectina

Notonecta glauca, Linn. *S. Leverton*, with var. maculata; *Kingston-on-Soar*
var. furcata. *S. Leverton; Cossall; Nottingham*

Corixina

Corixa geoffroyi, Leach. *S. Leverton*, not uncommon
— hieroglyphica, Duf.
— sahlbergi, Fieb.
— linnaei, Fieb.
} *S. Leverton*
— striata, Linn. *S. Leverton; Cossall; Radcliffe-on-Trent*
— falleni, Fieb. *S. Leverton*
— distincta, Fieb. *S. Leverton*
— fabricii, Fieb. *S. Leverton; Cossall*
— coleoptrata, Fab. *Cossall*

INSECTS

HOMOPTERA

CICADINA

Cixius pilosus, Ol. *N. Leverton; Treswell Wood*
— nervosus, Linn. *Langford Moor, Newark*
Liburnia lineola, Germ. *Treswell Wood*
— difficilis, Edw. *S. Leverton*
— limbata, Fab. *S. Leverton*
— lineata, Perr. *Treswell Wood*
Aphrophora alni, Fall. Widely distributed and common
— salicis, De G. *Treswell Wood*
Philaenus spumarius, Linn. Abundant
— lineatus, Linn. *S. Leverton*
Ledra aurita, Linn. *Treswell Wood*
Macropsis lanio, Linn. *S. Leverton*
Bythoscopus flavicollis, Linn. *Edwinstowe, Sherwood Forest*, common on birch
Pediopsis scutellatus, Boh. *Treswell Wood*
Idiocerus adustus, H. S. } *Treswell Wood*
— confusus, Flor. }
Evacanthus interruptus, Linn. *Kingston-on-Soar*
Tettigonia viridus, Linn. *Clumber* (Pegler)
Acocephalus nervosus, Schr. *Rampton Marsh*
— albifrons, Linn. *Treswell; Rampton*
Athysanus sordidus, Zett. *Treswell*

CICADINA (*continued*)

Athysanus communis, J. Sahl. }
— obscurellus, Kbm. }
— obsoletus, Kbm. } *S. Leverton*
Deltocephalus ocellaris, Fall. }
Allygus mixtus, Fab. }
Thamnotettix prasina, Fall. }
— subfuscula, Fall. } *Treswell Wood*
— cruentata, Panz. }
— crocea, H. S. *S. Leverton; Treswell Wood*
Limotettix sulphurella, Zett. }
Alebra albostriella, Fall. }
Chlorita viridula, Fall. }
Eupteryx urticae, Fab. } *S. Leverton*
— stachydearum, Hardy }
— auratus, Linn. }
— abrotani, Dougl. }
— pulchellus, Fall. *S. Leverton; Edwinstowe*
Typhlocyba rosae, Linn. }
— quercus, Fab. } *S. Leverton*, common
Zygina flammigera, Geoffr. }

PSYLLINA

Livia juncorum, Latr. *Gotham*, on Juncus
Psylla crataegi, Schr. *S. Leverton*

MYRIAPODA

Centipedes and Millipedes

The Myriapods of Nottinghamshire appear to have received no attention from local zoologists, nothing having hitherto been published concerning them. The scanty particulars given in this note are founded upon specimens collected casually by the writer during the last two or three years; the great majority of these are, however, still unidentified and consequently no list of the species can yet be given.

The Myriapods are terrestrial animals found under stones and logs lying on the ground, under the loose bark of dead trees and among dead leaves and rubbish. The body is divided into a large but variable number of nearly similar segments or rings, and is provided with numerous pairs of legs: the head bears a pair of antennae varying in length in the different species, and eyes may be present or absent.

The class is divisible into two orders: the Chilopoda or Centipedes, active, swiftly-running forms, which prey upon living animals, and possess formidable poison fangs, and one pair of legs to each body-ring; and Chilognatha or Millipedes, which are vegetable feeders, very sluggish in their movements, and have two pairs of legs to each body-ring. To the latter group belong the species of *Iulus*, commonly known as 'wire-worms,' which are often very injurious to cultivated crops, but are otherwise harmless and inoffensive.

CHILOPODA

Centipedes

The family Lithobiidae includes a number of very active species which run with great rapidity when disturbed. The body is relatively short and depressed, and furnished with fifteen pairs of legs. Eyes are present.

Lithobius forficatus (Linn.) is abundant everywhere in Nottinghamshire under stones and logs and among dead leaves both in town gardens and in the open country. One and probably two other species also occur in the county.

The Geophilidae are slow-moving centipedes with very long, slender bodies, no eyes, and a large but variable number of pairs of legs. The genera *Geophilus* and *Linotaenia* are each represented in Nottinghamshire by at least one species. The last-named genus includes the luminous or phosphorescent centipedes.

CHILOGNATHA OR DIPLOPODA

Millipedes

The families Polyxenidae and Glomeridae are each represented in Great Britain by a single species, and both of these are found in Nottinghamshire *Polyxenus lagurus* (Linn.), a pretty and

minute millipede, occurs under stones and bark of dead trees in several localities. The 'pill-millipede,' *Glomeris marginata* (Vill.), is a short broad millipede of the size and shape of the common 'pill-woodlouse,' which it also resembles in its ability to roll up into a spherical ball when disturbed. It is however easily distinguished from the woodlouse by the large size of the posterior segment of the body, and by the narrow white border to each segment.

Of the family Polydesmidae one species, *Polydesmus complanatus* (Linn.), is very common with us, occurring chiefly under rotten logs lying on the ground. Other species will probably be found among the material collected by the writer when properly examined.

Atractosoma polydesmoides (Leach), belonging to the family Chordeumidae, has been found in Nottingham.

Individuals of one or more species of the Iulidae occur abundantly in Nottinghamshire, and are locally known as 'wireworms.'

ARACHNIDA

Spiders, Harvestmen, and False-scorpions

Spiders may be readily distinguished from insects by the following characters among others :— In insects the body is clearly divided into three separate regions—head, thorax, and abdomen, the last-named being distinctly segmented, while in spiders the head and thorax are completely fused together, forming the cephalothorax, which is connected with the abdomen by a short stalk or pedicle ; only two distinct parts are therefore visible ; the abdomen is not segmented. The eyes of spiders are simple, while insects possess compound eyes, although many have simple eyes in addition. Insects have three pairs of legs, spiders possess four pairs. In front of the walking legs all spiders possess two pairs of jointed appendages ; the anterior of these are called the chelicerae or falces, and are formidable claw-like pointed fangs, each containing a poison-gland ; these are used for seizing and killing the prey. The hinder pair are the pedipalps or palpi ; they lie on either side of the mouth, and the basal part of each (the maxilla) is used as a masticatory organ, while the remaining portion forms the palpus or feeler ; the terminal joint of this is in the male spider modified into an accessory organ of reproduction.

The terminal joint, or tarsus, of each of the eight legs ends in either two or three curved claws, and in some spiders there is on the last joint but one (metatarsus) of the fourth pair of legs a peculiar comb-like organ termed the 'calamistrum,' consisting of a longitudinal row of curved bristles.

The silken lines which all spiders produce are emitted from a group of six nipple-like 'spinners' situated on the underside of the hind end of the abdomen. In those spiders which possess a calamistrum there is also, immediately in front of the spinners, a paired organ, the so-called 'cribellum,' perforated by numerous fine pores through which silk is emitted and combed out by the calamistrum so as to become flocculent, and to assist in the entanglement of their prey.

The respiratory organs of spiders are tubular tracheae and book-leaf tracheae ('book lungs') opening to the exterior by slit-like apertures or stigmata situated in the anterior part of the underside of the abdomen. Some have book-leaf tracheae only, others possess both book-leaf and tubular tracheae.

Unlike most insects, spiders undergo no metamorphosis, but they moult or cast their skin several times before reaching the adult state. All spiders are carnivorous, preying upon other animals, chiefly insects, which they capture either by leaping suddenly upon them, or more commonly by spinning webs or snares in which the insect prey becomes entangled.

In the Phalangidea or harvestmen the body is undivided, the abdomen being joined to the cephalothorax along its whole breadth, instead of being connected with it by a narrow pedicle as in spiders. The abdomen is segmented, the eight legs are very long and slender, and the simple eyes are only two in number.

The Chernetidea or false-scorpions are minute arachnids occurring amongst moss and dead leaves, or under stones, etc., and easily recognized by their peculiar palpi, which are very large and terminate in pincers or forceps. They thus resemble miniature scorpions, except that they have no tail.

Nothing whatever appears to have been known concerning the arachnids of Nottinghamshire before 1903, when the present writer began to pay attention to them for the purposes of this History. In the course of two seasons' collecting 169 species of spiders, fourteen species of harvestmen, and five of Chernetidea have been taken in the county, and while more extended research will doubtless result in the discovery of many more species, the list given below will compare favourably with those of most other counties whose arachnid fauna has been worked out. In the preparation of this list the

writer has been greatly assisted by the Rev. T. C. B. Chamberlin, M.A., who has collected most indefatigably at North Wheatley and elsewhere near Retford. Dr. G. W. Chaster, of Southport, contributed a number of specimens picked up while collecting Coleoptera in Sherwood Forest in June, 1904, and among these were several rare species. Specimens have also been contributed by the Rev. A. Thornley, M.A., and Mr. A. H. Pearson, and a few records by Miss E. M. Alderson and Mr. J. T. Houghton.

In a group so little worked as the arachnida, and one presenting so many difficulties in the identification of the more obscure or closely allied species, it is of the utmost importance that the determinations should be beyond question, and it is therefore gratifying to know that every species enumerated below is vouched for by our highest authority on these creatures, the Rev. O. Pickard-Cambridge, F.R.S., who most generously undertook the examination of the entire collection.

Lists of the species collected during the seasons 1903 and 1904 have been published in the fifty-first and fifty-second *Reports of the Nottingham Naturalists' Society*. The arrangement and nomenclature adopted are those of the Rev. O. Pickard-Cambridge in his *List of British and Irish Spiders*, *Monogr. of British Phalangidea*, and *Monogr. of British Chernetidea*.

ARANEIDEA

Spiders

DYSDERIDAE

The spiders of this family have six eyes and two pairs of stigmatic openings situated near the anterior end of the ventral surface of the abdomen, the openings of each pair being in close proximity to one another; the anterior pair communicate with book-lungs, the posterior pair with tubular tracheae.

1. *Dysdera crocota*, C. L. Koch
   Headon (T. C. B. C.).

A large and handsome spider, with chestnut-red cephalothorax and legs, and dull yellow elongated abdomen; there are two tarsal claws, and the eyes are arranged in the form of a horse-shoe with the ends directed forwards.

2. *Harpactes hombergii*, Scop.
   Sherwood Forest (G. W. C.).

Known by its slender somewhat ant-like form, nearly black cephalothorax and pale abdomen, three tarsal claws, and eyes arranged in a circle.

3. *Segestria senoculata*, Linn.
   Rather common under loose bark on old palings: Colwick Park; Oxton Bogs; Southwell; Lambley; Widmerpool; Langford Moor; Calverton Hill, etc.

A slender elongated spider, easily recognized by the black diamond-shaped patches on a dull buff ground on the dorsal surface of the abdomen, the three tarsal claws, and the arrangement of the eyes, which are grouped in three pairs, the central pair being placed transversely and the two lateral pairs longitudinally.

4. *Oonops pulcher*, Templ.
   Nottingham, two or three specimens in a heap of old flower-pots in a garden; Lambley; Langford Moor.

Recognizable by its small size (one-twelfth of an inch or less in length), orange-red colour, large oval pearly eyes, and two tarsal claws.

DRASSIDAE

Includes mostly hairy spiders of elongated form and usually sombre colour, with eight eyes in two transverse rows, and two tarsal claws.

DRASSIDAE (*continued*)

5. *Drassus cupreus*, Blackw.
   Barrow Hills, Everton (A. T.); Oxton Bogs; Sherwood Forest, Edwinstowe.

6. *Drassus pubescens*, Thor.
   Bulwell Forest; Blidworth.

7. *Drassus troglodytes*, C. L. Koch
   Sherwood Forest (G. W. C.).

8. *Drassus blackwallii*, Thor.
   North Wheatley, near Retford (T. C. B. C); S. Leverton (A. T.); Strelley; Lambley.

A nocturnal dark very hairy spider, often found roaming about on the walls of houses and outbuildings; also found under bark on old palings.

9. *Micaria pulicaria*, Sund.
   Sherwood Forest, between Edwinstowe and Budby; Langford Moor.

A very beautiful and brilliant little spider, dark coloured, iridescent and shining.

10. *Phrurolithus festivus*, C. L. Koch
    Quarry near Bulwell Wood Hall.

11. *Clubiona terrestris*, Westr.
    Worksop, under stones; Calverton Hill and Wollaton, under bark on old palings.

12. *Clubiona reclusa*, Cambr.
    Edwards Lane, Nottingham, among dead leaves; Calverton Hill, under bark on palings.

13. *Clubiona holosericea*, De G.
    Oxton Bogs; Budby Carr.

14. *Clubiona pallidula*, Clerck
    Common, and widely distributed.

15. *Clubiona brevipes*, Blackw.
    S. Leverton (A. T.); Edwinstowe; Roe Wood, Winkburn; Langford Moor. Beaten from trees, chiefly oak.

16. *Clubiona comta*, C. L. Koch
    Common on trees in woods throughout the county

17. *Clubiona corticalis*, Walck.
    Common under bark on old palings, etc.

DRASSIDAE (*continued*)

18. *Zora maculata*, Blackw.
Eakring Brail Wood ; Roe Wood, Winkburn ; Sherwood Forest, Edwinstowe ; Langford Moor.

19. *Anyphoena accentuata*, Walck.
Epperstone Park; Langford Moor; Eakring Brail Wood ; Wigsley Wood ; Roe Wood, Winkburn. Occurs on the foliage of various trees, but is not very common, although widely distributed.

20. *Agroeca brunnea*, Blackw.
Langford Moor, under bark.

DICTYNIDAE

Spiders with eight eyes in two transverse curved rows, those of each lateral pair being close together. There are three tarsal claws, and the calamistrum and cribellum are present in all the species.

21. *Dictyna arundinacea*, Linn.
On heather and rushes, common; Langford Moor; Budby Carr; Wigsley Wood.

22. *Dictyna uncinata*, Westr.
Wilford ; Lambley ; Budby, Sherwood Forest; N. Wheatley (T. C. B. C.).

23. *Dictyna pusilla*, Westr.
Sherwood Forest (G. W. C.).

24. *Dictyna latens*, Fab.
Barrow Hills, Everton (A. T.).

25. *Lethia humilis*, Blackw.
N. Wheatley (T. C. B. C.) ; Langford Moor.

26. *Amaurobius ferox*, Walck.
Nottingham, in cellars. Worksop (J. T. H.) ; N. Wheatley (T. C. B. C.) ; Barrow Hills, Everton.

A very large dark and forbidding-looking spider, common in cellars and outbuildings, but occurring also under stones and logs far away from houses.

27. *Amaurobius similis*, Blackw.
An abundant house-spider, occurring in cellars and outhouses, in crevices in walls, under boards, etc. The tubular snares are familiar objects in crevices of the sandstone rock in and about Nottingham.

28. *Amaurobius fenestralis*, Stroem.
Abundant under loose bark on old palings, logs, and trees ; also occasionally under stones and the copings of walls.

AGELENIDAE

The members of this family have eight eyes placed in two more or less curved rows, those of the lateral pairs not being contiguous to each other. The legs are hairy and spinose, and three tarsal claws are present. Calamistra and cribellum are absent.

29. *Cryphoeca silvicola*, G. L. Koch
Blidworth.

30. *Cryphoeca diversa*, Cambr.
Sherwood Forest (G. W. C.).

AGELENIDAE (*continued*)

31. *Coelotes atropos*, Walck.
Pleasley Vale, under stones.

32. *Argyroneta aquatica*, Latr.
Ditches near the Trent, Lenton ; pool near Trent Bridge, Nottingham.

This is the large and well-known 'water-spider,' which can swim and dive with ease, and constructs its silken dome-shaped nest beneath the surface of the water.

33. *Tegenaria parietina*, Fourcr.
Worksop (J. T. H.).

34. *Tegenaria derhamii*, Scop.
An abundant house spider everywhere in the county.

HAHNIIDAE

The spiders of this family have usually been included in the Agelenidae, but may be distinguished, as pointed out by the Rev. O. Pickard-Cambridge, by the disposition of the six spinners in a single transverse nearly straight row, the two outside ones —representing those of the usual superior pair—being the largest and the longest.

35. *Hahnia montana*, Blackw.
Langford Moor, among dead leaves on the ground under pine trees.

THERIDIIDAE

A very large family, including spiders mostly of small size with relatively large, often nearly globular, abdomens. The eight eyes are situated in two curved transverse adjacent rows, the four centrals forming a quadrangle. Three tarsal claws are present.

36. *Episinus truncatus*, Walck.
Langford Moor.

37. *Theridion formosum*, Clerck
Langford Moor.

38. *Theridion sisyphium*, Clerck
Rather common amongst the foliage of trees and shrubs in many localities throughout the county.

A handsome spider, with the abdomen beautifully variegated with reddish, brown, yellow, and white markings.

39. *Theridion vittatum*, C. L. Koch (T. pulchellum, Walck.)
Langford Moor ; Sherwood Forest, near Edwinstowe; Widmerpool ; Crown End Wood, West Leake.

40. *Theridion denticulatum*, Walck.
A pretty little spider occurring in all parts of the county.

41. *Theridion simile*, C. L. Koch
Langford Moor, beaten from heather, etc.

42. *Theridion varians*, Hahn
Widely distributed, and common in some localities : found among heather, foliage, on palings in gardens, etc.

43. *Theridion tinctum*, Walck.
Langford Moor, beaten from heather.

THERIDIIDAE (*continued*)

44. *Theridion pictum*, Hahn
S. Leverton (A. T.); N. Wheatley (T. C. B. C.); Budby, Sherwood Forest.

A beautiful species: the abdomen has a central longitudinal band of a red colour, with a yellow border on either side of it.

45. *Theridion tepidariorum*, C. L. Koch
Lowdham (A. H. P.); N. Wheatley (T. C. B. C.); Trowell.

A large, rather plainly coloured species, found in greenhouses and conservatories.

46. *Theridion bimaculatum*, Linn.
Blidworth; Budby; Langford Moor.

47. *Theridion pallens*, Blackw.
Wollaton; Epperstone Park; Edwinstowe, Sherwood Forest; Roe Wood, Winkburn; Langford Moor; Wigsley Wood.

A minute pale yellow spider, with the abdomen more or less marked or suffused with black, especially in the male. It occurs on heather and among herbage and the foliage of trees.

48. *Nesticus cellulanus*, Clerck
N. Wheatley (T. C. B. C.); Nottingham, in cellar.

49. *Phyllonethis lineata*, Clerck
Very common among foliage of trees in woods throughout the county.

A pretty spider of a pale yellow colour, often with two conspicuous longitudinal carmine-coloured bands on the dorsal surface of the abdomen.

50. *Steatoda bipunctata*, Linn.
Common in crevices and under copings of walls, under bark on old palings, on windows of outhouses, etc., everywhere in the county.

51. *Crustulina guttata*, Wid.
Budby, Sherwood Forest; Langford Moor.

52. *Enoplognatha thoracica*, Hahn
Bagthorpe, Nottingham; Budby.

53. *Pedanostethus lividus*, Blackw.
Burton Joyce, in a patch of liverwort (*Conocephalus*); Langford Moor, under dead leaves.

54. *Bolyphantes bucculentus*, Clerck
Oxton Bogs.

55. *Bolyphantes alticeps*, Sund.
Pleasley Vale.

56. *Bolyphantes luteolus*, Blackw.
Edwinstowe, Sherwood Forest.

57. *Drapetisca socialis*, Sund.
Barrow Hills, Everton; Sherwood Forest; Langford Moor; Epperstone Park; Widmerpool; West Leake Hills. Rather common in some of these localities among the foliage of trees and bushes.

58. *Stemonyphantes lineata*, Linn.
Occurs under stones, logs of wood, heaps of straw, etc., in several localities about Nottingham; also at Sherwood Forest, Clipston Wolds, etc. N. Wheatley (T. C. B. C.).

THERIDIIDAE (*continued*)

59. *Linyphia insignis*, Blackw.
Beauvale Woods; Oxton Bogs; Crown End Wood, West Leake; Widmerpool; Roe Wood, Winkburn; Wigsley Wood.

60. *Linyphia montana*, Clerck
Under bark of palings, and on foliage of trees and bushes, in many localities throughout the county.

61. *Linyphia triangularis*, Clerck
A very abundant spider, occurring on heather and furze bushes on commons, on hedges, and on shrubs and trees in plantations and woods everywhere throughout the county.

62. *Linyphia peltata*, Wid.
Beauvale Woods; Widmerpool; Owthorpe; Cotgrave; Epperstone Park; Eakring Brail Wood; Roe Wood, Winkburn; Sherwood Forest, Edwinstowe. N. Wheatley (T. C. B. C.)

63. *Linyphia pusilla*, Sund.
Sherwood Forest (G. W. C.); N. Wheatley (T. C. B. C.); Blidworth; Langford Moor

64. *Linyphia hortensis*, Sund.
Widmerpool; Sherwood Forest.

65. *Linyphia clathrata*, Sund.
Daybrook; Southwell; Eakring Brail Wood; Roe Wood, Winkburn; Langford Moor. N. Wheatley (T. C. B. C.)

The four last species occur on heather, bushes, and among the foliage of the lower branches of trees.

66. *Labulla thoracica*, Wid.
North Wheatley (T. C. B. C.); Lambley; Bulcote.

67. *Leptyphantes minutus*, Blackw.
Ranby (T. C. B. C.); Nottingham district, in several places; Widmerpool.

68. *Leptyphantes nebulosus*, Sund.
Nottingham, in cellar; Bagthorpe.

69. *Leptyphantes leprosus*, Ohl.
Nottingham, in deep rock cellar; Bulcote.

70. *Leptyphantes blackwallii*, Kulcz.
North Wheatley (T. C. B. C.).

71. *Leptyphantes obscurus*, Blackw.
On heather and among foliage of trees and shrubs. Blidworth; Epperstone Park; Budby and Edwinstowe, Sherwood Forest; Eakring Brail Wood.

72. *Leptyphantes pallidus*, Camb.
Southwell (F. O. P.-Cambridge).

73. *Leptyphantes flavipes*, Blackw.
Langford Moor, on heather.

74. *Leptyphantes tenuis*, Blackw.
North Wheatley (T. C. B. C.); Nottingham district, in several places, common; Sherwood Forest; Widmerpool.

75. *Bathyphantes variegatus*, Blackw.
Bulwell Forest; Blidworth; Epperstone Park; Langford Moor; Budby and Edwinstowe, Sherwood Forest.

THERIDIIDAE (*continued*)

76. ***Bathyphantes concolor***, Wid.
Under stones, logs, etc., in many localities around Nottingham; Worksop. N. Wheatley (T. C. B. C.).

77. ***Bathyphantes nigrinus***, Westr.
Wilford; Oxton Bogs; Beauvale Woods.

78. ***Bathyphantes pullatus***, Cambr.
Eakring Brail Wood; Oxton Bogs.

79. ***Bathyphantes parvulus***, Westr.
Sherwood Forest (G. W. C.).

80. ***Bathyphantes gracilis***, Blackw.
Bagthorpe, Nottingham; Widmerpool.

81. ***Bathyphantes dorsalis***, Wid.
Budby and Edwinstowe, Sherwood Forest; Cotgrave Wolds. Wheatley (T. C. B. C.).

82. ***Tmeticus rufus***, Wid.
Bagthorpe, Nottingham; Langford Moor, on heather, and under heaps of dead leaves in early spring.

83. ***Tmeticus abnormis***, Blackw.
Sherwood Forest (G. W. C.); Wollaton; Langford Moor, on heather.

84. ***Tmeticus bicolor***, Blackw.
Bagthorpe, Nottingham, in numbers; Arnold; Sutton, near Granby; Worksop.

85. ***Microneta rurestris***, C. L. Koch
Foss Road, Widmerpool; Cossall.

86. ***Microneta saxatilis***, Blackw.
Sherwood Forest, Edwinstowe.

87. ***Sintula diluta***, Cambr.
Langford Moor.

88. ***Maso sundevallii***, Westr.
Sherwood Forest, Edwinstowe.

89. ***Gongylidium rufipes***, Sund.
S. Leverton (A. T.); N. Wheatley (T. C. B. C.); Widmerpool; Eakring Brail Wood; Beauvale Woods; Roe Wood, Winkburn; Wigsley Wood.

90. ***Gongylidium fuscum***, Blackw.
Bagthorpe, Nottingham, under heaps of straw in winter; Wigsley Wood, on foliage of trees.

91. ***Gongylidium apicatum***, Blackw.
Southwell (F. O. P.-Cambridge).

92. ***Gongylidium tuberosum***, Blackw.
Oxton Bogs.

93. ***Tiso vagans***, Blackw.
Sherwood Forest (G. W. C.).

94. ***Erigone dentipalpis***, Wid.
Nottingham; Trowell; Widmerpool.

95. ***Erigone atra***, Blackw.
Bagthorpe, Nottingham, under straw heaps, in winter; Langford Moor, and Sherwood Forest, on heather and shrubs.

96. ***Lophomma herbigradum***, Blackw.
Sherwood Forest (G. W. C.).

THERIDIIDAE (*continued*)

97. ***Dicymbium nigrum***, Blackw.
Sherwood Forest (G. W. C.).

98. ***Neriene rubens***, Blackw.
Sherwood Forest, Edwinstowe; Oxton Bogs; Langford Moor. N. Wheatley (T. C. B. C.).

99. ***Neriene rubella***, Blackw.
Epperstone Park; Crown End Wood, West Leake.

100. ***Dicyphus cornutus***, Blackw.
Sherwood Forest (G. W. C.); N. Wheatley (T. C. B. C.); Langford Moor.

101. ***Dicyphus bituberculatus***, Wid.
Wilford; Oxton Bogs, under bark.

102. ***Dismodicus bifrons***, Blackw.
Sherwood Forest, Edwinstowe.

103. ***Diplocephalus fuscipes***, Blackw.
Langford Moor.

104. ***Entelecara acuminata***, Wid.
Langford Moor; Sherwood Forest, Edwinstowe.

105. ***Entelecara erythropus***, Westr.
Colwick Park; Sherwood Forest, Edwinstowe; Cossall.

106. ***Peponocranium ludicrum***, Cambr.
Blidworth; Langford Moor, common on heather.

107. ***Pocadicnemis pumilus***, Blackw.
Sherwood Forest, Edwinstowe.

108. ***Metopobactrus prominulus***, Cambr.
Sherwood Forest (G. W. C.).

109. ***Cnephalocotes obscurus***, Blackw.
Sherwood Forest (G. W. C.).

110. ***Tapinocyba praecox***, Cambr.
Langford Moor.

111. ***Baryphyma pratensis***, Blackw.
Wilford, under an old tin can in hedge-bottom.

112. ***Wideria antica***, Wid.
Langford Moor, on heather.

113. ***Wideria fugax***, Cambr.
Sherwood Forest (G. W. C.).

114. ***Walckenaera acuminata***, Blackw.
Sherwood Forest (G. W. C.); Bagthorpe and Basford, Nottingham; Cossall.

115. ***Ceratinella brevipes***, Westr.
Langford Moor.

MIMETIDAE

The spiders included in this family resemble the Theridiidae in most respects: the eight eyes are disposed as in the latter family, there are three tarsal claws, and the legs are very spinose.

116. ***Ero thoracica***, Wid.
Sherwood Forest, Edwinstowe; Langford Moor.

EPEIRIDAE

The members of this family have eight eyes situated in two rows, and disposed in three rather widely separated groups—two lateral groups of two eyes each and a central group of four which form a quadrangle.

EPEIRIDAE (*continued*)

The tarsal claws are three in number, but supernumerary pectinated claws are often present. Mostly spiders with bright colours and distinctive pattern of markings, spinning orbicular or wheel-shaped snares.

117. *Tetragnatha extensa*, Linn.
Annesley Park ; Budby Carr.

118. *Tetragnatha solandrii*, Scop.
N. Wheatley (T. C. B. C.) ; on sedges, Wollaton Canal ; on palings in garden, Lambley ; among foliage of trees, Epperstone Park ; on marsh-thistle, Wigsley Wood.

119. *Tetragnatha obtusa*, C. L. Koch
Among the foliage of trees : Sherwood Forest, Edwinstowe ; Langford Moor ; Cotgrave Wolds.

120. *Pachygnatha degeerii*, Sund.
In many localities about Nottingham ; Oxton Bogs ; Edwinstowe, Sherwood Forest, beaten from low trees commonly.

121. *Pachygnatha clerckii*, Sund.
N. Wheatley (T. C. B. C.) ; Bagthorpe, Nottingham, common under heaps of straw in stubble field, in winter ; Wilford; Radcliffe-on-Trent ; Oxton Bogs, rather commonly ; Worksop.

122. *Pachygnatha listeri*, Sund.
Eakring Brail Wood, among grass in riding.

123. *Meta segmentata*, Clerck
Abundant and universally distributed throughout the county.

124. *Meta merianae*, Scop.
Nottingham, on plants in garden ; Langford Moor, on trees and heather.

125. *Cyclosa conica*, Pall.
N. Wheatley (T. C. B. C.) ; Langford Moor

126. *Singa albovittata*, Westr.
Sherwood Forest, Edwinstowe, taken by sweeping grass.

127. *Zilla x-notata*, Clerck
A very common spider : found throughout the county under cross-bars of gates and palings, under the coping of walls, in greenhouses and outbuildings, etc.

128. *Zilla atrica*, C. L. Koch.
Nottingham ; Oxton Bogs ; Winkburn; Widmerpool, etc.

129. *Epeira gibbosa*, Walck.
Worksop district (E. M. A.) ; Langford Moor ; Sherwood Forest ; Crown End Wood, West Leake.

130. *Epeira pyramidata*, Clerck
N. Wheatley (T. C. B. C.).

131. *Epeira diademata*, Clerck
One of our largest and most familiar spiders, common in gardens, on heaths, and in woods.

EPEIRIDAE (*continued*)

132. *Epeira cucurbitina*, Clerck
Clumber (E. M. A.). ; N. Wheatley (T. C. B. C.); Sherwood Forest, near Edwinstowe ; Langford Moor, rather common.

A very beautiful spider, easily recognized by its reddish cephalothorax and legs, and bright apple-green abdomen with a red blotch at its hinder extremity.

133. *Epeira triguttata*, Fab.
Langford Moor ; Roe Wood, Winkburn.

134. *Epeira umbratica*, Clerck
Rather common, and widely distributed throughout the county, occurring under bark on old palings, in the crevices of wooden fences, etc. Easily known by its large size, flat oval abdomen, and very dark brown colour with paler markings, and two large yellowish-white spots on the under side of the abdomen.

135. *Epeira quadrata*, Clerck
Bulwell Forest ; Barrow Hills, Everton.

A very large and handsome species, forming its large orbicular snare chiefly in furze bushes on commons.

136. *Epeira sclopetaria*, Clerck
Lowdham, in greenhouses, abundant (A. H. P.) ; Colwick Park, under bark on old fence-rail.

137. *Epeira cornuta*, Clerck
Colwick, Barrow Hills, Everton.

138. *Epeira patagiata*, C. L. Koch
N. Wheatley (T. C. B. C.) ; Colwick.

THOMISIDAE

The spiders of this family have a short and broad cephalothorax and abdomen and laterally extended legs. This crab-like shape is accompanied by a crab-like motion, the species moving freely either forwards, backwards, or sideways. There are eight eyes in two rows, arranged in a semicircle or crescent with the convexity directed forwards. Tarsal claws, two. No web or snare is constructed.

139. *Diaea dorsata*, Fab.
Langford Moor.

A lovely species in which a clear pale green is the prevailing colour, occurring among the foliage of trees, especially fir.

140. *Xysticus cristatus*, Clerck
Occurs more or less commonly in every part of the county.

141. *Xysticus pini*, Hahn
Langford Moor, common.

142. *Xysticus lanio*, C. L. Koch
Roe Wood, Winkburn ; Wigsley Wood.

143. *Xysticus erraticus*, Blackw.
Sherwood Forest (G. W. C.).

144. *Xysticus ulmi*, Hahn
Roe Wood, Winkburn.

145. *Oxyptila praticola*, C. L. Koch
North Wheatley (T. C. B. C.) ; Nottingham ; Lambley.

THOMISIDAE (*continued*)

146. *Oxyptila trux*, Blackw.
Eakring Brail Wood.

147. *Philodromus dispar*, Walck.
South Leverton (A. T.); N. Wheatley (T. C. B. C.).

148. *Philodromus aureolus*, Clerck
Abundant on heather, fir, and other trees in woods and plantations throughout the county.

149. *Tibellus oblongus*, Walck.
North Wheatley (T. C. B. C.)

PISAURIDAE

150. *Pisaura mirabilis*, Clerck
This, the only British representative of the family, is a very large spider occurring in all parts of the county on heaths and in woods, where the female may be seen about midsummer running over the herbage with its egg-sac attached beneath the cephalothorax. Later on a large and conspicuous roughly dome-shaped nest is constructed between the upright stems of grasses, twigs of heather, etc., and in this the egg-sac is enclosed and the young are hatched out.

The body of this spider is long and narrow, the legs are long, with three tarsal claws ; the eight eyes are arranged in three rows : four in the first row in a transverse line slightly curved backwards, those of the second and third rows forming a rectangle which is wider than long.

LYCOSIDAE

Spiders with eight eyes in three rows as in the Pisauridae, but the first row is straight. There are three tarsal claws. Many species occur in woods, running freely over the ground in bright sunshine. The egg-sac is carried about attached to the spinners, and the young are also carried for a time after hatching, crowded together upon the abdomen of the mother. Some species lurk under stones, and some of the larger make a burrow in the ground, which they line with silk. No snare is constructed by members of this family.

151. *Pirata hygrophilus*, Thor.
Annesley Park ; Roe Wood, Winkburn ; Eakring Brail Wood.

152. *Pirata piraticus*, Clerck
Radcliffe-on-Trent ; Cinder Hill Brickyard ; Oxton Bogs.

153. *Trochosa ruricola*, De Geer
Cinder Hill Brickyard ; Daybrook ; Wilford Hill ; Wollaton ; Linby ; Worksop. North Wheatley (T. C. B. C.); South Leverton (A. T.).

154. *Trochosa terricola*, Thor.
Quarry near Bulwell Wood Hall ; Worksop. N. Wheatley (T. C. B. C.).

155. *Trochosa picta*, Hahn
Worksop (J. T. H.) ; Barrow Hills, Everton.

LYCOSIDAE (*continued*)

156. *Tarentula andrenivora*, Walck.
N. Wheatley (T. C. B. C.) ; Barrow Hills, Everton.

157. *Tarentula pulverulenta*, Clerck
Quarry near Bulwell Wood Hall ; Barrow Hills, Everton ; Sherwood Forest, Edwinstowe ; Langford Moor ; Clipston Wolds ; Oxton Bogs ; Roe Wood, Winkburn ; Eakring Brail Wood. Worksop (J. T. H.)

158. *Lycosa amentata*, Clerck
Abundant, especially in woods, in every part of the county.

159. *Lycosa nigriceps*, Thor.
Blidworth ; Edwinstowe ; Langford Moor.

160. *Lycosa pullata*, Clerck

161. *Lycosa lugubris*, Walck.
This and the last species are widely distributed and common in woods and rough waste places.

162. *Lycosa prativaga*, C. L. Koch
Edingley Hill, near Southwell ; Oxton Bogs ; Eakring Brail Wood.

163. *Lycosa palustris*, Linn.
Eakring Brail Wood.

164. *Lycosa monticola*, C. L. Koch
N. Wheatley (T. C. B. C.) ; Barrow Hills, Everton ; Clipston Wolds.

SALTICIDAE

The spiders of this family are easily recognized by the quadrate form of the cephalothorax, and by the arrangement of the eyes in three rows, forming a large quadrangle. The anterior row consists of four large eyes, the two centrals being especially large and usually iridescent ; the two forming the intermediate row are minute, and the posterior two are of medium size. These spiders spin no snare, but utilize their remarkable leaping powers for the capture of their prey.

165. *Epiblemum scenicum*, Clerck
This is the common 'jumping spider' so often seen running and leaping on walls in the hot sunshine. It is distributed throughout the county. I have found it at Southwell under the bark of an old fence in company with the next species.

166. *Epiblemum cingulatum*, Panz.
Worksop district (E. M. A. and J. T. H.) ; Calverton Hill ; Oxton Bogs ; Blidworth ; Southwell ; Langford Moor ; Budby. Found on palings and under bark on old fences.

167. *Heliophanus flavipes*, C. L. Koch
Barrow Hills, Everton ; Oxton Bogs ; Sherwood Forest, Edwinstowe.

168. *Euophrys frontalis*, Walck.
Warsop ; Worksop ; Budby South Forest (Sherwood Forest).

169. *Hasarius falcatus*, Blackw.
Sherwood Forest (G. W. C.) ; Langford Moor ; Wigsley Wood.

SPIDERS

PHALANGIDEA

Harvestmen

170. *Liobunum rotundum*, Latr.
Langford Moor ; Roe Wood, Winkburn ; Rempstone.

171. *Liobunum blackwallii*, Meade
North Wheatley (T. C. B. C.); Cotgrave Wolds, on trees.

172. *Phalangium opilio*, Linn.
Abundant throughout the county, especially on trees in woods.

173. *Phalangium parietinum*, Clerck
Nottingham ; Budby ; Warsop ; N. Wheatley ; Cotgrave Wolds ; Beauvale Woods.

174. *Phalangium saxatile*, C. L. Koch
Mansfield ; Barrow Hills, Everton.

175. *Platybunus corniger*, Herm.
Wilford Hill, near Nottingham.

176. *Megabunus insignis*, Meade
Linby ; Langford Moor.

177. *Oligolophus morio*, Fabr.
Clumber, (E. M. A.) ; N. Wheatley (T. C. B. C.) ; Cotgrave Wolds ; Roe Wood, Winkburn, etc., common on trees.

178. *Oligolophus agrestis*, Meade
Grives Wood, Kirkby-in-Ashfield ; Nether Langwith ; Roe Wood, Winkburn ; Crown End Wood, West Leake. Ranby, near Babworth (T. C. B. C.).

179. *Oligolophus tridens*, C. L. Koch
Grives Wood, Kirkby-in-Ashfield ; Nether Langwith ; Warsop ; Worksop ; Beauvale Woods, on trees. N. Wheatley (T. C. B. C.).

180. *Oligolophus palpinalis*, Herbst.
Crown End Wood, West Leake.

181. *Oligolophus hansenii*, Kraep.
Under rotten log and fallen gate-post in field at Bagthorpe, Nottingham, 19 and 24 November, 1903. This is the first record for England, the species having previously been found in Great Britain only at Elvanfoot, Lanark, and Leadhills, by Mr. W. Evans. I took several specimens on each occasion, and have since taken it at Daybrook and Wollaton.

182. *Nemastoma lugubre*, O. F. Muller
Linby ; Worksop ; Nottingham district, in several places ; Beauvale Woods ; Oxton Bogs, etc.

183. *Nemastoma chrysomelas*, Hermann
Worksop.

CHERNETIDEA

False-scorpions

184. *Chthonius rayi*, L. Koch
Common under stones in old quarries throughout the Magnesian Limestone district. Near Bulwell Wood Hall ; Mansfield ; Mansfield Woodhouse ; Pleasley Vale ; Creswell Crags quarry ; Worksop. North Wheatley (T. C. B. C.).

185. *Chthonius tetrachelatus*, Preyss.
Quarries in Magnesian Limestone near Bulwell Wood Hall ; Grives Wood, near Kirby-in-Ashfield ; and Mansfield Woodhouse.

186. *Obisium muscorum*, Leach
Nottinghamshire (W. E. Ryles).

187. *Chernes nodosus*, Schr.
Two specimens clinging to legs of house-fly at Worksop (J. T. H.).

188. *Chernes cimicoides*, Fab.
Near Trent Bridge, Nottingham (Ryles).

ADDENDA

The following species have been added to the Nottinghamshire fauna since the foregoing lists have been in type :—

INSECTS

EPHEMERIDAE

Centroptilum luteolum, Müll. *Cossall*
Baetis binoculatus, Linn. *Daybrook*
Rhithrogena semicolorata, Curt. *Linby*
Heptagenia sulphurea, Müll. *Fiskerton*
Caenis (one or more species) *Edwinstowe*
} Carr.

COLEOPTERA

Anchomenus atratus, Duft. *Barrow Hills, Everton* (Chamberlin)

COLEOPTERA (*continued*)

Hydroporus marginatus, Duft. *N. Wheatley* (Chamberlin)
Laccobius minutus, Linn. *N. Wheatley* (Chamberlin)
Cercyon aquaticus, Muls. *N. Wheatley* (Chamberlin)
Homalota liturata, Steph. *Sherwood Forest* (Blatch)
Tachyporus pallidus, Sharp. *S. Wheatley* (Chamberlin)
Oxytelus rufipes, Er. *Sherwood Forest*, May, 1905 (J. Kidson Taylor)

COLEOPTERA (*continued*)

Bythinus bulbifer, Reich. *Colwick Wood* (Carr and Ryles)
Hippodamia 13-punctata, Linn. *Barrow Hills* (Chamberlin)
Scymnus ater, Kug. *Gamston*, near *Retford* (Chamberlin)
Cryptocephalus fulvus, Goeze. *Barrow Hills*, on birch (Chamberlin)
Melasoma populi, Linn. *Gamston*, near *Retford* (Chamberlin)
Mordellistena abdominalis, Fab. *S. Leverton* (Thornley)
Metoecus paradoxus, Linn. *N. Wheatley*, in wasps' nests (Chamberlin)

COLEOPTERA (*continued*)

Notoxus monoceros, Linn. } *Barrow Hills*
Sitones griseus, Fab. } (Chamberlin)

DIPTERA

Diplosis tritici, Kirby. } *Kingston-on-Soar*
Poecilobothrus nobilitatus, Linn. } (Thornley)
Urophora cardui, Linn. *Gotham* (Thornley)
Oscinis frit, Linn. *Kingston-on-Soar* (Thornley)

HEMIPTERA-HOMOPTERA

Typhlocyba ulmi, Linn. *Nottingham*, abundant

ARACHNIDA

ARANEIDEA

8*a* Prosthesima petiverii, Scop. *Clipstone, Sherwood Forest* (Carr)
102*a* Diplocephalus cristatus, Blackw. } *Colwick Wood*
102*b* ,, latifrons, Cambr. } (Carr)

CRUSTACEANS

For the special fauna with which the present chapter is concerned this county might very well be chosen as a representative region. To such a preference the contributory circumstances are these:—it occupies a fairly central position; it is richly diversified with hills and dales, rivers and forests; it is also abundantly supplied with wells, ponds, gardens, and greenhouses. Under these favouring conditions a student might probably make himself acquainted with the land and freshwater crustaceans of England at least as well in Nottinghamshire as in any equal area of the interior. It is not a question of competition with maritime counties, where tidal rivers, harbours, brackish pools, and a saline atmosphere may confuse the results. Only the truly terrestrial and freshwater species are here to be taken into account. But while the territory is very attractive for this limited branch of research, it must be confessed that it is at present to a large extent virgin ground. Hitherto only two or three investigators have published records of their researches. Among these, as will be seen, especial acknowledgement is due to Professor J. W. Carr, M.A., F.L.S., F.G.S., of University College, Nottingham.

Our inland fauna nowhere illustrates the whole class of Crustacea: it is entirely barren of the highest and the lowest groups; there are no crabs and no barnacles. On the other hand, species intermediate between these two extremes are far more numerous and far more common than is generally suspected. An overwhelming proportion of these belong to the Entomostraca, while comparatively few are distributed among three orders of the Malacostraca. There is, in fact, only one out of the whole number that answers to the ordinary popular notion of a crustacean. This is the river crayfish, *Potamobius pallipes* (Lereboullet). The generic name appropriately points to its life in rivers. Its extensive distribution over the river-system of England is only now being gradually proved, and is almost certainly subject to some limitations and fluctuations. The latter are apparently due to epidemical disease or other temporary and local disasters. The former may be traced to uncongenial conditions of soil or climate, and will be worthy of more exact consideration when we are more sure of the precise facts. That a particular district is fertile in crayfish is easily proved by our finding plenty of specimens in it; but by not finding them we cannot at once conclude that there are none to be found. We have to bear in mind the old logical warning that it is extremely difficult to prove a negative. However, with regard to the species now in question, the Rev. Joseph Walker, of Averham Rectory,

Newark-on-Trent, writing under date 6 August, 1903, says: 'It certainly does not occur in the Trent, nor, as I am aware, in any streams in my district, Averham, near Newark. The only place I can recollect where they are to be found, and that is many years ago, was at Shireoaks, near Worksop.' Similarly Mr. Henry V. Machin, of Gateford Hill, Worksop, writing on 15 August, 1903, says: 'We have no specimens of the *Astacus fluviatilis* nearer than Shireoaks.' At the same time he enclosed an extract from *The Worksop Guardian* for Friday, 14 August, 1903, in which the anonymous writer agrees with him in using the familiar designation *Astacus fluviatilis* for the species now more correctly known as *Potamobius pallipes*. Under the heading 'Naturalist Notes by "Observer,"' the following account is given :—

> I have been very much interested during the past week in watching the proceedings of a female crayfish (*Astacus fluviatilis*), which, like many other creatures of a larger growth, has recently acquired a new summer suit, but, unlike the members of the genus homo, the crayfish has not to appeal for outside assistance to aid it in this operation.
>
> When it becomes apparent that the limits of expansion have been reached with the old suit, it loses its sensibility or practically dies, and the constituents of a new shell are deposited between the body and the old shell. At the appointed time the crayfish simply walks out of its old home, which is left empty, but marvellously perfect even to the extreme tips of the delicate antennæ.
>
> After the operation the creature rests for a time in a perfectly limp and helpless condition, until the new shell gradually hardens, and it is once more able to indulge its ready propensity for bickering and quarrelling with the other members of the tribe. One might also mention the extraordinary ability for parting with claws, which seem to be regarded by the crayfish as appendages to be thrown off on the least provocation. Fortunately, Nature has been kind in this respect; and the loss of a claw is not a serious matter, as a new one speedily grows in the place of the discarded member.
>
> As with so many other forms of wild life, Worksop may almost be said to have a monopoly for the county, as I am not aware that the crayfish occurs in any other part. Anyone who has seen a lobster may almost be said to have seen a crayfish, for beyond the fact that the lobster is much larger, and lives in salt water, whilst the crayfish is confined to fresh water, there is practically no structural difference between the two. The female crayfish changes her shell, in the manner described above, once each year; while the more extravagant male requires two coats in the same period.
>
> The female carries her eggs (which are laid in November or December) with her until they are hatched, and the young, which appear in May or June, are also carried about for some time by their parent. Being nocturnal in their habits, and resting by day under stones or in holes in the banks, these curious creatures are not often observed, which is perhaps as well for them, seeing that they are not particularly well equipped for offence or defence against larger animals. Eels particularly are said to be amongst their worst enemies. As they do not appear to do any harm, and by feeding upon dead animals or other matter found in the water, no doubt do a great deal towards keeping it pure, we may be pleased that our local fauna includes such an interesting crustacean as the crayfish, sometimes called, but erroneously, the fresh water crab.

Upon this agreeably-written notice by a local observer a few comments may be permitted. In regard to the distribution of *Potamobius pallipes* within the county, Professor Carr makes it clear that Worksop has not a monopoly, by supplying the information that the species is 'fairly common in the River Maun and mill-dams at Mansfield.'[1] The process known as exuviation, ecdysis, moulting, or shedding of the outer sheath of the animal is not peculiar to crayfishes, but a common characteristic of the whole crustacean class. Not only does it extend to the delicate tips of the antennæ, the covering of the eyes, the complicated apparatus of the mouth-organs, but actually includes the lining of the stomach,

[1] *Trans. Nott. Nat. Soc.* for 1902–3, p. 1 (1904).

although that is not extruded when the rest of the apparel is thrown off. On the other hand, it would be wrong to regard the operation as universally simple, as the facile casting of old clouts, to find a fairer and better fitting costume beneath them. There is often no such ground for evoking envy in the impecunious children of men. In all species armed with massive nippers the withdrawal of big muscles through narrow articulations is a hazardous and probably painful operation. Nor can it be said without reserve that, prior to the moult, 'the constituents of a new shell are deposited between the body and the old shell.' The discarding of the latter exposes indeed the new coat that lay beneath it, but the fresh vesture is unfinished, not yet properly calcified. This is a necessary condition of the whole procedure. The muscles first of all become flaccid for purposes of extraction. They then assume a certain rigidity. Finally they expand to that fuller capacity which made a change in the exoskeleton essential. When the coat is once well hardened by calcareous salts such expansion is no longer possible. In the meantime the crustacean without a solid crust is exposed to anxiety and peril. Another incident in the biology of these creatures may at the first glance be thought rather enviable. Wolves and Spartans have been known to escape from fetters, and less heroic individuals can avoid the pain and danger of wounded limbs, by artificial amputation. But the tribe of crabs and lobsters are provided by Nature herself with a special groove at which they can easily throw off almost the whole of an inconvenient leg. Also from the stump they can grow a new limb. But 'Observer' exaggerates their good fortune in affirming that the loss of a claw is not a serious matter, and that its restoration may be counted on as speedy. On the contrary, the repair of appendages is slowly accomplished, perhaps requiring several exuviations for its completion, and in any case leaving an interval during which the cripple must be at a grave disadvantage among its fully-equipped competitors.

Our river crayfish and our common lobster, alike as they are in general appearance, belong in fact to two different though nearly allied families, respectively the Potamobiidæ and the Nephropsidæ. Into all the distinctions between these two it is unnecessary here to enter; but, as an example of them, it may be mentioned that in the former family the segment that precedes the flexible tail is partially free, whereas in the lobster it is firmly adherent to the other segments covered by the carapace.

Crayfishes are tolerably tenacious of life, and can be to a certain extent domesticated. By the kindness of Mr. Machin and his sister I was put in communication with Mr. and Mrs. Eddison, of Shireoaks Hall, near Worksop, with the result that Mr. George Eddison wrote to me from that residence on 16 August, 1903, as follows:—'The crayfish I have pleasure in sending you by to-night's post have been caught this afternoon in the cascade which runs from one pond to another in the park here. I have known crayfish to be in these waters for over fifty years, where they breed. These are of average size.' The specimens packed

in damp moss travelled first to Tunbridge Wells, and were forwarded thence to West Ealing, having been in close confinement for about forty-eight hours. Nevertheless, they arrived in a quite lively condition, and one of the four, a female, survived to accomplish another postal journey and to spend several months at Tunbridge Wells apparently much to its own satisfaction. During this period it occupied a glass bowl 8½ inches in diameter by 3¼ inches deep. This was supplied with a layer of mud at the bottom for the tenant to burrow in, with two or three rough stones to assist it if necessary in sloughing its coat, with the moss in which it had travelled from its native cascade, with some fresh *Anacharis alsinastrum* and other pond weeds ; and, lastly, with water to the depth of an inch or a little more. For food it was at first provided with sessile-eyed crustaceans, water boatmen, and other experiments in aquatic provender; but in the course of the winter it was found more convenient to feed it on earthworms. These it did not attempt to kill, but it appeared to eat them with much satisfaction when they had been converted into meat. It soon ceased to show any sort of timidity or shyness, and would raise itself out of the water when approached, as if courting society. It never made any visible attempt to leave the bowl, yet one morning it was found on the floor, having apparently effected its escape and fallen from a height of 14 inches without injury. A considerable time after this escapade, and without having shed its skin, it eventually met its death on 13 May, 1904. Though this catastrophe happened during my own absence from home, it need not be assumed that the creature died of grief. It is more likely to have succumbed to an abrupt rise of temperature which then occurred. Of the four specimens from Shireoaks Park, the larger pair were three inches long, the smaller about two inches, in each case the male and female being approximately equal. I have specimens from Oxfordshire far more bulky, and over four inches in length.

The sessile-eyed Malacostraca are represented in our inland waters by plenty of individuals but very few species. Of the Amphipoda only one species, the common *Gammarus pulex* (Linn.), has hitherto been recorded for this county. According to Professor Carr it 'occurs abundantly everywhere in streams and ponds.'[1] This little shrimp is under an inch in length. A crayfish of small dimensions would outweigh a hundred of the Gammarus. Any near relationship between the two could scarcely be suspected on a cursory inspection. Nevertheless the structure in both is essentially the same, although in the smaller animal it is in some respects simpler, and, on the hypothesis of a common origin, might be thought to show fewer modifications of the ancestral form. The difference in appearance might be compared with that which exists between a thin boy in an Eton jacket and a portly man in a frock coat. It depends essentially on the covering capacity of the carapace. This great shield in the crayfish extends over the segment which carries the eyes and over thirteen other appendage-bearing segments, which are all except the last in complete coalescence. But in Gammarus the coat or carapace is so short that seven of this number are left uncovered and remain movably articulated, like the seven following segments, which in both species alike constitute the pleon or tail. To several appendages of those uncovered middle segments in the amphipod it will be found that little sacs or vesicles are attached. These simple bag-like organs are the gills or branchiæ. In the crayfish the corresponding organs are divided up into numerous filaments, exposing a much larger surface for the oxygenation of the blood in the course of its circulation. Moreover, they are attached to a greater number of appendages, and instead of hanging freely in the water, they are efficiently sheltered in a pair of branchial chambers, formed by the

[1] Op. cit, p. 1.

cheeks of the carapace. In the tail-segments or pleon it is not very difficult to trace similarity of character throughout the Malacostraca, but the appendages of these segments are modified in a strange variety of ways to serve different functions. In the higher forms some of them are altogether dispensed with, just as we find the proudest of the mammals dispensing with their caudal vertebræ. In that division of the Amphipoda to which *Gammarus pulex* belongs, the first three segments of the pleon are always articulated and carry appendages called pleopods or swimming-legs, with a function corresponding to their name. Their structure is tolerably simple, consisting of a two-jointed stem and two many-jointed branches. Even when the animal is stationary their movements are not entirely discontinued, being no doubt necessary for maintaining a proper flow of water over the branchial vesicles. The foremost pair is often found directed strongly forwards. In the female the object of this position is to assist in keeping the eggs or developing young, safe within the marsupial plates. In Gammarus and its neighbours the fourth, fifth, and sixth pairs of pleon-appendages are known as uropods or tail-feet. The last pair may be used as a steering apparatus, but sometimes all three assist the animal in springing movements by which the rowing action of the pleopods is supplemented or superseded.

The Isopoda are represented here as in other inland districts of our country by a single freshwater species, *Asellus aquaticus* (Linn.), noted by Professor Carr as 'common in similar situations'[1] with *G. pulex*. Many fine specimens of this species were sent me by Mr. H. V. Machin, of Gateford Hill, Worksop. They reached West Ealing opportunely for the commissariat of the earlier arrived crayfishes. Much to my surprise, when introduced to one another the crayfishes made not the slightest attempt to catch or molest the Aselli, and these on their part swam and crawled about not only within reach of the claws, but close to the mouths of the crayfishes. Their immunity was not permanent. But my impression is that crayfishes prefer to take their meals in the dark, and do not much care for game, at least in the guise of earthworms and water boatmen, until it has been kept a decent time. For a specimen of *Asellus aquaticus* from a shallow well at Chilwell I am indebted to Mr. Charles E. Pearson, F.L.S.

The Isopoda agree with the Amphipoda in having the eyes not stalked but sessile, and in having the seven segments of the middle-body or peræon freely movable, and not covered by the carapace. On the other hand they differ strikingly in regard to the breathing apparatus, which is in them transferred from the walking legs to the appendages of the pleon. This carries with it a transfer of the heart from its position near the head to a position near the tail. Like *Potamobius pallipes* among the Macrura, *Asellus aquaticus* among the Isopoda is a convenient object of study because of its extreme commonness. But whereas the former species is in most respects normal to an exemplary degree, the Asellus is very abnormal in the arrangement of the pleon. Not merely are all the segments of this part consolidated into a single shield, but beneath this sort of carapace the appendages are eccentric, differing in number in male and female, and some of them rather widely differing in shape in the two sexes.

Of terrestrial Isopoda the species known to occur in England are now twenty-four in number. When Bate and Westwood published their work on *British Sessile-eyed Crustacea* in 1868 they were only able to record sixteen of these twenty-four, and for Nottinghamshire, Professor Carr's list in 1904 contained only seven. A collection kindly made for me by Mr. C. E. Pearson during the winter of this present year, 1905, enables me to make one addition to the latter number. These eight species are distributed over three families of the Oniscidea. All of them are commonly known as woodlice. This term, it may be said in passing, is quite unworthy of their true carcinological rank. They are as much Crustacea Malacostraca as any crab or lobster that ever was eaten. In the family Trichoniscidæ stands *Trichoniscus pusillus* (Brandt), described by Bate and Westwood[2] under the name *Philougria riparia* (Kinahan). Professor Carr says of it, 'This tiny claret-brown coloured species is very common under stones, decaying logs, amongst moss, etc., in damp places. I have found it more or less abundantly at Basford, Cinder Hill, Wollaton, Kimberley, near Bulwell Wood Hall, at Kirkby in Ashfield, Mansfield, Warsop, Nether Langwith, Creswell Crags, Shireoaks, and Worksop.'[3] The animal is only a sixth of an inch long, with very minute eyes, the second antennæ much geniculate, and the first pair, as usual in this terrestrial group, very small. The pleon is abruptly narrower than the middle body, and, as in almost all the Isopoda, has the terminal segment or telson fused with the preceding segment. This terminal piece has here a truncate apex, distinguishing it from the corresponding part in the next five species,

[1] Op. cit. p. 1. [2] *Brit. Sess. Crust.* ii, 456. [3] *Trans. Nott. Nat. Soc.* for 1902–3, p. 1.

which have the telsonic segment more or less acute. All these five are included in the family Oniscidae. *Oniscus asellus* (Linn.), as might be expected, is noted as the commonest species, and as being 'abundant everywhere under flower pots in gardens, under stones, logs, bark of fallen trees, etc.'[1] It reaches two-thirds of an inch in length and more than a third in breadth, the eyes are rather large, and the second antennae have the five-jointed peduncle not armed with outstanding spines as in *Trichoniscus pusillus*, but smooth and carrying a flagellum of only three joints. The third, fourth, and fifth segments of the pleon are expanded in such a way that their lateral edges form a continuous curve with the sides of the middle body. By this last feature it is easily distinguished both from the preceding species and from the next, which is of a size somewhat intermediate between the two. This bears a name reminiscent of summer glades, being by interpretation the shade-loving tenant of mosses, or technically *Philoscia muscorum* (Scopoli). It is 'common under stones and logs everywhere around Nottingham; also about Mansfield, Worksop, in Sherwood Forest, etc.'[2] Of *Platyarthrus hoffmannseggii* (Brandt), Professor Carr says, 'This curious little wood-louse differs from the other British species in being quite destitute of eyes; it is pure white in colour, and lives in ants' nests, where its presence is tolerated probably on account of its being useful as a scavenger. I have found it commonly in quarries throughout the Magnesian Limestone district, e.g., near Bulwell Wood Hall, Grives Wood (Kirkby in Ashfield), Mansfield, Warsop, Creswell Crags, and Worksop; also in Wollaton brickyard; and the Rev. A. Thornley has sent me specimens from a gypsum pit at Clarborough, near Retford.'[3] The peculiar habitat and the characters above given will enable the student when he comes across this widely distributed species to imitate a celebrated traveller and say, without further introduction, 'Platyarthrus, I presume.' Its supposed usefulness as a scavenger in the formicarium tallies with the service which apparently the whole crustacean class are disposed to render to their fellow creatures. They are a kind of living machinery for converting waste products into palatable foods. *Porcellio scaber* (Latreille) is reported as 'very common under stones and flower pots in Nottingham gardens, also under stones and logs, under bark of dead trees, etc., throughout the county. The usual colour is a greyish slate, but a yellowish or reddish brown variety is not uncommon.'[4] This very common species is nearly as long as *Oniscus asellus*, but not so broad, and is distinguished by its more granular integument, and by having the flagellum of the second antennae two-jointed. Moreover, the two first pairs of appendages in the pleon exhibit an interesting feature of distinction, in that the outer branches which form opercular plates are provided with air cavities known as pseudo-tracheae. These must be regarded as a character acquired since the ancestral *Porcellio* left the water for terrestrial wandering. In his essay on this species the learned doctor and professor G. R. Treviranus[5] confirms the observation previously made by de Geer that the Oniscidea feed on plants, and take their nourishment principally by night. This is in accord with what I have suggested above as the custom of crayfishes. Treviranus adds, however, 'In my hotbeds I often saw these creatures still late in the morning gnawing at the leaves of the plants.'[6] Besides *P. scaber* several other species of this genus are found in England, and some of these are sure to be eventually discovered in this county. Indeed, since this prediction was written, it has been in part fulfilled, as will presently be noticed. Of *Metoponorthus pruinosus* (Brandt), Professor Carr writes, 'I have only once met with this species, on 22 June, 1902, when it occurred in considerable numbers under a log in a garden at Sherwood Rise, Nottingham.'[7] This species recalls the appearance of *Philoscia muscorum* by having the pleon abruptly contracted. But it agrees with *Porcellio* in having a two-jointed flagellum to the second antennæ, and air cavities in the pleopods. In contrast with his single record for this species, Professor Carr speaks of *Armadillidium vulgare* (Latreille) as occurring in considerable numbers in several localities, e.g., Nottingham, Kimberley, quarry near Bulwell Wood Hall, Mansfield, Warsop, Creswell Crags, Worksop, etc. 'This species,' he adds, 'when disturbed instantly rolls itself into a perfect ball of the size and colour of a black, or rather blue, pill; hence the name "Pill woodlouse," commonly applied to it. Varieties of a brown or yellowish-brown colour are not uncommon.'[8] It belongs to the family Armadillidiidæ. It has the telsonic segment truncate as in *Trichoniscus pusillus*, but, whereas in that species the two slender branches of the uropods extend beyond the telson quite prominently, here the inner branch is entirely concealed, and the short broad outer branch helps to form a continuous curve with the telsonic and three preceding segments. To

[1] Op. cit. p. 2. [2] Ibid. p. 2. [3] Ibid. p. 2.
[4] Ibid. p. 2. [5] *Vermischte Schriften*, i, 50 (1816). [6] Ibid. p. 53.
[7] *Trans. Nott. Nat. Soc.* for 1902–3, p. 2. [8] Ibid. p. 2.

this record of seven species published by Professor Carr may now be added, from Mr. C. E. Pearson's collection, the interesting species *Porcellio dilatatus* (Brandt and Ratzeburg). From *P. scaber* this is distinguished by its broader shape, less tuberculose integument, and the produced rounded (not acute) apex of the telsonic segment. Also in the second antennæ the two joints of the flagellum are about equal in length. Bate and Westwood record it only from Ireland, and say it is found among decaying grass and straw, and appears to be extremely rare.[1] But like many other rarities, it has proved to be not so very uncommon when search is conducted with a little pertinacity. Though the Oniscidea more than ever withdraw themselves from the public gaze during our English winter, Mr. C. E. Pearson was able in a few days of January and February to collect for me from Lowdham and Chilwell, besides the above-mentioned *P. dilatatus*, also *P. scaber ;* the straight-fronted, smooth-coated *Metoponorthus pruinosus ;* and the globe-forming *Armadillidium vulgare*, including prettily-marked specimens of the form known as var. *variegata*.

From the Malacostraca, in which a strong cord of uniformity binds together all the diverse elements, we now pass to the Entomostraca, united indeed to the other sub-class and united among themselves, but united by less evident and more entangled threads. For species occurring within this county I am indebted to papers by Mr. Edwin Smith, M.A., published in *The Midland Naturalist*,[2] and to an unpublished list by Mr. W. H. Pratt, F.R.M.S., of Cavendish Hill, Sherwood, Nottingham, sent me through Professor Carr, to whom I am further indebted for the published record of one species and for specimens of another. From these several sources sixteen or seventeen species, illustrating the three orders of the sub-class, can be accredited to the county. The orders in question are named Branchiopoda, Ostracoda, and Copepoda, in allusion to features which are more or less conspicuously characteristic of them severally. The names signify respectively gill-footed, valve-shelled, oar-footed. It is in the last of these groups that we find forms the most shrimp-like, the least remote from the Malacostracan pattern. Mr. Edwin Smith, in the work already cited, gives an interesting discussion of the Copepoda, taking as a type the species *Cyclops quadricornis* from some unspecified locality. Mr. Pratt records it from 'ponds and ditches about Nottingham in many places,' and the same authority records *Canthocamptus minutus* from 'pond at Gamston near Nottingham.' In regard to this and two other species Mr. Smith makes the following remarks, some of which will be useful for wider application : 'Nearly allied to Cyclops, and not much unlike it in appearance, is Canthocamptus, found abundantly in the ponds about Nottingham. As it is rather small, the best way to secure a specimen for examination is to place a portion of the gathering in a shallow dish and look it well over with a pocket lens. A small dipping tube, made as follows, will be found useful : One end must be drawn to a blunt point with moderate aperture, the other inserted into a short piece of india-rubber tubing sealed air-tight at the free extremity. Press the india-rubber between thumb and fore-finger, dip into the water, and by removing pressure at the right moment the object is sucked up into the tube, whence it may be expelled by once more pinching the indiarubber. The two commonest species of Canthocamptus are *C. minutus* and *C. furcatus*. In the female I have often found a curious reddish substance coming off from the sixth body segment. It is of a hard and horny nature, but its use is not known. Closely allied to the preceding is *Diaptomus castor*, easily recognized by its inferior antennæ, which are fully as long as the entire body. I have found it amongst algæ in stagnant ponds.'[3]

Thus we have apparently four species of normal Copepoda to deal with. As already indicated, they are extremely common species. Also they are all insignificant in size, but the three genera belong to three different families, of which the Cyclopidæ and Arpacticidæ belong to the division Podoplea, the Diaptomidae to the division Gymnoplea. To explain this severance we have to notice that the framework of ordinary Copepoda is divided into eleven segments, the first or cephalic being composite. This is followed by a middle-body or limb-bearing trunk of five segments, and a pleon or tail-part of five segments without limbs. In the Gymnoplea, as the name implies, there is a bare or naked pleon, in the sense that the pleon is devoid of limbs. But in the Podoplea the pleon seems to have annexed one of the limb-bearing segments of the middle-body, and hence the name of the division, implying that the pleon carries limbs, points only to a difference which is apparent rather than real. It would often be delightful if natural history could tell its story in the compendium of a single word,

[1] *Brit. Sess. Crust.* ii, 479.
[2] Op. cit. No. 1, January, p. 15 ; No. 2, February, pp. 33–37, vol. i (1878).
[3] Op. cit. 34.

but the attempt is never for long successful. Nature continually interposes the necessity for limitations, explanations, and exceptions. Names the most apt at the time of their choice may easily become with the increase of knowledge inconvenient and misleading, so that we can only continue to use them by shutting our eyes to their original significance. In the Diaptomidæ the first antennæ in the female are divided into twenty-five articulations, and in the male the right member of the pair is geniculate. The fifth pair of trunk-legs differ much in the two sexes and are very unsymmetrical in the male. The female carries a single ovisac or external egg-bag. The pleon in the male has five distinct segments, but in the female these are reduced to two or three by coalescence. The latter sex in *Diaptomus castor* (Jurine), a species which is found all over Europe, measures from a twelfth to a seventh of an inch in length, the male not quite attaining the upper limit. But in determining the actual species with which Mr. Edwin Smith was concerned, we are met with this difficulty. He says that it is 'easily recognized by its inferior antennæ, which are fully as long as the entire body.' It is obvious that by the inferior antennæ he really intends the first, and not the very much shorter second, pair. But in *Diaptomus castor* the first antennæ are 'unusually short, when reflexed reaching but slightly beyond the anterior division of the body.'[1] There is, however, another allied species, *D. gracilis* (Sars), also found all over Europe, and described from England by Sir John Lubbock (Lord Avebury) under the name of *D. westwoodi*, which has the first antennæ even longer than the body. This species, only a sixteenth of an inch long, is probably the one to which Mr. Smith was really referring.[2] It is not a little important that in faunistic lists some distinctive features of the creatures mentioned should be given, whereby verification of their names may be made to some extent practicable. In regard to *Cyclops quadricornis* the two authorities above quoted do not allude to any specific character. But the Linnean name *quadricornis* has been applied to several forms which are now held to be distinct species. Thus, according to Dr. G. S. Brady, F.R.S., the *C. quadricornis* of Lilljeborg is the same as the *Monoculus quadricornis rubens* of Jurine, and should be called *C. strenuus* (Fischer), while the *M. q. albidus* and the *M. q. fuscus* of Jurine he considers to be two varieties of the species *C. signatus* (Koch).[3] On the other hand, Mr. J. D. Scourfield includes *quadricornis* in the synonymy of three distinct British species, *C. strenuus* (Fischer), *C. fuscus* (Jurine), and *C. albidus* (Jurine),[4] not to mention others which were regarded by Dr. Baird in 1850 as mere varieties of one generalized type.[5] It is not only possible, but practically certain, that several of these will eventually be found in this county. In *C. strenuus* and its near allies it may be noticed that the anterior antennæ are 17-jointed. They cannot therefore be confused with *Canthocampus minutus* (O. F. Müller), in which the first antennæ are only 8-jointed. The hard structure to which Mr. Smith refers, as seen in connexion with the vulvular segment of the female, was probably the spermatic tube. The genus, be it observed, is properly named *Canthocampus*, not *Canthocamptus*. The species *C. furcatus* (Baird) has been transferred to the genus *Idya* (Philippi), and being a marine species has no claim to our consideration here, nor does Mr. Smith claim to have found it in local waters. Its range is wonderfully extensive, since it occurs not only on the English coast, but also at New Zealand and in the Chatham Islands.[6]

Professor Carr observes in his often quoted paper, 'Among the Entomostraca perhaps the most interesting form is the fish-parasite, *Argulus foliaceus* (Linn). This beautiful and delicate Crustacean I have found in numbers on bream taken from the Trent at Nottingham.[7] Here we are fortunately left in no doubt about the species, since there is but one of the family known in England. The only doubt is about its place in classification, whether it should be ranged among the parasitic Copepoda, to which so many fish-devotees belong, or should be allotted to a special division of the Branchiopoda called Branchiura or gill-tails. As will be seen from Baird's bibliographical history of the genus,[8] these animals have courted the attention of more than one distinguished naturalist. The celebrated Cuvier kept some alive under special observation. He noted that the eggs were deposited in two compact straight lines on

[1] G. O. Sars, *Crustacea of Norway*, iv, 85 (1903); and Giesbrecht and Schmeil, *Das Tierreich*, Copepoda, pt. i, 88 (1898).

[2] Sars, op. cit. p. 92, pl. 63; Giesbrecht and Schmeil, op. cit. p. 72.

[3] *Nat. Hist. Trans. Northumb.* etc. vol. xi, pt. i, 71, 73 (1891).

[4] *Journal Quekett Microscopical Club*, 533, 535 (1903).

[5] *British Entomostraca*, Ray Soc. pp. 198, 203 (1850).

[6] Sars, *Zool. Jahrb.* vol. xxl. pt. iv. 380 (1905).

[7] *Trans. Nott. Nat. Soc.* for 1902–3, p. 2.

[8] *Brit. Entomostraca*, p. 242.

the sides of the glass vessel in which the mother was kept. This method, reminiscent of molluscan habits, is strikingly different from that of Copepoda, which normally carry the extruded eggs in ovisacs attached to their own bodies. Cuvier described also the four pairs of two-branched feet as serving both for locomotion and respiration, being perpetually in movement, whether the animal were swimming or at rest. One of the remarkable peculiarities of this species, but not common to the whole family of the Argulidæ, is the transformation of one pair of maxillæ into suckers. These give the animal secure adhesion to the fishes, from which by other organs it derives a bountiful meal. When sufficiently gorged it can loose hold and disport itself freely in the water. There is no narrow exclusiveness in its attachments, for it has been observed on carp and roach, pike and perch, trout and salmon-trout, as well as on the humble stickle-back and the tadpole of the frog. The bream is an addition to the victims on which this sanguinary persecutor battens for the nutriment of its little flat, greenish, roundabout body.

The Cladocera, which owe their name to their two-branched second antennæ. unlike the Argulidæ, are a much diversified order of the Branchiopoda. In place of the two separate compound eyes and median eye-spot which our *Argulus* enjoys, they have but one eye, with or without an eye-spot in attendance. They have a more or less distinct head, and the rest of the body in general covered by a bivalved sheath. They have from four to six pairs of feet. They share with many other Entomostraca a privilege highly conducive to the preservation and distribution of the race. While essentially aquatic animals that cannot live without water, they can, nevertheless, sow the seed of future generations in defiance of drought. For example, in January of this present year I conveyed from one county to another a little earth scooped up from a piece of grassland which was not then, but sometimes is, covered by a thin stratum of water. Some ordinary drinking water was poured upon this dried mud. For some weeks it showed no sign of crustacean life, but at length on the 29th of the month I noticed some moving specks, and on the following 4th of February I was able to take out and dissect a full-grown *Daphnia pulex* laden with thirty-five well-advanced eggs. Of this vivacious and abundant order Mr. Pratt's list mentions '*Daphnia pulex*.—Ponds and ditches in many places about Nottingham. *D. schæfferi*.—Pond at Gamston, near Nottingham. *D. reticulata*.—Ponds about Nottingham. *D. vetula*.—Ditch near Beeston. *Chydorus sphæricus*.—Ditch near Beeston. *Eurycercus lamellatus*.—Old pond at Strelley.' In Mr. Edwin Smith's lecture various species are mentioned with some account of their peculiarities, but no statement that they had been observed in Nottinghamshire, although a species of *Macrothrix* is noted as having been found elsewhere. This notice is succeeded by the following paragraph: 'One other family of the Cladocera should be mentioned, if only because it contains *Chydorus sphaericus*, a very common species in our stagnant ponds. The Lynceidæ (for so the family is called) may be recognized by a black spot situated in front of the eye, and looking not much unlike a second eye, which, however, it is not. The intestine, moreover, makes one complete turn and a half. To the same family belong *Eurycercus lamellatus* and *Acroperus harpæ*, both of which occur in this neighbourhood. The latter is fond of resting on the top of the water, moored by its antennae to a bit of weed, or a cluster of them will collect round some floating leaf or sprig, and lie motionless in the warm sunshine as if asleep.' From references in other parts of the essay it is clear that the expression 'this neighbourhood' relates to Nottingham.

There is no reason whatever for doubting that the species recorded in the above quoted lists occur in this county. It would rather be a marvel if they did not. But some comment may be offered on their names and distinctive characters. In the family Daphniidae the second antennae have the dorsal branch four-jointed, the ventral one three-jointed; of the five pairs of feet, the last is remote from the others, and the intestine is not convoluted. The typical species, *Daphnia pulex* (de Geer), is extremely common. It is also very mutable, so that a medley of specific, subspecific, and varietal names has grown round it. *D. schæfferi* (Baird) is now identified with the earlier *D. magna* (Straus), and earns its specific name by attaining a much more considerable size than its commoner relation, the female becoming about a sixth of an inch long as contrasted with a tenth of an inch measured by the other species, in each case the terminal spur not included.[1] The *D. reticulata* of Baird is now known as *Ceriodaphnia reticulata* (Jurine), the genus being distinguished from *Daphnia* by having the first antennae of the female movable, and by the hexagonal or pentagonal pattern of the reticulation on its shell. It must, however, be understood that the name as used by Baird is considered now to cover not only three varieties of Jurine's species, but two other species in addition, namely,

[1] Brady, in *Nat. Hist. Trans. Northumberland*, etc., vol. xiii, pt. ii, pp. 222, 242 (1898).

C. megalops (Sars) and *C. quadrangula* (O. F. Müller).[1] Similarly, *Daphnia vetula* (Baird) includes the two species *Simocephalus vetulus* (O. F. Müller) and *S. exspinosus* (Koch), the former 'one of the commonest of the British Cladocera,' the latter 'a fairly common species in the south and east of England, but not yet recorded from the north or from Scotland.'[2] In these there is no spiny prolongation of the shell such as occurs in *Daphnia*, and the head is obtuse with a beak but little projecting. In 1903 Dr. A. M. Norman, F.R.S., pointed out that the generic name *Simocephalus* (Schödler) was pre-occupied, and changed it to *Simosa*. Some specimens sent me by Professor Carr, 'which when alive were pea-green in colour,' and which 'were excessively abundant among the water weeds in the canal at Cossall, Notts,' proved on examination to be *Simosa vetula*. The three remaining species—*Eurycercus lamellatus* (O. F. Müller), *Acroperus harpæ* (Baird), and *Chydorus sphaericus* (O. F. Müller)—belong to a family which has been not unfrequently, but not properly, named *Lynceidæ*. Correctly, it should be named Chydoridæ from its premier genus *Chydorus* (Leach). Here both branches of the second antennae are three-jointed, there are five or six pairs of feet equally spaced, and the intestine forms almost a double convolution. By these characters its numerous genera are distinguishable from those of the Daphniidæ. The *Eurycercus*, though like our Cladocera in general, small enough in itself, is quite a monster compared with the other two species. It is also lethargic in its habits, in contrast to the little spherical *Chydorus*, which is ever on the move. The *Acroperus* is distinguished from *Chydorus* by its harp-shaped shell, the strings of the harp being represented by the obliquely longitudinal ribbing of the transparent carapace.

Lastly, the Ostracoda demand a brief notice. Concerning these Mr. Edwin Smith says, 'The species most common in the neighbourhood of Nottingham are *Cypris vidua*, *C. minuta*, *C. aurantia*. If you search carefully the surface of gravel in your aquarium you may chance to see a little oblong horny speck making its way by fitful jerks. This will probably turn out to be a rather large member of the same family, named *Candona reptans*. It has a comical habit of creeping in preference to swimming. I have found it about here in meadow drains, and have successfully bred it in my aquarium from season to season.'[3] Mr. Pratt's list contains '*Cypris bistriata*—Pond at Gamston and ditch near Beeston.' This group differs from the Cladocera in many ways, but strikingly in external form, inasmuch as the bivalved shell or carapace makes no pretence of showing a distinct head. The body within the valves shows little or no segmentation. The appendages, including the two pairs of antennae and the mouth-organs, are limited to seven pairs, and do not always reach that number.

According to the latest available authorities the four species mentioned by Mr. E. Smith should now respectively be called *Pionocypris vidua* (O. F. Müller),[4] *Cyclocypris lævis* (O. F. Muller),[5] *Cyprinotus incongruens* (Ramdohr),[6] and *Erpetocypris reptans* (Baird).[7] Mr. Pratt's *Cypris bistriata* is presumably *C. bistrigata* (Jurine), and, if so, may be identical with *Ilyocypris gibba* (Ramdohr)[8] or with *Ilyocypris bradyi* (G. O. Sars).[9] All these species belong to the section called Podocopa, in which the second antennae are simple, subpediform, geniculate, furnished with terminal curved spines called ungues, and the first maxillae have a branchial appendage. The family to which these species all alike belong is called Cyprididae. Therein only the last two pairs of limbs are pediform, 'the preceding pair small and maxilliform in female, larger and modified for grasping in male; furnished with a branchial appendage,' the caudal appendages are 'long, narrow, linear, terminating in ungues,' or else 'minute, consisting of setiform processes, which run out to a very fine extremity.'[10] From such names as *Erpetocypris*, the creeping Cypris, and *Ilyocypris*, the Cypris of the mud, something may be judged as to the sluggish habits which some of these creatures have contracted. They are all very common in England, with one very remarkable limitation to this quality of abundance. It is not without reason that *Pionocypris vidua* is specifically called 'the widow,' for Professor G. O. Sars in 1889, when defining the genus (then called *Cypridopsis*), gives as one of the characters, 'propagation exclusively parthenogenetical.'[11] Nevertheless, so unnatural an exclusiveness may perhaps be doubted, for in the neighbouring genus *Cypris*, at one time supposed to share this singular singleness of sex, males of various species, such as *C. incongruens*, have now been repeatedly found. Yet Brady and Norman say, 'As far as we know the curious fact remains

[1] Scourfield, in *Journ. Quekett Microscopical Club*, ser. 2, viii, 436 (1903).
[2] Ibid. p. 435.
[3] *The Midland Naturalist*, i, 17.
[4] Brady and Norman, *Trans. Roy. Dublin Soc.* ser. 2, v, 726 (1896).
[5] Ibid. p. 718.
[6] Sars, *Crustacean Fauna of Central Asia*, pt. iii, p. 28 (1903).
[7] Brady and Norman, *Trans. Roy. Dublin Soc.* ser. 2, iv, p. 84 (1889).
[8] Ibid. p. 107.
[9] Op. cit. v, 728.
[10] Ibid. p. 624.
[11] Ibid. p. 725.

that no representatives of that sex have been observed in northern or western Europe north of Spain.'[1]

While much remains to be done for the Crustacea of Nottinghamshire, enough has been done already by a few workers to show that the county is, as might have been expected, ready to yield a rich harvest to those who have time to study its carcinology. The comparative neglect of this particular branch of natural history investigation is scarcely surprising, since in quite recent years a history of the county could claim to discuss its flora and fauna, while completely ignoring the whole zoology of invertebrate animals. The 'water-flea' and the 'wood-louse' need not complain of indifference and neglect, when spiders and flies, ants and grasshoppers, are treated as the mere material for fables, and the great armies of beetles and bees and butterflies are left out of account, as though they had no essential part in the life and economy of the globe, and contributed nothing to the beauty and the marvel of man's surroundings.

[1] Op. cit. p. 721.

FISHES

In the twenty-sixth song of Michael Drayton's poem, the *Polyolbion*, published in 1622, reference is made to the fishes then known to occur in the Trent near Nottingham. This enumeration constitutes, as far as I can learn, the earliest record of Nottinghamshire fishes, and in spite of the enormous growth of the city since Drayton wrote, and the pouring into the river of large volumes of foul water from the numerous dyeing, bleaching, tanning and other works, as well as the effluent from the sewage farm, the fish fauna seems to have undergone comparatively little change during the interval of 280 years since the publication of the *Polyolbion*, and I am only able to add eight species to Drayton's list, viz. the miller's thumb, three-spined and ten-spined sticklebacks, burbot, rudd, white bream, spined loach and shad.

TELEOSTEANS

ACANTHOPTERYGII

1. Perch. *Perca fluviatilis*, Linn.

Very common in all parts of the Trent and attaining a large size, specimens weighing from 3 to 3½ lb. being frequently taken.

2. Ruffe. *Acerina cernua*, Linn.

One of the commonest fishes in the Trent.

3. Miller's Thumb. *Cottus gobio*, Linn.

Common in the Trent and its tributary streams.

ANACANTHINI

4. Burbot. *Lota vulgaris*, Cuv.

This fish, the freshwater representative of the cod family, occurs in the Trent, but not commonly. A specimen taken at Wilford weighed 4½ lb.

5. Flounder. *Pleuronectes flesus*, Linn.

Common in the Trent below Newark, but occasionally makes its way higher up the stream, even as far as Colwick Weir, close to Nottingham.

HEMIBRANCHII

6. Three-spined Stickleback. *Gasterosteus aculeatus*, Linn.

Very common everywhere in rivers, streams and ponds.

7. Ten-spined Stickleback. *Gasterosteus pungitius*, Linn.

Common in places, as in the streams and ditches in the Nottingham and Lenton meadows, but much less so than the last.

HAPLOMI

8. Pike. *Esox lucius*, Linn.

Common in rivers, canals and lakes everywhere.

OSTARIOPHYSI

9. Carp. *Cyprinus carpio*, Linn.

Occurs, but is not common, in the Trent, preferring ponds and still waters, in which situations it is fairly common.

10. Barbel. *Barbus vulgaris*, Flem.

Common in deep waters all along the course of the Trent, both above and below Nottingham. Examples up to 10 lb. in weight are frequently taken, and one brought to me a few years ago scaled 10¾ lb.

11. Gudgeon. *Gobio fluviatilis*, Flem.

Common.

12. Roach. *Leuciscus rutilus*, Linn.

Abundant in rivers and canals. The finest Nottingham specimen I have handled weighed 1 lb. 10½ oz.

13. Chub. *Leuciscus cephalus*, Linn.

Very common in the Trent; specimens weighing from 5 to 6 lb. are not infrequently caught.

14. Dace. *Leuciscus vulgaris*, Flem.

Very common in the Trent.

15. Rudd. *Leuciscus erythrophthalmus*, Flem.

Occurs in the Trent, but is not common.

16. Minnow. *Leuciscus phoxinus*, Flem.

Common in the Trent and tributary streams.

17. Tench. *Tinca vulgaris*, Cuv.

Is occasionally taken in the Trent, and is fairly common in ponds and still waters.

18. Bream. *Abramis brama*, Linn.

Very common in the Trent; a specimen in the Nottingham Museum weighed 6¾ lb. in the flesh.

19. White or Silver Bream. *Abramis blicca*, Bloch.

Common in the Trent and in the Grantham Canal.

20. Bleak. *Alburnus lucidus*, Häckel.

This species is known locally as the whitling, and is a common Trent fish. A specimen taken from the river at Radcliffe-on-Trent a few years ago weighed 5½ oz.

21. Loach. *Nemachilus barbatula*, Linn.

A common Trent fish.

22. Spined Loach. *Cobitis tænia*, Linn.

'River Trent' (Berkenhout, *Synopsis*, p. 79). 'Has been recorded from the Trent near Nottingham' (Day, *British Fishes*, ii. 202). Mr. W. Rose has taken it commonly in a pool by the Trent near Trent Bridge, Nottingham.

MALACOPTERYGII

23. Salmon. *Salmo salar*, Linn.

Occurs every year in many parts of the Trent, both above and below Nottingham, but not very commonly.

24. Trout. *Salmo trutta*, Linn. (including *S. fario*, Linn.).

Scarce in the Trent, but occurs about the spots where the small trout streams—in which it is common—enter the river. Some of our artificial lakes and some trout streams are stocked with the variety known as the Loch Leven trout.

25. Grayling. *Thymallus vexillifer*, Linn.

This elegant fish was within twenty years ago fairly common in one or two places in the Trent near Nottingham, but is now very scarce. The only local specimen in the Nottingham Museum was taken from the Trent in Beeston meadows about 1895; it is just over 10 inches in length. Two other specimens, of 4 or 5 oz. weight each, were caught in 1896.

[The Smelt, *Osmerus eperlanus*, Linn., is mentioned by Drayton as one of his 'thirty fishes of Trent,' but although it is not unlikely that it may ascend the Trent into Nottinghamshire, I have no record of its actual occurrence.]

26. Shad. *Clupea alosa*, Linn.

An example was taken in the Trent at South Clifton some years ago, and a second captured at South Muskham near Newark in 1896 is preserved in an inn at Newark.

APODES

27. Eel. *Anguilla vulgaris*, Turt.

Very common in rivers and canals, attaining a very large size. It descends to the sea to breed, spawning in deep water, where the eggs give rise to the remarkable little fish known as *Leptocephalus brevirostris*, Pennant, a larval form, whose connection with the eel was until lately unsuspected. The Leptocephali undergo a metamorphosis, the result being the little 'elvers' which make their way in multitudes up the rivers in which the adult condition is attained.

GANOIDEI

28. Sturgeon. *Acipenser sturio*, Linn.

Very rare in the Trent, and has not, I believe, been seen near Nottingham for many years. The last one that I can hear of was taken at Clifton, some few miles above the city. This is a curious coincidence, as there is an old popular belief that the presence of one of these fish in the Trent above Nottingham presages the death of some member of the ancient Clifton family, whose mansion stands on the right bank of the river (Lowe, in Black's *Guide to Nottinghamshire*). On 10 June, 1884, a fine sturgeon was captured at Muskham near Newark in the salmon nets; it was 8 feet long and weighed 16 stone (*Field*, 14 June, 1884). Another specimen was captured in the Trent at Muskham Bridge near Newark in June, 1902.

CYCLOSTOMES

29. Lamprey. *Petromyzon marinus*, Linn.

Occurs in the Trent, but not commonly; a fine specimen caught in the river at Fiskerton about 1897 is now in the Nottingham Museum.

30. Lampern. *Petromyzon fluviatilis*, Linn.

Abundant in the Trent, especially about Colwick, Beeston, Newark and Averham Weirs where great quantities used to be taken and sent to Grimsby for bait for sea-fishing. I have seen it in considerable numbers in the Rainworth Water near Mansfield.

REPTILES AND BATRACHIANS

The list of reptiles and batrachians is a very meagre one, only the commonest species being found in Nottinghamshire, and even of these the slow-worm and viper are now very rare. Sterland's assertion (in White's *Worksop, the Dukery, and Sherwood Forest*) that the sand lizard (*Lacerta agilis*) 'may be seen occasionally' in Sherwood Forest is doubtless an error, and I have hitherto searched in vain for the palmated newt (*Molge palmata*).

REPTILES

LACERTILIA

1. Common Lizard. *Lacerta vivipara*, Jacq.

Formerly common in Nottingham Park, on the forest and other sandy gorse covered commons about the city; but the absorption of most of its former haunts within the ever-extending area covered by bricks and mortar has almost exterminated the lizard in this neighbourhood. It is still however to be met with in considerable numbers on Bulwell Forest, where the writer recently saw five specimens during a morning stroll across the forest. It was also seen last summer (1902) in an enclosed part of the old Nottingham Forest within the city boundary.

2. Slow-worm or Blind-worm. *Anguis fragilis*, Linn.

At one time frequent in Sherwood Forest, according to Sterland. Not often seen now, but has been taken at Gedling, Lambley and elsewhere.

OPHIDIA

3. Common or Ringed Snake. *Tropidonotus natrix*, Linn.

Fairly common and generally distributed throughout the county.

4. Viper or Adder. *Vipera berus*, Linn.

Formerly common in Sherwood Forest, according to Sterland, but now rare. Mr. J. Whitaker reports it as occurring very occasionally about Rainworth; one killed on the carriage drive there in 1900 was nearly two feet long. I have heard also of specimens captured at Oxton and in Newstead Park.

BATRACHIANS

ECAUDATA

1. Common Frog. *Rana temporaria*, Linn.

2. Common Toad. *Bufo vulgaris*, Laur.

Both of the above are abundant in the county.

CAUDATA

3. Great Crested Newt. *Molge cristata*, Laur.

4. Common Newt. *Molge vulgaris*, Linn.

Both common and generally distributed in the county, the latter being much the more abundant.

ADDENDA

Since the above was printed the following records have been received:—Common Lizard: Seen by the writer 4 September, 1903, in a gravel pit on the Barrow Hills, Everton; reported by Mr. Houghton as common in the Worksop district. Slow-worm: Also occurs in the Worksop district, according to Mr. Houghton. A large specimen seen by the Rev. A. Thornley in the summer of 1903 in quarry behind Creswell Crags. Viper: A very fine example, measuring two feet in length, captured in Sherwood Forest near Edwinstowe in Nov. 1904, has been preserved by Mr. Houghton, who has seen this species also at Shireoaks.

BIRDS

Being an inland county, Nottinghamshire cannot be expected to furnish as extensive a list of birds as one which possesses a coast-line, however small. Nevertheless the following notes will show that it can boast of a rich and varied avifauna, which will compare favourably with that of any other inland county in England.

The extreme northern part of the county lies very low and is drained by dykes : here the redshank and snipe nest. The forest land to the south of this covers about 100,000 acres, and is some eighteen miles long by seven or eight wide ; a large portion has been converted into farms, but there still remains a considerable area of ancient woodland, largely consisting of fine old oaks, with a sprinkling of birch and an undergrowth of bracken. Many hundreds of jackdaws nest in the hollow trunks of these grand old trees. In several of the great estates comprised within this region—Clumber, Welbeck, Thoresby and Rufford—are large lakes covered in winter with waterfowl of many species, which being most carefully protected find here a safe and quiet home with abundance of food. It is no uncommon sight to see over 20 goosanders at one time, and at Thoresby thirty or forty pairs of tufted ducks remain in the spring to breed.

Coming towards the middle of the county there is in Rufford and Mansfield Forests a large stretch of heather, some 4,000 acres in extent, with here and there patches of fir-trees ; here live the last of the Nottinghamshire black-game, now only a small remnant, but for size and beauty of plumage equal to any in Great Britain. Rainworth waters lie to the south of this tract of heather, and here the tufted duck has nested in numbers since at least as far back as 1820–30. From these waters, consisting of seven or eight ponds of about 50 acres in total area, they gradually spread over the other waters in the county, and now many scores of pairs breed on other properties. The teal, shoveler and wild duck also nest on these lakelets.

South of Rainworth are the fine estates of Newstead, Sherwood Lodge, and Bestwood and Annesley Parks, on all of which are many plantations of fir and hardwood trees, and these being most carefully protected form quiet nesting places for many species of birds. In all there are about 26,000 acres of woods in Notts—not a large area, but a fair extent for an agricultural county.

About Nottingham, and thence to the southern boundary of the county, we find much more grass ; there are not so many plantations, but still we find some woods of fair size. This part of the county is rich in warblers and finches, and is also a fair game district, though not to be compared in this latter respect with the forest part, where much more corn and turnips are grown.

An inland county is always at a disadvantage compared with one possessing a sea-coast, but rivers and streams, especially large ones, offer

a great inducement to sea-birds and waterfowl to follow their course inland far from their natural home. Nottinghamshire is fortunate in having such a fine river as the Trent, which runs through the county from south-west to north-east and forms a natural highway from the sea. There are numerous other streams, the most important being the Idle, which drains the northern parts of Notts; there are also several canals. These make the county very attractive to birds of aquatic habits. We have no big hills, though a few rise to about 600 feet ; on one hill near Rainworth a small trip of dotterel often stay for a few days on their way north to nest ; they were last seen in April 1901, when they numbered about sixteen.

No place in Nottinghamshire has a larger or more varied avifauna than Rainworth, and it may be of interest to enumerate the birds that have been seen within a radius of one mile around Rainworth Lodge : they number 155 species, and are as follows :—

Osprey
Peregrine Falcon
Hobby
Merlin
Kestrel
Sparrow Hawk
Common Buzzard
Rough-legged Buzzard
Hen Harrier
Montagu's Harrier
Barn Owl
Tawny Owl
Long-eared Owl
Short-eared Owl
Great Grey Shrike
Red-backed Shrike
Spotted Flycatcher
Pied Flycatcher
Missel Thrush
Song Thrush
Fieldfare
Redwing
Blackbird
Ring Ousel
Hedge Sparrow
Redbreast
Redstart
Stonechat
Whinchat
Wheatear
Reed Warbler
Sedge Warbler
Grasshopper Warbler
Nightingale
Blackcap
Garden Warbler
Whitethroat
Lesser Whitethroat
Wood Warbler
Willow Warbler
Chiffchaff
Wren
Goldcrest
Tree Creeper
Great Tit
Blue Tit
Coal Tit
Marsh Tit
Long tailed Tit
Pied Wagtail
White Wagtail
Grey Wagtail
Yellow Wagtail
Tree Pipit
Meadow Pipit
Sky Lark
Corn Bunting
Reed Bunting
Yellow Hammer
Chaffinch
Brambling
Goldfinch
Siskin
Linnet
Twite
Lesser Redpole
Tree Sparrow
House Sparrow
Greenfinch
Hawfinch
Bullfinch
Crossbill
Starling
Carrion Crow
Hooded Crow
Rook
Jackdaw
Magpie
Jay
Green Woodpecker
Great Spotted Woodpecker
Lesser Spotted Woodpecker
Wryneck
Cuckoo
Kingfisher
Swallow
House Martin
Sand Martin
Swift
Nightjar
Ring Dove
Stock Dove
Turtle Dove
Pheasant
Black Grouse
Pallas's Sand Grouse
Partridge
Red-legged Partridge
Quail
Grey Plover
Golden Plover
Lapwing
Ringed Plover
Dotterel
Greenshank
Redshank
Green Sandpiper
Common Sandpiper
Knot
Dunlin
Grey Phalarope
Woodcock
Common Snipe
Jack Snipe
Curlew
Whimbrel
Spoonbill
Heron
Bittern
Water Rail
Land Rail
Moorhen
Coot
Whooper Swan
Bewick's Swan
Mute Swan
Grey Lag Goose
Brent
Canada Goose
Wild Duck
Gadwall
Shoveler
Wigeon
Teal
Garganey
Pochard
Scaup
Tufted Duck
Golden-eye
Scoter
Smew
Red-breasted Merganser
Goosander
Great Crested Grebe
Sclavonian Grebe
Little Grebe
Gannet
Common Tern
Black Tern
Black-headed Gull
Kittiwake
Common Gull
Herring Gull
Lesser Black-backed Gull
Great Black-backed Gull

There are two duck-traps in the county, one at Park Hall and the other in Annesley Park. They are made by cutting a narrow canal through an island and covering it over with wire netting ; at each end is a door which can be raised or lowered at pleasure. The trap is baited with corn. The ducks swim in to feed, and when a sufficient number have entered the doors at the ends are lowered by means of a wire pulled by the fowler, who is concealed in a hut from which he can get a clear view of the trap without being seen by the wildfowl on the water. The captives are left until night, when the other ducks have left the pond, and are then caught, the doors raised, corn spread, and the trap is again ready for next day. This mode of capture is more effective than shooting, for if wildfowl are shot at often they leave the lake, but when taken in a trap the rest are not disturbed and attract others.

At Park Hall, where the lake is in front of the house, hundreds of wildfowl may be seen dotted all over the water, and sitting or feeding on the banks by scores ; parties of ducks are continually coming and going, and ten or a dozen herons may be seen at one time, some often standing on the top of the trap, the sides of which are hidden by willows and other shrubs. Cattle and other animals are kept away by an iron fence, and no gun is fired anywhere near. There is no more delightful occupation for a naturalist than to sit in the library window with a good pair of glasses watching the wildfowl—six or seven or even more species—some asleep, others feeding or chasing one another over the glassy surface of the lake, and parties of pochards and tufted ducks busy diving. When lit up by a bright winter sun the scene is one to be remembered. The ducks begin to arrive in numbers about the end of September and remain until the spring, when they depart to their nesting quarters. As many as 400 have been taken in a winter on this piece of water, and I have many times seen a thousand or more wildfowl on and about the lake at one time.

In compiling the following list all doubtful occurrences have been most carefully excluded, and only those enumerated which have a real claim to be considered Nottinghamshire birds.

1. Missel Thrush. *Turdus viscivorus*, Linn.

This fine thrush is distributed over the county in fair numbers, and is very abundant at Rainworth. In August, when they flock together, as many as 115 have been seen to fly into a small plantation in the deer park to roost. It is usually met with in pairs in spring, and I have found its nest in a small fir within 2 feet 6 inches of the ground.

2. Song Thrush. *Turdus musicus*, Linn.

Very common and distributed over the county in spring and summer ; many leave in autumn ; it frequents small plantations. In March 1901 Mr. Aplin, when staying at Rainworth, was certain he heard over 100 birds of this species singing in the plantations round the house at one time ; the volume of sound was wonderful.

3. Redwing. *Turdus iliacus*, Linn.

A fair number of this species visits us every autumn and winter, but it is most numerous in the parts of the county where grass fields and big hedges occur ; this bird suffers much in severe winters.

4. Fieldfare. *Turdus pilaris*, Linn.

Much commoner than the last named bird, some years occurring in very large flocks. The earliest date at which I have ever seen this bird was on 12 September 1874, and the latest the third week in May 1900.

5. Blackbird. *Turdus merula*, Linn.

Very common. This bird stands severe weather better than the thrush or redwing.

6. Ring Ouzel. *Turdus torquatus*, Linn.

Seen occasionally in the spring and autumn, more particularly the latter time.

7. Wheatear. *Saxicola œnanthe* (Linn.)

Found in small numbers in suitable places. It nests on Ratcher Hill in Mansfield Forest, where several pairs arrive in March, using rabbit holes in which to lay their eggs; a fair number rest in big fields on their way south in autumn.

8. Whinchat. *Pratincola rubetra* (Linn.)

Very common all over the county and is partial to the hedges by the roadside. It is probable that there are two forms of this bird, some of the males being larger and brighter and having more white on their heads than others.

9. Stonechat. *Pratincola rubicola* (Linn.)

Not at all a common bird in Notts; found here and there in suitable places, and at Rainworth it is seen almost as often in winter as in summer. A pair or two breed in Mansfield Forest.

10. Redstart. *Ruticilla phœnicurus* (Linn.)

Lightly distributed in most parts; it is fond of oak woods and frequents the forest where it can find old hollow oaks for nesting; in younger woods it nests under the dead leaves on the ground and in faggot heaps. I have them breeding at Rainworth in boxes put up in the plantations.

11. Black Redstart. *Ruticilla titys* (Scopoli)

Rare. A male was shot near Nottingham in May 1846, one in December 1857, and another on the old Nottingham racecourse in 1870.

12. Redbreast. *Erithacus rubecula* (Linn.)

A very common resident, drawing near houses and gardens in autumn and winter and going further afield to nest in spring. Its eggs are rarely taken, but the species does not increase; one of our early nesting birds.

13. Nightingale. *Daulias luscinia* (Linn.)

The old saying that this bird never went north of the Trent has been proved to be wrong, for it is fairly plentiful in the southern parts of the county, and a few pairs nest here and there in the north portion.

14. Whitethroat. *Sylvia cinerea* (Bechstein)

A very common spring visitor and frequents hedges; it is often seen taking short upward flights and singing at the same time. I have a white variety shot near Nottingham.

15. Lesser Whitethroat. *Sylvia curruca* (Linn.)

Much less common and more local than the last-named species, and often overlooked by those who do not know its song. It sings in trees of a good height. There are always a pair or two nesting at Rainworth in garden plantations.

16. Blackcap. *Sylvia atricapilla* (Linn.)

Only fairly common in localities which suit it; one of our finest songsters. I have often seen a male sitting on the nest.

17. Garden Warbler. *Sylvia hortensis* (Bechstein)

More numerous in some years than in others, and commoner in the southern part of the county.

18. Goldcrest. *Regulus cristatus*, Koch

Found nesting in fir plantations, and occurs in greater numbers in the northern and middle parts of the county. It has a very pleasing little song in spring.

19. Firecrest. *Regulus ignicapillus* (Brehm)

A rare visitor; one was shot by Mr. Caborn in Nottingham Meadows in 1850, and another by Daws, the bird-stuffer of Mansfield, in his garden about 1878. This bird no doubt is often overlooked and mistaken for one of the last species, for owing to its quick movements it is not easy, even for a keen observer, to see the white eye-line.

20. Chiffchaff. *Phylloscopus rufus* (Bechstein)

Local, and is one of our earliest spring visitors. I shot one at Rainworth on 28 February 1882; this may have been one that had stayed over the winter, which it has been known to do on several occasions.

21. Willow Warbler. *Phylloscopus trochilus* (Linn.)

This pretty little warbler is much more common in all parts of the county than the last named bird, and its song is heard on all sides in April, May and June. It is fond of young larch plantations.

22. Wood Warbler. *Phylloscopus sibilatrix* (Bechstein)

A very local bird, but found in fair numbers in the great oak woods near Rainworth, also at Annesley and in Sherwood Forest. It has a very striking song which once heard can never be mistaken. The nest of this

bird is very difficult to find; it is lined with grass, *not hair*, as most of the natural history books tell us. There are generally about thirty pairs nesting in Harlow Wood, which is about 800 acres in extent.

23. Reed Warbler. *Acrocephalus streperus* (Vieillot)

Not uncommon in reed beds on the side of the Trent, where it breeds. It was once heard on the side of the lake at Rainworth.

24. Sedge Warbler. *Acrocephalus phragmitis* (Bechstein)

Fairly common in suitable localities; as it sings when quite dark at night it is often mistaken for a nightingale by the villagers in these parts.

25. Grasshopper Warbler. *Locustella nævia* (Boddaert)

A spring visitant and very local; but although it is found in certain places one year, it may not occur again there for some time. It is generally found near water, but has been seen over a mile away nesting in clover fields. I have a pretty variety with partly white flights shot near Mansfield in 1892. This bird has not nested at Rainworth since 1887, when there were three pairs.

26. Hedge Sparrow. *Accentor modularis* (Linn.)

Distributed all over the county, but not in such great numbers as formerly.

27. Dipper. *Cinclus aquaticus*, Bechstein.

Two or three have been shot or seen on the stream at Perlthorpe, Thoresby. Mr. Edward Walter shot one and saw another on the stream near Papplewick in 1881, and I saw one by the waterfall at Lamb Close in 1898. Both were specimens of the chestnut breasted dipper.

28. Black-bellied Dipper. *Cinclus melanogaster*, Brehm.

The only specimen obtained in Nottinghamshire was shot near Southwell about 1873.

29. Bearded Tit or Reedling. *Panurus biarmicus* (Linn.)

The late Mr. Percy of Beeston shot a bird of this species in a willow-bed near Toton in Notts, and had it in his collection; it was alone at the time. As far as I know this is the only county specimen.

30. Long-Tailed Tit. *Acredula caudata* (Linn.)

Fairly common, and is more in evidence in winter, when it is seen in small and large parties. This bird is fond of nesting near the same place year after year.

31. Great Tit. *Parus major*, Linn.

Well distributed all over the county; a bird of many notes. It is rather too fond of bees.

32. Coal Tit. *Parus ater*, Linn.

Common, but not so numerous as the last species and more retiring.

33. Marsh Tit. *Parus palustris*, Linn.

The rarest of the five commoner tits in Notts.

34. Blue Tit. *Parus cæruleus*, Linn.

Common all over the county; in winter it is seen in woods in companies, associated with two or three of the other species of tit.

35. Nuthatch. *Sitta cæsia*, Wolf.

Very local and nowhere common; nests in Thoresby Park and at Wollaton; it has also been seen at Rufford and in the south of the county.

36. Wren. *Troglodytes parvulus*, Koch.

A very common resident, found in woods, gardens and hedgerows all over the county; it is one of the few birds that sing here in winter.

37. Tree Creeper. *Certhia familiaris*, Linn.

This bird is seen in woods, but is nowhere common. It often comes nearer houses in breeding time, and has been known to nest under the lead in a greenhouse attached to this house, also in a summer-house, and on another occasion in a flower-box close to my front door. It is a most interesting little bird and very quiet.

38. Pied Wagtail. *Motacilla lugubris*, Temminck.

This pretty bird is found in greater numbers in spring and summer. It sometimes stays through the winter and may then often be seen where sheep are feeding. I once saw a nest with eggs in a turnip field close under the side of a large turnip.

39. White Wagtail. *Motacilla alba*, Linn.

Occurs from time to time, but it is rare. Two or three have been seen near Ollerton and also at Rainworth, but it is probably often overlooked.

40. Grey Wagtail. *Motacilla melanope*, Pallas.

Far from common; it is seen in autumn and early spring. On 20 October 1897 I

saw one of these beautiful birds running on the roof of my house; it was searching for insects, and the contrast of its bright colours against the slates was a pretty sight.

41. Blue-headed Yellow Wagtail. *Motacilla flava*, Linn.

Two of these birds were killed at one shot on the side of the stream at Ollerton, by Hibbs the naturalist, on 7 June 1892.

42. Yellow Wagtail. *Motacilla raii* (Bonaparte)

This beautiful bird arrives in April in numbers in suitable places; it is plentiful in the Trent valley. Nests have been found several times in fields of tares, but they are very hard to locate.

43. Tree Pipit. *Anthus trivialis* (Linn.)

A regular spring migrant, and is found in numbers in the big woods in north Notts.

44. Meadow Pipit. *Anthus pratensis* (Linn.)

Plentiful, and is often seen in sheep-pens in turnip fields. I saw a white specimen in September 1888, and a cream-coloured one was shot near Southwell.

45. Golden Oriole. *Oriolus galbula*, Linn.

The late Mr. Lowe of Highfield House saw one of these beautiful birds in his grounds several times in 1863.

46. Great Grey Shrike. *Lanius excubitor*, Linn.

A rare winter visitor, but seen from time to time. I shot one when partridge driving at Park Hall in 1877; and on 13 March 1901, when Mr. Aplin and I were driving over the forest, we saw one near the Clipstone Road and had a good opportunity of watching it. I have two others in my collection shot near Nottingham; all three are the form with one bar (*L. major*, Pallas's shrike).

47. Red-backed Shrike. *Lanius collurio*, Linn.

A regular visitor to the southern parts of the county, but it is nowhere common; not so plentiful in the northern parts. A pair nested in a garden at Blidworth in 1897, and the year before, probably the same ones, in a lane near that village.

48. Woodchat Shrike. *Lanius pomeranus*, Sparrman.

This rare bird has occurred once in Nottinghamshire, when a male was shot in May 1859 in Sherwood Forest near 'The Buck Gates,' Thoresby Park, by Mr. H. Wells.

49. Waxwing. *Ampelis garrulus*, Linn.

Now and again this handsome bird has occurred. The late Captain Hall shot one at Park Hall a good many years ago; a few have been obtained in the northern parts of the county, several at Ossington in 1871, and I saw one in the valley near Rainworth in March 1883.

50. Pied Flycatcher. *Muscicapa atricapilla*, Linn.

A rare visitor. It is known to have nested twice in the county, once in Birkland, and in a hollow apple tree at Ramsdale in 1875. Other occurrences are: one shot at Oxton, two seen near Rainworth, one at Newstead in May 1887, and also at Newark, Wellow and Ollerton.

51. Spotted Flycatcher. *Muscicapa grisola*, Linn.

A common spring visitor and generally the last to come. In 1902 it did not arrive till 23 May, which is the latest date I have ever known; in 1901 it was almost as late, viz. 22 May, but it started to nest at once and had a nest and one egg in it on the 27th. This migrant is so conspicuous in its habits that its arrival is at once noticed.

52. Swallow. *Hirundo rustica*, Linn.

This charming summer bird arrives generally about 12 April and in varying numbers all over the county. Some seasons it is more numerous than in others. Several white, pied and cream-coloured varieties have been shot.

53. House Martin. *Chelidon urbica* (Linn.)

Not nearly so plentiful as the last species but fairly common, and is a useful bird; the quantity of flies consumed by a pair during their visit to us must be enormous.

54. Sand Martin. *Cotile riparia* (Linn.)

Rather local, and numerous where there are suitable nesting places; there are several large 'sand-martinries' in different parts of the county. It breeds on the side of the Trent. I have several varieties shot in Nottinghamshire.

55. Greenfinch. *Ligurinus chloris* (Linn.)

Very common; it is fond of hedgerows, and stubbles in autumn. I have a beautiful variety with pale yellow wings, and another of a cream colour; both were shot near Nottingham.

56. Hawfinch. *Coccothraustes vulgaris*, Pallas.

This bird has increased very much in late years all over the county. I first came across

it in 1870, when I saw some feeding on the peas in the garden at Ramsdale, and two or three were shot; the man who preserved them said they were the first he had had. This bird nests in apple, oak and thorn trees in preference to others, and is very shy and retiring. I have a beautiful specimen showing a great deal of white on its head, back and breast, which was shot in 1894 at Berry Hill near Mansfield.

57. Goldfinch. *Carduelis elegans*, Stephens.

I am sorry to say this beautiful finch is now rare; high farming and clap-nets have told their tale. It still breeds in suitable places, and a few are seen in the autumn; it has nested in my kitchen garden.

58. Siskin. *Carduelis spinus* (Linn.)

This pretty little bird comes to us in autumn and leaves early in the spring. It is very fond of feeding on the seeds of the alder and birch. Some winters hardly one is seen at Rainworth, and again in others there are a good many.

59. House Sparrow. *Passer domesticus* (Linn.)

An abundant resident. I have many varieties shot in different parts of the county.

60. Tree Sparrow. *Passer montanus* (Linn.)

Local but fairly plentiful, especially in north Notts. There are a good many at Rainworth, and I have several pairs breeding in artificial nesting boxes fastened on the trees in the plantations. This bird has quite a little song, but I have only heard it rarely.

61. Chaffinch. *Fringilla cœlebs*, Linn.

A very conspicuous bird and found in numbers over the whole county; large flocks frequent the stubbles with other birds in the autumn. It is one of the earliest to sing in the new year. I have some very pretty and striking varieties which have been shot in Notts; they are cream-coloured and pied, and one with the usual white parts brick red.

62. Brambling. *Fringilla montifringilla*, Linn.

Some winters this species is seen in large flocks on the stubbles, and again in others only in small numbers; occasionally it stays late. One was shot near Southwell in full breeding plumage; on 17 April 1884 I heard birds twittering on some high fir trees in a wood at Rainworth, and as the notes were new to me I shot a bird and found it to be one of this species in full breeding plumage. Saw one here 11 April 1903.

63. Linnet. *Linota cannabina* (Linn.)

A common resident. A white variety was shot near Southwell in 1870 and is now in my collection, also a grey-coloured one.

64. Mealy Redpoll. *Linota linaria* (Linn.)

A rare winter visitor. I know of only one specimen being obtained, and that was caught on Mapperley Hills near Nottingham on 12 January 1848, and was taken alive to the late Mr. Percy of Beeston, who identified it.

65. Lesser Redpoll. *Linota rufescens* (Vieillot)

Resident in Notts and breeds here and there. It is most numerous in winter, when it is found in flocks in company with siskins frequenting alder and birch trees. I have two pure white varieties in my collection shot near Southwell in 1870. There are always several nests about Rainworth every year.

66. Twite. *Linota flavirostris* (Linn.)

Very local and far from common. I have a pair shot on Mansfield Forest where a few can often be seen. It has nested once or twice in this part of the county.

67. Bullfinch. *Pyrrhula europæa*, Vieillot.

Found thinly distributed over the county. A good many are taken by bird-catchers in the autumn. A beautiful pale grey bird was shot near Nottingham in 1869.

68. Pine Grosbeak. *Pyrrhula enucleator* (Linn.)

A beautiful male in rosy plumage was shot by Dr. Dixon on 30 October 1890 when he was partridge driving at Watnall. The bird came and settled by the side of a small pond to drink, and on seeing him flew up into a tree where he shot it; it is now in the collection of Mr. Chaworth Musters of Annesley Park.

69. Crossbill. *Loxia curvirostra*, Linn.

This bird is seen now and again in small flocks, and has nested in the county on more than one occasion. Daws of Mansfield once saw old and young ones in Harlow Wood, and in July 1870 I saw a female come down to the side of the pond at Ramsdale to drink.

70. Parrot Crossbill. *Loxia pityopsittacus*, Bechstein.

A small party of these rare stragglers from northern Europe visited a clump of Scotch firs at Edwinstowe in the winter of 1849, and seven were shot by Mr. Wells on 4 March of that year.

71. American White-winged Crossbill. *Loxia leucoptera*, J. F. Gmelin.

About the end of March 1849 Mr. Wells shot four of these birds in some fir trees near Edwinstowe.

72. Two-barred Crossbill. *Loxia bifasciata* (Brehm)

One of these rare stragglers was shot by George Emery in the Residence Gardens at Southwell about 1875. It was taken in the flesh to the late F. Schumach, the taxidermist of Southwell, who preserved it and put it away. After his death it was given to me by his son, who remembered seeing it when it was brought to his father. The bird is in beautiful plumage and is a most interesting county specimen.

73. Black-headed Bunting. *Emberiza melanocephala*, Scopoli

Stanley, the bird-stuffer of Nottingham, had a specimen in fine plumage brought to him with some small birds which had been caught near Nottingham in the spring of 1886. The Rev. J. Ashworth seeing it there and noticing that it was something out of the common expressed a wish to have it ; Stanley at once gave it him, little thinking how rare it was. It was identified by Professor Newton. Only three others have occurred in Britain.

74. Corn-Bunting. *Emberiza miliaria*, Linn.

Resident and fairly common in cultivated parts of the county ; the nest of this bird is very hard to find. It is often a very late breeder, and I have found its nest at Rainworth in August. I have a pretty pied bird shot in 1882 at Blidworth, and a pale cream-coloured variety shot at Newstead Abbey in 1883.

75. Yellow Hammer. *Emberiza citrinella*, Linn.

A very common bird and frequents cultivated fields with high hedges ; I have several very pretty varieties shot in the county.

76. Cirl Bunting. *Emberiza cirlus*, Linn.

Rare ; a few have been taken near Ollerton, and Mr. Wells shot five at Edwinstowe in 1859. On 5 February 1897 two were caught in a clap-net at Bagthorpe near Nottingham with some chaffinches. I bought the two for 1*s.* 6*d.* from their captor, and was very pleased to get such rare county birds for my collection.

77. Reed Bunting. *Emberiza schœniclus*, Linn.

Resident and fairly numerous in suitable places. I have a pretty pied variety shot near Newark-on-Trent.

78. Snow Bunting. *Plectrophenax nivalis* (Linn.)

A rare winter visitor. A flock was seen by Mr. Lowe at Highfields in January 1854, three birds were shot at Oxton in 1880 by Mr. Musters, and in March 1901 when driving with Mr. Aplin near Clipstone we saw one on the high road ; the last specimen was in good plumage and very tame.

79. Lapland Bunting. *Calcarius lapponicus* (Linn.)

This rare straggler has occurred once in Nottinghamshire ; it was shot by Mr. Wells in the winter of 1850 amongst a number of larks between Edwinstowe and Ollerton.

80. Starling. *Sturnus vulgaris*, Linn.

A resident and very common, nesting in any possible place it can find. I have nearly 100 boxes on trees at Rainworth, each one containing a pair of these birds. Great flocks get together early in July and keep in company till the following spring. A fir wood near Rainworth is a favourite place for roosting in winter and is resorted to by tens of thousands of starlings. I have a pure white variety, also cream, grey and sandy-coloured varieties shot in these parts. This bird is *single* brooded.

81. Rose-coloured Starling. *Pastor roseus* (Linn.)

Very rare. I know of only two specimens, one shot many years ago by my father's keeper at Ramsdale, and the other was killed near West Bridgford and is in the collection of Mr. Chaworth Musters of Annesley Park.

82. Nutcracker. *Nucifraga caryocatactes* (Linn.)

One was seen at Ramsdale by my brother in the winter of 1871. It flew out from a thorn tree and he had a shot at it, but missed ; on following it up he had a good view of it several times, but could not secure it.

83. Jay. *Garrulus glandarius* (Linn.)

Fairly common, especially in big woods where it nests ; great numbers come to us in autumn. I have four white jays which have been shot in the county, also a pied variety, and I have heard of several others.

84. Magpie. *Pica rustica* (Scopoli)

Resident, but far from common. It is fairly numerous in the southern portion of the county but scarcer in the northern parts. I saw a nest containing five eggs near Farnsfield in 1902 on the side of the high road in a small thorn tree not more than 10 feet from the ground.

85. Jackdaw. *Corvus monedula*, Linn.

This bird nests in the old oaks in the Birklands, and is scattered over the county in autumn and winter. A pied one was seen at Ollerton, and I have a brown variety shot near Nottingham.

86. Raven. *Corvus corax*, Linn.

Has been seen in Sherwood Forest some years ago. One was shot near Bingham about 1879.

87. Carrion Crow. *Corvus corone*, Linn.

Not common. It breeds about Stoke and a few other places in the southern part of the county; it is seen now and again near Rainworth, where it nested in 1903.

88. Hooded Crow. *Corvus cornix*, Linn.

Scattered over the county especially in the northern parts in autumn and winter. I think there are more about Rainworth than in other places. I have seen thirty-five on the wing at one time, and in 1887 I counted eighty-two flying over to their roosting places in the forest. In 1892 I counted eighty-six passing over, and in January 1879 twenty-three feeding at one time on an ash heap near my house.

89. Rook. *Corvus frugilegus*, Linn.

This is an abundant resident and many arrive in autumn; there are many large rookeries in Notts. I have white, brown and cream-coloured varieties shot in the county. Great numbers roost in Newstead Park during the winter.

90. Sky Lark. *Alauda arvensis*, Linn.

A very common bird and found in large numbers in the cultivated districts. A white variety, and one with white wings, were shot near Rainworth in 1884, and several others in varied plumage have occurred from time to time.

91. Wood Lark. *Alauda arborea*, Linn.

A very rare bird, but found occasionally in the forest, where the late Mr. Sterland some years back took its eggs; it has been seen several times at Newstead.

92. Swift. *Cypselus apus* (Linn.)

Common in some parts, especially in villages where there are houses with tiled roofs. It is very plentiful in Mansfield, but it seldom arrives before the first week in May and leaves early in August.

93. Nightjar. *Caprimulgus europæus*, Linn.

Plentiful during the summer months in the forest but not nearly so numerous as formerly, when I have seen a dozen on the wing at once flying about the road between Harlow and Thieves Woods.

94. Egyptian Nightjar. *Caprimulgus ægyptius*, Lichtenstein

The only British specimen was shot on 23 June 1883 in Thieves Wood near Mansfield, by my keeper, who mistook it for a light variety of the common nightjar. The bird rose from the side of the drive on his shooting at a rabbit and fell to his second barrel. Only five other specimens are known to have been obtained in Europe.

95. Wryneck. *Iynx torquilla*, Linn.

I do not know any part of the county where this bird is found in any numbers, but it occasionally occurs in north Notts. I have seen it at Rainworth only three times in thirty years. It has nested once or twice near Southwell.

96. Green Woodpecker. *Gecinus viridis* (Linn.)

Fairly common in forests and large woods. I had a pair nesting at Rainworth within 60 yards of my house in June 1902.

97. Great Spotted Woodpecker. *Dendrocopus major* (Linn.)

Often seen, but not so abundant as the last species. I have frequently seen one on the park pales at Rainworth stripping the bark for insects.

98. Lesser Spotted Woodpecker. *Dendrocopus minor* (Linn.)

By no means common, but it is harder to see than either of the above named birds. It nested in Harlow Wood in 1888, and I have seen it about Rainworth a few times.

99. Great Black Woodpecker. *Picus martius*, Linn.

I know there are doubts cast on the occurrence of this bird in Britain, but on the evidence of Macgillivray, who most certainly is to be trusted, I add it to this list. In the University Museum at Aberdeen there are two specimens of this bird labelled 'Nottingham' in the handwriting of the late Professor Macgillivray and referred to by him in his *British Birds*, iii. 79. He says 'two specimens in my collection, a male and a female, which I purchased from Dr. Madden, to whom they had been sent by their owner as having been shot near Nottingham. That gentleman afterwards obtained for me a certificate of the fact by the person who had procured them.'

100. Kingfisher. *Alcedo ispida*, Linn.

This lovely bird is fairly common in suitable localities, though numbers are shot and caught every winter. I often see it at Rainworth within a few yards of my house, and it is delightful to watch it capturing

small fish. I only wish it were protected all the year round.

101. Bee-eater. *Merops apiaster*, Linn.

One of these very rare and beautiful birds was shot in the spring of 1878 on Mapperley Plains near Nottingham, and was preserved by Rose of Mount Street; traces of where it is now are lost.

102. Hoopoe. *Upupa epops*, Linn.

This striking bird has been seen and shot in Notts several times; one was shot at Wilford in 1863, another seen near Ollerton about the same time, and in 1889 Mr. Webb saw one several times at Newstead Abbey.

103. Cuckoo. *Cuculus canorus*, Linn.

Varies in numbers in different years but it is always well distributed over the county. I once took a chocolate coloured *mature* bird from a trap in Harlow Wood, and the Rev. W. Becher of Wellow also has one in this plumage. The latest date at which I have heard this bird sing was 13 July 1872, and I am quite sure the adult cuckoo leaves directly after its song ceases.

104. White or Barn Owl. *Strix flammea*, Linn.

This bird is found thinly distributed over Nottinghamshire and nests in old oaks in Sherwood Forest; it does a great deal of good, which I am glad to say keepers are beginning to find out. A pale cream-coloured variety with pink eyes was shot near Newark in the 'eighties' and is in my collection.

105. Long-eared Owl. *Asio otus* (Linn.)

Found in the fir woods in fair numbers and in the forest, and is thinly distributed in the south of the county.

106. Short-eared Owl. *Asio accipitrinus* (Pallas)

Now and again a good many arrive in autumn, and I once saw eight on the wing at one time, and we sometimes see them when shooting getting up from turnips. I have looked for its nest in the open forest but have never come across one.

107. Tawny Owl. *Syrnium aluco* (Linn.)

Observed in suitable localities, but far from common. I have seen them in both shades of plumage.

108. Little Owl. *Athene noctua* (Scopoli)

One was caught alive near Newark-on-Trent in 1896, and another was shot in October 1901 near Nottingham.

109. Marsh Harrier. *Circus æruginosus* (Linn.)

The only record I have of this now rare bird being killed in the county is one shot by a keeper in Thoresby Park in 1848.

110. Hen Harrier. *Circus cyaneus* (Linn.)

Occurs now and again, birds of both sexes having been killed at Welbeck, Newstead, Rufford and other places. I have seen it at Rainworth three or four times, on one occasion a beautiful male in full plumage.

111. Montagu's Harrier. *Circus cineraceus* (Montagu)

One of these birds was caught in a pole trap at Ratcher Hill near Rainworth, and is the only occurrence of which I have heard.

112. Buzzard. *Buteo vulgaris*, Leach.

It is not often that this fine bird is seen now, though formerly it was not so rare. I have three eggs taken by the late Sir Arthur Need when a boy (probably about the 'thirties') at Fountain Dale, from a nest in an old Scotch fir tree not far from the lake there. The latest of which I have any note was picked up dead at Stoke by Sir Harry Bromley in 1900.

113. Rough-legged Buzzard. *Buteo lagopus* (J. F. Gmelin)

Seen now and again, generally in the open forest. Some years ago four or five were killed at Rufford. In March 1899 I saw one flying over the lake at Rainworth, and it was about for over a month and often seen; its flight was very beautiful, and on the wing it looked about as large as a heron. There was also one here this year (1903).

[Red-tailed Buzzard. *Buteo borealis* (Wilson)

Mr. Felkin of Lenton near Nottingham stated in a list of birds he drew up in 1866, and which he read at the British Association meeting, that a buzzard was brought to him in the *flesh* which had been killed between Mansfield and Newstead in the autumn of 1850. He submitted it to the late Mr. Gould, who identified it as *Buteo borealis*, and so far it is the only British specimen.]

114. White-tailed Eagle. *Haliaëtus albicilla* (Linn.)

One was seen at Welbeck in 1838, and was about there for three weeks. One was shot at Osberton in January 1857; and another measuring 7 ft. 1 in. across and weighing 9½ lb. was shot by Mr. George Musters at Park farm, Annesley, on 8 November 1896. The latter had been seen a few days before being

shot feeding on rabbits, which abound in this fine park.

115. Goshawk. *Astur palumbarius* (Linn.)

There are only two instances of the occurrence of this rare hawk in Nottinghamshire; one was shot by a keeper at Rufford in 1848, and the other on Mansfield Forest.

116. Sparrow Hawk. *Accipiter nisus* (Linn.)

Fairly common in autumn but not as a nesting species.

117. Kite. *Milvus ictinus*, Savigny.

Two of these now very rare hawks were shot at Clifton near Nottingham a good many years ago, and a female was shot by Mr. Wells near Edwinstowe in 1860. The late Mr. Sterland saw one flying over the forest in May 1847; another was shot in November 1875 at Chilwell near Nottingham.

118. Honey Buzzard. *Pernis apivorus* (Linn.)

Several of these birds have been shot and trapped in Nottinghamshire. A pair were killed in Ploughman Wood near Lowdham in the summer of 1842, and another pair, male and female, were both caught in the *same trap* by their legs on 26 April 1858; other records are, a female at Rufford in 1854, one at Toton October 1863, and a pair shot near Park Hall in 1897; the latter are in Mr. Musters' collection.

119. Peregrine Falcon. *Falco peregrinus*, Tunstall.

I have notes of a good many occurrences of this bird. Of these I may mention one shot at Ramsdale by my late father's bailiff in 1840, and others shot at Rufford, Park Hall, Kirton and Rainworth. The last I saw was in 1899.

120. Hobby. *Falco subbuteo*, Linn.

A summer visitor, but I once saw one in Newstead Park on 9 December 1877, also another near Rainworth in July 1875. It has been shot at Rufford, Ollerton, and other places.

121. Merlin. *Falco æsalon*, Tunstall.

This bird has bred in Sherwood Forest, and has been shot and seen many times at Rufford; two were seen at Thrumpton and were caught at one time in a clap-net near Trent station. In November 1870 I shot the largest specimen of this falcon I have ever seen; it was a female and was half as large again as the usual size.

122. Kestrel. *Falco tinnunculus*, Linn.

Fairly common and nests in several places. Many come to us in autumn, and a cream-coloured variety was seen at Park Hall in 1880. It is very much scarcer than it was thirty years ago.

123. Osprey. *Pandion haliaëtus* (Linn.)

The following occurrences are recorded: one shot on the Trent near Nottingham in 1839; a female caught alive at Beeston Rylands in the same year; one seen flying over Thoresby Lake in 1855, which remained about there for several weeks; one shot at East Bridgeford in 1865; one shot years ago at Newstead Abbey; one seen over Rainworth Water in 1866; one caught in a hawk-trap at Clipstone in the spring of 1871; one shot near Nottingham in 1881; and one caught at Rainworth in 1880.

124. Cormorant. *Phalacrocorax carbo* (Linn.)

One was shot on Thoresby Lake in August 1864; and another some years back at Lamb Close, Eastwood; also one at Annesley in 1883, and one on Mansfield reservoir in April 1886.

125. Shag or Green Cormorant. *Phalacrocorax graculus* (Linn.)

Two were shot at Burton Joyce on the Trent in July 1851; in November 1879 a man who was going to his work came upon two of these birds in Cross Street, Nottingham, both of which he caught; another was shot on the same day while sitting on the roof of a factory on Mapperley Plains.

126. Gannet or Solan Goose. *Sula bassana* (Linn.)

It is curious that this sea-loving bird should be so often found in this inland county. I have notes of the gannet having been shot on more than a dozen occasions. A full adult which is now in my collection was caught by a fox on the side of a pond at Fountain Dale; the fox was seen dragging the bird along by its neck, but left it on being run after.

127. Common Heron. *Ardea cinerea*, Linn.

I am delighted to say this fine bird is fairly plentiful, and I often see three or four from my windows. The strongest heronry in the county is at Stoke, where there are about forty nests. It belongs to Sir Harry Bromley, who kindly gave me a most wonderful nest which was blown out of a tree; the greater part is made of wire with a stick intertwined here and there, and how the bird ever got this

quantity of wire through the tree tops, to say nothing of forming it into a perfect nest, is marvellous. There are a few herons nesting at Thoresby Park, also at Clumber and Newstead.

128. Purple Heron. *Ardea purpurea*, Linn.

One of these birds was shot at Clifton near Nottingham in 1868, and Mr. Forman has one which was shot at Colwick some years back. Rose the naturalist once showed me a bird which looked very much like a cross between the purple species and the common heron, showing in its plumage markings of each.

129. Great White Heron. *Ardea alba*, Linn.

Mr. Foljambe has a fine specimen of this bird in his collection, which was shot at Osberton.

130. Squacco Heron. *Ardea ralloides*, Scopoli.

This is another very rare straggler ; one was shot by a keeper at Bestwood Park in August 1871, and is in my collection.

131. Night Heron. *Nycticorax griseus* (Linn.)

Only one specimen has been noted, which was shot in the autumn of 1820 at South Clifton by Mr. Bassett.

132. Little Bittern. *Ardetta minuta* (Linn.)

A rare summer visitor. One was put up from some flags on the side of the Trent near Newark and shot, and another was shot on 24 May 1870 near Worksop.

133. Bittern. *Botaurus stellaris* (Linn.)

There are many records of this bird having been killed in various parts of the county, of which I may mention the following : at Colwick in 1848 ; at Clifton in 1871 ; on Rainworth Water a pair, male and female, were shot, and on one of the keepers holding the former up by the legs five or six trout dropped from its throat ; one was shot at Beeston in 1871 ; several during the severe winter of 1881 ; one in the winter of 1891, and one was shot at Welbeck in January 1903.

134. White Stork. *Ciconia alba*, Bechstein.

Two instances only are recorded. In 1825 one was shot near Bawtry in the north corner of the county ; and in 1829 a flock was seen not far from the same place and two were killed.

135. Spoonbill. *Platalea leucorodia*, Linn.

The visits of this bird are now few and far between. In July 1831 one was followed by Mr. Gee at Girton-on-Trent, but was not captured. In the winter of 1847 one was shot by Mr. Maltby near Toton on the Notts side of the Erewash ; and in 1843 one was seen on the side of Rainworth Waters.

136. Gray Lag Goose. *Anser cinereus*, Meyer.

Rare, but has been seen on Thoresby and Rufford lakes. Sir Thomas White shot one on his lake at Wallingwells, and another was shot on the pond at Papplewick in 1885, and sent to me by the late Mr. Henry Walter.

137. White-fronted Goose. *Anser albifrons* (Scopoli)

In Mr. Felkin's list he states that this goose has been killed in Nottinghamshire; several were shot on the Trent in the great frost of 1891.

138. Bean Goose. *Anser segetum* (J. F. Gmelin)

This goose has been obtained several times on the Trent near Newark ; Mr. Musters shot two of these birds at Annesley in the winter of 1891, when seven were about there for a month.

139. Pink-footed Goose. *Anser brachyrhynchus*, Baillon.

I am only aware of one record of this goose having been obtained in Notts, which was in the winter of 1888–9 when Mr. W. P. Sutton shot one at Langar in the south of the county.

140. Bernacle Goose. *Bernicla leucopsis* (Bechstein)

In September 1869 fifty-two of these birds flew close over my head at Ramsdale, and were so near that I had no difficulty in distinguishing the species. One was shot flying over a garden at Mansfield a few years back, and another at Eastwood in December 1890.

141. Brent Goose. *Bernicla brenta* (Pallas)

The late Mr. Foottit shot one near Newark-on-Trent, and another was shot by the Rev. R. Sutton in the same neighbourhood in the winter of 1850.

[Canada Goose. *Anser canadensis* (Linn.)

These birds are seen every winter flying over in small and big companies, and they nest on several pieces of water ; the greater proportion are, I feel sure, domesticated ones.]

[Egyptian Goose. *Anser egypticus* (Linn.)

A party of six was seen on the Trent near Clifton Hall on 5 December 1873, when two of them were killed ; one was shot at Eastwood in 1868.]

142. Whooper Swan. *Cygnus musicus*, Bechstein.

Formerly herds of these swans were often seen passing over the county, but now it is a rare sight. They are birds of hard winters. A flock of twelve spent a few days on the Trent in March 1845; two were killed on the Trent in 1848 near Newark; one was shot out of a flock of five at Lamb Close Reservoir in 1871; another at Besthorpe in November 1872; and I saw six on the lake at Welbeck, 23 December 1902.

143. Bewick's Swan. *Cygnus bewicki*, Yarrell.

This species has been observed occasionally. It has been shot near Newark-on-Trent by Mr. Foottit, and also near Nottingham; in December 1899 a flock of sixty flew over Mr. Musters' head at Annesley Park, and from their size he was certain they were of this species. Twenty-one settled on Rainworth Water on 28 November 1902, when my son shot two, one on the water, the other on the wing, with a rifle.

144. Mute Swan. *Cygnus olor* (J. F. Gmelin)

It is common on all the waters in Nottinghamshire, and I have seen as many as fifty-eight on Thoresby Lake at one time. I have no doubt the pure wild species occurs now and again.

145. Common Sheld Duck. *Tadorna cornuta* (S. G. Gmelin)

The late Mr. Sterland twice saw this duck on the lake at Thoresby, and it has been noticed on the river Idle at Retford; a female was shot in December 1864 at Beeston Rylands, and one was shot on the Trent at Thrumpton in January 1885. It has also been seen at Newstead.

146. Ruddy Sheld-Duck. *Tadorna casarca* (Linn.)

The late Mr. Webb saw two of these striking ducks on the lake in Newstead Abbey Park in 1869; they were very wild and inaccessible and remained there some time.

147. Mallard or Wild Duck. *Anas boscas*, Linn.

This duck is common all over the county, more especially on the large lakes in north Nottinghamshire; I have seen over a hundred on Rainworth Water at one time. It is an early breeder, and I have found its nest in the centre of a big wood half a mile from the outside and a long way from water. I have several pretty varieties, most of which were taken in a trap at Park Hall and kindly given me by Mr. Hall.

148. Gadwall. *Anas strepera*, Linn.

A rare Notts duck. One was shot near Retford by Mr. Thorold in 1858. Mr. Webb has seen them once or twice on the lake at Newstead, and one was killed on the lake at Fountain Dale by the late Sir A. Need.

149. Shoveler. *Spatula clypeata* (Linn.)

This handsome duck has, I am glad to say, increased of late years. The first pair I ever saw nesting was in 1874, and in 1884 these had increased to six pairs. It has bred at Park Hall and other places during the last few years. It generally nests away from water.

150. Pintail. *Dafila acuta* (Linn.)

This is a very rare duck in Nottinghamshire, but has been obtained on the Trent near Newark. One was shot by Mr. Turner in January 1903 on Forest Pond, and five were seen at Annesley during the same month.

151. Teal. *Nettion crecca* (Linn.)

Fairly common, and many breed on the Nottinghamshire waters. We have had as many as six pairs nesting at Rainworth; it also nests at Newstead, and on some of the forest ponds.

152. Garganey. *Querquedula circia* (Linn.)

There are several occurrences of this bird. A male was shot on the Trent near Newark by Mr. Foottit; Mr. Percy had a male and female killed on the Trent near Beeston fields; the Rev. W. Becher obtained another near Southwell about 1880, and a pair were shot at Rainworth on 10 April 1880. I wonder it is not more frequently seen, as the waters at Rainworth are most suitable.

153. Wigeon. *Mareca penelope* (Linn.)

This is a winter visitor and is often seen in large quantities on some of the lakes, especially in the forest. Numbers frequent the lake at Park Hall, and I have shot many on the lakes at Rainworth. A slightly wounded duck wigeon remained on the large sheet of water at Lamb Close and was joined by a male; they nested and reared a good brood. On 5 August 1883, when walking round the lake here with Messrs. Aplin and Bidwell, we saw one of these ducks in full breeding plumage; it appeared in good health and was by itself.

154. Pochard. *Fuligula ferina* (Linn.)

Fairly common as a winter visitor and can be seen in all the winter months on the lake at Thoresby, and also at Newstead.

155. Ferruginous Duck. *Fuligula nyroca* (Güldenstädt)

One of these rare ducks was shot on the Trent at Newark and was in Mr. Foottit's collection; a pair were seen on the lake at Highfields near Nottingham, and another, a female, was killed by Mr. Lowe.

156. Tufted Duck. *Fuligula cristata* (Leach)

Yarrell mentions that the first authenticated nest was found in 1849, but long before this, early in the 'twenties' of the last century, the bird was breeding in numbers on Rainworth Waters, and in 1872, when I first came to live here, sixteen pairs were nesting; I can well remember my delight on seeing them. It has nested every year since and has given pleasure to many of our well known naturalists; large quantities occur all over the northern parts of the county in the winter, and many remain to breed. In May 1902 I counted twenty-eight pairs on Thoresby Lake, and quite as many at Newstead Abbey, and in December of that year I saw at least 400 on Welbeck Lake. It also nests at Park Hall, Rufford, Osberton and on several other waters.

157. Scaup Duck. *Fuligula marila* (Linn.)

A rare winter visitor. It has been shot once or twice on the Trent near Newark. I shot a female on Mansfield reservoir on 1 December 1883, and obtained another on Rainworth Water in 1884. Mr. Hall has one taken in the decoy at Park Hall.

158. Golden-eye. *Clangula glaucion* (Linn.)

A fair quantity visit the large lakes in Sherwood Forest during the winter and leave us in early spring, but I have seen one on the pond at Rainworth as late as April, where I have shot a number from time to time; I have seen others killed at Park Hall and the Mansfield reservoir, most of which were young birds and females, but I have a grand male in full plumage shot at Mansfield.

159. Long-tailed Duck. *Harelda glacialis* (Linn.)

One of these sea-loving ducks, an immature male, was killed at Newark in 1862, and was taken to Mr. Foottit in the flesh; another was shot on the Trent at East Bridgeford on 1 November 1881.

160. Common Eider Duck. *Somateria mollissima* (Linn.)

Only one specimen, a female, is known, which was shot on Nottingham meadows when flooded about 1879, and brought in the flesh to Rose the bird-stuffer, who sold it to me.

161. Common Scoter. *Œdemia nigra* (Linn.)

This bird has occasionally been seen on the Trent at Newark, also near Nottingham. One was shot in the winter of 1868 at Wilford Ferry; another by Sir A. Need at Fountain Dale, and four were seen on the reservoir at Lamb Close, Eastwood, on 22 August 1898, which was rather a curious time; one was obtained by Captain Hall at Park Hall many years ago, and is preserved there; and another was on Rainworth Water in November 1882.

162. Velvet Scoter. *Œdemia fusca* (Linn.)

A very rare visitor. One was shot at Welbeck some few years back, which is in the Duke of Portland's collection; and another was shot by Mr. W. Hollins at Pleasley Vale on the lake which forms the county boundary.

163. Goosander. *Mergus merganser*, Linn.

Occurs every winter on Thoresby Lake. Mr. Sterland once counted forty-three there at one time. It is also seen at Newstead Abbey; and one day when shooting at Rainworth we found over forty on the Rainworth Water, three being shot. Mr. Hall has shot several at Park Hall, and I have often seen small parties on the Mansfield reservoir. It generally arrives about the end of October and has remained on one occasion as late as May.

164. Red-breasted Merganser. *Mergus serrator*, Linn.

Much rarer than the last bird. It has been shot on the Trent at Newark, and there is a fine male in Mr. Percy's collection. A pair were killed at Newstead in March 1844, and one was shot near Retford many years ago by my father; another was shot at Annesley Park in 1876; and I killed a female on Rainworth Lake in January 1890.

165. Smew. *Mergus albellus*, Linn.

From time to time this pretty duck is seen on our sheets of water. Mr. Sterland saw it many times on Thoresby Lake, and it has been obtained on the Trent several times. A female was shot on Rainworth Water; six were seen together on the pond at Highfields

near Nottingham, four of which were killed at one shot. Mr. Hall has two which were killed at Park Hall, and a pair were obtained at Beeston Rylands near Nottingham in 1891.

166. Ring Dove or Wood Pigeon. *Columba palumbus*, Linn.

A very common bird, and flocks of several hundreds are seen on the new seed fields near Mansfield in winter. It breeds in quantities and does much damage to young seeds. I once shot twelve at a 'right and left,' and I have white, sandy and cream-coloured varieties, also a very pretty pied one which was shot near Mansfield.

167. Stock Dove. *Columba œnas*, Linn.

Fairly common locally, but not so numerous as the last species. I have four or five pairs nesting in boxes put up in the trees at Rainworth. In my collection there is a very pretty hybrid between a stock-dove and a common tame pigeon. The bird was hatched in one of the old hollow oak trees where the pair were often seen together, and it was shot at Haywood Oaks. I have also a pretty speckled variety, shot at Rainworth, but in this species varieties are very rare.

168. Turtle Dove. *Turtur communis*, Selby.

The first turtle-doves ever noticed in Nottinghamshire, to my knowledge, were observed in the very dry summer of 1868, when I shot one which was the first stuffed in Nottingham; since then they have increased and are now common. In May 1902 I saw a flock of twenty-seven, but it is rare to see them in flocks of such size.

169. Pallas's Sand Grouse. *Syrrhaptes paradoxus* (Pallas)

In the extraordinary flight of these birds that visited Great Britain in 1863 five were killed; a pair, male and female, were shot in May at Farnsfield; another male at Farnsfield on 20 August; and a pair of females were caught in rabbit traps on Two Oaks farm near Mansfield. A much larger flight visited us in 1888, when I saw as many as sixty together in the forest; and one day in June of that year thirty-two flew over my head in the Deer Park at Rainworth. They had all left by the following October. Two eggs were taken in the forest, but were broken before I could secure them.

170. Black Grouse. *Tetrao tetrix*, Linn.

I am delighted to say we still have a few of these grand game birds in the forest, and some forty years back packs of fifties were about. I have heard of a man who killed eight at one shot when sunning themselves on some rails. The species has become more scarce, as the odd bits of forest have been enclosed; but I hope it will be long ere it is a bird of the past in these parts.

171. Red Grouse. *Lagopus scoticus* (Latham)

Now and again in severe winters this bird is driven from the Derbyshire moors and is shot in Nottinghamshire. A male was killed at Bevercotes in 1860; in 1863 several were killed near Nottingham; one was shot at Clipstone in 1883, and one was seen on Mansfield Forest in January 1903.

172. Pheasant. *Phasianus colchicus*, Linn.

Found in quantities all over the county, and in addition many thousands of tame birds are turned up. Over 2,000 have been killed in a day at Welbeck.

173. Partridge. *Perdix cinerea*, Latham.

Nottinghamshire is one of the best counties for this species of game bird, particularly in the middle and north, where it is very numerous. At Welbeck over 600 brace have been shot in one day, and Mr. Hollins has killed over 300 brace in a day at Berry Hill near Mansfield. I saw a very pretty pale cream-coloured variety shot one day at Clipstone. The large increase is due to driving and turning up Hungarian birds.

[Virginian Colin. *Perdix virginiana* (Latham)

Several of these birds have been obtained in the county, and though they have been turned out in numbers in various parts of England as far back as Montagu's time, I think it as well to notice this species. I have one shot at Thrumpton in September 1872, and another was killed at the same place shortly after.]

174. Red-legged Partridge. *Caccabis rufa* (Linn.)

About 1872 the late Duke of Portland turned some of these birds out, and they were added to by Mr. Lees; a few were obtained prior to this time, but it was then a rare bird. Latterly they have increased much, and as many as forty-eight brace have been shot in a day at Welbeck.

175. Quail. *Coturnix communis*, Bonnaterre.

This is not so plentiful as formerly, and is regarded in these days as a rare bird. I have shot it at Ramsdale in September and December; it has nested there on several occasions, and also at Rainworth. In 1874 I killed seven in one day at Ramsdale.

176. Corn Crake or Land Rail. *Crex pratensis*, Bechstein.

A spring visitor, formerly very plentiful but now much rarer. I fancy the mowing machine has much to answer for this. A pale cream-coloured variety was shot near Newark-on-Trent and is in my collection.

177. Spotted Crake. *Porzana maruetta* (Leach)

Has been killed in various parts of the county; twenty-five were brought to *one* bird-stuffer in Nottingham in 1871, in which year several pairs nested in Nottingham meadows.

178. Baillon's Crake. *Porzana bailloni* (Vieillot)

On 22 June 1893 a man going to work in the early morning picked up one of these birds from under the telegraph wires close to Gedling near Nottingham; it was an adult specimen in beautiful plumage, and looked rather as if it might have been nesting. Another of these crakes was shot near Retford a short time after.

179. Water Rail. *Rallus aquaticus*, Linn.

This retiring bird is, I believe, more common than is supposed. I have often seen it at Rainworth, and have shot several near Epperstone. I have no doubt it nests, though I have never found one.

180. Moorhen. *Gallinula chloropus* (Linn.)

Common on all streams and ponds; there are great numbers on the different pieces of water at Rainworth. A tawny variety was killed some years back in Nottingham meadows, and in 1894 my son also shot one at Rainworth. Mr. Watson of Beeston has a pretty speckled variety obtained near there in 1872. A beautiful white bird shot at Glebe Thorpe in 1901 is in my collection.

181. Coot. *Fulica atra*, Linn.

Fairly common, but local. There are numbers on the lake at Thoresby, and also on Rainworth Water; a pied variety was shot on the mill dam at Southwell.

182. Crane. *Grus communis*, Bechstein.

This very rare straggler has only been obtained in the county once, when it was shot by a man on the Trent near Gunthorpe in 1851, and bought for 7*s.* 6*d.* by Cutts for Mr. Felkin. It was a young male in immature plumage, and is now in the Nottingham Museum.

183. Little Bustard. *Otis tetrax*, Linn.

There are several occurrences of this bird—one in 1854 at Shelton, where it was feeding with some fowls; another at South Clifton on 21 December 1856; I have two, bought at a sale of Mr. Foottit's collection, which were killed near Newark; the male is in full breeding plumage, and was the first ever seen in Britain in this state (since then one was killed in Norfolk in 1898, also in full plumage).

184. Stone Curlew. *Œdicnemus scolopax* (S. G. Gmelin)

This fine bird has been seen many times in Nottinghamshire. It has been shot at Rufford, Farnsfield, Papplewick and Newstead. A pair nested near Rainworth in 1881, also in 1887 and 1891, and I have two of these eggs in my collection.

185. Dotterel. *Eudromias morinellus* (Linn.)

A few were shot on Oxton Warren about 1860, and I killed a young bird at Ramsdale, 20 August 1890. Small flocks are seen occasionally in May on Ratcher Hill; about twenty were there for a few days in May 1901, resting on their way north.

186. Ringed Plover. *Ægialitis hiaticula* (Linn.)

A good many have been seen from time to time, and several have been obtained on the side of Mansfield reservoir. In August 1873 eight were seen on the side of a small stream at Rainworth and two were shot. It has also been shot at Burton Joyce and Wilford.

187. Golden Plover. *Charadrius pluvialis*, Linn.

Some years, and more often in the spring, great numbers of this species are seen in the large fields at Rainworth, and stay till the end of March, when many have got their black breasts. A scattered few are found in suitable localities in autumn, and I know no place where they are oftener seen than at Papplewick.

188. Grey Plover. *Squatarola helvetica* (Linn.)

This is a rare straggler, and I have notes of only four occurrences in Nottinghamshire—one, a fine old bird, in my collection, shot at Mansfield reservoir; one killed at Sutton; one near Edwinstowe, and one near Nottingham.

189. Lapwing. *Vanellus vulgaris*, Bechstein.

A resident and seen in large flocks; it breeds in fair numbers, especially in north

Notts. I have a beautiful cream-coloured variety which was shot in November 1899 near Farnsfield.

190. Turnstone. *Strepsilas interpres* (Linn.)

Mr. G. Attenbury shot two of these birds near Sutton-on-Trent, and my father killed one at Ramsdale. These are the only occurrences of which I have heard.

191. Oyster-Catcher. *Hæmatopus ostralegus*, Linn.

A rare Notts bird. I have one shot at Mansfield reservoir in 1870; one was shot near Newark-on-Trent, and was in Mr. Foottit's collection; and a third was obtained near Ollerton in 1875, and is in the collection of Lord Savile at Rufford Abbey.

192. Avocet. *Recurvirostra avocetta*, Linn.

A few of these striking birds have been killed. One was shot on the Trent at Barton Ferry near Beeston in 1800; another was killed at Fiskerton in 1859; another was seen at Thrumpton on the Trent side; and a fourth, in immature plumage, was seen on 24 July 1856 on the banks of the stream at Edwinstowe and killed by a boy with a stick.

193. Black-winged Stilt. *Himantopus candidus*, Bonnaterre.

The first and only instance of this bird having been seen in Nottinghamshire was at Perlethorpe near Ollerton on 30 January 1848, when Mr. Mansel and his son saw one, apparently feeding, in a shallow ditch in an ashholt bordering the stream. It rose with a shrill cry, and flew low towards the river. They had a clear view of the bird both standing and flying, and had no doubt of its identity.

194. Grey Phalarope. *Phalaropus fulicarius* (Linn.)

Two were shot near Newark-on-Trent, and were in Mr. Foottit's collection; one was shot near Eastwood in 1881, and another at Holme near Newark in 1891. I have two in my collection, one shot about 1870 on Mansfield reservoir, and the other killed on Rainworth Water. All these occurred in the autumn.

195. Red-necked Phalarope. *Phalaropus hyperboreus* (Linn.)

Only one specimen of this very pretty little bird has been obtained. It was shot by my father on the side of his pond at Ramsdale 6 July 1843.

196. Woodcock. *Scolopax rusticula*, Linn.

A fairly common autumn visitor, and a few remain and nest. Some woods attract this bird more than others, and certain places in such woods. Thieves Wood is a favourite covert, and thirty-six have been killed there in one day. Newstead Park is another good locality. It breeds in some numbers in Birkland, also Harlow Wood, Rufford, Newstead and Annesley. I have a white variety killed in Thoresby Park in 1861.

197. Great Snipe. *Gallinago major* (J. F. Gmelin)

This bird has been obtained occasionally, but it is a very rare visitor. One was shot years ago by Mr. John Hardy at Bestwood Park, one at Hickling near Nottingham on 3 October 1882, and the Rev. W. Becher killed another near Southwell in 1883.

198. Common Snipe. *Gallinago cælestis* (Frenzel)

This species is scattered over Notts in suitable places and breeds in a good many parts. There are generally several nests at Rainworth, and I have found one within 100 yards of my house. The late Mr. Cursham in one day shot twenty-five couples on the end of Mansfield reservoir when the water was low, and could have got more but ran short of cartridges. A white variety was seen near Blidworth several times in 1883.

199. Jack Snipe. *Gallinago gallinula* (Linn.)

Not as plentiful as it was thirty years ago when I have killed several in one day; now I rarely see one. I once flushed one on 1 September 1867, a very early date.

200. Dunlin. *Tringa alpina*, Linn.

It has been seen and shot on the side of the Trent several times, both near Nottingham and Newark. I have some which were killed on the side of Mansfield reservoir and at Park Hall; also one killed on Rainworth Water.

201. Little Stint. *Tringa minuta*, Leisler.

Two were shot near Newark-on-Trent; it has also been killed on the side of Mansfield reservoir, and one in my collection was shot in August 1881 on the Trent near Nottingham.

202. Temminck's Stint. *Tringa temmincki*, Leisler.

Very rare indeed with us. The only specimen which has been obtained was shot on the side of Mansfield reservoir about 1869 and is now in my collection.

203. Curlew Sandpiper. *Tringa subarquata* (Güldenstädt)

A rare straggler. One was shot on the Trent near Newark, and two on the side of Mansfield reservoir about 1870. I have seen one on the side of the pond at Ramsdale.

204. Purple Sandpiper. *Tringa striata*, Linn.

The winter is the usual time when this species pays its visits, but curiously enough one was shot on the side of the Trent near Wilford Ferry in the *summer* of 1864 by Mr. G. Price. Another was picked up by a tramp under some telegraph wires near Larch farm, Blidworth, and brought to me when shooting; it was still quite warm, and the man told me there were six or seven more in the flock.

205. Knot. *Tringa canutus*, Linn.

I have notes of two occurrences only—one shot by Mr. Besley on the side of the Trent near Nottingham, and another in full breeding plumage shot by the late Sir Arthur Need on the side of a pond at Fountain Dale. The latter is now in my collection.

206. Sanderling. *Calidris arenaria* (Linn.)

The only record of this bird in the county is one killed by the Rev. R. Sutton near Newark in 1850.

207. Ruff. *Machetes pugnax* (Linn.)

A rare bird. Two were shot on the side of the Trent near Newark; one was obtained in 1870 at Clipstone; and James May, keeper, killed a female on the side of the reservoir at Mansfield in August 1892.

208. Common Sandpiper. *Totanus hypoleucus* (Linn.)

The common sandpiper is a spring and autumn visitor, but though one or two have remained more than once all the summer on the side of the reservoir at Lamb Close its nest has never been found. It is said to have nested on the side of the Trent.

209. American Spotted Sandpiper. *Totanus macularius* (Linn.)

In March 1848 John Eyre, then headkeeper at Thoresby, flushed and shot one of these very rare birds. It was feeding on the side of a shallow stream at Budby just on the outskirts of Thoresby Park.

210. Wood Sandpiper. *Totanus glareola* (J. F. Gmelin)

Has only been obtained three times in Notts. One was shot at Kirklington by Mr. H. Bayly; a second was obtained in Nottingham meadows in 1880; and the third was killed by James May, keeper, on the side of Mansfield reservoir in August 1884. The last is a nice specimen, and is now in my collection.

211. Green Sandpiper. *Totanus ochropus* (Linn.)

An occasional visitor to this county, and has been seen and shot on the side of the Trent and also on Mansfield reservoir. I have obtained two and seen several at Rainworth.

212. Redshank. *Totanus calidris* (Linn.)

This species is oftener seen in the spring than at any other time of the year, and, I am glad to say, breeds in fair numbers in meadows near Rolleston, also near Newark-on-Trent, Retford and Bawtry. It has been shot near Mansfield in winter.

213. Spotted Redshank. *Totanus fuscus* (Linn.)

Only two specimens are known to have been found in this county. One was shot on the side of a pond at Halloughton near Southwell, and the other, now in my collection, was killed on the side of a small pond in Bestwood Park on 3 September 1872. There were a pair, but one escaped.

214. Greenshank. *Totanus canescens* (J. F. Gmelin)

Several of these birds have been shot on the Trent near Newark. One was killed near Ollerton, another on the side of the Trent near Muskham in September 1844, and one at Beeston in August 1871. The last of which I have heard was obtained on the side of the reservoir at Lamb Close in September 1873.

215. American Yellowshank. *Totanus flavipes* (J. F. Gmelin)

This very rare visitor to Britain has once been obtained; it was killed at Misson in Nottinghamshire in the winter of 1854–5.

216. Bar-tailed Godwit. *Limosa lapponica* (Linn.)

Has been obtained several times both in spring and autumn, on two occasions near Newark-on-Trent. In May 1846 a flock was seen and several killed near Nottingham; and in September 1874 a flock of about thirty flew over some partridge shooters near Farnsfield and four were killed.

217. Black-tailed Godwit. *Limosa belgica* (J. F. Gmelin)

Two or three specimens have occurred—one near Newark, another near Ollerton, and one was shot near Newark in September 1892, which was first seen amongst some fowls.

218. Common Curlew. *Numenius arquata*, (Linn.)

From time to time this bird is seen, generally flying over. It has also been killed on several occasions at Thoresby, Edwinstowe, Ramsdale, Oxton, and Mansfield reservoir.

219. Whimbrel. *Numenius phæopus* (Linn.)

Much rarer than the last species. In 1847 one was shot at Trent Bridge, Nottingham. I shot one at Ramsdale in August 1865; one near Ollerton in 1882, and one near Mansfield about 1880. I heard them passing over my house in May 1901.

220. Black Tern. *Hydrochelidon nigra* (Linn.)

Not an uncommon spring visitor on the Trent. I saw them flying over the lake at Rainworth in 1885, and again in 1887; it has also been shot at Mansfield reservoir.

221. Caspian Tern. *Sterna caspia*, Pallas.

A specimen of this very rare straggler was killed on the border of the county at Caythorpe on 17 May 1863 and was taken in the flesh to Mr. Foottit of Newark.

222. Sandwich Tern. *Sterna cantiaca*, J. F. Gmelin.

One was seen by Mr. Whitlock in May 1888 flying up and down the Trent at Barton Ferry.

223. Common Tern. *Sterna fluviatilis*, Naumann.

This is a frequent spring visitor and has been obtained on many occasions; hardly a spring passes without one or more being noticed on Mansfield reservoir and the Trent. I have seen it flying over Rainworth Lake.

224. Arctic Tern. *Sterna macrura*, Naumann.

As far as I am aware only two specimens have been shot, both occurring on the Trent near Newark.

225. Little Tern. *Sterna minuta*, Linn.

This little bird has occurred several times, twice in winter. In 1838 one was shot on the Trent near Nottingham, and taken to Mr. Felkin; another was seen by Mr. Foottit flying over the stream near Southwell, and one now in Mr. Musters' collection was killed at Annesley. Others have been observed at Thoresby and Mansfield reservoir.

226. Little Gull. *Larus minutus*, Pallas.

A rare straggler. One was shot on the Trent near Clifton Grove in December 1870, and a second on the same river near Nottingham on 29 December 1892.

227. Black-headed Gull. *Larus ridibundus*, Linn.

This gull is a constant visitor; it is shot on the Trent continually, and has been killed at many places in the county. I have seen them about the lakes at Rainworth very late in the spring and have wondered they have not nested there as it is a very suitable locality.

228. Common Gull. *Larus canus*, Linn.

Frequently seen and generally in winter and early spring. Flocks have been seen on the Trent and also on the Nottingham Corporation farm at Burton Joyce; one was obtained at Ramsdale in September 1863, and I have noticed them near Rainworth.

229. Herring Gull. *Larus argentatus*, J. F. Gmelin.

Neither so common nor so much of an inland bird as the two last species. It has often been seen on the Trent; I saw one at Rainworth on 20 October 1898, and my son saw six there on 15 April 1899.

230. Lesser Black-backed Gull. *Larus fuscus*, Linn.

This bird is more frequent than the last and is seen from time to time flying over the Trent. One was shot at Bothamsall near Ollerton in May 1855, another on Markham Moor in May 1859, one near Nottingham in May 1866, and I saw two flying over Rainworth Park on 21 September 1898. I have one in full plumage killed near Mansfield about 1870.

231. Great Black-backed Gull. *Larus marinus*, Linn.

This fine gull has been killed several times on the Trent both in mature and immature plumage. One frequented a fallow field near Newark-on-Trent for two months; in 1862 an immature bird was shot at Lamb Close reservoir; I saw a mature bird of this species fly low over my house on 23 September 1896, and another in the same plumage on 5 April 1902.

232. Glaucous Gull. *Larus glaucus*, Fabricius.

A rare straggler, and I have heard of only

two, which were shot on the Trent at Beeston Weir on 22 December 1872; one is in the collection of Mr. S. Watson of Beeston and the other is in my collection.

233. Kittiwake. *Rissa tridactyla* (Linn.)

This bird has been shot often, not only on the Trent but in various parts of the county, and has been obtained at the following places: Newark-on-Trent, Fiskerton, Mansfield reservoir, Rainworth Waters, Thoresby, Bestwood, etc.

234. Great Skua. *Megalestris catarrhactes*, (Linn.)

A rare wanderer. On 22 August 1898 my son saw one of these birds when fishing; it was flying over the water at Lamb Close reservoir, chasing the green plover; several times it came close to the boat and was about for some hours.

235. Pomatorhine Skua. *Stercorarius pomatorhinus* (Temminck)

I have never heard of this species occurring more than once, when one was shot near Farnsfield in November, 1875; it is now in my collection.

236. Arctic or Richardson's Skua. *Stercorarius crepidatus* (J. F. Gmelin)

One of this species, a bird of the year, was shot between Farnsfield and Southwell and was in the late Mr. Foottit's collection at Newark-on-Trent.

237. Long-tailed or Buffon's Skua. *Stercorarius parasiticus* (Linn.)

I have notes of two specimens; one shot at Clipstone near Mansfield in 1879, now in my collection, and another killed near Tuxford in 1881.

238. Razorbill. *Alca torda*, Linn.

A scarce straggler to this county. One was shot on the Trent near Nottingham in January 1847, and another was obtained near Eastwood in 1870.

239. Guillemot. *Uria triole* (Linn.)

Mr. Sterland saw several of these birds in December 1855 on the lake at Thoresby, where they stayed for a week or two; he saw them several times, and watched them diving for fish.

240. Little Auk. *Mergulus alle* (Linn.)

Has been observed several times, generally after storms. In November 1841 one was shot at Radcliffe-on-Trent, one was killed at Holme Pierrepont in January 1847, and another was picked up at Lenton after a gale in 1849. In November 1877 one was found dead under the telegraph wires near Rainworth, and in November 1878 two were shot at Wollaton. Others have occurred since.

241. Puffin. *Fratercula arctica* (Linn.)

Miss Webb, the daughter of the vicar of Mansfield-Woodhouse, picked up one of these birds on the road near the vicarage in November 1884; this is the only specimen of which I have heard, and is, thanks to her kindness, in my collection.

242. Great Northern Diver. *Colymbus glacialis*, Linn.

This very fine bird has, as far as I know, only been obtained in this county twice; one was shot on the Trent near Newark and is now in Nottingham Museum, and the other was killed by Mr. Caborn near Wilford, on the Trent, in the winter of 1853.

243. Black-throated Diver. *Colymbus arcticus*, Linn.

Has been shot or taken a few times within our borders. One was found frozen in the ice of a pond near Worksop in January 1848, and three others have been obtained on the Trent near Newark, two of them being taken in the flesh to Mr. Foottit.

244. Red-throated Diver. *Colymbus septentrionalis*, Linn.

This bird has visited Nottinghamshire more often than either of the two mentioned above. Mr. Felkin says he has known five to have been killed in one day on the Trent in winter; the late Mr. Percy had one in his collection shot at the Trent Bridge, Nottingham; one was shot on Mansfield reservoir in 1876, another in 1878, and I also saw one on that sheet of water in 1877 and tried to get a shot at it, but without success. Mr. Barber's keeper killed one on the reservoir at Lamb Close in 1876.

245. Great Crested Grebe. *Podicipes cristatus* (Linn.)

Since the Bird Act came into force this fine bird has increased very much, and now breeds on many of the waters in Nottinghamshire. I saw three pairs nesting at Thoresby in 1902, two pairs on Mansfield reservoir, and several pairs at Newstead. It nested at Rainworth in 1898, 1899 and 1900, but not since. It has also been obtained at Lamb Close, Papplewick, Ollerton, and on the Trent. Twelve pairs nested on Mansfield reservoir in 1903.

246. Red-necked Grebe. *Podicipes griseigena* (Boddært)

There are notes of this bird's occurence on several occasions. One was shot near the Trent Bridge in December 1843, another, a male in full summer plumage, was killed at Clifton in June 1850, two or three have been obtained near Newark-on-Trent, and I have one shot on the Trent near Nottingham in 1876.

247. Sclavonian Grebe. *Podicipes auritus* (Linn.)

Occurs now and again in the county. Several have been seen and shot on the Trent; one was killed near Nottingham in 1838, one at Barton in January 1848; Mr. Felkin states that one was killed on the Trent in the summer. I have one shot at Fountain Dale in November 1882; also one obtained on the Trent in 1881.

248. Eared Grebe. *Podicipes nigricollis* (Brehm)

I have notes of this grebe being obtained twice in Nottinghamshire. Schumach, the taxidermist of Southwell, preserved one which was shot on the Trent near Fiskerton in the winter of 1864, and Mr. Barber's keeper killed one, an immature bird, on Lamb Close reservoir on 4 August 1876.

249. Little Grebe or Dabchick. *Podicipes fluviatilis* (Tunstall)

This shy little bird frequents the ponds and streams in Nottinghamshire in fair numbers, and nests more frequently than is supposed. There are always a few pairs at Rainworth, and their tittering call is heard oftener than the bird is seen. I once saw the bird diving in clear water and it did not use its wings, and I have also seen a small party of seven together in the winter on Mansfield reservoir.

250. Storm Petrel. *Procellaria pelagica*, Linn.

There are many notes of this bird having been driven by storms from its usual haunts into Notts. One was shot in May 1843 at the Trent Bridge, Nottingham; during easterly gales in the winter of 1845 a pair, male and female, were seen on Thoresby Lake and were both killed by a keeper; in 1861 two more were obtained at the Trent Bridge, Nottingham; one at Papplewick; and on 17 November 1872 one was picked up near Bulwell. I have in my collection one shot on Mansfield reservoir in 1870.

251. Leach's Fork-tailed Petrel. *Oceanodroma leucorrhoa* (Vieillot)

This rare straggler has now and again been observed in the county. One noted by Mr. R. Enfield was shot at Burton Joyce in the winter of 1840; another, now in my collection, was killed near Lenton by Mr. Moult of Old Radford in November 1878, and Mr. R. Evans of Nottingham shot one at Bunny Park in September 1900.

252. Manx Shearwater. *Puffinus anglorum* (Temminck)

This is another rare Notts bird. One was picked up dead on 1 September 1888 at Sutton-in-Ashfield and is in my collection; a second was found near Retford in September 1891.

ADDENDA

2*a*. Dusky Thrush. *Turdus dubius* (Bechst.).

One shot at Gunthorpe by Mr. Mills, 13 October, 1905, was by itself, and is the first British specimen.

76*a*. Ortolan Bunting. *Emberiza hortulana*, Linn.

One caught on Rock Hill near Mansfield in a clap net, Feb. 1858, and now in the collection of Mr. Daws of Mansfield.

162. Velvet Scoter. *Oedemia fusca*, Linn.

After the article was in print the writer saw the specimen which was shot at Pleasley Vale, and found it to be a common scoter.

186*a*. Kentish Plover. *Aegialitis cantiana* (Latham).

One was seen on 13 April, 1904, by the writer's son in a field of young wheat near one of the ponds at Rainworth. It was within fifteen yards of him for some time, and as he knows this species well, there was no doubt as to the identity.

MAMMALS

Although most of the larger indigenous mammals of Nottinghamshire are now extinct there is no doubt that up to a few centuries ago the forest of Sherwood, which covered a considerable part of the county, afforded shelter to most of the British species. The red deer was abundant, the wolf, pine marten, polecat, badger and otter were all probably common, and we have evidence of the existence of the wild boar, roe deer and wild cat. Of these, descendants of the red deer still exist in a semi-domesticated state, the marten and polecat have been captured in the county within recent years, and the badger and otter are by no means very rare even now.

From very early times up to at least the reigns of James I. and Charles I. Sherwood Forest was a favourite hunting ground of our English monarchs, being tenanted by numerous herds of red deer which, though of course quite wild, were strictly protected by the harsh and oppressive forest laws which regarded the unauthorized killing of a deer as a crime more heinous than homicide. Camden, writing in the time of James I., tells us that the forest still supported 'an infinite number of deer and branchy-headed stags.' From a survey taken in 1635 it appears that the number of red deer in the forest was 1,367, and as late as the reign of Queen Anne a yearly grant of £1,000 was made for the preservation of the deer and maintenance of a hunting establishment. At this time they were so abundant as to cause great loss to the surrounding landowners by feeding upon their crops, and many were the complaints made against 'the intolerable burden of the Queen's deer.' The subsequent gradual disafforestation and enclosure of the district resulted in the reduction of the herds and their confinement within the limits of the parks formed out of the ancient forest.

That the forest was in early times infested with wolves is proved by the fact that as late as 1433 an official existed who held certain land in Mansfield Woodhouse, called 'wolf hunt land,' by service of winding a horn and chasing or frightening the wolves in the forest of Sherwood.

In an inland county it is not to be expected that any of the Cetacea should often occur, and indeed the only member of the order which has been certainly known to ascend the Trent into Nottinghamshire is the porpoise. This species occurs frequently, and a single individual was quite recently shot in the river close to Newark.

Of our remaining mammals the fallow deer, which forms so graceful an ornament of many of our parks, the all too common brown rat and the ubiquitous rabbit are introductions within historic times. Among

the smaller forms further research will perhaps lead to the discovery of other species of bats besides those now recorded; the pigmy shrew may also yet be found to inhabit the county.

CHEIROPTERA

1. Greater Horseshoe Bat. *Rhinolophus ferrum-equinum*, Schreber.

Said by Sterland to have occurred in Sherwood Forest many years ago, and Mr. J. Whitaker reports it from Rainworth. Further confirmation is however required before we can definitely claim this southern species as a Notts bat.

2. Lesser Horseshoe Bat. *Rhinolophus hipposideros*, Bechstein.

Only known to occur in the county from a specimen picked up dead some years ago at Edwinstowe by Mr. J. R. Hardy of the Manchester Museum.

3. Long-eared Bat. *Plecotus auritus*, Linn.

This appears to be one of our common species. I have seen specimens captured in Nottingham, Mr. Whitaker reports it from Rainworth, and it is said by Sterland to be abundant in Sherwood Forest.

4. Noctule or Great Bat. *Pipistrellus noctula*, Schreb.

Bell—*Scotophilus noctula.*

This fine species is common about Nottingham, and is sometimes found hybernating in numbers in the roofs of factories.

5. Pipistrelle. *Pipistrellus pipistrellus*, Schreber.

Bell—*Scotophilus pipistrellus.*

Recorded from several districts and probably common in the county, although few specimens have actually come under my notice.

6. Natterer's Bat. *Myotis nattereri*, Kuhl.

Bell—*Vespertilio nattereri.*

A specimen was picked up dead at Grove near Retford in June, 1888, by Mr. L. Buttress (*Zoologist*, 1892, p. 144).

INSECTIVORA

7. Hedgehog. *Erinaceus europæus*, Linn.

Generally distributed and common in spite of the relentless persecution to which it is subject at the hands of gamekeepers.

8. Mole. *Talpa europæa*, Linn.

Abundant everywhere. A cream-coloured form occurs occasionally.

9. Common Shrew. *Sorex araneus*, Linn.

Common in the Nottingham district, and would doubtless be found to be equally so elsewhere if looked for.

10. Water Shrew. *Neomys fodiens*, Pallas.

Bell—*Crossopus fodiens.*

Apparently not common about Nottingham, but has been seen at Colwick, Lenton and Beeston. Mr. Whitaker says that it frequents the Rainworth Water, but is rare. In north Notts Mr. L. Buttress has taken it at Grove and Headon, together with the variety formerly distinguished as the oared shrew (*N. remifer*). A specimen of the latter, killed at Annesley, is in Mr. J. Whitaker's collection.

CARNIVORA

[Wild Cat. *Felis catus*, Linn.

I have been unable to find any documentary evidence of the occurrence of the wild cat in Nottinghamshire, but as its remains occur in both the Pleistocene and Recent deposits in the Creswell caves on the borders of Sherwood Forest, it doubtless once inhabited the dense woods which formerly covered this region.]

[Wolf. *Canis lupus*, Linn.

Common in Sherwood Forest as late as the fifteenth century at least.]

11. Fox. *Vulpes vulpes*, Linn.

Bell—*Vulpes vulgaris.*

Common throughout the county owing to its preservation for purposes of sport.

12. Pine Marten. *Mustela martes*, Linn.

Bell—*Martes abietum.*

The Rev. W. Becher of Wellow possesses an example which was killed at Winkburn near Southwell about 1850, and two specimens in the Nottingham Museum were captured on the Worksop Manor estate about 1872.

Bones of the pine marten occur in the Recent deposits in the caves at Creswell Crags, so that it was probably a regular denizen of the forest-clad district of Notts, but doubtless is now extinct.

13. Polecat. *Putorius putorius*, Linn.
Bell—*Mustela putorius.*

Possibly still survives in the county, but if so is verging upon extinction. In 1875, according to Sterland, it still held its ground in Sherwood Forest, and as recently as January, 1891, a fine male was captured alive there (L. Buttress in *Zoologist*, 1891, p. 424). Mr. Whitaker writes me that the last polecat seen at Rainworth occurred about 1876. Mr. W. Rose of Nottingham has seen specimens which were taken at Beeston and East Bridgford; one was killed near Colwick Hall about 1871–2, and two specimens at Bingham about 1887. Remains of the polecat have been found in the Pleistocene and Recent deposits in the Creswell caves.

14. Stoat. *Putorius ermineus*, Linn.
Bell—*Mustela erminea.*

Very common throughout the county. Examples in winter dress are frequently seen, and Mr. Buttress records (*Zoologist*, 1892, p. 310) that a great many white and pied individuals were shot in the neighbourhood of Grove in the winter of 1891–2, one as late as 28 May. A pure white stoat was seen at Thurgarton on 26 January, 1898.

15. Weasel. *Putorius nivalis*, Linn.
Bell—*Mustela vulgaris.*

Abundant and generally distributed in the county.

16. Badger. *Meles meles*, Linn.
Bell—*Meles taxus.*

The badger is not so rare in Nottinghamshire as is generally supposed, but owing to its shyness and nocturnal habits is not often seen. Mr. J. Whitaker, writing in January, 1898, says: 'Badgers are got nearly every winter at Annesley Park, and a few years back two were taken at Newstead.' The *Field* for 5 January, 1889, records a specimen captured on the Aspley Hall estate near Nottingham. The steep right bank of the Trent, where well wooded, as at Kneeton, Clifton and Thrumpton, has yielded several examples in recent years, e.g. at Clifton Grove two were seen on 18 May, 1893, one of which was killed and is now in the Nottingham Museum; and one was captured at Thrumpton on 9 March, 1898, and sold alive to a Nottingham publican. Five badgers were killed at Bunny in the late autumn of 1897; an adult male was run down by a pack of foxhounds at Thurgarton on 17 January, 1898; and a pair were caught at Plumtree about the beginning of March, 1900. There is a stuffed specimen in the collection of the Rev. W. Becher at Wellow, which was killed at Fiskerton a few years ago. If protected from useless and wanton destruction this interesting and practically harmless animal would doubtless become fairly common.

Bones of the badger have been found in the Recent deposits in the Creswell caves, and the animal—under its old name of 'brock'—apparently gave its title to the Broxtowe (anciently Brockstowe) estate near Nottingham.

17. Otter. *Lutra lutra*, Linn.
Bell—*Lutra vulgaris.*

Sterland in 1875 (White's *Worksop*, etc.) stated that the otter occurred at intervals in some of the streams in Sherwood Forest, but neither the Rev. W. Becher nor Mr. Whitaker has heard of its occurrence there. The latter writes (under date 14 January, 1898): 'The only otters I have heard of were in the willow beds at Basford some fifteen years ago. I often wonder, with the large quantity of water and lots of fish, we don't have them here.'

The records of its occurrence in the Trent are fairly numerous, and I have notes of its having been captured or seen within comparatively recent years at Clifton (several), Wilford, Colwick, Farndon, East Stoke, South Collingham, etc. F. B. Whitlock (*Naturalist*, 1895, p. 329) gives the following instances of its occurrences in the Nottinghamshire part of the river Soar: one near Stanford-on-Soar about 1869; one near Zouch Mills—an exceptionally large male—a few years ago; a lair with two old otters and two or more young ones found on an island in the Soar in November, 1894; four more, two old and two young, seen in the same place in August, 1895. The late Mr. Lockwood of Aspley Hall near Nottingham possessed an otter which was trapped in the Aspley Woods some years ago.

The following paragraph appeared in the *Nottingham Daily Express* of 7 December, 1895: 'A "dog" otter of a large size was shot in the Greet, in the parish of Upton, the other afternoon by Mr. Kinder of Upton Mills. The animal was in beautiful condition, and when weighed turned the scale at 34 lb. These animals are now becoming very rare in the district, though they were formerly very frequently met with in the neighbourhood of the little river Greet, well known to anglers for its excellent trout fishing.'

RODENTIA

18. Squirrel. *Sciurus leucourus*, Kerr.
Bell—*Sciurus vulgaris.*

Common in woods and parks throughout the county.

[Beaver. *Castor fiber*, Linn.

No remains of this animal appear to have been found in the county, and the only reason for supposing that it ever occurred rests upon the name of a village—Bevercotes—in north Notts, which is supposed to have derived its name from the existence of the beaver in that neighbourhood at some former period.]

19. Dormouse. *Muscardinus avellanarius*, Linn.
Bell—*Myoxus avellanarius.*

'As to Nottinghamshire, Mr. J. Whitaker of Rainworth Lodge near Mansfield writes me that notwithstanding numerous inquiries he can only hear of its existence in one locality (a wood near Worksop), where there are two colonies' (G. T. Rope, *Zoologist*, June, 1885, ix. 207).

20. Harvest Mouse. *Mus minutus*, Pallas.

Probably now rare in the county. The only record I have is of several mice and a nest seen by W. Rigby of the Nottingham Museum, in a field near the Eastcroft, Nottingham, a good many years ago.

21. Wood Mouse, or Long-tailed Field Mouse. *Mus sylvaticus*, Linn.

Common in the Nottingham district and doubtless elsewhere. Mr. Whitaker reports it from Rainworth.

22. House Mouse. *Mus musculus*, Linn.

Here, as elsewhere, an abundant pest.

23. Brown Rat. *Mus decumanus*, Pallas.

As the preceding.

24. Field Vole. *Microtus agrestis*, Linn.
Bell—*Arvicola agrestis.*

Rainworth (Whitaker), and no doubt common elsewhere.

25. Water Vole. *Microtus amphibius*, Linn.
Bell—*Arvicola amphibius.*

Very common in all suitable situations. Mr. T. M. Blagg tells me that his father frequently saw individuals of the black variety on the banks of a stream in Langford parish, in the 'fifties' and 'sixties' of the last century. Remains of the water vole occur in the Pleistocene and Recent deposits in the caves at Creswell Crags.

26. Bank Vole. *Evotomys glareolus*, Schreber.
Bell—*Arvicola glareolus.*

Common in the only place in the county where I have placed traps for field mice, viz. Colwick Park near Nottingham. No doubt this and the field vole would be found to be widely distributed if sought for.

27. Hare. *Lepus europæus*, Pallas.
Bell—*Lepus timidus.*

Very common; white, pied and sandy varieties are occasionally seen. Bones of the hare have been found in the Pleistocene and Recent deposits in the Creswell caves.

28. Rabbit. *Lepus cuniculus*, Linn.

Occurs in great abundance throughout the county, and its bones occur in the Recent deposits in the caves at Creswell Crags.

UNGULATA

[Wild Boar. *Sus scrofa*, Linn.

Remains of this animal were found in the Recent deposits in the Creswell caves.]

29. Red Deer. *Cervus elaphus*, Linn.

The red deer was once common in Sherwood Forest, but has long since disappeared in a wild state, although it exists in a semi-domesticated condition in Welbeck Park, where in 1892 there was a herd of 130 and 14 white ones; at Thoresby Park in the same year there were 24, and at Wollaton Park 31. (The numbers are from Whitaker's *Deer Parks and Paddocks of England*, 1892.)

30. Fallow Deer. *Cervus aama*, Linn.

Introduced into the following parks (numbers from Whitaker's *Deer Parks and Paddocks of England*, corrected to date): Thoresby Park, about 630; Welbeck Park, 360 and a herd of 130 white ones; Wollaton Park, 105; Annesley Park, 200; Rufford Park, 300 to 350; Rainworth Park, 26; Highfield Park, 10; Chauntry House Park, 10.

[Roe Deer. *Capreolus capreolus*, Linn.

Bones have been found in the Recent deposits in the caves at Creswell Crags.]

[Wild Cattle. *Bos taurus*, Linn.

Wild white cattle existed in Wollaton Park until the beginning of the last century. 'They were polled or hornless, with black noses and black ears, and were known as the "old park herd," a name denoting some an-

tiquity. Between 1800 and 1835 the herd became reduced by an accident when fourteen died from eating dead branches of yew cut from trees near the hall. The survivors, showing no tendency to breed, were killed off' (Whitaker, *Deer Parks*, etc.).

Wild cattle also existed in Annesley Park, as the following extract from a letter from Lord Chaworth to the Countess of Rutland shows (the letter is dated 'Annesley, 4 August, 1669'): 'I have made boulde to present your Ladyship a small taste off a White wild Oxe frome my Parke, killed by my owne hand. I had not presumed so much but that I have heard my Lord off Rutland saye they were originally his att Beskewood Park from whence I had that breed' (Whitaker, *Deer Parks*, etc.).

Remains of wild cattle occur in the Creswell cave deposits.]

CETACEA

31. Porpoise. *Phocæna phocæna*, Linn.
Bell—*Phocæna communis.*

Occurs very frequently in the tidal portion of the Trent and occasionally ascends the river to a much higher point. Mr. T. M. Blagg of Newark writes to me: 'It is no infrequent event for a small school to come up the Trent as high as Collingham, and I must have heard of their being seen on some half-dozen occasions at least during the past ten or twelve years. The most noteworthy instance, however, was in 1880 when, the river being in flood, a school of five crossed the weir in the canal just below Newark, and coming up past the town, were hunted with guns and boats in the mill-tail, one being actually captured in the locks.'

A specimen which measured 4 ft. 6 inches in length was shot in the Trent at Kelham near Newark on 26 March, 1903, and was exhibited for some days in a fish shop in Newark. The *Newark Herald* of 28 March, in recording the event, stated that five or six were killed in the Trent near Collingham about five years ago.

ADDENDA

3. Long-eared Bat. *Plecotus auritus*, Linn.

Specimens have occurred recently in the Worksop and Retford districts, and about Nottingham and Eastwood.

5. Pipistrelle. *Pipistrellus pipistrellus*, Schreb.

Common everywhere in the Worksop district (J. T. Houghton).

10. Water Shrew. *Neomys fodiens*, Pallas.

Seen in the stream in Shireoaks Park near Worksop, 2 July, 1904, by Rev. A. Thornley.

10*a*. Pigmy Shrew. *Sorex minutus*, Linn.

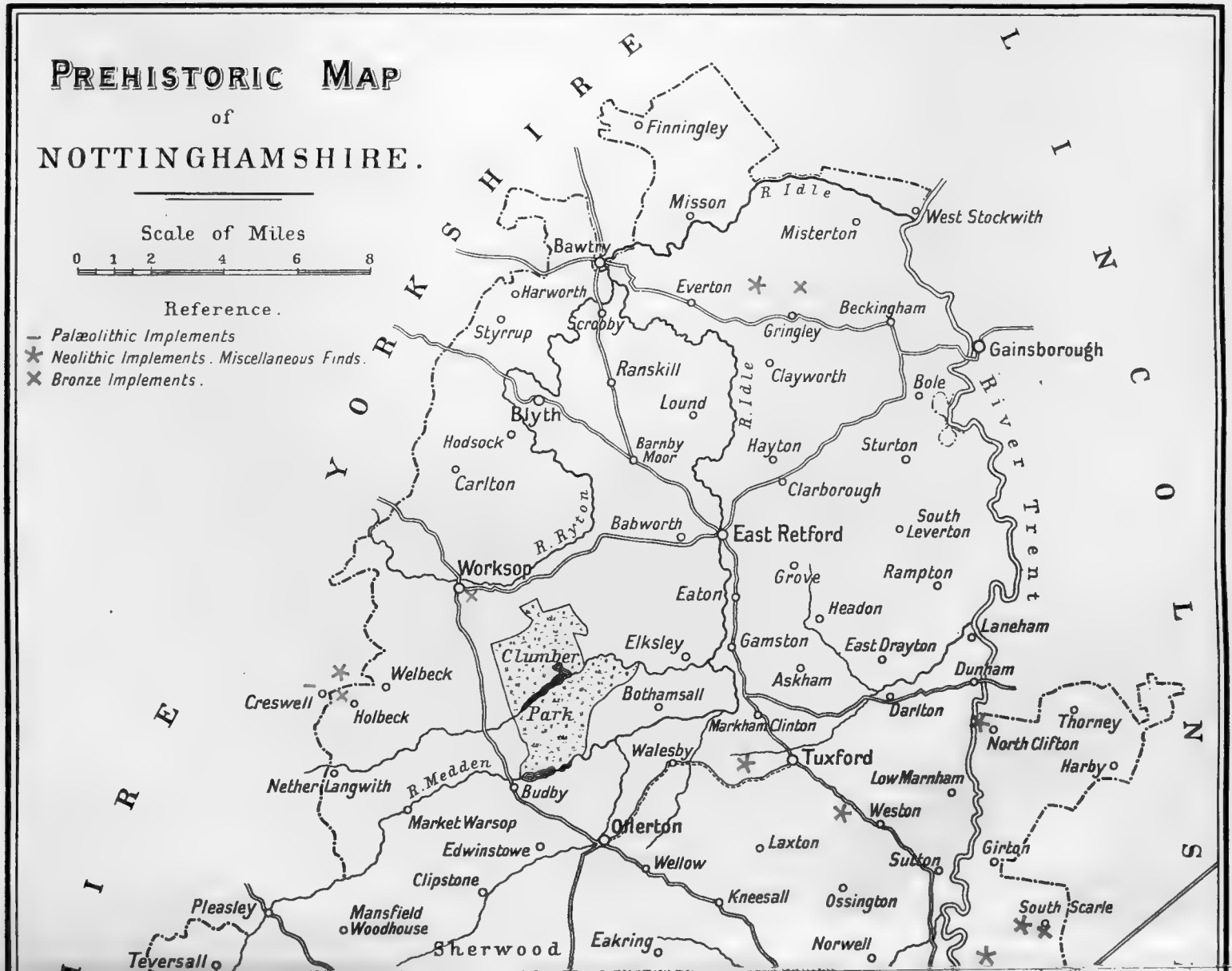
In the *Zoologist* for May, 1904, Mr. J. Whitaker records a specimen captured at Rainworth Lodge near Mansfield during the previous month. It was brought into the house by a cat, and had doubtless been captured in the grounds of the Lodge or in its immediate vicinity.

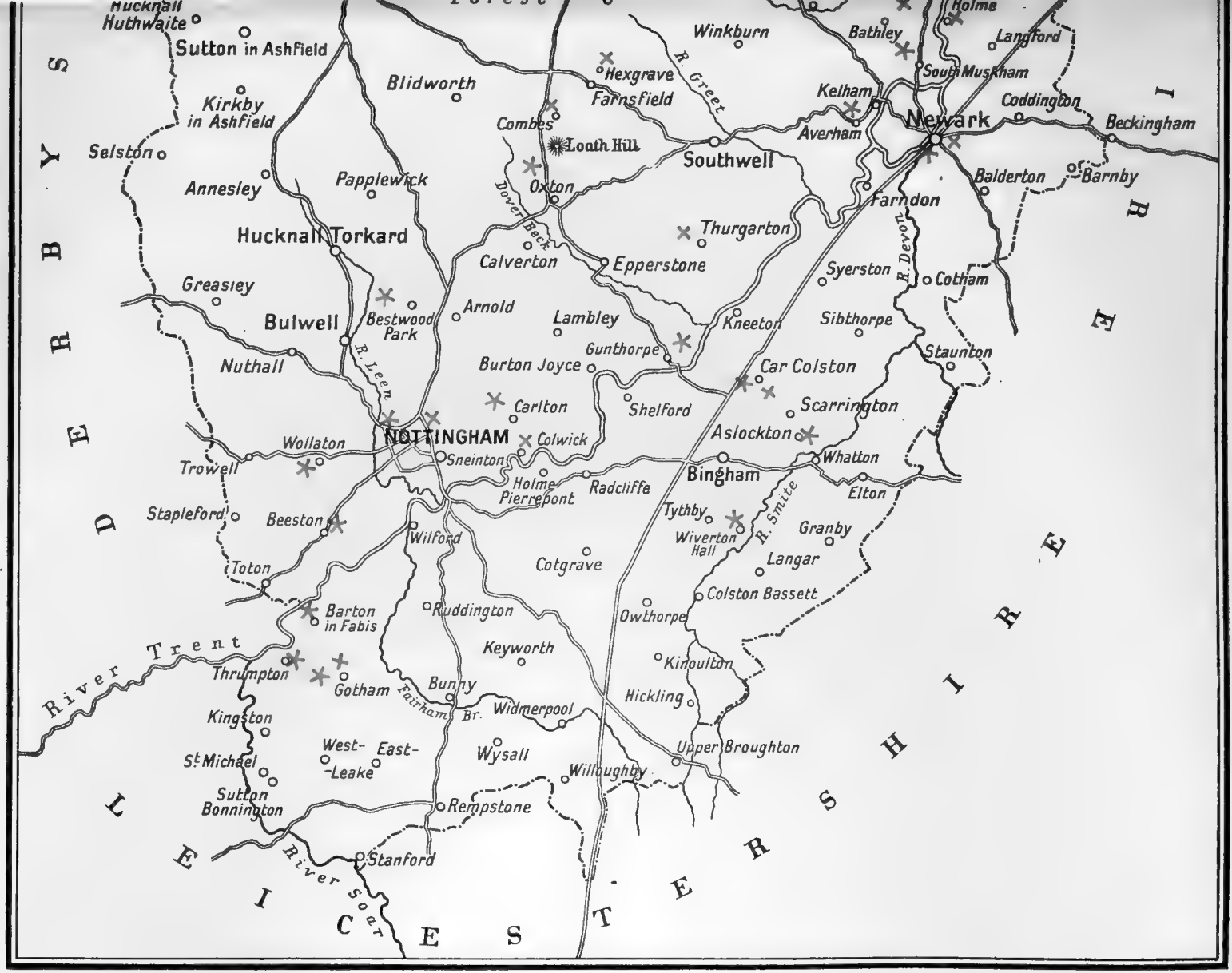
16. Badger. *Meles meles*, Linn.

Two killed in Nottinghamshire by the Earl of Harrington's hounds in September, 1904: one in Edwalton Top Cover, the other in Epperstone Park. Has been seen recently at Shireoaks and elsewhere near Worksop; while not long ago a litter of young badgers was found at Gringley-on-the-Hill.

17. Otter. *Lutra lutra*, Linn.

On 3 March, 1905, a very fine example was shot in the canal at Hickling. It measured 47 in. from nose to end of tail, the tail itself being 19 in. long. Now in the local collection in the Nottingham Natural History Museum. Mr. J. T. Houghton reports two recent occurrences in the Worksop district.


PREHISTORIC MAP
of
NOTTINGHAMSHIRE.
Scale of Miles
0 1 2 4 6 8
Reference.
— Palæolithic Implements
✱ Neolithic Implements. Miscellaneous Finds.
✕ Bronze Implements.
YORKSHIRE
LINCOLNSHIRE
Finningley
Misson
R Idle
West Stockwith
Misterton
Bawtry
Harworth
Everton
Beckingham
Styrrup
Scrooby
Gringley
Gainsborough
Ranskill
Clayworth
Bole
River Trent
Blyth
Lound
R. Idle
Hodsock
Barnby Moor
Hayton
Sturton
Carlton
Clarborough
R. Ryton
Babworth
East Retford
South Leverton
Worksop
Grove
Rampton
Eaton
Headon
Laneham
Clumber Park
Elksley
Gamston
East Drayton
Welbeck
Askham
Dunham
Creswell
Holbeck
Bothamsall
Darlton
Thorney
Markham Clinton
North Clifton
Walesby
Tuxford
Harby
Nether Langwith
R. Meadden
Budby
Low Marnham
Market Warsop
Ollerton
Weston
Edwinstowe
Laxton
Girton
Wellow
Sutton
Clipstone
Kneesall
Ossington
South Scarle
Pleasley
Mansfield Woodhouse
Sherwood
Eakring
Norwell
Teversall



Between pages 182, 183.

EARLY MAN

IT is proposed in this article to trace the history of man from his earliest appearance in the county to the moment when definite records begin.[1] For the performance of this task, we have to rely upon the tokens of his presence: here and there the skeletons of his dead, but more often implements and weapons of bone and stone and bronze, or again and more doubtfully the shaping of huge stones and of caverns. By a happy accident the stalagmites of the Creswell Caves have sealed up the successive deposits of human and animal remains. They thus furnish us with a rough calendar of the earliest times which, with the help of the geologist and palaeontologist, it is possible to decipher. There is yet another measure of the lapse of time. The anthropologist marks off the successive stages of advancing civilization, as man passes from the use of rough stone tools and weapons to polished stones, and again from stone to metal, first bronze, and then iron. It follows that our measure of time is very different from that of the historian who is helped by definite records. Instead of years we deal with geological periods and with ages of culture. We have to be satisfied with a bare register of succession: with saying that such and such objects come before, or at the same time with, or after, other objects. Moreover the stages of development overlap. Notably is this the case as man passes from the use of stone to the use of metals. The finest stone tools were wrought when man had already become familiar with the working of bronze. It will be convenient, however, to consider the stone implements together before we pass to the Bronze Age, although many of the stone implements belong to the Bronze Age. We begin with the Old Stone Age, or palaeolithic man: then we shall consider the New Stone Age or neolithic man: and lastly the Bronze Age, which will bring us to the coming of the Romans and the dawn of history.

The county of Nottingham is not rich in pre-historic remains, but possesses them in sufficient variety to illustrate the life of early man. Our poverty in this respect is somewhat exaggerated owing to the lack of local antiquarian research. No one, for example, has done for Nottinghamshire what Bateman did for Derbyshire, and every year removes some landmark or memorial of the past. Hence the following pages are an indication of work yet to be done, as well as an attempt to sum up the results which are already ascertained.[2]

[1] See index at the end of this article.

[2] I have to acknowledge gratefully the assistance which has been generously given me in preparing this description. The officers and many of the members of the Thoroton Society have taken great pains for me; my colleague, Prof. Carr, has also helped me much.

A HISTORY OF NOTTINGHAMSHIRE

The Palaeolithic Age

A line drawn from the Dee to the Humber seems to mark a limit beyond which palaeolithic man rarely passed. Scarcely any instances are recorded of palaeolithic implements being found even as far north as the now famous Creswell Caves. The Rev. J. M. Mello began the exploration of these caves in 1875 along with Professor Boyd Dawkins, and it was at once clear that the discoveries made there were very important for the early history of man.

The Creswell Crags line the two sides of a beautiful ravine which marks the boundary between the counties of Nottingham and Derby. The crags are of magnesian limestone. By the percolation of water along the joints of this rock, dissolving away its soluble constituents, passages have been slowly formed and gradually enlarged into caverns. Of these caverns the greater part are on the Derbyshire side of the ravine. But one of the chief of them, which is known as the Church Hole Cave, is upon the southern or Nottinghamshire side. On digging through the cave bottom, there were found the following strata of deposits: first a superficial layer at the entrance of the cave, lying upon the stalagmite; this contained remains of the late Bronze Age: second, stalagmitic breccia in places and beneath it an accumulation of earth and sand with clay; the implements found were of bone, antler, and flint: third and lowest was a layer of red sand which contained rough implements of quartzite. The animal remains which accompanied the implements in the two lower layers show that we have here relics of two successive occupations of palaeolithic man in the late Pleistocene Age.[1]

At the time of these occupations the great Ice Age was already a thing of the past. The ice cap was retreating northwards, although the scanty traces of human occupation seem to show that it still covered the northern part of the island, or rather, we should say, the northern part of what is now Great Britain. For the British Isles were not yet formed, so different was the distribution of land and sea from that of the present time. The coast of Europe extended westward beyond the furthest shores of Ireland, and northward beyond the Orkneys. The Thames was a mere tributary of the Rhine, which flowed northward into a gulf of which Norway marked the eastern side. This wild region was covered with forests of oak and pine, through which there rose snow-capped ridges having glaciers on their lower slopes. Here man contended with a mingled host of arctic and southern animals: on the one hand, the bear, mammoth, and reindeer; on the other, the lion, the hyena, and the woolly rhinoceros. For the bones of these animals are found in the caves of Creswell along with the traces of man's presence. The rough tools and weapons of the red sand show the extent of his skill in manufacture. His civilization was at least as advanced as that of the Tasmanians, who used similar weapons of stone when they came first into contact with European settlers.[2] As their experience increased and their skill developed,

[1] *Quart. Journ. Geol. Soc.* xxxiii, 602 f.

[2] E. B. Tylor, *Enc. Brit.* xxv, 466.

these palaeolithic men passed to the more carefully finished implements of flint and bone which were found at Creswell in the cave earth. Doubtless they were akin to the race of men who, in the same age, hunted the reindeer and the horse in Switzerland and the south of France.

The diagram[1] (see p. 191) will show the conditions under which the discoveries were made in the Church Hole Cave. While the red sand only furnished rough quartzite tools, the cave earth above yielded objects of bone, antler, and flint. These included (*a*) a well-shaped needle, absolutely perfect, made out of the metacarpal or metatarsal bone of a ruminant, (*b*) two bone awls fashioned out of the tibiae of a hare and polished by long and continued use, (*c*) a broad fragment of bone rounded at the end and with its edges notched, (*d*) two carefully rounded rods made of antler, (*e*) various tools of flint and quartzite. The bone awls and needles suggest that the cave-men wore skin clothing like that of the modern Australians and Fuegians, or like the pre-historic inhabitants of Egypt described by Professor Flinders Petrie.

The county is rich in caves other than those of Creswell. There are some at Mansfield which have been used for dwellings up to now; and the city of Nottingham and its immediate neighbourhood are honeycombed with hollows and openings in the rock. These have not been explored systematically, but as far as may be learned there is nothing to connect them with palaeolithic man. It will be most convenient to consider them at the end of this article.

The Neolithic Age

A long interval of time elapsed between the Palaeolithic Age and the appearance of neolithic man. England no longer formed part of the European continent, but was separated from it by the English Channel. The abruptness of the transition from the Old Stone Age to the New Stone Age suggests that some great cataclysm must have taken place by which in England at least palaeolithic man was swept away, or driven out before the arrival of his successor. The new comers were acquainted with many of the arts upon which developed civilization was to rest. They were not only hunters, but fishermen and miners. They had begun to cultivate the earth, and to breed domestic cattle. They had even begun to make pottery. And towards the end of this period they had learned to shape huge stones into monuments of the dead, and perhaps temples for worship. Recent excavation seems to show that Stonehenge itself marks the close of the New Stone Age. If we may compare palaeolithic man to backward races, such as the Eskimo in the north, or the bushmen of Africa, neolithic man is not only illustrated by, but is actually represented by, the Iberians who inhabited these islands before the arrival of the Celt, and whose descendants are still distinguishable in the populations of the western coasts of Europe, notably in the Basques of the Spanish peninsula. For it is more than probable that the dark-skinned type of

[1] Fig. 1, from *Quart. Journ. Geol. Soc.* xxxiii, opp. p. 588. By kind permission of Rev. J. M. Mello.

man which is more prevalent towards the west both of England and Ireland, or in other words the Iberian inhabitants of these isles, are descended from the neolithic men. The fusion of types in the county is almost complete, but there are still visible traces of the darker race. Hence we may be permitted to see in the scanty neolithic remains of the county a legacy from the remote forefathers of some of the present inhabitants.

The advance that we have already traced in the manufacture of his tools by palaeolithic man was continued in the period which we are now considering. The roughly sharpened flakes of flint which were found at Creswell are succeeded by well-wrought arrow-heads and knives. No sure line can be drawn between the late Stone Age and the age of bronze. And, indeed, most of the finer stone implements of the county have been found in the neighbourhood of Celtic burial grounds, and in conjunction with bronze objects.

The more important neolithic implements found in Nottinghamshire include chipped flint arrow-heads found at Gunthorpe; and ground or polished flint celts from Averham, Car Colston, Carlton, and Nottingham. At Bestwood, North Clifton, Scarthing Moor, and Wiverton neolithic implements have also been found.

The fluted and perforated axe-head found at the Sand Hills, Wollaton, and the fragment of another perforated axe-head, including its cutting end found at Beeston, are both probably more nearly related to the age of bronze than that of stone. The same may be said of the specimen of holed axe-head dredged from the bed of the Trent near Barton and the holed stone hammer-head from Thrumpton.

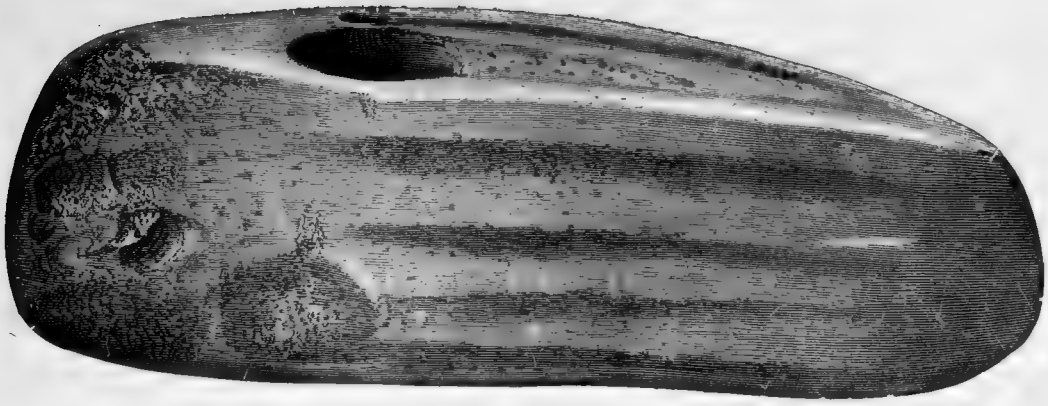
Some human remains were found at South Muskham along with rough fragments of earthenware and reindeer bones. These belong probably to a time preceding the coming of the Celtic invaders, that is to the age which we are now considering. But when stone objects are found along with bronze objects, we have already passed into another stage of civilization. For example, Bateman found a flint spear-head along with articles of bronze at Gotham.[1] And the 'well-finished celt of polished stone' which was found at Collingham in 1867 seems to have belonged to a British burial ground.[2]

There are one or two striking natural objects in the county which may be associated with some reason with the close of the Stone Age. This time was characterized, as we have seen, by the erection or use of huge stones, and reached its culmination in Stonehenge. There is some reason to think that the Hemlock Stone on Stapleford Hill, and the Druid Stones of Blidworth, were centres of religious interest even in neolithic times.

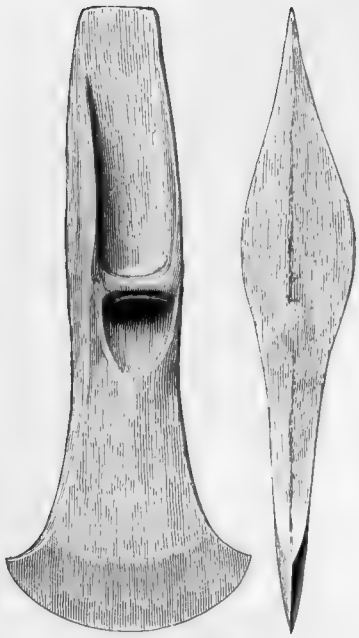
The Hemlock Stone is a pillar of sandstone which, owing to the insoluble nature of the cementing material, barium sulphate, has resisted the weather to a greater degree than the surrounding rock, and so has, by degrees, been left standing out amid the slow decay of the rest

[1] *Vestiges*, 104.

[2] Wake, *Collingham*, 43.

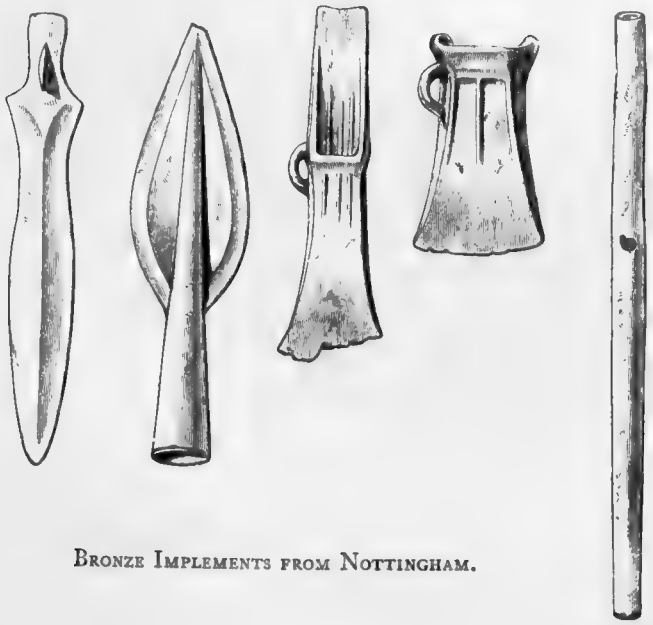


Perforated Axe-Head from Wollaton.



Winged Celt from Colwick.

Bronze Socketed Spear-Head from Gringley.



Bronze Implements from Nottingham.

To face page 186.

of the hill-side.[1] The rock itself reveals no trace of human handiwork ; but long standing custom seems to connect the Hemlock Stone with those ancient days in which the miracle of fire was still celebrated. The use of lighting the sacred fire seems to have continued down to the beginning of the nineteenth century. This lighting took place on Beltane eve each year upon the top of the Hemlock Stone, according to Dr. Timothy Spencer Hall, and old people in his young days could remember and describe the celebration.[2]

At Blidworth in a hollow to the west of the village are some masses of Bunter conglomerate, which stand out above the level of the fields. They remind us of the Hemlock Stone, and like it, are connected by tradition with the pre-Roman past, under the name of Druid Stones. The largest of them rests upon a knob of rock which juts a little above the soil ; it has been hollowed from the western side for a distance of about six feet into the interior of the mass. The hollow is pierced through at the back in such a way that, it is said, the aperture exactly faces the sun on the morning of Midsummer Day. Thus we are again pointed, as in the Beltane usage on Stapleford Hill, to rites in which reverence for the sun played a leading part. The hole through the largest mass at Blidworth is to be compared with the numerous holed stones which have been recorded in many quarters. And doubtless the men who hollowed out the western side of Blidworth Stone made a practice of passing either human beings or their possessions through the narrow opening at the back, but with what purpose it is now impossible to say.[3]

The Bronze Age

The use of metals was brought to these islands by the advanced guard of the great Indo-European invasion, which, spreading from the east of the European continent, pressed westward and southward, driving before it the men who were already settled. The Celts, with their weapons of bronze, expelled or subdued to themselves the darker neolithic inhabitants of England, leaving them to take refuge in the extreme west, in Cornwall, Cumberland, and Wales. Compared with their enemies, the Celts were fair-haired, ruddy and tall, differing very little from the Germans and Anglo-Saxons. Huxley indeed affirms that the people termed Gauls, and those called Germans by the Romans, did not differ in any important character.[4] It is impossible to say with anything like precision by how long an interval the coming of the Celts preceded the Christian era. Probably it was by a period of not less than a thousand years. Since the Celts formed one of the earliest offshoots from the Aryan stock, they displayed a more primitive form of constitution than their brethren who emigrated at a later period. Each tribe, or rather each local settlement, formed a political unit which was very

[1] This is the opinion of Prof. J. W. Carr.
[2] *Old Nottinghamshire*, ed. by J. P. Briscoe, p. 51 ; *Notts. and Derb. Notes and Queries*, i, 76, 100.
[3] Baring-Gould, *Strange Survivals*, 268 ; *Notts. and Derb. Notes and Queries*, ii, 116 ; iii, 88.
[4] *Man's Place in Nature*, 257.

loosely connected with the other similar tribes or settlements. For example, the settlement upon the rising ground which surrounds St. Mary's Church at Nottingham would not be very closely bound to the neighbouring settlement upon Calverton Hill.[1] On the other hand the tie which united the inhabitants of any single village was very close, most of the land being held in common by the whole community. Hence it is that the civilization of the Celts exhibits such a curious mixture of what is primitive, and what is highly developed. They lacked what the Romans enjoyed through their stricter national organization. But, on the other hand, the very intensity of the clan life of the Celts furnished more frequent exercise for the inspiration of their poets and artists. The Celtic love of music is symbolized for us in the harp-shaped brooch which was found at Creswell. Their power of design may be more doubtfully traced in the mouldings of the bronze objects which we shall now have to enumerate.

We have followed the development of stone implements from the rude quartzite lumps which were found in the lowest stratum at Creswell, to the finely finished tools which were still used in the Bronze Age. We pursue a similar line of advance as we come first upon the flat bronze adze or axe which is a copy in metal of the most elaborate stone weapons; secondly, upon the palstave, consisting of a long axe-shaped piece of bronze, with flanged edges in order to grip the wooden handle, the handle being split to receive the palstave. In the third stage the celt was made hollow so as to receive the end of the wooden handle entire, and was often furnished with a loop through which a thong was passed, in order the better to secure the handle to the head. In the Castle Museum, Nottingham, is a transitional form, a looped palstave.

We will now consider in order the discoveries of bronze objects which have taken place within the county :—

A hoard of bronze objects of a most important character was discovered in the course of some building operations at Great Freeman Street, Nottingham, in 1860. The objects, which were exhibited at a meeting of the Society of Antiquaries of London[2] on 21 February, 1861, by Mr. Thomas Close, F.S.A., comprised : sixteen socketed and looped celts, one palstave, four socketed spear-heads, one knife with flat tang, six fragments of swords, one long ferrule 9½ inches long, a fragment of a quadrangular tube, and what was described as 'part of a circular ornament.' The accumulation of a number of perfect and imperfect articles of bronze in one spot is of great interest. All the fragments were found quite close together buried in the sandy soil at a depth of 3 ft. 6 in. from the surface. These were evidently buried in the earth for safety, and they doubtless represent the hoard, possibly all the wealth, of some individual who knew the commercial value of bronze.

The fragments of swords are suggestive. There are many instances on record of the discovery of several short sections of bronze swords which have apparently been broken up purposely into convenient lengths for

[1] Wright, *Celt. Rom. and Sax.* 112.

[2] *Proc. Soc. Antiq. Lond.* 2nd Ser. vol. i, pp. 332–333.

re-casting or for secret burial in the earth. The weapon having been worn out by use, or damaged beyond repair, became of no use except for melting up and re-casting. The presence of socketed and looped celts and socketed spear-heads, as well as the ferrule, indicates a fairly late stage in the Bronze Age. The ornamental character of the palstave and celts points to the same conclusion. Some of the objects found in this hoard are now in the museum at Nottingham Castle, others are in the Nottingham Natural History Museum, and others are in private possession.

Another interesting hoard of Bronze Age antiquities was found some years ago at Newark and passed into the fine collection of Canon Greenwell. They comprise: (1) two bronze discs 5¼ inches in diameter, pierced with a hole in the centre, with a raised rib round their margins, and with a cone-like rising or projection in the middle; (2) socketed celts; and (3) a broad socketed spear-head.

Several objects were found in Nottingham during the excavations for the Theatre Royal, including, I am told, a bronze celt, a bronze spear-head, and a sword-blade of iron.[1] Three spear-heads are said to have been dug up in Nottingham when the workmen were excavating for the Grantham Canal.[2]

Sir John Evans possesses a fine winged celt found in the gravel of the Trent at Colwick, near Nottingham. Immediately below the stop, the blade is fluted, and the bottom of the fluting tapers somewhat in the contrary direction to the tapering of the blade.[3] It is a singularly handsome and effective implement.

Another fine bronze object found in this county was the socketed and fluted spear-head discovered in 1803 in the course of some drainage works at Gringley. A drawing of the spear-head, exhibited at a meeting of the Society of Antiquarians of London on 9 January, 1806, has been engraved and published in *Archæologia*, vol. xvi, Plate LIV, fig. 1.

The small bronze pin found at Gotham in association possibly with an interment, and accompanied by a neatly chipped spear-head of flint, furnishes an interesting illustration of that overlapping of stone and metal tools or weapons of which prehistoric archaeology affords many instances.

Some bronze objects seem to have been found with traces of cremation. For example, there were found at Combes near Southwell towards the end of the eighteenth century two socketed celts which when discovered appeared to be buried in a bed of ashes.[4] In 1836 workmen excavating along the Fosse Road, near Newark, found urns placed about 2 ft. to 2 ft. 6 in. from the surface, and with them a pair of scissors much oxidized, and pottery probably of British manufacture.[5] When Major Rooke opened the barrow near Oxton an urn of iron half full of ashes, a sword in its scabbard, and fifteen glass beads were found.[6]

Our history ends as it began with the Church Hole Cave of Creswell. The civilization of the Bronze Age came with the Celts and

[1] Information supplied by Mr. W. Rigby.
[2] Evans, *Bronze Imp.* 77.
[3] Cornelius Brown, *Annals of Newark*, 4.
[4] Orange, *Hist. of Nott.* i, 64.
[5] Dickinson, *Southwell*, 298.
[6] Throsby, *Thoroton* (1797), vol. ii, 176.

ended when they were conquered by the Saxons. The Britons, as they fled before the invaders, took refuge in hiding places and fastnesses, and for a passing moment occupied the caves which their neolithic predecessors had haunted. Some such company, perhaps, taking refuge in the ravine of Creswell, has left behind at the entrance to the Church Hole Cave the ashes of its fires and a few objects of use or ornament. Among them a bronze brooch in the form of a harp is especially noteworthy. There were also found 'a bone awl, a square polished bone like a die cut in half, ornamented with circles on all sides but one, numerous fragments of grey lathe-turned Romano-British ware, a fragment of a whetstone, a black flint strike-a-light.'[1]

If the above account is correct, these objects belong to the end of the British period, but it is possible that we are dealing with a burial place, such as those which line the Fosse Road out of Newark. The presence of the ashes, of human bones, of pottery, of personal ornaments, is, perhaps, more easily explained in this way than by supposing that the caves were occupied as dwellings.

The circular ornament upon the die is an interesting trace of a familiar Celtic decoration, and anticipates the favourite geometrical motive of the Irish illuminators of manuscripts.

The Caves of Nottinghamshire

Now that we have surveyed the course of prehistoric time as far as our somewhat scanty resources will permit, we can take up a problem which has much interested local antiquaries, namely, the age of the caves which are found at various places in the county. In addition to the caves of Creswell, there are some rock surfaces which have been hollowed out and used as dwellings in the neighbouring town of Mansfield. They are towards the top of the rise leading from the town in the direction of Southwell. The same sandstone formation presents in Nottingham and its neighbourhood an opportunity for numerous excavations. The northern escarpment of the Trent on both sides of the Castle Rock has been honeycombed with dwellings and hollows of various kinds.[2] Some of these caves are probably as old as Roman times, or even older; but the evidence for their antiquity is meagre, and in the end reduces itself to a passage in Asser, in which the historian gives the British name of Nottingham as Tignocobauc, and translates it 'dwellings of caves.'[3] But the Britons themselves dwelt by preference in hill settlements, and although it is believed by some that the Druids sometimes taught in caves, this was a special custom, and does not prove a common usage. In view of all this we cannot ascribe a very early origin to the excavations in the church cemetery at Nottingham.[4]

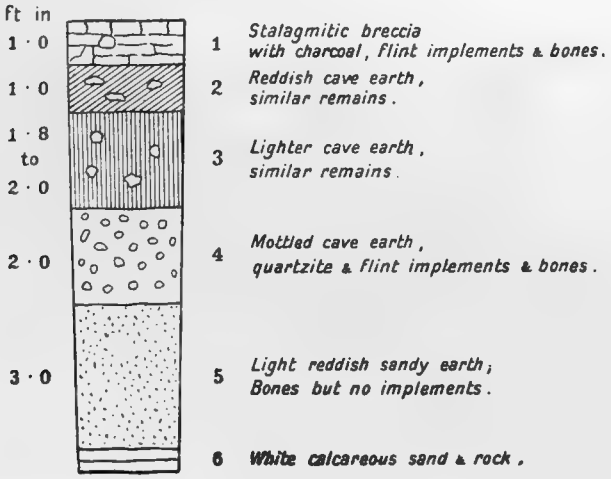
[1] *Quart. Journ. Geol. Soc.* xxxiii, 603 ff.
[2] *Trans. Thoroton Soc.* (1897), 37; *Notts. and Derb. Notes and Queries*, vi, 17, 35.
[3] Guest, *Origines Celticae*, i, 360; *Notts. and Derb. Notes and Queries*, ii, 87.
[4] Oliver, *Shadows Departed*, 13.

INDEX AND SUMMARY

Aslockton.—Stone hatchet : communicated by Rev. J. Standish.
Averham Flash.—Axe-head of polished flint : described by Mr. Blagg.
Barton.—Holed axe-head : Natural History Museum, Nottingham.
Beeston.—Cutting end of stone axe-head [Evans, *Stone Imp.* 210].
Bronze sword found in pond at Highfield ; Castle Museum, Nottingham.
Bestwood.—Neolithic implements : Castle Museum, Nottingham.
Car Colston.—Polished stone axe : Mr. T. M. Blagg's collection.
Bronze spear-head : described by Mr. Blagg.
Carlton.—Stone hatchet [*Notts. and Derb. Notes and Queries*, ii, 123] : Mr. Whitbread's collection.
Colwick.—Bronze palstave [Evans, *Bronze Imp.* 77].
Collingham.—Stone celt [Wake, *Collingham*, 43].
Combes.—Two bronze socketed celts [Dickinson, *Southwell*, 298].
Creswell.—Palaeolithic, neolithic, bronze implements : Museum, Owens College, Manchester ; Derby Museum [*Quart. Journ. Geol. Soc.* xxxiii, 602 f.].
Gotham.—Neolithic implement [Evans, *Bronze Imp.* 190] ; bronze pin [ibid.].
Gringley.—Bronze spear-head [Evans, *Bronze Imp.* 321 ; *Arch.* xvi, 361] ; stone implements in Dr. Appleby's collection, Newark.
Gunthorpe.—Flint arrow-head : Jewitt, *Engl. Antiq.* fig. 60.
Hexgrave.—Bronze celts [Stevenson, *Bygone Notts.* 42].
Holme.—Bronze celts : in Colonel E. H. Nicholson's possession.
Newark.—Bronze hoard [Evans, *Bronze Imp.* 118] : Greenwell collection.
Flint arrow-head : British Museum.
North Clifton.—Neolithic implement : Mr. C. Woolley's collection.
North Muskham.—Bronze celt : Castle Museum, Nottingham.
Nottingham.—Stone hatchet : Natural History Museum ; bronze hoard, p. 188 *ante* [Evans, *Bronze Imp.* 118].
Oxton.—British burial place, p. 189 *ante*
Scarthing Moor.—Neolithic implement : recorded by Rev. A. Hunt, Welton, Linc.
South Muskham.—Skull, rude earthenware vessels [*Geologist*, 1861, 349].
South Scarle.—Bronze celt, stone celt [Wake, *Collingham*, 43].
Thurgarton.—Bronze celt : recorded by Rev. A. Hunt, Welton, Linc.
Thrumpton.—Holed stone hammer-head : Mr. Whitbread's collection.
Tuxford.—Neolithic arrow-heads and celts [Evans, *Stone Imp.* 316].
Wiverton.—Flint implement : Wiverton Hall.
Wollaton Park.—Neolithic implement [Evans, *Stone Imp.* 202].
Worksop.—Bronze celt : Osberton Hall.

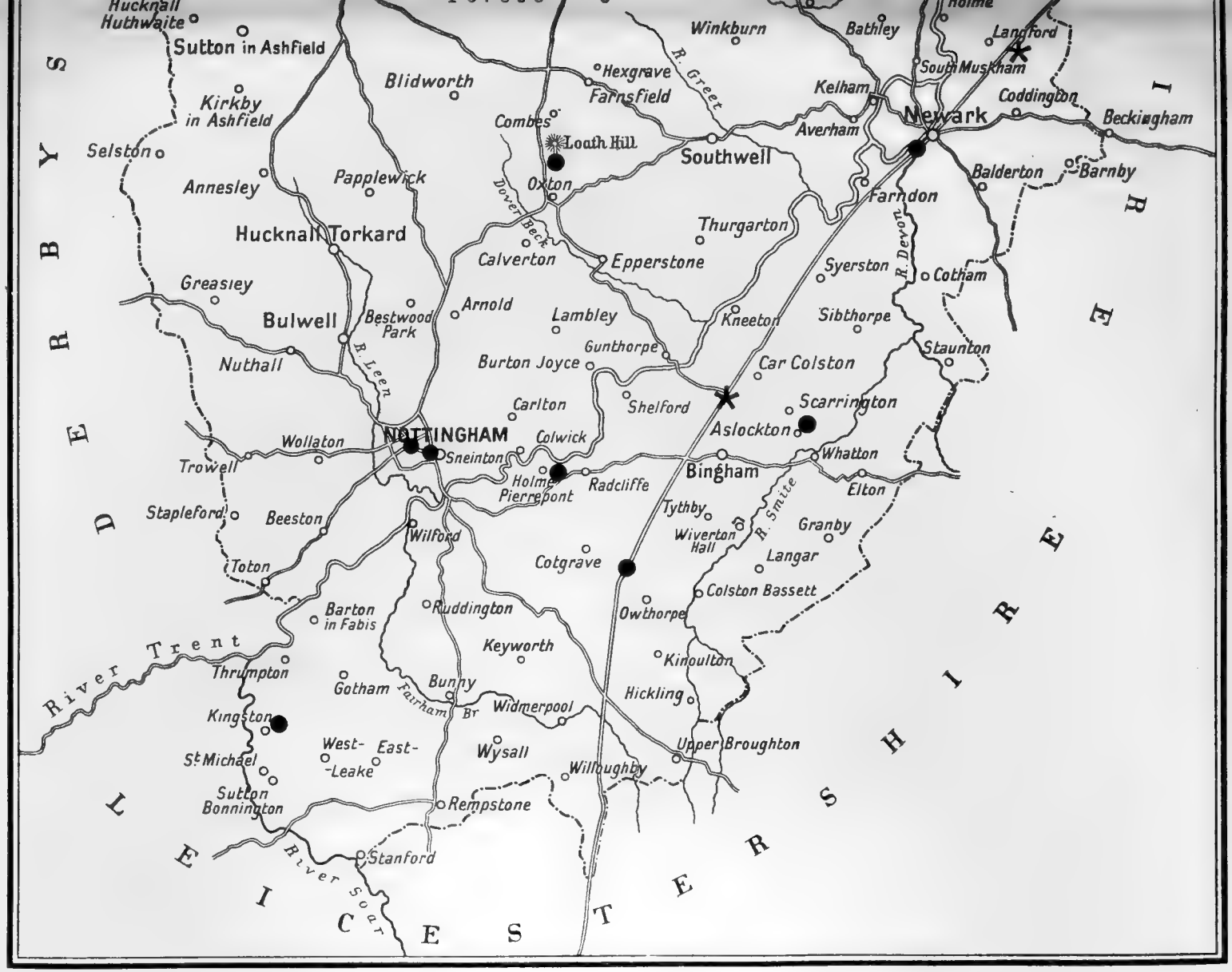
Section of Church Hole Cave.

(31 feet from Gate at entrance.)



Creswell Caves.


ANGLO-SAXON MAP
of
NOTTINGHAMSHIRE.
Scale of Miles.
0 1 2 4 6 8
Reference.
Interments.
Miscellaneous Finds.
YORKSHIRE
LINCOLNSHIRE
IRELAND
Finningley
Misson
R Idle
West Stockwith
Misterton
Bawtry
Harworth
Everton
Beckingham
Styrrup
Scrooby
Gringley
Gainsborough
Ranskill
Clayworth
Bole
Lound
Blyth
R Idle
River Trent
Hodsock
Barnby Moor
Hayton
Sturton
Carlton
Clarborough
R Ryton
Babworth
East Retford
South Leverton
Worksop
Grove
Rampton
Eaton
Headon
Laneham
Elksley
Gamston
East Drayton
Clumber Park
Welbeck
Askham
Dunham
Creswell
Holbeck
Bothamsall
Darlton
Markham Clinton
Thorney
North Clifton
Walesby
Tuxford
Harby
Nether Langwith
R Meaden
Budby
Low Marnham
Market Warsop
Ollerton
Weston
Edwinstowe
Laxton
Girton
Wellow
Sutton
Clipstone
Kneesall
Ossington
South Scarle
Pleasley
Mansfield Woodhouse
Sherwood
Eakring
Norwell
Teversall


Hucknall Huthwaite
Sutton in Ashfield
Kirkby in Ashfield
Selston
Annesley
Papplewick
Blidworth
Hucknall Torkard
Greasley
Bulwell
Bestwood Park
Nuthall
R. Leen
Arnold
Calverton
Dover Beck
Combes
Loath Hill
Oxton
Hexgrave
Farnsfield
R. Greet
Winkburn
Southwell
Bathley
Landford
South Muskham
Kelham
Newark
Coddington
Beckingham
Averham
Balderton
Barnby
Farndon
Thurgarton
Epperstone
Lambley
Gunthorpe
Burton Joyce
Carlton
Shelford
Kneeton
Sibthorpe
Syerston
R. Devon
Cotham
Staunton
Car Colston
Scarrington
Aslockton
Whatton
Elton
Bingham
Radcliffe
Holme Pierrepont
Colwick
Sneinton
NOTTINGHAM
Wollaton
Trowell
Stapleford
Beeston
Toton
Wilford
Tythby
Wiverton Hall
R. Smite
Granby
Langar
Colston Bassett
Cotgrave
Owthorpe
Barton in Fabis
Ruddington
Keyworth
Kinoulton
Hickling
Upper Broughton
Willoughby
Wysall
Widmerpool
Bunny
Gotham
Fairham Br
Thrumpton
Kingston
St Michael
West-Leake
East-Leake
Sutton Bonnington
Rempstone
Stanford
River Trent
River Soar
DERBYSHIRE
LEICESTERSHIRE

ANGLO-SAXON REMAINS

OUR knowledge of the founders of England must to a great extent be derived from their funeral customs and the array of objects deposited in their graves. Apart from traditions of the pagan period, which cannot be implicitly trusted, there are indeed other sources of information not yet exhausted by scientific inquiry; and it will suffice to mention two in the field of philology. In Nottinghamshire and the neighbouring counties place-names are of special significance; and the classical instance of North-weorthig, which ranked among the Five Boroughs under the name of Derby, indicates precisely enough the period during which the suffix *-by* replaced the English *-ham* or *-ton* (*tun*) in certain parts of the country. It is, however, with still earlier centuries that the present chapter deals, the centuries that elapsed between the Roman domination and the conversion of England to Christianity; and for this period we can appeal with still less confidence to another set of survivals, the dialectical varieties that may still be plainly distinguished in many districts. In the nature of things documentary evidence is here most inadequate, for only in recent times have measures been taken to distinguish intonations by an elaborate system of symbols, and year by year the material for such inquiries is diminishing. The prospect for archaeology is more encouraging. Though little has yet been done to classify or even to record in detail relics recovered from the soil, it is incontestable that much remains to be found, and there is every likelihood of more scrupulous and intelligent excavation and treatment of antiquities in the future.

An attempt to present the history of Nottinghamshire before documentary records were contemplated can, in the present circumstances, result in little more than a summary of the few discoveries available; but even thus some data may be rescued from oblivion, and the interest of chance finds more fully appreciated. A glance at the map will reveal the most striking physical features of the county, and at once account for the restriction of early Anglo-Saxon sites to its southern and eastern areas. An instructive comparison may be instituted with Sussex, where the longer axis similarly divides what was once a desolate forest from the fertile region that attracted the earliest settlers. The Sussex Weald corresponds to Sherwood Forest that occupied nearly all the western half of Nottinghamshire; and in both cases the forest area is shown by the Domesday record to have been still uninhabited at least six centuries after the Teutonic invasions. The villa at Mansfield Woodhouse on the further

side, however, suggests that Sherwood did not baffle the Romans, who also drove a road (Stane Street) through the Weald of Sussex.

At present it is impossible to bring forward conclusive evidence as to the course followed by the earliest Teutonic immigrants into this district; but the view put forward by John Richard Green has everything in its favour. A glance at his series of maps will explain, and in many cases substantiate his statements, though here and there imagination may too readily fill the void left by archaeology. If by the Engle (Angles) be understood the tribe or tribes that at the date of their arrival, and for some time longer, practised cremation and urn-burial, little exception can be taken to his contention that 'their main settlement along the lower Trent (in what is now the county of Nottingham) must have been in the little dales that break the picturesque wold country that lies to the south (or east) of the river, and through which they pushed along its course as far as its junction with the Soar.'[1] The map showing Anglo-Saxon sites at the head of this chapter fully warrants this view, and physical reasons for such distribution are not far to seek. 'The forest of Sherwood stretched from the outskirts of our Nottingham' northward within a short distance of Southwell 'to a huge swamp into which the Trent widened as it reached the Humber. Here, indeed, a thin line of clay-country remained open on the left bank of the river, with lifts of soft sandstone here and there; and on the slopes of one of these the house of the Snotingas fixed their home.'[2]

The finds at Oxton and Tuxford, both of which may belong to the sixth century, represent therefore in all probability the western limit of the earliest Teutonic settlement of the lower Trent valley; and the question arises, Whence came these strangers from over-sea? The answer must depend on the final interpretation of their diverse funeral customs, of which the traces are evident; and the first step is to correlate the archaeological data in this and neighbouring areas. Of the latter only those now known as Lincolnshire, Derbyshire, and Leicestershire are of importance, as forest and swamp completed the circuit; and it may be said at once that there seems to have been, in the period now under discussion, an archaeological frontier[3] coinciding roughly with the upper courses of the Warwickshire Avon and Welland. North of this line there is a marked absence of a certain type of brooch that is characteristic of the southern midlands, an area that in its turn is practically devoid of the large square-headed variety represented by two examples in Nottinghamshire itself.

As is generally the case north of the Thames, groups of burials with or without cremation of the body have been discovered in the county; and it must be confessed at the outset that this discrepancy with regard to a ceremony usually controlled by a rigid tradition, is at present unexplained. It is true that in the Trent valley there is but little evidence of a mixed cemetery in which burnt and unburnt burials occur side by

[1] *Making of England* (1897), vol. i, p. 88.
[2] Ibid. pp. 85, 88.
[3] *V.C.H. Warw.* i, 256: *Bucks*, i, 196.

side, as for instance in Cambridgeshire ; and there is little to show whether inhumation was for a time abolished in favour of cremation, or whether the two rites were practised by contemporaries of different tribal affinities in settlements distinct but not far removed from one another. It should be remembered in this connexion that among the Romans or Romanized provincials of Britain, cremation of the dead seems to have passed out of fashion about the middle of the third century of our era, more than half a century before the state recognition of Christianity under Constantine ; so that it would be unwise to regard the Teutonic cinerary urns of Nottinghamshire as the successors of the Roman mortuary-ware that attained a high standard of quality. Comparison with continental discoveries justifies the attribution of these rude hand-made urns to immigrants who came from the country bordering the lower Elbe, or were at least akin to the tribes who settled in what are to-day Schleswig-Holstein and Hanover.

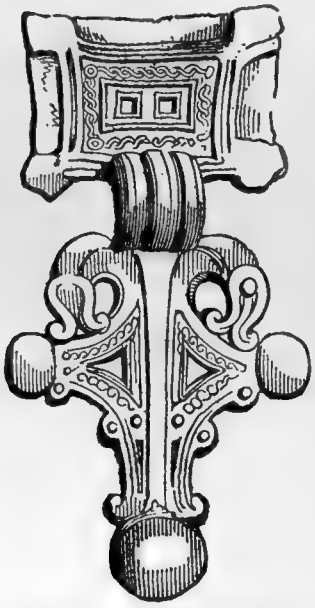
There is in this county some slight indication that burials of the unburnt body, that must still on account of their grave furniture be referred to the pagan period, preserve the Roman tradition. They may be those of the population that was left to its own resources by the withdrawal of the Roman troops and officials about the year 410 ; and, leaving the cinerary urns for separate treatment, we may at once proceed to an examination of a burial-ground that was evidently in use during the fifth century.

URN FROM HOLME PIERREPONT.

A cemetery at Holme Pierrepont, three miles east of Nottingham, was accidentally discovered by labourers in 1842; but though various articles are described and illustrated in the original account,[1] nothing is said as to the interments. It may, however, be concluded from the condition of the relics found 2 ft. below the surface, that the burials were not by way of cremation, and the skeletons had, perhaps, gone to decay, though one urn is mentioned that may have contained calcined bones. As remnants of the Roman civilization, may be mentioned part of a thin yellow glass bowl, about six inches in diameter, with a raised inscription of which the word *Semper* alone remains above a bird. Another drawing represents a brooch in the form of a spotted animal that has a decidedly Roman appearance. Though details were wanting, it was said that all varieties of weapons and ornaments usually found in Saxon cemeteries were here discovered in profusion. Two more urns are mentioned, and one is illustrated ; but as they are described as smaller than the first, there is nothing to show that they were cinerary, though they were classed as such in 1858.[2] A quern about one foot in diameter, with part of the iron spindle remaining, on which revolved an upper stone of bee-hive form, may be compared with similar discoveries in graves at Winster, Hartington, and Taddington in Derbyshire, and at Reading, Berkshire.

[1] *Journ. Brit. Arch. Assoc.* iii, 297 ; see also *Coll. Antiq.* ii, 228. [2] W. M. Wylie, *Arch.* xxxvii, 471.

With the exception already noticed, the brooches were of well-known Anglo-Saxon types, a gilt example of the square-headed variety, about 4½ in. long, being illustrated (see fig.), and resembling specimens from the northern midlands and eastern counties. As it appears to have been enriched with seven settings of stone or glass, the resemblance to one found at St. Nicholas, near Warwick,[1] is all the more striking. This form of the square-headed brooch belongs to the first half of the fifth century here and in Scandinavia, and closely resembles one from Kenninghall, Norfolk.[2] From among many smaller brooches discovered at Holme Pierrepont one with a trefoil head is illustrated (see fig.), and belongs to a type represented in Northants.[3] All were of bronze, with iron pins, and present evident traces of a woven fabric on the back, indicating that they had been deposited with an unburnt body in the grave. The buckles mentioned were probably quoit-shaped brooches such as have been found in many parts of England. Numerous glass beads of various forms and colours, as well as one or two of rough amber, are mentioned, and two larger ones had the somewhat rare mosaic pattern, made in the same way as the millefiori glass of the Roman period.



Bronze-Gilt Brooch from Holme Pierrepont.

Some pieces of bronze that had apparently been riveted to the sides of small bronze buckets for the attachment of handles were another interesting item, as they probably belonged to a bowl with three hooks for suspension, such as were found at Chesterton, Warwickshire.[4] Circular enamelled plates are sometimes found which were attached to the side of the bowl inside a frame of which the hook formed part; but as there is no mention of enamel here, the present example may have resembled one from Hawnby, N. R. Yorkshire, in the British Museum, which has plain attachments.

Bronze Brooch from Holme Pierrepont. (½)

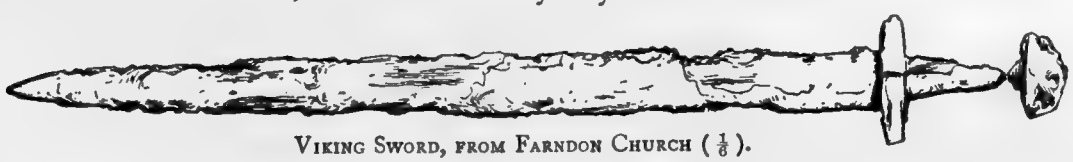
In 1839 a discovery of human burials was made in the neighbourhood of Cotgrave and Normanton, immediately on the line of the Roman road known as the Fosse Way, at a point about nineteen miles from Leicester and about thirty from Lincoln. The following account was communicated to the British Archaeological Association[5] by Mr. Thomas Bateman some years later. Three skeletons were found within a hundred yards, and a fourth about a quarter of a mile distant. They were interred at full length in the line of the road (which here

[1] *V. C. H. Warw.* i, 258, fig. 6 on plate: Akerman, *Pag. Sax.* xx, 1.
[2] *V. C. H. Norfolk*, i, 340, fig. 5.
[3] *V. C. H. Northants*, i, 243.
[4] *V. C. H. Warw.* i, 258, figs. 8, 9, on plate.
[5] *Journ.* iii, 297.

runs nearly north and south), and the graves had been cut through the gravel and rubbish of which the road was made to the rock which lies about two feet below the present surface. The workmen who made the discovery agreed in stating that two spears were deposited with each body; these varied in length from eight to sixteen inches, and were composed as usual of iron. It is probable that other remains, such as shield-bosses and handles, escaped observation, but a 'third-brass' coin of Carausius (286–293) was found which serves to date the burials at any rate in one direction. It is hardly possible that interments in the centre of the highway were permitted in Roman times, and it is therefore reasonable to refer these and another group found in the middle of the Watling Street, near Bensford Bridge,[1] to the fifth century, if not to the sixth of our era.

Another group of burials that cannot be dated in the same manner, but had evidently some relation to the same great highway, was discovered half a century ago at Norton, near Daventry, Northants.[2] A bank forty or fifty yards long and about three feet high ran parallel to, and just beyond, the Roman embankment, being about twenty-five feet from the crown of the road; and several bodies, buried in a line, were found about six feet below that level. A fine square-headed brooch[3] was found on a subsequent occasion when the bank was levelled to alter the course of the road.

In January, 1893, Mr. F. Pritchatt, while opening a new gravel-pit in the Barnfield, Aslockton, came upon the remains of a warrior, lying buried with his feet to the west, at a depth of 3½ ft. from the surface. A straight two-edged sword, with a blade 29 in. long and 2 in. wide, was found at the right of the body, pointing north-west, and a lance-head, with a blade of 3 in. and a socket ½ in. shorter, lay near the left foot. Other bones have been turned up on the site, and a bed of gravel was a favourite position for an Anglo-Saxon burial-ground; while it is pointed out in the original account[4] that the orientation was not in accordance with Christian usage. It may also be added that the reversed spear is of rare occurrence in graves of the period in England,[5] though apparently the rule among the Ripuarian Franks.[6] From measurements of some of the bones it is evident that the stature of the living subject was about five feet four inches, which is not by any means excessive for a warrior.



VIKING SWORD, FROM FARNDON CHURCH (⅛).

Another sword (see fig.), of the Viking pattern, was found during excavations below Farndon church, and was preserved in the vestry there.[7]

[1] *V. C. H. Warw.* i, 253.
[2] *V. C. H. Northants*, i, 234; see also 236 (Passenham).
[3] *Arch.* xli, pl. xxii, p. 479.
[4] *Scarrington and Aslockton Parish Magazine*, March, 1893: the relics are in the possession of Capt. Montagu Hall, of Whatton Manor, who kindly furnished the account. Reproduced in *Notts. and Derb. Notes and Queries*, 1893, p. 107; the skull is said to be brachycephalic, ibid. p. 122.
[5] Long Wittenham, Berks., with stoup bearing biblical scenes, *Arch.* xxxviii, 345.
[6] *Proc. Soc. Antiq. Lond.* iii, 34: for an example see Boulanger's *Mobilier funéraire Gallo-romain et Franc*, pl. 36.
[7] Cornelius Brown, *Hist. of Newark* (1904), i, 8.

Its total length is 33½ in., the guard being straight and the pommel proportionately heavy; but nothing of interest was found with it.

A somewhat disappointing discovery must here be noticed, as affording evidence of Anglo-Saxon burial just within the forest area of the county; and it is fortunate that the few antiquities discovered were illustrated at the time, for the description[1] leaves much to be desired. In 1790 Major Hayman Rooke reported to the Society of Antiquaries the results of his excavations in the previous year about a mile north of Oxton. The smallest of three grave-mounds (*tumuli*) within little more than half a mile measured 159 ft. in diameter, and consisted of very fine mould to the depth of 7½ ft., from the top to a little below the natural soil, where a layer of grey sand mixed with clay, about five inches thick, was met with. On this layer lay what was described as 'an urn (later found to be of iron) half full of ashes, and covered with a piece of coarse baked earth, which broke when taken up.' The engraving, rough as it is, proves this to have been a shield-boss of ordinary Anglo-Saxon type, and the ashes within it can have been nothing but the decayed remnants of the wooden framework of the shield, which appears to have been uppermost. On one side and at the bottom was a piece of wood adhering to the iron, and several small pieces were found near it which were hollowed out, and had evidently taken the curve of the boss; hence it was inferred that the boss had been deposited in the barrow in a wooden casing which had in time become fixed to the metal by oxidation. Near this was a sword in a wooden scabbard, 30 in. long and 4 in. broad, the breadth applying no doubt more to the scabbard than the sword, which should have measured about two inches from edge to edge. The sheathed sword broke into seven pieces on being lifted from the earth, and the total thickness where least decayed was above half an inch. 'Near the end of the sword fifteen glass beads were picked up, some green, others clouded with yellow, and some of a deep yellow.' The illustration of specimens shows these to have been not beads but discs, with one flat and one convex face, used apparently for gaming, as draughtsmen; and it is expressly stated that they were not perforated. Beads are an almost invariable mark of a female interment, and the occurrence of these discs with a sword perplexed the excavator; but later discoveries have made it clear that these draughtsmen were frequently placed in the graves of warriors, and it will suffice to mention a bone set of twenty-eight, with varying numbers of dots on the convex surface, found at Cold Eaton in the neighbouring county of Derby,[2] and specimens found with a die at Faversham, Kent.[3] Dice in association with glass and bone draughtsmen are also known from Scandinavia.[4]

The Oxton barrow further yielded some objects of iron which may to some extent be identified from the illustrations. An iron knife is

[1] *Arch.* x, 381, pl. xxxv; details of the site in ix, 201; *Journ. Brit. Arch. Assoc.* viii, 188.

[2] Jewitt, *Grave-mounds and their Contents*, p. 293, fig. 484.

[3] Roach Smith, *Collectanea Antiqua*, vi, 138 (made of horse-teeth); other bone specimens from Sarre, *Archaeologia Cantiana*, vi, 157; vii, 308.

[4] Sophus Müller, *Nordische Altertumskunde*. ii, 108 (Denmark); Rygh, *Norske Oldsager*, figs. 474, 475 (Taasen, Akershus, Norway).

almost invariably found in Anglo-Saxon inhumations, and was used at meals and for general purposes. A socketed cone of iron has the appearance of a spear-butt, though the head was not recovered ; and a strip of bronze binding may well have come from the edge of the shield. A piece of iron, that is better drawn in Thoroton's account,[1] was probably the handle of the sword or the shield, and 'the thin coat of smooth yellow rust upon it' would be, in that case, decayed wood, or possibly leather. There need be, therefore, little hesitation in classing this as an unburnt burial of the Anglo-Saxon period, though the mound may conceivably have been in existence some centuries previously, and contained Bronze Age interments of which no trace remained. Such was the case at Oldbury, near Atherstone, just within the northern boundary of Warwickshire. Here the barrow, at the time of exploration, was about twenty feet in diameter at the base, rising in the centre to a height of about fifteen feet ; but the Anglo-Saxon interment, marked by an iron spear-head and shield-boss, was found with human bones only 2 ft. from the surface, the usual depth at that period.[2] Many cases in Yorkshire show that the Teutonic invaders frequently availed themselves of grave-mounds that were then at least a thousand years old and formed a conspicuous feature of the landscape.

The bald statement that the brooch illustrated below (p. 203) was found in a garden at Tuxford in 1865 is of a kind too frequently met with in archaeological inquiry : it whets the curiosity and leaves it unsatisfied on many points that careful excavation or even a superficial examination of the site would have settled. Methods of precision, however, can hardly be expected in such chance discoveries, and it is a matter for congratulation that this interesting relic of antiquity was preserved at all. It recently passed into the hands of Sir John Evans, who exhibited it to the Society of Antiquaries,[3] and kindly allowed its reproduction in these pages.

Its outline is familiar enough, and evidently further than the Holme Pierrepont example from the prototype. Large square-headed specimens of this type are mostly found in the counties of Leicester and Northampton (five each), but four are also known from Cambridgeshire, and three each from Norfolk, Suffolk, and Yorkshire ; Nottinghamshire and Lincolnshire have each yielded two, so that the centre of distribution is thus fairly indicated ; but typical specimens occur sporadically further afield, and a very close analogy to the Tuxford example is presented by one from Sarre, on the highroad half-way between Canterbury and Ramsgate. The isolated occurrence of another almost identical with the latter at Herpes, Dépt. Charente, near the centre of the west coast of France, does not point to importation from that quarter, but rather the contrary; the prototype was evidently evolved in the north of the Continent, though specimens found in this country may well have been manufactured here on the traditional lines.

The side view shows a comparatively small bow and the position of the hinge and catch-plate for the pin at the back, but the most

[1] *Hist. of Notts.* ii, 176. [2] *V. C. H. Warw.* i, 267. [3] *Proceedings*, vol. xxi.

important feature is the disc attached to the front of the bow. A well-known pattern, common in the Baltic island of Gothland, is not truly parallel, being later in date and quite distinct as regards outline and ornamentation. Comparison is best made with unpublished brooches from Finningham and Ipswich, Suffolk, and a damaged example from Brooke, Norfolk, now in the British Museum. In spite of its appearance, the last was probably not burnt at the time of burial, as amber beads from the same site are quite intact; but it seems to have been intentionally damaged before interment, and only the square head and bow with its attached disc remain. The ornamentation on all four is similar, and the type was evidently well established in this country. Below the bow may be distinguished animal heads with open jaws, familiar in this position on such brooches in northern Europe from the opening of the fifth century; but the rest of the surface exhibits little that suggests animal forms of any kind. The three pear-shaped lobes and the two triangular patches near the centre of the foot owe their form and position to the existence of garnet settings on earlier and better examples of the type (as from Sarre and Herpes). The same may be said of the two small cones on the head (just above the junction with the bow), and of the lobes in the upper corners, between which is a row of spectacle-ornament that is generally derived from the human face, but is more probably a remote descendant of Roman arcading.

The inner band is divided into square panels, some of which enclose the eye of the characteristic animal of early Teutonic art, represented in the present instance merely by a dot with two or three curved lines beside it that may represent the neck of the animal.[1] A single reference will suffice for evidence of this derivation; and lastly, attention may be directed to the S-shaped engraving near the centre of the brooch-head, as well as the rope pattern of the central disc, both reminiscent of the scrolls so frequent in Roman work of the fourth century.[2]

Specimens with a disc on the bow, evidently belonging to the same parent stock, but differing in details, are published from all three Scandinavian countries, and a remarkable specimen with an almost triangular base was found at Bifrons, near Canterbury. Brooches of similar dimensions with a hole in the bow, evidently for affixing a disc by means of a rivet, are known from Bury St. Edmund's and Faversham, while a smaller example has been found in Kent.[3] It is fairly certain that all these belong to the northern area of Europe, as contrasted with Bohemia, Bavaria, and Switzerland, where early Teutonic antiquities of quite distinct character are frequently met with. It was along the latter route that the culture of the barbarians spread westward to Gaul and Britain, south of the Thames; while further north, in the midlands and East Anglia, the North German and Scandinavian element was predominant. Whether this fact explains the prevalence of cremation in the area indi-

[1] B. Salin, *Die altgermanische Thierornamentik*, p. 326.
[2] Ibid. pp. 170–2.
[3] *Arch.* xli, pl. xix, fig. 1 (Stowting)

cated has still to be decided, but the preceding pages show that cremation was not the invariable practice here during the fifth and sixth centuries.

An important discovery of cremated burials at Kingston on Soar in 1844 was communicated to the British Archaeological Association[1] by the Rev. J. S. Henslow, at that time Professor of Botany in the University of Cambridge. In the light of subsequent investigations it is no longer permissible to attribute these cinerary urns to the aboriginal Britons; they are undoubtedly of Anglian origin, of a dark-coloured clay mixed with fragments of felspar, and wrought by hand without the use of the lathe, while the firing was very imperfect. Many were ornamented with lines in various patterns, and some have in addition stamped devices probably executed by means of a stick or bone. They were found deposited on the slope and near the summit of a gentle eminence, about a quarter of a mile to the east of Kingston Church, and over a space of about half an acre. Workmen employed in trenching the ground for the shrubbery in the grounds of Kingston Hall, then in course of erection for the Rt. Hon. Edward Strutt (formerly M.P. for Derby, and afterwards Lord Belper), had turned up and completely destroyed about two hundred of them before it occurred to anyone that they were worthy of preservation. The owner subsequently had the soil removed from the remainder of the space occupied by the interments, and thus made it apparent that they had been arranged in lines or trenches either singly or in groups, several deposits being from four to six feet apart. As the field had been under the plough about sixty years previously, it is not surprising that there was no surface indication of the burials, or that all the urns had been more or less mutilated. About thirty of the deposits were carefully removed, and the fragments recovered were generally sufficient to indicate the size, shape, and decoration of the urns. It seemed probable that the mouth of each had been covered with a slab of sandstone, and it may thus be inferred that all had been buried in an upright position. With the exception of a small vase, which was empty, all contained human bones thoroughly calcined. In a few were also found glass beads fused in the funeral pyre, and in one some fragments of a bronze brooch, which is not described in detail; but no weapons or coins were found in or near the cemetery. The specimens figured in the original account furnish examples of most of the forms and decorative patterns known in this class of pottery, and vary in height from 10¾ to 6 in., the exception mentioned above being a cup 3½ in. high.

It was by the side of the Fosse Way that a number of cinerary urns were found near Mill Gate at Newark in 1836.[2] During excavations for the foundation of a house at the south-west end of the town, fifteen or sixteen specimens (see fig.) were recovered in fairly good condition, but three or four times as many were destroyed in digging. Subsequently a saw-pit was sunk, and about twenty more urns were found in an area of

[1] *Journ.* vol. ii, p. 60 (where the site is wrongly stated to be in Derb.), vol. viii, p. 189; *Arch. Journ.* iii, 158; and Roach Smith, *Collectanea Antiqua*, ii, 228, with plate of urns; Jewitt's *Reliquary*, vol. ix (1868–9), p. 6, and pl. ii.

[2] Roach Smith, *Collectanea Antiqua*, ii, 231; *Journ. Brit. Arch. Assoc.* iii, 194.

24 ft. by 4 ft. They appear to have been placed in regular quincunx order, and all were in an upright position about two feet from the surface. Each contained calcined bones, and in one alone were also found a pair of bronze tweezers, a pair of iron shears, and part of a bone comb. [1]

Before proceeding to mention certain discoveries of a later period we may conclude from the character and distribution of the antiquities already described that the Rhaetic beds of red marl attracted the earliest Teutonic settlers, who seem to have approached from the Lincolnshire side, and to have followed the Fosse Way and the Trent Valley. The former took them into Leicestershire, where antiquities of the period are somewhat more plentiful but of similar character; while the latter would draw them across what is now the county border into Derbyshire. In this connexion it should be noticed that early Anglo-Saxon sites in Derbyshire fall into two main groups; [2] the larger occupies the centre of the western half of the county between Buxton and Matlock, and is quite isolated from that in the southern angle, where the river valley

URN FROM NEWARK.

URN FROM NEWARK.

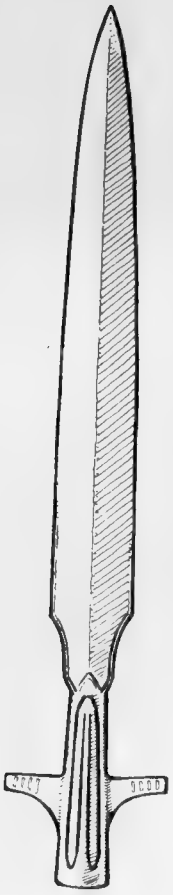
was the centre of attraction. The cemeteries of King's Newton, near Melbourne, and of Stapenhill,[3] near Burton, present many resemblances to those in the adjoining county. The former site is only seven miles from Kingston on Soar, and yielded a large number of cinerary urns of the same description as those from Kingston Hall grounds and from Newark, while the Stapenhill cemetery contained five burnt and thirty-one unburnt burials, the latter not strictly orientated. Elsewhere in Derbyshire different types of interment are not found intermingled, and the presence of many Roman objects recalls discoveries at Holme Pierrepont, where both rites may also have been practised. At present there is little to fix

[1] George Milner, *Cemetery Burial*, pp. 26, 27, figs. reproduced in *Journ. Brit. Arch. Assoc.* viii, pl. 27.

[2] Map in *V. C. H. Derbyshire*, i, 265; cf. pp. 272–5.

[3] Another variety of trefoil-headed brooch was found here: *Trans. Burton Arch. and Nat. Hist. Soc.* (1889), pl. vii.

Iron Sword from Nottingham ($\frac{1}{4}$).



Iron Spear-Head with Cross-Bar, London ($\frac{1}{4}$).

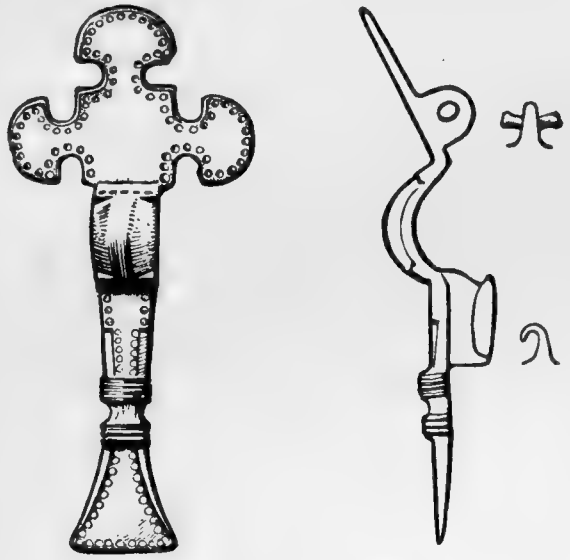
Bronze-Gilt Brooch from Tuxford (l. 6$\frac{5}{8}$ in.).

Iron Spear-Head from Nottingham ($\frac{1}{4}$).

Sword Pommel from Nottingham ($\frac{1}{2}$)

To face page 202.

the date of this advance up the Trent Valley, but both the Holme Pierrepont brooches illustrated evidently belong to the fifth century, and a wave of immigration about that time would account for the isolated occurrence of Anglo-Saxon brooches at two stations on the Fosse road. That illustrated by kind permission of Mr. T. Smith-Woolley was found at Brough (identified with Crocolana), and is essentially similar to the smaller Holme Pierrepont specimen, both having a trefoil head (see fig.) and faceted bow and foot, in the late Roman manner. The side view shows the ear and rivet for attaching the pin to the back of the head (which is accidentally bent) and the catch projecting from the upper part of the foot. A second specimen, of the same type but not so well preserved, is the only Anglo-Saxon relic as yet found at Castle Hill, between Car Colston and East Bridgford on the Roman road, the site being considered that of the Roman station Margidunum.



Bronze Brooch from Brough (Crocolana). (½)

In 1851 portions of two iron swords with a spear-head of unusual form were found at Nottingham with two skulls and other human remains at a depth of 3 ft. in a field adjoining the public baths and wash-houses (between St. Mary's Cemetery and the County Lunatic Asylum). These weapons were exhibited to the Archaeological Institute[1] in the same year, and are now preserved in the armoury at the Tower of London.[2] The spear is 24½ in. long, with a maximum breadth of 2½ in.; while the sword is 36 in. long, 2¼ in. at the widest part of the blade, with a guard 5½ in. long and a grip of 3 in. These burials evidently belonged not to the early Anglo-Saxon period, but to what is generally known in this country as the Viking Age, corresponding in part to the Carlovingian period of Western Europe. Spears with cross-bar below the blade are rarely met with in this country,[3] but are more frequent abroad, where they were made within the kingdom of Charles the Great.[4] The perfect sword belongs to one of the two main types, with a straight guard and a three-lobed pommel. Many have been found in Norway,[5] and others are known from Scotland and Ireland, but their place of manufacture

[1] *Journ.* viii, 424, with illustrations.

[2] Nos. 158, 174, and 175 in catalogue.

[3] Two from London and one from Amiens are in the British Museum, and one from the Thames is in Reading Museum. A specimen is figured for comparison.

[4] *Mittheilungen der anthrop. Gesell. in Wien*, xxix (1899), p. 37, pl. i.

[5] Specimens in Bergen Museum described by A. L. Lorange, *Den Yngre Jernalders Svaerd:* Rudolf Wegeli, *Zeitschrift für Historische Waffenkunde*, vol. iii (1904).

is somewhat uncertain, and the most likely region is that near the mouths of the Rhine. They were no doubt carried by the Northmen, to whom Nottingham more than once fell a prey. The Danes, for instance, seized the passage of the Trent and wintered there in 868.

Such is the somewhat meagre story of portable objects belonging for the most part to the pagan Anglo-Saxon period, which have been recovered from the soil of Nottinghamshire from time to time. Christian monuments of pre-Norman date, such as the stone carvings still to be seen in the county, are reserved for treatment elsewhere ; but as marking the transition to Norman England one discovery of interest may be mentioned in conclusion. Four ring-brooches of bronze, of plain and solid workmanship, were included in the exhibition organized by the Thoroton Society in 1899 [1] and are still in existence. All of the same pattern (see fig.), they can be at once recognized as belonging to a type hitherto poorly represented, and difficult to date with precision. The available evidence is somewhat contradictory and may be summed up as follows :—Two are known from Berkshire [2] : one was found, apparently with a secondary interment, in a grave-mound on the Lambourn Downs, and is now in the British Museum ; while the other, now in Reading Museum, comes from a grave lined with Roman tiles in a meadow adjoining King's Road, Reading. Two in the Royal Museum at Canterbury were found in the neighbourhood, but further details are wanting ; while two other discoveries might be approximately dated, though the evidence points to the Norman period. A pair was found buried in the flower garden at Audley End, Essex, and may have belonged to a member of the Benedictine community on that site (Walden Abbey), which dates from 1138. A similar conclusion may be drawn from the occurrence of the same type on the site of Hyde Abbey (founded 1109),[3] where several of these brooches were found with chalices, patens and ciboria in graves that retained traces of ecclesiastical vestments. Nothing definite as to date can be gathered from the account of the Nottingham discovery, which took place in February, 1841, during excavations for the poor-house in York Street.[4] Human bones were uncovered in great numbers, along with fragments of stonework, part of a pavement of glazed tiles, several 'brass rings' (the bronze brooches in question), a large stone coffin, and other antiquities. The site is supposed to have been that of the ancient church of St. Michael, which was destroyed by the inhabitants in 1328 during a tumult with

Bronze Ring-Brooch from Nottingham. (1/1)

[1] *Transactions of Thoroton Society*, iii, 50.
[2] *V. C. H. Berks*, i, pp. 238, 240, (with fig.).
[3] John Carter, *Specimens of Ancient Sculpture and Painting*, ii, 19 (figs.).
[4] *Nottingham Date Book*, 10 Feb. 1841 ; Bailey, *Annals of Notts.* iv, 419 ; i, 210.

the body of foreign soldiers brought into the country with Philippa, the young queen of Edward III. The brooches were evidently worn in pairs at some period, and the moulding below the head of the pin is characteristic ; while the specimen illustrated (see fig.) retains a fragment of linen textile on the pin, showing that it had been fixed to the garment at the time of burial. Another still bears a piece of leather inserted between the ring and the pin head, and the same was found to be the case at Hyde Abbey. The discoveries at Audley End and Winchester certainly point to the early twelfth century, and the minor antiquities of the Norman period are as yet but imperfectly known ; but such a date for the Lambourn Down and Reading specimens does not seem appropriate, and this discrepancy must be our excuse for including these brooches in the present chapter.

DOMESDAY SURVEY

THE Nottinghamshire portion of the Domesday Survey has perhaps received less attention than has been given to most of the counties of the northern midlands. It is not one of the more attractive parts of the great record, for its subject matter is somewhat severely restricted to such details as were strictly relevant to the main object of the Domesday Inquest, which was the assessment and distribution of the king's 'geld.' Many problems are raised in the course of the portion of the survey with which we have to deal, but in general we can only hope to solve them in the light of evidence drawn from beyond the borders of our county, for Domesday rarely explains its own terminology, and local records which can be applied to its elucidation are somewhat to seek in Nottinghamshire. Several religious houses were founded in the county within seventy years of Domesday, and their documents are useful in this connexion, but none of them take in Nottinghamshire history the place which Peterborough records fill in that of Northamptonshire, nor have we any later royal survey of our county such as we possess for its neighbours Lincolnshire and Leicestershire.

This is the more to be regretted since Nottinghamshire was the central member of a very interesting group of counties comprising Lincolnshire, Yorkshire, Derbyshire, Leicestershire, and Rutland, which are distinguished from the rest of England by many characteristic features pointing, as is now recognized, to a Scandinavian colonization of the district in the ninth century. These counties are divided into 'wapentakes' instead of 'hundreds,' and are assessed in 'carucates' instead of 'hides,' while place-names ending in the accepted Scandinavian termination 'by' are scattered unevenly over the district.[1] In Nottinghamshire, for instance, a well-marked group of such names, represented by Scrooby, Serlby, Thoresby, Budby, Bilby, and Ranby, is congregated in the north-western quarter of the county, outlying examples being Harby and Barnby in the Willows on the Lincolnshire border, Saundby and Bleasby on the Trent, and Granby and Willoughby on the Wolds close to Leicestershire. Names like Gunthorpe, Staythorpe, and Owthorpe are also suggestive, but evidence from local nomenclature is easily misinterpreted; a much more certain and delicate test of 'Danish' settlement lies in the manner in which this group of counties was assessed to the Danegeld.

[1] There is still no more recent treatment of the distribution of these place-names than the *Words and Places* of Isaac Taylor, whose results are utilized by Green, *Conquest of England*, 114–129.

In every other part of England except East Anglia and Kent the basis of taxation was the 'hide' containing four 'virgates,' and this unit when employed for fiscal purposes is normally found combined in groups of five or ten, for the assessment of the south and west was arranged on a decimal system. In Nottinghamshire and the counties which adjoin it, the place of the hide was taken by the 'carucate,' consisting of eight 'bovates,' and from an analysis of the portion of Domesday relating to this district it has been found that these carucates were normally disposed so as to form blocks of six or twelve. This theory of the 'six carucate unit' was first set forth by Mr. Round in *Feudal England*,[1] and the opposition between the 'duodecimal' system of assessment which prevailed in that part of England which is known on other grounds to have been subjected to 'Danish' influence, and the 'decimal' system found elsewhere has for the first time enabled the boundaries of the Danelaw to be defined with something like exactitude. It must be remembered that neither the carucate nor the bovate was in this sense a measure of area, nor even when we read of acres in connexion with assessment must we think of real divisions of the soil; these were all purely fiscal terms, the bovate being divided into fifteen parts called acres, and the carucate, as we have seen, containing eight bovates. The 'field carucates' actually existing on the land bear no necessary relation to the 'carucates assessed to the geld'; the number of the latter which a county was reputed to contain was determined not by its acreage but according to the will of the law-givers of the country, who fixed the fiscal responsibility of each shire at their own pleasure.

The assessment of the Danelaw can most conveniently be studied in Lincolnshire and Leicestershire; for one reason because a survey of each of these counties made under Henry I has come down to us and throws much light upon the local distribution of the geld. But for our immediate purpose it is more important to note that in proportion to their area Lincolnshire and Leicestershire were burdened with a much larger number of carucates than was assigned to Derbyshire and Nottinghamshire. Now the unequal rating of the several counties of the Danelaw certainly deserves mention in any account of this subject, as it affected the assessment of the whole district in every stage of its subpartionment. Thus Leicestershire and Nottinghamshire each contained about 270 vills surveyed in Domesday, but whereas the former seems to have paid geld on 2,500 carucates,[2] which would give an average of over nine to each vill, the latter only paid on 567 carucates, representing an average of about two per vill. Hence while cases of rating at six or more carucates may be noted on every page of the Leicestershire survey, they are extremely rare in this county. On the other hand, the assessment of vills at 12 bovates or 3 carucates is very characteristic of Nottinghamshire, and these are just the figures in which we should expect the fiscal liability of the local

[1] *Feudal England*, 79, et seqq.

[2] Leicestershire statistics are complicated by the peculiar 'hide' of that county, but in any case its assessment as expressed in carucates was extremely high.

groups to be expressed on a duodecimal system of repartition in view of the favourable treatment which the county as a whole received in the apportionment of the geld.

We may now proceed to the assessment of our county in detail, remembering always that the unit of taxation was not the 'manor' but the vill, for in Nottinghamshire the two were rarely identical even at the date of the survey. Beginning with Broxtow wapentake we may note the following as instances of assessment at 3 carucates: Toton, Beeston, Lenton ($\frac{1}{2}+\frac{1}{2}+2$), Radford, Sutton Passeys ($1\frac{1}{2}+1\frac{1}{2}$), Trowell ($1\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$), and probably Bramcote ($\frac{3}{4}$[1]$+\frac{1}{4}+2$). Cossall ($\frac{3}{4}+\frac{3}{4}$), Strelley ($\frac{3}{4}+\frac{3}{8}+\frac{3}{8}$), and 'Mortune' stand at $1\frac{1}{2}$ carucates each, all these places lying west of Nottingham in the angle formed by the Trent and Erewash. To the immediate north of them occurs a curious belt of small vills such as Bilborough, Awsworth, Kimberley, Nuthall, Greasley, Eastwood, and Brinsley, which are assessed at only 1 carucate or less each, and therefore do not illustrate any system, while the north of the wapentake was occupied by the king's great manor of Mansfield; but across the Leen we find Arnold and Papplewick ($2\frac{3}{8}+\frac{5}{8}$) rated at 3 carucates each, with Linby near Papplewick and Kirkby in Ashfield further west ($1\frac{1}{4}+\frac{1}{4}$) both answering for $1\frac{1}{2}$ carucates. On passing the water-parting of the Erewash and Idle into Bassetlaw wapentake we find, lying along the road from Mansfield to Tickhill, Warsop, Cuckney ($1+2$), and Worksop assessed at 3 carucates; Mattersey in the extreme north of the county ($1\frac{3}{8}+\frac{1}{8}$), Bothamsall, Elkesley ($\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$), Houghton, Tuxford, and Rufford standing at $1\frac{1}{2}$ carucates each. In the adjoining wapentake of 'Lide' occur Kneesall with Kersall, Winkburn, Hockerton ($\frac{1}{8}+1+\frac{3}{8}$), and Norwell rated at $1\frac{1}{2}$ carucates; Averham, Cromwell ($\frac{1}{4}+2\frac{3}{4}$), and Sutton upon Trent ($2\frac{3}{4}+\frac{1}{8}+\frac{1}{8}$) at 3.

Crossing the Greet into Thurgarton wapentake, the assessments at first sight appear so unintelligible that it may be well to set them forth in tabular form:—

	Carucates	Bovates	Team-lands
Southwell with berewicks	22	4	24
Rolleston	4	4	9
Thurgarton	3	3	6
Gunthorpe	3	3	6
Lambley	2	2	3
Oxton	2	2	6
Hoveringham	2	2	4
Staythorpe	1	1	2
Blidworth	1	1	3

To these instances we may add that one manor in Bulcote and another in Fiskerton were each assessed at 2 carucates, 2 bovates. Now the highest common factor which can underlie all these figures is the strange sum of 9 bovates, a unit which seems absolutely confined to this wapentake. What the meaning of this curious system may be, it would be difficult to say, and the difficulty is not lessened by the fact that two of the above

[1] Possibly the figure here is 'v' not 'vi' (bovates).

instances result from the addition of fractional assessments, the details of which are meaningless by themselves and by no means well adapted to a convenient payment of the geld.

Rolleston

	Car.	Bov.	Team-lands
Archbishop of York. .	0	4½	1
Bishop of Bayeux . .	2	4½	6
Walter de Aincurt . .	1	3½	2
Total	4	4	9

Oxton

	Car.	Bov.	Team-lands
Archbishop of York .	0	6	2
Roger de Busli	1	0	2⅓
Walter de Aincurt . .	0	4	1½
Total	2	2	6

Moreover in contrast to these fractional assessments it is important to note that in seven out of the above nine cases the number of 'team-lands' is integral and 'duodecimal' in character. As, with the exception of Calverton which was assessed at 1½ carucates,[1] the above table includes every vill in the wapentake the assessment of which can be distinguished from that of its neighbours, the recurrence of this nine-bovate unit cannot well be regarded as accidental. Whatever its origin it strikingly differentiates the assessment of this particular district from that of the rest of the shire, and illustrates the solidarity of the wapentake in matters of taxation.

South-east of the Trent it is more difficult to detect the influence of any system of assessment. The subdivision of vills was carried much further in the open land of the vale of Belvoir and the Nottinghamshire wolds than in the largely afforested north and west of the shire, with the result that the assessment of the former district is far more complicated than that of the latter. It must be confessed that the several fractions of villar assessment do not work out so well as might be expected into even duodecimal totals, and we possess for this county no clue to the system by which vills were combined in roundly assessed fiscal groups, although by analogy with Lincolnshire and Leicestershire we know that such a principle must have been in operation.[2] And another difficulty which should not be ignored lies in the fact that many of these southern assessments are expressed in very small fractions involving thirds, quarters, and fifths of a bovate. Now Mr. Round has shown that for some reason or other the compilers of Domesday were not very careful in recording minute fractions of assessment,[3] a failing which at once introduces an element of doubt into our calculations. It so happens that in the one case in which the assessment of a Nottinghamshire vill is recorded in another document than Domesday we find a divergence between the two. In Domesday, Collingham is rated at 4 carucates, 0½ bovate; in the Black Book of Peterborough it stands for 4 carucates, 0⅘ bovate.[4] Here the discrepancy is so small that it gives us no reason to suppose a fresh assessment to have taken place, but it is quite enough to suggest that

[1] It is probable that this is only an apparent exception, for Salterford, which is in the modern parish of Calverton was rated at 6 bovates, so that the combined assessment of both places would stand at 2 carucates, 2 bovates.

[2] See *Feudal England*, 75–81.

[3] *Feudal England*, 16–21.

[4] *Chron. Petroburgense* (Camden Soc.), 159.

the Domesday figures may not be infallible. It will be evident that a very small margin of error in the figures themselves would make the task of their combination into duodecimal totals impossible for us.

For all this we can trace a number of assessments of the normal type in the southern half of our county beginning with Wysall (3 carucates), on the Leicester border, and continuing through Bradmore, Plumtree, Normanton on the Wolds ($\frac{3}{4} + \frac{9}{16} + \frac{3}{16}$), $1\frac{1}{2}$ carucates each, Cotgrave 6 (2 + 1 + 3) and Edwalton ($\frac{3}{4} + \frac{3}{4}$) $1\frac{1}{2}$, to the Trent at Wilford, 3, West Bridgford, Adbolton ($\frac{3}{4} + \frac{3}{4}$), Holme Pierrepont, $1\frac{1}{2}$ each, Radcliffe on Trent, 3 carucates ($1\frac{1}{2} + 1\frac{1}{2}$), Saxondale, and Newton ($\frac{3}{8} + 1\frac{1}{8}$), $1\frac{1}{2}$ carucates each. Lying apart from this group occurs Orston, 3 carucates, and away in Newark wapentake we find Girton assessed at $1\frac{1}{2}$.

Lastly, crossing the Trent once more we may illustrate the possibilities of the combination of vills by setting forth the very neat assessment of North and South Muskham with the hamlet of Little Carlton included in the latter. The long continued association of these three places, which occupy a corner of 'Lide' wapentake to themselves, makes it very probable that this was the grouping actually employed in the distribution of the geld.

	Car.	Bov.			Team-lands
North Muskham					
Archbishop of York	1	4	6·4	12·0	(not given)
Peterborough Abbey	1	2			4
'Uluric'	0	3			4
Sokeland	0	4			1
'Tochi'	2	4			4
Siward	0	3			3
South Muskham					
Archbishop of York	4	5	5·4		9
'Sortebrand'	0	6			$1\frac{1}{2}$
Little Carlton					
Sokeland to North Muskham	0	1			(not given)

We shall find it convenient to consider in connexion with assessment what is perhaps the most difficult problem presented by the Nottinghamshire survey—the relation between gelding carucates, ploughlands, and actual plough-teams. The second are in uniform excess of the first, but the third are so greatly in excess of the second that the question whether the term 'plough-land' bears its obvious meaning in this county has seriously to be faced. This has attracted the attention of Professor Maitland, who says :—

> To interpret the steady excess of teams that we see in Nottingham and Derby is not easy. We can hardly suppose that the jurors are confessing that they employ a superfluity of oxen. Perhaps, however, we may infer that in this district a given area of land will be ploughed by an unusually large number of teams, whereas in Devon and Cornwall a given area will be ploughed, though intermittently, by an unusually small number. In every way the contrast between Devon and Cornwall on the one hand, Lincoln, Nottingham, and Derby on the other, is strongly marked.[1]

Now the case of Nottinghamshire stands somewhat apart from that of its neighbours to east and west. In Lincolnshire there seem after all

[1] *Domesday Book and Beyond*, 427.

to be more plough-lands than teams, and these two quantities approximate pretty closely to each other throughout the shire. In Derbyshire, on the other hand, the plough-lands keep fairly close to the gelding carucates, but are 100 below the number of existing teams. The peculiarity of the case of Nottinghamshire is that while the teams exceed the plough-lands by 736, the latter are 688 in excess of the fiscal units. For the sake of clearness, we may express these figures in the following table :—

	Carucates	Plough-lands	Teams
Lincolnshire	4188	5043	4712
Derbyshire	679	762	862
Nottinghamshire	567	1255	1991 [1]

But a further point which comes out strikingly on an analysis of the survey of our county is that the plough-lands, like the carucates of assessment, tend to be distributed among the vills according to a duodecimal system. Below is given a series of instances arranged according to wapentakes :—

Rushcliffe

	Car.	Bov.	Plough-lands	Teams
Ratcliffe upon Soar	1	2¼	6	4
Stanford upon Soar	2	4	6	11
Barton in Fabis	2	3 1/12	6	11⅞
Wilford	3	0	6	7
Bunny	2	0	6	9
Bonnington	1	1	3	5
Wysall	3	0	3	13
Plumtree	1	4	3	8
Bradmore	1	4	3	8
West Bridgford	1	4	3	5

Bingham

	Car.	Bov.	Plough-lands	Teams
Whatton	2	4	9	12
Shelford	5	3	9	10
Bingham	4	0⅛	6	17½
Staunton	2	1⅛	6	8
Barnston	1	0⅞	6	9¾
Radcliffe upon Trent	3	0	6	10
Bassingfield	2	0	3	4
Clipstone	3	0	3	8
Scarrington	2	0	3	7½
Holme Pierrepont	1	4	3	7

Bassetlaw

	Car.	Bov.	Plough-lands	Teams
Dunham and 'berewicks'	5	4	12	12
Gamston upon Idle	1	1	9	6
Elkesley	1	4	6	5½
Cuckney	3	0	6	9
Boughton	0	6	6	9
Grove	0	4	3	4
Finningley	0	6	3	6
Ossington	0	6	3	9
Stokeham	0	6 6/15	1½	3
Bilby	0	6	3	4

Broxtow

	Car.	Bov.	Plough-lands	Teams
Mansfield and 'berewicks'	3	6	9	21½
Trowell	3	0	3	8
Arnold	3	0	3	8
Radford	3	0	3	6
Stapleford	2	6	3	9
Cossall	1	4	1½	4
'Mortune'	1	4	1½	11
Annesley	1	0	1½	8
Teversall	0	6	1½	5½

Thurgarton

	Car.	Bov.	Plough-lands	Teams
Southwell and 'berewicks'	22	4	24	90
Rolleston	4	4	9	10⅞
Gunthorpe	3	3	6	20
Thurgarton	3	3	6	8
Oxton	2	2	6	5½
Lambley	2	2	3	6
Blidworth	1	1	3	2

'Lide'

	Car.	Bov.	Plough-lands	Teams
Norwell	1	4	6	9
Laxton	3	0	6	6
Averham	3	0	6	14
Bilsthorpe	2	0	6	6
Marnham	2	6¾	6	16½
Winkburn	1	4	3	9
Willoughby	0	5	1½	2

[1] Professor Maitland's figures.

Now in face of these tables it seems as if our choice can only lie between three possible alternatives. Either the recurrence of these duodecimal figures is accidental, or the jurors habitually employed a duodecimal method of reckoning in stating the agricultural possibilities of their vills, or else we have in these figures fragments of an obsolete system of assessment as conventional as that which prevailed in the distribution of gelding carucates. The first suggestion seems impossible—the above tables account for 20 per cent. of the total number of vills in the county, and as at least two-thirds of the remainder are either surveyed in connexion with other vills or else, through inadvertence on the part of the scribes, are not assigned any plough-lands in the survey, the proportion of duodecimal figures seems much too high to be the result of chance. The second conclusion also is improbable ; we find no traces of such a habit of reckoning elsewhere. The third possibility, unlikely as it may seem at first, is greatly strengthened by the fact that the 'plough-land' in Northamptonshire and Rutland has been proved to be a conventional quantity. The above tables in fact strikingly resemble those given by Mr. Round in the *Victoria History of Northamptonshire*, of the assessment of Rutland, and of the hundreds of Nassaburgh and Willey-brook, Northants,[1] not only in the steady excess of the plough-lands over the carucates, but also in the fact that no constant ratio can be discovered between these two quantities. Nor must we forget that at the time of Domesday Rutland was closely associated for fiscal purposes with Nottinghamshire, to the survey of which its own account is appended,[2] while the Rutland evidence further reminds us that figures which do not imply a duodecimal system of reckoning may nevertheless be combined into groups based on this principle. After all this, it seems that we shall be fairly safe in saying that the possibility of the Nottinghamshire plough-land being an obsolete fiscal term ought to be kept in mind in any future discussion of this unit.

We may now briefly recapitulate the main conclusions suggested by the Nottinghamshire assessment. We have seen that the county as a whole was very leniently treated in the general distribution of the 'geld,' and that this produced a correspondingly low assessment of individual vills, so that the fiscal units characteristic of the shire are of 3 or 1½ carucates instead of the 12 or 6 carucate groups which prevailed in Lincolnshire and Leicestershire. It has been shown that this normal system of rating is displaced in Thurgarton wapentake by a very peculiar series of assessments seemingly based upon a 'unit' of 9 bovates, and that in the south of the county the extreme subdivision of vills places difficulties in the way of our reconstructing the total villar assessments. Lastly, we have seen that the plough-lands of Nottinghamshire show distinct traces of a duodecimal system of distribution as artificial as that which prevailed in the apportionment of assessment carucates, which connects the *terrae carucis* of our county with the conventional plough-lands of Rutland and North Northamptonshire.

[1] *V. C. H. Northants*, i, 266–268.

[2] See below, p. 240.

First in order among the landowners of Nottinghamshire stands the king, the extent of whose possessions may be gathered from the Domesday map. Stretching across some sixty vills they were in fact almost entirely grouped as 'sokeland,' or 'berewicks,' round the five great manors of Dunham, Bothamsall, Mansfield, Arnold, and Orston, all of which stand out conspicuously in the feudal history of the shire. Bothamsall, the least important of the five, had belonged to Earl Tostig of Northumbria; the rest had formed part of the demesne of Edward the Confessor; while on the Leicestershire border, apart from this group, the king had reserved to himself 'Neubold' (in Kinoulton) and Upper Broughton, previously belonging to the house of Leofric of Mercia.[1] The centre of his territory in our county, however, consisted of the large manor of Mansfield with its dependent 'sokeland.' The latter lay in two blocks, one extending from Mansfield itself along the Maun, Meden, and Poulter, to the border of the 'soke' of Bothamsall which lay along the Idle; the other scattered over the north-eastern division of the county, the 'Oswardbeck wapentake' of Domesday. The northern group of sokeland maintained its unity as 'Oswardbeck Soke' right through the Middle Ages; the western group is interesting because it included just that district which is now known as Shirewood forest—the northern half of the forest as it is defined in mediaeval 'perambulations.'[2] We have no proof of any afforestation in our county before the Pipe Roll of 1130, when William Peverel answers *de placitis forestae*,[3] but it is distinctly probable that the king in keeping this region in his own hands may have had an eye to its sporting possibilities.

The ecclesiastical history of these manors is unusually clear. In 1093 William Rufus gave to Robert Bloet, the newly-appointed bishop of Lincoln, the churches of Mansfield and Orston, 'with the chapels which are in the berewicks belonging to the said manors,'[4] a grant which is interesting as showing the relationship between a manor and its berewicks reproduced in the ecclesiastical sphere in the distinction between a 'church' and its (dependent) chapels. Domesday mentions a church as existing at Mansfield and Orston, and so late as 1790 Throsby, in his edition of Thoroton, says, 'The church (of Orston) is reputed the mother-church of Scarrington, Thoroton, and part of Staunton,' three of the dependencies of Orston in 1086.[5] Henry I gave Dunham church to Archbishop Thurstan of York, who made of it a prebend in his church of Southwell,[6] where it still gives a title to an honorary canon; and Henry II, between 1154 and 1158, added the church of Arnold to the donations which he confirmed to Laund Priory, Leicestershire.[7]

[1] Probably Upper Broughton, Notts., and Nether Broughton, Leic., had originally formed one estate, for the former had belonged to Earl Ælfgar, of Mercia, and the latter to Earl Morcar, of Northumbria, his son.

[2] See the perambulation of Shirewood forest in the time of Henry III given in *Select Pleas of the Forest* (Selden Society).

[3] *Pipe Roll* 31 *Henry I* (Rec. Com.)

[4] *Mon. Angl.* viii, 1271.

[5] *Hist. of Nottinghamshire*, 1790, 224.

[6] *Mon. Angl.* viii, 1314.

[7] *Mon. Angl.* vi, 189.

At the end of the account of the king's land come a number of miscellaneous entries relating to Flintham, the former possession of one 'Elwin,' Kneeton, Sneinton, Meering, and Misson. The latter is an interesting vill, for three of the parcels into which it was divided were appendages of manors outside our county. The king possessed 3½ bovates there, over three of which the 'soke' belonged to Kirton-in-Lindsey, while the remaining half bovate is said to 'lie' in 'Lestone,' and to be held by 'Guy,' and by 'Alfred' under him. 'Lestone' is Laughton near Gainsborough (Lincs.), and we may safely recognize our Misson tenants in Guy 'de Credun,' the owner of Laughton, and Alfred his man who held of him there.[1] Of the other vills, Meering before the Conquest had been held by a certain William who is not otherwise distinguished. But immediately across the Trent from Meering lies Sutton upon Trent, of which the previous owner is given as 'William the son of Scelward,' and in view of the rarity of the name William before the Conquest, and of the contiguity of these two places, we shall hardly be wrong in assuming the identity of their former possessors. The case of Sneinton will be discussed later.[2]

The valuations of the more important royal manors deserve consideration in connexion with the very difficult question of the Domesday *valet*. Of Dunham we read: 'In King Edward's time it rendered £30 and 6 sestiers of honey, now £20 with all things that belong there.' Here the sum named is evidently that which was actually received for the manor, and the same must be the case at Arnold, which is said in King Edward's time to have been worth (*valebat*) £4 and 2 sestiers of honey, for no one would express a valuation in the modern sense in terms of pounds and honey. Similarly the phrase used at Orston, 'it was worth £30 by tale' (*ad numerum*), points to a rent received rather than to an estimate of potential revenue, and should be compared with the Lincolnshire formulas *valebat . . . cum pondere et arsione* or *cum pensione*.[3] Outside the royal demesne we find one clear instance of rent at Newark of which we read: 'In King Edward's time it rendered £50, now (it renders) £34'; and a probable instance at Southwell which had been worth (*valebat*) £40, but had risen to £40 15*s*. Such round figures as £40, £30, £50, when applied to large and heterogeneous manors suggest that the latter have been 'farmed' or set to rent as single wholes, and here we may see at least a partial explanation of the fact that no value is usually assigned to 'sokeland' in our county; at Newark and on the royal manors quoted above its proceeds must be included in the rent received from the whole manorial group. There is much in Domesday Book to suggest that historical economists have generally underestimated the play of monetary forces in the eleventh century.[4]

[1] Dom. Bk., f. 367.

[2] See below, p. 245.

[3] These formulas are found on the royal demesne at Kirkby Laythorpe, Kime, Boothby Pagnell, and Wellingore.

[4] See for the Domesday 'valet' *V. C. H. Essex*, i, 364.

In most counties the compilers of the survey, after describing the king's land, pass at once to the estates of the ecclesiastical tenants-in-chief within the shire, but here this rule of precedence is not observed. Two folios are devoted to the king's land, after which a folio is left blank, and then the survey deals with the three lay tenants of comital rank within the county—Earl Hugh of Chester, and Counts Alan of Richmond and Robert of Mortain. The survey of Count Alan's land is thrown together somewhat carelessly. His manors of Sibthorpe, Sutton upon Trent, Ruddington, Kneeton, and Treswell follow each other in column, his holdings in Syerston, Carlton upon Trent, and South Leverton ('Cledretone') being described in the margin. The account of the latter place runs :—

> In Cledretone habuerunt Godric & Ulmar vii bovatas terrae et quintam partem unius bovatae ad geldum.
> Hanc terram tenuerunt Alanus comes et Rogerus de Busli usque nunc. Terra ii carucis. Valet xx solidos.

Now on f. 287 Roger de Busli is credited with an estate at 'Cledretone' rated at $3\frac{3}{5}$ bovates,[1] valued at 10*s.* and reputed to contain 1 'plough-land,' details representing exactly half of this place as it is described under Count Alan's fief. On the Busli estate 'half a church' is entered and also a certain amount of woodland and meadow which probably belonged to the vill as a whole, for we are told 'hujus silvae et prati medietatem habet Rogerus.' Here then we have a duplicate entry of somewhat unusual form, and the explanation is probably to be found in the description of the neighbouring vill of Treswell, which also was divided between the same two tenants-in-chief in approximately equal proportions. Count Alan's share had belonged to a certain Ulmar, and Roger de Busli's to one Godric. Now 'Cledretone' as described on Count Alan's land is said to have belonged to Godric and Ulmar, and it would doubtless be the latter's portion only which passed to Count Alan, although the details of assessment and value given as referring to his land refer to both shares. In the Robert de Mosters who held Treswell of the count we have one of the earliest recorded bearers of a surname well known in Nottinghamshire history, whose descendants continued to hold land in that vill of the honour of Richmond down to the reign of Edward III. He was doubtless the Robert de Musters who granted land to Count Alan's new foundation of St. Mary's abbey, York.[2] Another of the count's tenants deserving mention is the Hervey (a characteristically Breton name) who held Sutton upon Trent, for the name reappears in connexion with Sutton under Henry II.[3]

In contrast to the string of undistinguished men who had preceded Count Alan, all Earl Hugh's manors in this county had belonged to a certain Harold in whom, though he is mentioned in our survey without any note of rank, we must recognize no less a person than the former earl of

[1] 'iii bov^{a} terrae et dim^{a} et medietatem quintae partis unius bovate.'
[2] *Mon. Angl.* iii, 532.
[3] Vide *Pipe Roll, 22 Henry II* (*Pipe Roll Soc.*), 95.

Wessex and king. In Lincolnshire and Leicestershire also Earl Hugh appears as the successor of Harold, whose Leicestershire estates of Barrow upon Soar, Loughborough (probably), and Kegworth are connected geographically with the manors of Kingston, Sutton Bonnington, and Normanton, which he had held on the Nottinghamshire bank of the Soar. With the exception of a one-bovate manor at Newthorpe in Broxtow wapentake all the possessions of the count of Mortain lay in the south-western corner of our county, and had belonged to an Englishman named 'Stori.' The name occurs several times elsewhere in the Danelaw, but it is impossible to say whether it refers to the same man in every case.[1]

Of much greater interest are the estates of the archbishop of York, which occupy the next folio of the survey and still maintain their individuality as the Liberty of Southwell and Scrooby. It is important to note that the collegiate church of Southwell, the one religious house which our county possessed in Anglo-Saxon times, like its sister churches of York (St. Peter's), Beverley, and Ripon, does not appear in the survey as holding in chief of the crown. The intimate and historical connexion which existed between the archbishop of York and his four great 'colleges' of secular canons caused the latter to be represented as holding of him, and the lands appropriated to them to be entered among his estates. First among the latter stands the great manor of Southwell itself, the elaborate description of which deserves careful study. We are first given the assessment of the whole manor with its berewicks, which we have seen to be rated at 22½ carucates and 24 plough-lands. Then follows a description of that part of the manor which was in the hands of the archbishop, after which we are told that six knights hold 4½ carucates of this land, three clerks hold 1½, of which 2 bovates are in a prebend, and, a unique entry for our county, two Englishmen (*Anglici*) hold 3 carucates, 5 bovates. These three parcels of the manor are then described one after the other and the total result deserves to be set out in detail:—

	Car.	Bov.	Demesne Teams	Villein Teams	Sokemen	Villeins	Bordars
Archbishop's land	(not stated)		10	37	10	75	23
Knights' lands	4	4	7	21	—	35	28
Clerks' lands	1	4	1½	3	—	7	5
Englishmen's land	3	5	4	6½	—	20	6

Lastly we have an account of the appurtenances of the manor in meadows and woodlands, together with a very unusual entry of 'arable land, 5 leagues in length and 3 in breadth.' Domesday so rarely expresses arable land in terms of lineal measure that we ought to work out the relation which these figures bear to the number of plough-lands recorded for the whole manor, though, if we are wise, we shall not hope for any very intelligible result, especially in view of the possibility that the Nottinghamshire plough-land was, after all, a conventional quantity. As

[1] See *V. C. H. Bedfordshire*, i, 203; *V. C. H. Derbyshire*, i, 304.

a matter of fact we arrive by this process at an average for the Southwell *terra carucae*, which is simply inconceivable on any theory of the acreage of the plough-land. On the Eytonian equation of 12 furlongs to the *leuca* the above land would contain 21,600 acres, which divided among the 24 Southwell plough-lands would give us an average of no less than 900 acres to the plough-land. Even if we adopt Mr. Round's suggestion of 8 furlongs to the 'league,' we shall have an average of 600 acres to account for. Nor can we obtain relief by assuming that while the statement about 'arable land' relates to the whole manor the number of plough-lands only refers to part of it; the latter is given in connexion with the assessment figures, and undoubtedly refers to the whole. Probably there does not occur elsewhere in Domesday so violent a discrepancy between recorded area and estimated plough-lands[1]; a discrepancy in our case which no allowance reasonably to be made for the uncertainty of early lineal measurements will reduce to workable proportions. On the other hand if we use for our divisor the number (90) of actual teams existing on the manor we shall be able (on Mr. Round's equation of 8 furlongs = 1 league) to assign an average of 160 acres to each team; a sufficiently neat quotient, but one which only throws up the artificiality of the plough-lands into stronger relief.

Of course the population enumerated in the above table is much too large to be contained in any one rural manor, and Domesday, after its statement of value, tells us that 'in Southwell there are reckoned (*numerantur*) twelve berewicks.' Now we possess a copy of a charter dated 958 which purports to be a grant by King Eadwig to (arch)bishop Oskytel (of York) of 20 cassates of land at Southwell.[2] This charter is more than probably spurious, but it contains a list of the lands belonging to Southwell which, whether the document be genuine or not, represents the earliest statement of the constituent vills of the manor which has come down to us, and it may accordingly be used to illustrate the Domesday text. These lands are said to be Halloughton, Upton, Halam, Bleasby, Goverton, Gibsmere, Fiskerton, Morton, Normanton, Farnsfield, and Kirklington, all of which at the present day form part of the manor of Southwell. Here we account for eleven of our twelve unnamed berewicks, the first four of which are not mentioned in Domesday at all, while Upton only comes in incidentally under Rolleston. Parts of the other berewicks which lay outside the archbishop's land are described in due course, but in every case but one the soke over them is said to belong to Southwell. This one exception casually reveals a fact of considerable importance, for on Walter de Aincurt's land occurs the entry: 'In Farnsfield Walter has two bovates of land assessed to the

[1] Compare *Domesday Book and Beyond*, 434, where a number of other instances are compared. The arable land entered at Rolleston (Staffs.), Professor Maitland's extreme example, only gives 360 acres to the team-land.

[2] Birch, *Cartul. Sax*, 1029. If genuine, this would be a highly important document, for it distinctly asserts that the archbishop possessed sac and soc over his Southwell estate. But the text is very corrupt, and the list of witnesses seems to have been modelled upon the attestations to the charter of Edgar, which precedes it in the *Liber Albus*.

geld. One is in the soke of Southwell and the other is the king's, but, nevertheless, it belongs to the hundred of Southwell.' Taken simply these words would seem to imply that the soke of Southwell and the hundred of Southwell were, or ought to be, identical, otherwise there would be no object in Domesday pointedly noting an exception to this arrangement. If this were so it would give us a welcome clue as to the composition of one of these mysterious Danelaw 'hundreds.'

The statement under Southwell that 2 bovates were 'in a prebend' is important in view of the appropriation of capitular revenues to particular canons which it implies, for such cases are rare in Domesday.[1] We shall not be far wrong in assigning the above 2 bovates to the prebend of Normanton, for this was the only one of the early prebends within the manor of Southwell which possessed an endowment in land. Other manors said to have belonged to St. Mary of Southwell in pre-Conquest times were Cropwell Bishop, with its berewick of Hickling, and Norwell, with its soke ; and we may note that away in east Leicestershire Tilton is said to belong to the alms of St. Mary of Southwell.[2]

Passing now to the lands held in the archbishop's own hand, we may recognize the northern part of the modern liberty of Southwell and Scrooby in his two large manors of Laneham and Sutton. The account of the former gives us a wholesome caution not to press Domesday terminology too far. It runs :—'In Lanun cum Berewitis his . . . . novem carucatae terrae et ii bovatae ad geldum . . . . In dominio aulae sunt x bovatae de hac terra. Reliqua est soca.' Here, then, although all the vills dependent on Laneham are distinctly described as 'berewicks,' the whole of the land in them not in demesne turns out to be 'sokeland.' The phrase *dominio aulae*, which is contrasted with *soca*, is unique in Nottinghamshire and Derby, and not very common elsewhere. The manner in which Laneham is surveyed also deserves a passing notice. First comes the archbishop's own portion of the manor, probably consisting only of Laneham itself ; then we read of the sokemen, villeins, and bordars holding of him in its berewicks ; and, lastly, there are entered 33 sokemen, 6 villeins, and 18 bordars, with the curious statement, 'hos cum terra sua tenent ii° milites de archiepiscopo.' This synthetical method of description, as applied to large and discrete manors, is a sort of compromise between the usual practice of entering each parcel of 'sokeland' separately and the plan of merely giving a string of villar headings with the appropriate assessments, such as was followed in the account of Mansfield. The appurtenances of the manor with which we are dealing extended across the Trent into Lincolnshire, for in the Domesday of that county the archbishop is assigned 100 acres of meadow 'as belonging to Laneham'

The manor of Sutton (with Scrooby) is interesting, because the York *Liber Albus* has preserved the text of the charter by which Edgar granted

[1] Another instance occurs at Stafford,' fol. 247*b*.

[2] This probably means that Tilton joined the vills of Nottinghamshire in the Pentecostal offering which the latter made at the church of Southwell.

it to Archbishop Oskytel of York. This latter seems to be genuine, and is one of the very few similar documents older than the eleventh century which relate to the Danelaw.[1] Apart from this the manor, the sokeland of which is only described in abstract, does not call for special remark. Blidworth, which is now part of the manor of Southwell, stands by itself as a manor in Domesday, with parts of Calverton and Oxton as its dependencies. Oxton, indeed, is entered as a separate *manerium*, designated as such by the symbol M in the margin, and assigned to a pre-Conquest owner 'Elnod.' But at the end of the entry we read 'the king has one bovate of this land, the rest belongs (*iacet*) to Blidworth.' Accordingly, we have here an instance of one *manerium* dependent on another.

The possessions of the bishop of Lincoln all lay in the east of our county, and were entirely dominated by his manor of Newark. Although only styled a manor in the survey, Newark possessed fifty-six burgesses (whose existence is only revealed to us through an interlineation), and has, presumably on this account, been included in the small class of boroughs which were situated on private land in 1086.[2] Whether a borough or not before the Conquest, Newark must have been very recently under a lord of comital rank, for it was given, together with Fledborough and Well wapentake, Lincolnshire, by the famous Countess Godeva, wife of Earl Leofric of Mercia, to the bishop of Lincoln and his monastery of Stow in Lindsey.[3]

The Conqueror confirmed the grant,[4] and Newark became a favourite residence of the bishops of Lincoln, especially after the foundation of its castle by Bishop Alexander (1123–1147). But to the Domesday student the chief interest of Newark will consist in its soke and the rights which the bishops of Lincoln possessed over it. At the time of the survey the bishop exercised rights of jurisdiction over three wapentakes, Newark, and Well and Lawress in Lincolnshire; the first two being in virtue of the above grant of the Countess Godeva. However, the rights conferred over Newark were not quite the same as those which the bishop enjoyed over his two Lincolnshire wapentakes. Thus, in the Lincolnshire (West Riding) 'clamores,' we read :—

'Super forisfacturam de (Lagulris) wapentac hab(uit) S. Maria ii partes soc(ae) et comes terciam. Nunc Rex. Similiter de heriete. Et si terram suam forisfecissent S: Maria ii partes habuisset et comes terciam.'

'De omnibus tainis qui terram habent in Welle wapentac habet S: Maria ii partes et comes terciam. Similiter de heriete. Similiter si terram suam forisfecissent ii partes in S: Maria et terciam partem in manu comitis hunc habet rex.'[5]

The grammar of these passages is not above reproach, but we can see that only the king's two pennies, and not the earl's third penny, were in

[1] Birch, *Cartul. Sax.*, iii, 249 (not in *Codex Diplomaticus*).
[2] *Domesday Book and Beyond*, 213.
[3] See the documents in *Mon. Angl.* iii, under the heading of Eynsham Priory.
[4] The text of the charter is preserved in the Eynsham Register, which will shortly be published by the Oxford Historical Society.
[5] Dom. Bk., f. 376.

the bishop's hand. On the other hand, we are told of Newark that :— 'Ad Newercke adiacent omnes consuetudines regis et comitis de ipso wapentac,' and this distinction is borne out by the statement on folio 280*b*, that the Countess Godeva had held (over Newark wapentake) not only the king's two pennies but the earl's third penny as well. From a charter of Henry I we learn in addition that Newark was only reckoned as a 'half' wapentake, and, accordingly, that only two men were to be summoned from it to pleas of the crown and the shire court.[1]

This district is interesting for another reason. Nottinghamshire as a whole, was very far indeed from being a fully manorialized county ; and in Newark wapentake, or at least in that strip of it which lay between the Lincolnshire border and the Trent, the process which was always creating the villar-manorial economy seems scarcely to have begun before the Conquest. Wholly or in part seventeen vills are included in the soke of Newark, the population of which is given by Domesday as 174 sokemen and 14 bordars, not a single villein being mentioned, nor any hint given of the existence of demesne. The conclusion forces itself upon us that the predecessors of these sokemen had no immediate lord below the king and the earl, and we see also that the bishop's rights over them are essentially connected with his possession of the wapentake to which they belonged. Moreover, such powers as he possessed can hardly have been of such a nature as to affect very intimately the social organization of the group. Large as was the manor of Newark, it can hardly have called for any very onerous agricultural services from its appurtenant sokemen ; it had 42 villeins of its own. Probably these sokemen furnished to the bishop little more than their jurisdictional and fiscal profits, such as the 'heriot' and 'forfeiture' of which our Lincolnshire quotations speak. Something similar may doubtless be said of those sokemen of Oswardbeck wapentake who belonged to the king's manor of Mansfield. On the other hand, we shall shortly see an instance of sokeland united to its manor by much more definite and stringent ties. No argument could well be more unsafe than that which would represent the vague and obscure bonds which so often connected vill with vill in our county to have been even approximately the same in all cases.

Even apart from the immediate soke of Newark, the vills of the wapentake show traces of extreme subdivision before 1066. Clifton upon Trent, for instance, had been divided into five manors, Coddington into four manors and one carucate of sokeland, Hawton into sixteen manors and three distinct parcels of sokeland. Most of the wapentake was held by the bishop, and had come to him from numerous small owners. One of the latter, the Agemund who had possessed 2½ bovates as a manor in Clifton, continued to hold the same under the bishop. The 'Arnegrim' who was a joint tenant at Elston can safely be identified with the man of the same name who held part of Sibthorpe and Elston under Ilbert de Lacy. These two vills are connected in another way, for the 'Pilewin' who had

[1] *Mon. Angl.* viii, 1272. Rushcliffe was also reckoned as a 'half wapentake.' *Nomina Villarum*, printed in *Parly. Writs* (Rec. Com.), iv, 401.

held 2½ bovates in Sibthorpe which had passed to Ilbert can hardly be other than the 'Pilewin' who was one of the bishop's predecessors in Elston. Across the Trent in Bassetlaw wapentake we find Fledborough and Stokeham in the bishop's hands, the former certainly, and the latter in all probability, as the gift of the Countess Godeva, who is given as the former owner in each case, though Fledborough only is mentioned in the writ by which the Conqueror confirmed her grants. One other bishop appears among the tenants-in-chief in our county in the person of Odo of Bayeux, the brother of the count of Mortain, and half-brother of the Conqueror, but he held his lands in his lay capacity only, and in this county they do not call for special remark.

The only religious house which held land in chief of the crown in Nottinghamshire was Peterborough Abbey, and its holding was restricted to the two manors of Collingham and North Muskham. The former is surveyed in the 'Liber Niger' of the abbey,[1] from which we gather that its population had risen in the fifty years which separates this document from Domesday, its sokemen increasing from thirty-seven to fifty, and its villeins from eight to twenty, while its bordars, sharing the general fate of their class, vanished altogether. Domesday records two churches as existing in the vill, which are still represented by the two parish churches of North and South Collingham. The abbey's share of North Muskham was one of the possessions which King William confirmed to Abbot Brand at the very beginning of his reign. We are enabled to recover a little of its early history through Hugh 'Candidus,'[2] who tells us that Abbot Brand and his brothers Askill, Siward, and Siric, gave a number of lands to the abbey, and at the head of his list stands 'Muskham on the other side the Trent.' This explains an otherwise mysterious passage in the Lincolnshire 'clamores,' which runs :—

> Scira testatur quod Aschil habebat ea die qua rex Edwardus fuit vivus et mortuus et post haec tria maneria. Scotune, Scotre, et Ragenaltorp, in propria libertate de rege Edwardo. Similiter habebat Muscham in Snotinghamscire.[3]

Now, on a strict reading of these passages, if Askil held Muskham on the day of King Edward's death 'and afterwards,' while it was confirmed to Peterborough by the Conqueror at the time (probably) of his coronation, the grant must have taken place either in the reign of Harold, or during the interregnum which followed the battle of Hastings. We might even suggest that Askil gave the manor on the occasion of his brother Brand becoming abbot of Peterborough, and this supposition is confirmed by the wording of William's charter. He grants to the monastery 'at the request of Abbot Brand,' 'all the lands belonging to his brothers or kinsmen which they had under King Edward in hereditary right and

[1] *Chron. Petroburgense* (Camden Soc.), 159.

[2] Ed. Sparke, p. 43. Hugh states the donor of Collingham to have been one Turkill 'Hoche,' who also gave the abbey its moneyer in Stamford and its land in Stamford (Baron), Northamptonshire.

[3] Dom. Bk., f. 376*b*.

freely.'[1] From the Anglo-Saxon Chronicle[2] we know that Brand had to purchase this concession and his own recognition as abbot with 40 marks of gold, but for our purpose it is more important that the above charter confirms nine manors by name to the abbey, and that on turning back to Hugh Candidus we find that he states every one of them to have been given originally by Brand and his three brothers. It would seem, therefore, to have been a main object of the abbot in obtaining this very important charter to secure from the new king a detailed confirmation of all the grants which he and his family had made in the doubtful time between the death of Harold and William's own coronation. Incidentally we may note that all this is welcome as confirming the general accuracy of Hugh Candidus, whose twelfth-century narrative becomes important from the facts which he alone gives as to the revolt of Hereward in the summer of 1070.[3]

After describing the ecclesiastical estates with which we have been dealing, the survey at once proceeds to the possessions of the greatest of Nottinghamshire landowners, Roger de Busli. Powerful in many counties, he had no rival in the wide expanse of wild and largely forest country which lies between the Idle and the Don, a district which included his castle of Tickhill, Yorkshire, and the priory which he founded at Blyth (Notts.), within two years after Domesday. 'Famous in Domesday but nowhere else,' as Mr. Freeman said,[4] very little is known about him and his family. He seems to have derived his name from Bully-le-Vicompte, near Neufchâtel (Seine Inférieure), where he appears some two years before the Conquest as selling his tithes to the abbey of Holy Trinity, Rouen.[5] That he was infrequently in attendance on the king is proved by the extreme rarity of his attestation to the writs and charters of the reign. He died towards the close of the reign of William Rufus, and as Roger, his only son, predeceased him, his lands, which formed a group described indifferently in feudal documents as the honour of Blyth or of Tickhill, escheated to the crown. When found, in virtue of re-grants, in the hands of Robert of Belesme, in 1102, and of Earl John in 1191, they play an important part in Nottinghamshire, and, indeed, in general history, but one which lies too far from our present purpose for it to be described here.

The Domesday map marks the general distribution of Roger de Busli's estates. They were scattered over the whole of the county with the exception of Broxtow wapentake, in which he did not hold a single manor. As might be expected, they became more and more compact as we approach the Yorkshire border; indeed, the only exceptions to his tenure between the latter and the River Idle were some fragments of the king's sokeland of Bothamsall and Mansfield.

Most of Roger's predecessors in this large territory had been quite undistinguished men. It is equally uncertain whether the 'Morcar'

[1] The charter is printed in the *Monasticon*, i, 383, and discussed by Mr. Round in the *Commune of London*, p. 29, where its date is determined.

[2] *Sub anno* 1066.

[3] See also *Feudal England*, 163.

[4] *English Towns and Districts*, p. 363.

[5] Round, *Cal. Doc. France*, 23.

who had held Gunthorpe was the earl of Northumbria, or whether the 'Tosti' who had held part of Bingham was his dispossessed predecessor in that earldom. Elsi the son of Caschin, who is stated on folio 280*b* to have held sac and soc over Worksop, duly appears on folio 285 as the former owner there, but this seems to be the limit of possible identifications. On the other hand the fief supplies us with some extremely good examples of the division of vills, not into parcels of sokeland, but into distinct manors, the former owners of which are usually specified by name. When this is not the case they are invariably described collectively as 'thegns,' a fact which is important, for the majority of these people must have been of very lowly rank with little except their personal status to mark them off from the larger class of sokemen around them. Moreover there are some valuable entries in which we read not only of the thegn but of his hall (*aula*). Thus we are told that at Eaton ten thegns, at Carlton in Lindrick six thegns, at Headon Godric and six other thegns had each his hall.[1] Such cases are interesting, for it is to the hall that we must look if we wish to find the old English equivalent of the Anglo-Norman *manerium*;[2] while on the other hand the estates on which these halls were seated might well be considered far too small to admit of anything resembling the later manorial organization. Thus Eaton and Carlton in Lindrick contained only 4 plough-lands each and Headon $5\frac{1}{2}$; at Normanton upon Trent 'five thegns, Justan, Durand, Elward, Ulmar, Aseloc, had each his hall and $1\frac{1}{5}$ bovates of land each (assessed) to the geld,' and in the neighbouring vill of Weston, 'Elmar, Elwi, Osbern, Grim, Edric, Steinulf had each his hall and 6 bovates between them.' However faintly the fiscal responsibility of the manor may have reflected its real capacity, no allowance reasonably to be made for this will materially increase the size of their units; Normanton had been worth 10 shillings as a whole, Carlton in Lindrick and Headon £4 each, and if Eaton was estimated at £6 before the Conquest this would only give an average value of 10 shillings for each of its manors. Other small but seemingly independent estates from the same quarter of the county occur at Rampton and Gringley on the Hill, where there had been seven manors, Misterton and Wheatley divided into five, Ordsall and Fenton into four. The account of the latter is important, for it shows us the existence of private jurisdiction on one of these small pre-Conquest manors. Three of the four manors in Fenton are surveyed together, but a separate entry is made of the fourth, which runs :—

> Ibidem habebat Speravoc ii bovatas terrae et ii partes unius bovatae ad geldum. Terra i carucae cum saca et soca sine aula.

This may fairly be quoted as a counter instance to Professor Maitland's Cheshire manor which is said to have its pleas in its lord's court;[3] for if the latter passage suggests that it was an exceptional thing for a

[1] At Epperstone and Woodborough in the fief of Ralf de Limesi, the scribe after giving the names of Ralf's two English predecessors has added the words 'non aulam' over the second name.

[2] *Domesday Book and Beyond*, 109.

[3] *Domesday Book and Beyond*, 91.

'lord' to hold his court in his hall we might certainly gather from the Fenton case that it was no less exceptional for a man to have jurisdiction over a manor without possessing a court in which it could be exercised. Also this particular manor, rated at 2⅜ bovates, and valued T.R.E. at 10*s.* 8*d.*, does not look like a promising field for private jurisdiction of any kind, though it is only fair to add that 'Speravoc' seems to have been distinctly a more important man than his fellows. In the three other Fenton estates, indeed, the Nottinghamshire manor seems to reach its lowest point—the three together had only been rated at 1⅓ bovates, and valued at 5 shillings, but Sperhavoc had also held part of Sturton-le-Steeple and the whole of West Burton with its sokeland in Everton and Harwell. However, we have no need to make this qualification in the case of 'Ulmer' of Clarborough, who in 1086 held as a king's thegn 1½ bovates in that vill, like Sperhavoc in Fenton 'with sac and soc without a hall.' Ulmer's manor was only worth 2*s.*, and there is nothing known to connect him with any other vill, while 'Ulchil,' who had also held part of Clarborough and had like Ulmer survived the Conquest, though only as under-tenant to Roger de Busli, had exercised sac and soc over land assessed at half a bovate, and worth no more than 16*d.* We may suspect that these small manors seemed as great an anomaly to the compilers of Domesday as they seem to us, for a great and general consolidation of the manorial system had taken place between 1066 and the date of the survey.[1]

The under-tenants whom Roger de Busli had enfeoffed on his estates are somewhat less shadowy persons than their English predecessors. The highly important charter which Roger granted to his new foundation of Blyth[2] was witnessed by a number of his 'men,' several of whom may be recognized in Domesday. The Fulk de Lisors (*Lusoris*) of the charter, for instance, appears with his full name at Breaston in Derbyshire, and as Fulco simply at Cotham, Eaton, Weston, Clayworth, Clarborough, and Harworth in our county. For two generations his manors descended in his male line and then passed to the constables of Chester, several donations to Blyth Priory marking the process of the descent. The charter also warns us of the confusion that may arise from the fact of two under-tenants bearing the same name, for it distinguishes 'Thorald,' brother of Fulk de Lusoris from Thorald de Chevercort, founder of an important early Nottinghamshire family, both of whom appear in the survey simply as 'Turold.' It was very possibly the former of these men who held at Hodsock; at any rate the Lisors family and their tenants appear there very soon after Domesday, but the 'Turold' who held the next vill of Carlton in Lindrick was undoubtedly Turold de Chevercort. Ralf de Chevercort, probably his son, gave land in Carlton to Worksop Priory, and his deed of gift was witnessed by Ernald the son of Claron,[3] whom we may safely connect with the Claron of Roger de Busli's charter to

[1] See Vinogradoff, *The Growth of the Manor*, 299–300.
[2] *Mon. Angl.* iv, 623.
[3] Abstract in Thoroton, *History of Nottinghamshire*, ed. Throsby, iii, 408–9.

Blyth and the Domesday under-tenant at West Markham and Elkesley. The Ralf 'Novifori' of Roger's charter bore a name which occurs frequently in the documents of Roche Abbey, but unless he was the Ralf who held at Elton, which is improbable, he does not appear in our portion of the survey.

It is rather surprising that there is no evidence directly to connect the great family of 'Luvetot,' the lords of Sheffield and of Worksop and many other manors in this shire with any Domesday under-tenant in our county. But before 1120, William de Luvetot had founded Worksop Priory, and granted to it 'all the churches of his demesne' of the honour of Blyth, that is the churches of Gringley, Misterton, Walkeringham, Normanton (upon Trent), Car Colston, Willoughby on the Wolds, Wysall, and his part of the church of Treswell.[1] Now on referring to Domesday we find that in six out of these eight places the under-tenant is given as Roger, Roger (de Busli)'s man, Misterton is said to be held by 'Roger,' which may, of course, stand either for the tenant or his overlord, and the holder of Willoughby is not stated. If we cannot argue directly from this as to the relationship of 'Roger' and William de Luvetot, the completeness with which the former's group of manors had passed to the latter is nevertheless very suggestive, especially in view of the probability that Roger the under-tenant may be identical with Roger de Luvetot, who is addressed in several writs belonging to the early years of Henry I and relating to South Yorkshire.[2]

Returning again to the foundation charter of Blyth Priory, we should certainly note one very exceptional and important feature which it contains. In making his gift to his monks Roger grants them 'the entire vill of Blyth with all its appurtenances and customs as the men of that vill used to perform them, that is, to plough (*arare*), to do carrying service (*kariare*), to mow (*falcare*), reap (*bladum secare*), make hay (*foenum facere*), pay merchet (*merchetum dare*), and to make the mill pool (*stagnum molendini facere*).' He also grants 'all the dignities (*dignitates*) which I used to enjoy in that vill, that is soc and sac and toll and team and infangenethef, iron and ditch and gallows with the other liberties (*libertates*), which I then held from the king.' Now this charter is dated 1088, and it is probable that we do not possess another outline of the services done by the men of a vill to a lay tenant-in-chief, and of his rights over them, so nearly contemporary with Domesday. In fact we have here some of the most characteristic features of the later manorial labour system, and this although Blyth in Domesday is merely entered as sokeland of Hodsock, two miles distant, and contained no demesne of its own. At Blyth, the only population consisted of four villeins and four bordars, and it is precisely as to the services performed by men of these classes that Domesday is most silent, while such information as it does give relates almost entirely to the west of England. It is, of course, unfortunate though inevitable that our charter merely indicates the nature of these services and tells us nothing of their quantity; but if the

[1] *Mon. Angl.* v, 118. [2] Ibid. viii, 1179.

reaping, mowing, and hay-making were of necessity confined to one season of the year, the carrying service and the ploughing, to say nothing of the work on the mill-dam, were not so restricted. This early occurrence of 'merchet,' the especial test of servile status at a later period, deserves particular notice.[1]

As to the lord's powers of jurisdiction the phrase 'sicut tunc temporis tenebam de rege' is noteworthy, for as Professor Maitland says, 'whether the Conqueror or either of his sons would have admitted that any justice could be done in England that was not his justice, we may fairly doubt.'[2] We could especially wish to know how many of these 'franchises' had been possessed by 'Ulsi,' the pre-Conquest owner of Hodsock, to which, as we have seen, Blyth was appurtenant. The manner in which the survey is drawn up in Nottinghamshire implies that the relation between a manor and its soke had existed before 1066, but the whole question is too wide to be discussed here. In the case of Blyth it is complicated by the fact that that vill contained no sokemen in 1086, and in a case of this kind Professor Maitland would suspect that there has been some depression of the peasantry.[3] Certainly, as might be expected, sokemen are characteristic of sokeland, but it would be easy to carry this argument too far. Roger de Busli's fief contains some instances to the point. He held widely in Oswardbeck wapentake, and we have seen that the king possessed much of this wapentake as 'sokeland' belonging to his manor of Mansfield. If, therefore, we turn to those vills which are surveyed partly as royal sokeland and partly as manors on Roger de Busli's fief, we may arrange their population in the following table:

	Sokeland			*Manors*		
	Sokemen	Villeins	Bordars	Sokemen	Villeins	Bordars
Gringley on the Hill	6	1	1	0	10	6
Misterton	5	6	1	0	8	5
Walkeringham	13	2	3	4	1	5
Wheatley	6	1	0	4	25	0
Sturton-le-Steeple	24	11	7	2	2	2
Clayworth	12	1	18	3	0	3
Clarborough	2	1	1	0	8	1

These figures show that general distribution of sokemen which was to be expected; they constitute 55 per cent. of the population on the sokeland as against nearly 15 per cent. on the manors. On the other hand, the fact that 23 villeins appear in the former and 13 sokemen in the latter reminds us that these classes were too nearly related in economic position for them to be mutually exclusive; they were rather differentiated by varieties of tenure and customary service than by any fundamental distinctions of origin or status.

One of the four typical 'escheats' mentioned in Magna Carta was the honour of Nottingham, which is represented in Domesday by the fief of William Peverell. The origin alike of the man and of his name is

[1] This charter deserves re-editing. The *Monasticon* copy omits the witnesses, who have to be supplied from the abstract given by Thoroton, *Hist of Notts.* iii, 494.

[2] *Dom. Bk. and Beyond*, 85. [3] Ibid.

very obscure, but he occurs early in the history of the Conquest in connexion with our county, for it was to him that the Conqueror entrusted the castle which he built at Nottingham in 1068 when on his way to put down the first revolt of the north.[1] William Peverel's lands form a compact group in the western half of the shire, covering all the roads leading from west and south to the county-town and its stronghold. He held nearly the whole of Broxtow wapentake, if we except the royal manors of Mansfield and Orston and some unimportant estates mostly belonging to 'king's thegns,' his possessions being continued across the Trent by the manor and soke of Clifton. This last is an interesting estate, for two lines were devoted to it at the end of the statement of the customs of Nottinghamshire and Derbyshire to the effect that 'over the soke which belongs to Clifton the earl ought to have the third part of all customs and works.'[2] As there was no earl of Nottinghamshire at this time, these dues must have been in the king's hand unless he had made an unrecorded grant of them to anybody. Clifton had belonged to a former owner of comital rank, though one unconnected with any earldom in which Nottingham ever lay, in the Countess 'Gode' or Gytha who had preceded William Peverel in several counties, notably Buckinghamshire and Northamptonshire. She was the wife of Earl Ralf of Hereford and must be carefully distinguished from her namesake Gytha, the wife of Earl Godwine, and from the better known wife of Earl Leofric, the Countess Godeva (Godgifu) of Mercia.[3] We may also recognize our countess in the 'Gode' whose manor of Edwalton, 3 miles from Clifton, had passed to Hugh de Grentemaisnil, the greatest landowner in Leicestershire. Although she is mentioned there without any mark of title we may be quite certain of the identification, for Edwalton is said to belong to Stockerston, Leicestershire, and on turning to that place in the Leicester Domesday[4] we find that it, like Wigston Magna, which had also passed to Hugh de Grentemaisnil, had belonged to Earl Ralf. Returning to the soke of Clifton we may notice that it lay along the right bank of the Trent opposite Nottingham, including Wilford, West Bridgford, Bassingfield, Gamston, and Adbolton with one or two outliers along the wolds, and that its value must be included in the figures given for Clifton itself, since £16 would be an impossible value for a Nottinghamshire manor rated at 2½ carucates and reported to contain only five ploughlands.

Like his rival Roger de Busli, William Peverel founded a priory on his Nottinghamshire estates. Early in the reign of Henry I he established a house of Cluniac monks at Lenton under the shadow of Nottingham Castle. His selection of a site for his priory is rather curious, for in 1086 he merely held Lenton *in custodia*, that is, probably, on the king's behalf as his bailiff or agent.[5] He held the whole of the

[1] *Ordericus Vitalis* (Soc. de la Hist. de France), iv, 184.
[2] Dom. Bk. f. 280*b*.
[3] See *V. C. H. Northants*, i, 289.
[4] Dom. Bk. f. 232.
[5] See for the meaning of *custodia* Appendix I in Round, *Geoffrey de Mandeville*, and for Peverel's tenure of the royal demesne in the Peak *V. C. H. Derb.* i, 303.

royal demesne in the Peak of Derbyshire on the same terms, as also Awsworth and Eastwood (Notts.), while we have seen that when he appears in 1068 in connexion with Nottingham Castle it is merely as the king's representative. It was Henry I who gave him definite possession of his lands in the Peak with which he richly endowed Lenton Priory, bestowing on it also besides Lenton itself the adjoining vills of Radford, Morton, and Kighton,[1] with his portion of Newthorpe and Papplewick and Courteenhall in mid-Northamptonshire. His under-tenants followed their lord's example, and among the list of donors given in William's foundation charter[2] we may notice several names which occur in the Nottingham survey. Thus the Saped who gave two-thirds of his demesne tithes in Empingham (Rutland) and Baseford may be identified with the Saped who appears as William's tenant in the latter vills, and the 'Pagan' who was Saped's co-tenant at Baseford must have been the father of 'Robertus filius Pagani,' who also gave tithes there to Lenton. A 'Goscelinus' made a similar grant at Watnall to the priory, and we may recognize him in the Gozelinus who with Grinchel, an Englishman, held Watnall of William in Domesday. In the 'Thonethona' of the charter, strange as is the form of the name, we have the modern Toton (near Long Eaton), and we discover the son of another Domesday tenant in Robert the son of Warner, who made a grant of tithes there. Whether the Domesday Warner, his father, was identical with the tenant of that name at Wollaton and Codnor and Shirland, Derbyshire, must be uncertain, but the name is not very common.[3] Ambrose, who held under William in Strelley and Bilborough, has been identified in several other counties, notably Northamptonshire, as a Peverel under-tenant.

But William Peverel's estate in this county is also noteworthy for the number of Englishmen who held of him in 1086. Their holdings may most conveniently be expressed in tabular form :—

Name	Held T. R. W. in :—	Held T. R. E. in :—
'Unlof'	Lenton	Lenton
Godwin the Priest	Strelley	Adbolton
Ailric	Greasley Brinsley	— —
Fredgis	Radcliffe on Trent Tithby	Costock Rempston Radcliffe on Trent
Ulviet	Radcliffe on Trent	—
Grinchitel	Watnall Newthorpe Kimberley	Watnall

[1] Already in Thoroton's time the two latter places were absorbed in Lenton.

[2] *Mon. Angl.* v, 111.

[3] The tithes of Stapleford were given to the priory by Geoffrey (de) Heriz, the founder of a branch of this family which, according to the Newstead Register, died out early in the male line. The Domesday under-tenant is given as Robert, who may have been Robert de Heriz, the head of the main line of the family. Tithes in Gonalston were given by 'Erbertus,' whom we may probably identify with the 'Herbert Peverel' of a Lenton charter given in Round, *Cal. Doc. France*, 506, and with the Herbert styled by Wm. Peverel *miles meus*, who gave to the priory one of the four mills of Lenton. The tenant of Gonalston is not given in Domesday.

Here we see that even those Englishmen who continued to hold land after the Conquest suffered some disturbance and reduction of their tenure. We might perhaps add to the list but for the carelessness of the Domesday scribes in recording the names of Englishmen, an extraordinary instance of which occurs at Lenton. The former owner is given as 'Unlof,' but directly afterwards we read *Ibi isdem Ulnod habet*, etc. We certainly dare not have assumed Ulnod and Unlof to be the same man without this distinct statement to that effect, but in its light we may probably recognize him in the Ulnod who is said to hold at Radford (adjoining Lenton) '1 bovate in thegnland.' It is perhaps worth noting that in none of these seven cases is the Englishman described after the normal fashion as William Peverel's 'man'; the almost equivalent formula (*Fredgis*) *tenet sub* or *de Willelmo* is used instead.

Two and a half columns of our survey are assigned to Walter de Aincurt, the kinsman of Bishop Remigius of Lincoln and the lord of Granby, whose principal seat was at Braunstone, Lincolnshire. Although the fact is somewhat obscured by the plan of the survey, his estates formed a roughly continuous group extending from his west Lincolnshire possessions, through Staunton, Cotham, Granby, and Flintham, to a number of manors on the left bank of the Trent, comprising the whole of Thurgarton, Hoveringham, and Bulcote, with part of Fiskerton and Rolleston. One of his under-tenants, the Mager who held in Staunton, deserves notice as the ancestor of the Nottinghamshire family of Staunton, who, however, appear later as holding of the lords of Belvoir in virtue of a grant made by Oliver de Aincurt to William de Albini the younger.[1] In each of his Nottinghamshire manors, except Granby, and in most of his Derby and Lincoln possessions, Walter de Aincurt had been preceded by one or both of two Englishmen, called Swegen and Tori, of whom nothing else is known; but the case of Granby is peculiar. It was by far his most valuable manor in Derbyshire or Nottinghamshire, and he is said to have possessed sac and soc over it.[2] Its former owner had been a certain Haminc who does not appear elsewhere in Nottinghamshire, but occurs in the list of those who had held sac and soc in Lincolnshire, and also as Walter's predecessor at Branston and Blankney in that county.[3] A considerable amount of sokeland belonging to Granby was scattered over the neighbouring vills, over which Haminc had doubtless exercised powers of jurisdiction before the Conquest. Domesday reveals a church at Granby, and the register of St. Mary's Abbey, York, shows us Walter de Aincurt granting his tithes there and at Cotham, Knapthorpe, Hickling, and Thurgarton to that foundation.[4] But the Aincurt fief, like all the greater fiefs in our county, afterwards supplied an endowment for a religious house of its own, for Ralph de Aincurt, Walter's son, founded an Augustinian priory at Thurgarton between 1114 and 1140. We may, in passing, note one curious detail concerning the Aincurt estates; they had risen in value in face of a general depreciation throughout the

[1] Thoroton, *Hist. of Notts.* i, 305.
[2] Dom. Bk. f. 280*b*.
[3] Ibid. f. 361.
[4] *Mon. Angl.* iii, 549.

shire. As the value of his lands in Derbyshire and Lincolnshire had also risen since the Conquest, Walter de Aincurt may have the credit of being a discreet and skilful landlord.

The next fief entered in our survey was that of Geoffrey Alselin, whose chief manor in our county was Laxton, which afterwards became the head of the Everingham barony. Laxton, to which pertained nine pieces of sokeland, had belonged to Geoffrey's regular predecessor in this and other counties, 'Tochi' (Toki) the son of Outi,[1] who appears among those who had exercised sac and soc before the Conquest. It may be convenient to note here that all the more important groups of sokeland in our county, such as Laneham, Sutton, Newark, Clifton, Granby, and this of Laxton, are connected by their pre-Conquest owners with rights of jurisdiction existing in King Edward's time.[2] If we include the king in our calculation, we can account for nearly four-fifths of the recorded sokeland of Nottinghamshire. This is important, for it makes it possible that the word 'sokeland' may here at least have meant what by derivation it implies, and that in these cases we may find a fairly definite bond of union between manor and soke in jurisdictional rights centred in the former. It is necessary to keep this question well apart from the distinct problem, whether a thegn who possessed one or two manors had 'sac and soc' over them where the fact is not directly stated; and if we believe that such powers of jurisdiction must have taken their origin from a royal grant, we must make a very large allowance for our deficiency of information respecting the Anglo-Saxon thegnhood in estimating the prevalence of private justice before 1066.

We may pass more rapidly over the tenants-in-chief who remain, for their Nottinghamshire estates were for the most part mere appendages of large possessions elsewhere. Thus Geoffrey de Wirce, Osbern fitz Richard, Durand and Robert Malet, and Hugh de Grentemaisnil only held one manor, and William the Usher, Robert the son of William, Henry de Ferrers and Hugh fitz Baldric, only two manors apiece in our county. Ralf fitz Hubert has been considered in the *Victoria County History of Derbyshire*, where he was lord of Crich. He held some nine manors in the west of Nottinghamshire, and here, as in Derbyshire, he had succeeded two Englishmen named Leofric and Leofnoth. Gilbert de Gand had come into possession of a compact estate in the centre of the county, most of which had belonged to the Ulf 'fenisc,' who had held 'the earl's third penny' in Nottinghamshire and Derbyshire. In the description of Gilbert's Nottinghamshire lands, Ulf is not assigned his distinguishing adjective, but in six cases out of eight a space is left vacant after his name, and the uniformity with which his possessions in other counties had passed to Gilbert leaves no room for doubt as to his

[1] *V. C. H. Northants*, i, 292.

[2] It should be noted that the famous list on f. 280*b* is not quite consistent as to date, for while the majority of names given in it are those of pre-Conquest owners, it also includes Walter de Aincurt and Henry de Ferrers. It is just possible, however, that the list may really refer, as a whole, not to the *tempore regis Edwardi* but to some time early in the Conqueror's reign, before the great confiscation of Englishmen's lands had been thoroughly carried out.

identification. The most interesting of Gilbert's possessions are the two manors which he held in Eakring, for they probably represent the partition of one estate between co-heirs. Thus each of them was assessed at 6 bovates and 2 plough-lands, each contained 3 acres of meadow, and woodland 6 furlongs in length and 4 in breadth, and each had fallen in value from £1 to 16*s*. Their former owners, however, had undergone different fates, for while one of them, 'Ingolf,' was replaced by 'William, Gilbert's man,' the other, 'Echebrand,' continued to hold his share as Gilbert's under-tenant.

The small fief of Gilbert Tison was more directly connected with Nottinghamshire, for it appears later as the honour of Averham (Egrum).[1] In addition to Averham and one or two adjoining vills, it included Finningley, the most northerly manor in the county, and had nearly all belonged to one Swegen. The description of it is noteworthy in one respect, for it incidentally mentions one of those mysterious 'senior thegns' in whose functions in the local courts Professor Stubbs sought to discover the germs of the jury of presentments. The entry in question runs :—

> In Wicheburne [Winkburn], habuit Suain xii bovatas terrae ad geldum . . . Duas bovatas de hac terra tenuerunt v taini. Unus eorum erat senior aliorum, que (*sic*) non pertinuit ad suain.[2]

This passage unfortunately is by no means clear, but the *que* is probably a short and obscure expression for *cujus terra*. Without making conjectures as to the meaning of the 'seniority' of this thegn, we may note that Swegen himself must have been an important man, for the entry seems to imply that the land of four of these five thegns had 'belonged' to him. It is perhaps worth while making the guess (it is no more) that he may have been the Swen the son of Suave who appears on folio 280*b* as a former possessor of sac and soc.

The survey of Ralf de Limesi's land contains a reference to a unit of land-measurement sufficiently rare in the north of England to be worth a note. In the account of Epperstone we are told 'Ibi Radulfus habet in dominio iii carucas et xiiii sochmanni de vi bov' et ferding hujus terrae,' and over 'ferding' the scribe has added the words 'i bov̄' in explanation. The 'ferding' would seem to represent the 'fertinus' or 'farthing' which occurs frequently in the survey of the south-western counties, where it represented the quarter of a virgate,[3] whereas at Epperstone it was apparently the quarter of a bovate; unless indeed the interlineation is not explanatory but intended to correct the 'ferthing' into 'bovate.'

A folio of our survey is assigned to Ilbert de Lacy the lord of Pontefract, and it also contains an entry which looks as if it would be

[1] See the charter of Henry de Hose, the successor of the Tisons, to Thurgarton Priory, addressed 'Omnibus sanctae matris ecclesiae fidelibus et maxime hominibus honoris de Egrum.' *Mon. Angl.* vi, 191.

[2] Folio. 291, quoted by Maitland, *Domesday Book and Beyond*, 165, and Vinogradoff, *The Growth of the Manor*, p. 287.

[3] *Domesday Book and Beyond*, 479.

interesting if it were only intelligible. Godric and Ulviet had held 4 bovates in Cropwell Butler which had passed to Ilbert, but when Roger of Poitou, who possessed a much larger manor in the same vill, received his land he appropriated Ilbert's share in addition to his own. The wapentake (of Bingham) bore witness that Ilbert had received seisin, and when Domesday was compiled the manor was in the king's hand 'praeter terciam partem et tainum qui est caput manerii, quem tenet Ilbertus.' It seems impossible to translate these last words so as to make sense, for one does not see how a thegn could be a 'capital messuage' (*caput manerii*), nor indeed how Ilbert could 'hold' him. Doubtless there is a mistake here, unless possibly 'tainum' is used for 'tainagium,' the thegn and his thegnland being taken as equivalent; but at any rate we have an illustration of the action of the wapentake court in suits as to the possession of land, and we also notice the importance attached even thus early to proof of actual possession or 'seisin.'

Small as were the Nottinghamshire possessions of Henry de Ferrers and Osbern fitz Richard, the description of them involves a curious topographical difficulty in each case. It is rather surprising to find Osbern fitz Richard holding land so far east as Nottinghamshire, for the head of his barony was at Richard's Castle in Herefordshire. In our county he is assigned a manor in Granby which had formerly belonged to earl Ælfgar, together with 3½ bovates in Wiverton and 6 in Salterford. But the difficulty in the case is occasioned by the statement that Osbern's holding in Wiverton was 'sokeland,' and his 6 bovates in Salterford formed a 'berewick' in 'Coletone.' Now Osbern's manor in Granby was held of him by Robert de Oilly, the greatest lay tenant in Oxfordshire, and our difficulty arises from the fact that there seems to be no evidence later than Domesday to connect Granby with the honours either of Richard's Castle or Wallingford, which represent the fiefs of Osbern fitz Richard and Robert de Oilly respectively; the whole vill belonging to the Aincurts. On the other hand the 'carta' of Geoffrey Ridel in 1166 shows us the Bassets holding Colston Basset, which in all probability represents the 'Coletone' above, of the honour of Wallingford,[1] and we also know that they had entered into possession there before 1121.[2] It would seem therefore that either the account of Colston Basset is altogether omitted from the survey, or else that we have its description in the entry which is above attributed to Granby, the name being a mistake on the part of the Domesday scribes, either alternative of course implying carelessness on the part of the latter.[3] An even more inexplicable case occurs on the fief of Henry de Ferrers, who held one bovate in Willoughby on the Wolds, of which we read 'soca in Badeleie.' The only known name in the county which can represent the latter is Bathley, to the north-east of Newark, but this was merely a

[1] *Red Book of the Exch.* (Rolls Ser.), 331.

[2] See the charters relating to the priory of Laund, Leicestershire (*Mon. Angl.* vi, 188).

[3] An additional complication is caused by the fact that the only 'Salterford' in the county lies near Calverton north of the Trent, and is 13 miles distant from Colston Basset.

hamlet of North Muskham, and was chiefly in the hands of the chapter of Southwell. In connexion with Henry de Ferrers we may safely identify the Siward who preceded him at East and West Leake and Bonnington with the Siward 'barn,' who in 1070 joined Hereward and his fellow malcontents in the Isle of Ely.[1]

The last two folios of the Nottinghamshire survey are devoted to those Englishmen who had survived the Conquest and form the class of 'king's thegns.' They are interesting people, for they seem to be holding their lands in 1086 on conditions of tenure very similar to those which had prevailed generally over the county in the time of King Edward, and in Nottinghamshire their number is unusually great. On analysis, however, it turns out to be not quite so great as might be supposed at first sight, for two or three thegns stand out prominently above their fellows. By far the most interesting of this class was one Alden or Healfdene, who held as much land of the king in Nottinghamshire as did Roger of Poitou or Ralf fitz Hubert. As a king's thegn he held manors in Cromwell, Carlton upon Trent, Knapthorpe, Lambley, Woodborough, Trowell, Awsworth, Lambcote, Kelham, and Widmerpool, and he was probably the Alden who held part of Normanton upon Soar of the count of Mortain. But his peculiar importance arises from the fact that he was the ancestor of the mediaeval lords Cromwell, who without attaining the highest regions of statesmanship played a creditable part in English history before the extinction of their male line in the time of Henry VI. If it should be found possible to connect the great Protector with this family, the interest attaching to our 'Aldene' as his earliest recorded ancestor would of course be greatly increased. It is worth noting that in eight of his manors 'Aldene' had been preceded by an Englishman styled in different entries Ulchel, Ulchet, and Ulchete.

Eight manors, Normanton upon Trent, Elkesley, Clarborough, Ordsall, Chilwell, Trowell, Gonalston, and Misson, were held by a certain Ernui, sometimes, but it seems indifferently, styled 'presbiter' in an interlineation.[2] Unlike Aldene, he had held land in this shire before the Conquest, and he appears prominently in the Domesday account of Lincoln, where he held a messuage which had belonged to Earl Morcar. He also held 1½ bovates in Flintham of Roger de Busli.[3] It is curious that at some period after 1070 the county had possessed a sheriff of this name, for an Earnwi or Earnwig is addressed as such in two of the Conqueror's writs relating to Nottinghamshire affairs.[4]

A third thegn, holding a smaller but more compact estate, was the 'Sawin' who possessed part of Gotham, Kingston and Barton in Fabis with the whole of Ratcliffe upon Soar. It will be evident that the subtraction of these three estates from the total possessions of the king's thegns in Nottinghamshire will materially reduce the number of the

[1] See *V. C. H. Warw.* i, 282.

[2] For a notice of Ernui the priest see *V. C. H. Lancs.* i, 275.

[3] *Mon. Angl.* iii, 20.

[4] Writs, in Anglo-Saxon, in the Eynsham Chartulary, shortly to be published by the Oxford Hist. Soc.

latter who were independent landholders, and will to that extent invalidate the conclusions which Professor Freeman based upon their presence in our county. The professor made the presence or absence of king's thegns the test by which to determine whether a county had submitted peaceably or the reverse to the Conqueror, and he argued that the presence of the class in such considerable numbers in Nottinghamshire showed that the king's favour had been bought by an early submission on the part of the shire to his rule.[1] But apart from the question of mere numbers it has been shown in other volumes of this series that the king's thegns were considered to be of inferior status to the tenants in chief by military service, and even in this county the number of Englishmen holding land in 1086 bears a very small proportion to the great crowd of the disinherited.[2]

The position of the borough of Nottingham in the survey deserves notice, for it reflects one of the most important facts in the history of the shire. Until the reign of Elizabeth Nottinghamshire was united with Derbyshire under one sheriff, and from a chance reference in the Domesday account of Derby borough to 'the witness of the two shire courts' we know that this arrangement must already have prevailed in 1086.[3] The association of the counties is implied in the order in which their surveys are entered in Domesday, for the account of Derbyshire comes first, followed on folio 280 by the descriptions of Nottingham and Derby, to each of which a column is assigned ; the next folio, which is devoted to certain customs relating to the two counties jointly, being succeeded by the survey of Nottinghamshire. It is rather important to follow carefully the structure of the account which is given of Nottingham itself. First comes the description of the borough as it stood in the Confessor's time, with special reference to its agricultural condition, and to the king's fiscal rights there. Next we have an account of some changes which took place in the borough between the Conquest and 1086, and then comes the usual description of the state of things existing at the date of the survey, with a specification of those who held houses in the borough. This is followed by the account of a small agricultural estate which the king possessed in Nottingham, and then in reality begins the statement of general customs with which the reverse of the folio is occupied.

Like the great majority of English boroughs Nottingham was 'farmed' or set to rent as a single whole, and as generally was the case its 'ferm' had been largely increased by the Conqueror.[4] In King

[1] *Norman Conquest*, iv, 197.

[2] This point has been considered in the *V. C. H. Northants*, i, 294 ; and *Derb.* i, 307.

[3] On this ground Mr. Round has suggested (*Geoffrey de Mandeville*, 193) that the Ferrers earldom consisted of the joint shrievalty of Notts. and Derby, and that this was the reason why Nottingham never became a separate earldom before Richard II conferred the title on Thomas Mowbray. If we can trust the copy given in the *Mon.* (vi, 97) the connexion of the two counties is proved by the foundation charter of Bredon Priory, Leicestershire, where Earl Robert de Ferrers appears as 'Robertus comes de Notingham.'

[4] On the payments made by boroughs in 1086 see Mr. Round's paper on Domesday finance in *Domesday Studies*.

Edward's time it had paid £18, but in 1086 it is found debited with £30, and an additional payment of £10 from the mint. The 'ferm' of Derby had likewise been brought up to £30 from £24, while that of Lincoln and Leicester had stood at the former amount before the Conquest, but had been much increased. The pre-Conquest 'ferm' of Nottingham most probably included the proceeds of the mint, for following the rent of the borough lands we read of a payment of £2 'from two moneyers.' This statement is interesting, for in the twelfth-century pipe rolls we find that when one of the moneyers of a borough ceased to work, a remission of £1 was made from the 'ferm' of the borough on this account, and the above passage carries this allowance of £1 to a moneyer beyond the Conquest. Moreover the increase in the render of the mint from £2 to £10 may fairly be taken to imply that a corresponding increase in the trade of the borough had taken place since 1066. The mint at Lincoln, however, rendered £75, and a proportionately greater number of actual coins struck there have come down to us.

But in addition to its 'ferm' a borough was usually assessed to the geld in the same fashion as a rural manor, its assessment being repartitioned among the burgesses. The case of Nottingham is not quite simple. To begin with, the amount of geld cast upon the borough is very small, being only 6 carucates; it was only 12 carucates at Derby, the case of which is parallel in several points with that of Nottingham.[1] Then the wording of the survey deserves attention: 'To this borough there belong six carucates of land (assessed) to the king's geld, and one meadow and underwood 6 furlongs in length and 5 in breadth. This land was divided among 38 burgesses, and from the rent of the land and the works of the burgesses rendered 75 shillings and sevenpence.' Now this entry does not read like a statement of assessment of the borough as a whole, but has rather the form of a description of an agricultural estate 'belonging' indeed to the borough, but held in fact by only a relatively small number of its burgesses. As the total number of the latter had been 173 we see clearly enough the presence of a landholding class within the urban community, and we seem entitled to ask the question whether the fiscal responsibility of the borough had not been borne in practice by those burgesses only who possessed a share in the borough lands, especially in view of the reappearance of a precisely similar phenomenon at Derby. For the gulf is wide between the assessment of Nottingham and Derby at 6 and 12 carucates, and that of Cambridge at 100 hides, of Bedford and Huntingdon at 50 each, and (to return to the Danelaw) of Stamford at 150 carucates. Lastly, later in the same column, there occurs an entry which, to all appearance, relates to the geldable land of the borough—'Burgenses habent vi carucatas terræ ad arandum et xx bordarios et xiii carucas.' Here, then, we see the above 6 fiscal carucates represented by an equal number of field carucates actually cultivated by the burgesses and their dependents.

[1] *V. C. H. Derb.* i, 308.

The account of the borough land of Nottingham opens up another interesting subject. One of these 6 carucates had been held by Earl Tostig 'of the soke of whose land the king had two pennies and the earl himself the third.' This entry has a definite bearing on the difficult question of the earldom to which Nottinghamshire had belonged in the time of Edward the Confessor. Professor Freeman, who had noticed this passage, remarked that Tostig 'is not distinctly spoken of as earl of the shire.'[1] This no doubt is true, but when an earl is found in possession of the third penny of land in a county town the fact affords a reasonable presumption that he was the earl of the shire to which the town belonged. Tostig's possession of Bothamsall, an important manor with much sokeland appurtenant, is also suggestive; such estates were not very common in Nottinghamshire, and the Conqueror's retention of it in his own hand agrees well with the plan, which we know him to have followed in other counties, of keeping for himself the forfeited estates of the local earl.

At any rate Earl Tostig's land in Nottingham is of importance in another connexion. At some uncertain date before 1086, Hugh fitz Baldric was sheriff of this shire,[2] and he established thirteen houses on the land in question, although the population had fallen from 173 to 136. An interlineation describes these houses as *in novo burgo*, a phrase which gives us our first evidence for the existence of the 'French borough' in Nottingham. Similar 'new boroughs' had been founded in other towns, as at Exeter and Northampton.[3] The peculiarity of the Nottingham case is that it accidentally affected our legal phraseology. The 'old borough' of Nottingham, so early as the beginning of the reign of Henry I, had come to be described in contradistinction to the new borough as the *Anglicus burgus*, and in it the old English customs as to the inheritance of land continued to prevail. In particular, that form of succession according to which the youngest son succeeded to his father's land was found there, and there seems to be no deeper reason for the name, Borough English, which ever since the twelfth century has attached to this kind of tenure.

Although five Nottinghamshire tenants in chief held houses in the county town, we do not see any of that attribution of town houses to country manors which was such a prominent feature of the survey of Leicester. There is, therefore, no direct evidence in favour of the 'garrison theory' of the borough to be gathered from Nottingham.[4] On the other hand the survey of Nottingham contains one very characteristic feature in the *domus equitum*, which appear in two entries. The word *eques* is very rare in Domesday, and it seems as if it can have had no other Anglo-Saxon equivalent but *cniht*, a word which, by the eleventh

[1] *Norman Conquest*, ii, 580.

[2] He figures as sheriff (of Yorkshire) before 1069 in the foundation legend of Selby Abbey. Freeman, *Norman Conquest*, iv, 794.

[3] *V. C. H. Northants*, i, 276.

[4] See the section on 'the Borough' in *Domesday Book and Beyond*, where particular reference is made to Nottingham in 1200.

century at any rate, was undergoing a military specialization. When, therefore, we read that 'Ralf de Burun has twelve knights' houses, in one of which a merchant dwells,' we may be disposed to see a concrete instance of the process, as a result of which, in Professor Maitland's phrase, 'houses which should have been occupied by knights were occupied by chapmen.'[1] Twenty-five knights' houses are recorded, twelve of which belonged to William Peverel, who, we may remark, had been at least formerly in charge of Nottingham Castle, and thirteen, as we have seen, to Ralf de Burun.

The one church which Domesday records in Nottingham was handsomely endowed. It possessed three 'messuages' (*mansiones*) and 5 bovates of borough land 'with sac and soc,' as well as 5½ acres, over which the king exercised these rights, which also belonged to him in relation to sixty-five houses situated 'in the priest's croft,' the total value of all these possessions being £5 yearly. The foundation charter of Lenton Priory carries the history of this church a stage further, for William Peverel gives to his monks 'the church of St. Mary, of the English borough of Nottingham, with all its appurtenances, by the grant of (his) lord King Henry.'[2] These last words are explained by the statement in Domesday that the church was situated in the king's demesne, and we may safely identify it as the Norman predecessor of the present church of St. Mary.

Of more general interest is the statement that 'In Nottingham the water of Trent and the Foss way (*fossa*), and the road towards York were so guarded that if any one should hinder the passage of ships, or should plough or make a ditch within two perches of the king's way, he should pay a fine (*emendare*) of £8.' Nottingham stood in later times at the head of the navigation of the Trent, and the commercial importance of the river is illustrated by the permission which Henry I gave to Alexander, bishop of Lincoln, of making a bridge over the Trent at his castle of Newark, 'so that it may not hurt my city of Lincoln nor my borough of Nottingham,'[3] and also by the clause in Henry II's charter to the burgesses of Nottingham, granting them rights of toll over all people passing along the Trent from Thrumpton to Newark.[4] The Lincolnshire Domesday shows us other than mercantile travellers passing down the river, for it was the duty of the men of Torksey to conduct the king's messengers in their boats from the latter place to York.[5] Much of the trade of Nottingham was no doubt due to its situation at the point where the Trent at or near its navigable limit was crossed by one of the great highways running from north to south, the *via versus Eboracum* of Domesday. There seem to have been two main 'through routes' from London to York, both of which intersected Nottinghamshire. The one

[1] *Domesday Book and Beyond*, 196.

[2] *Mon. Angl.* v, 111. In 1538 the value of the tithes accruing to the priory from Nottingham amounted to £35 18*s.* 8*d.*

[3] *Mon. Angl.* viii, 1275.

[4] Stevenson, *Records of the Borough of Nottingham*, i. The Domesday text is well illustrated by the clause in the charter running 'Et iter de Trenta liberum esse debet navigantibus quantum pertica una obtinebit ex utraque parte fili aquae.'

[5] Dom. Bk. f. 337.

in question was that which diverged from the Watling Street at Stony Stratford, passed through Northampton and Leicester to Nottingham, and continued through Blyth and Doncaster to York and the north. We get a definition of its course in Nottinghamshire in the above-mentioned charter to Nottingham, for the burgesses are granted toll 'a Duito ultra Rempeston usque ad aquam de Radefud in Nor.' *Duito* is explained by Mr. Stevenson as a shortened form of *conductum*, and refers to the brook which for some five miles forms the southern boundary of Nottinghamshire, and is crossed by the above road at Rempstone on its entrance into the county.[1] Similarly the road crosses the 'water at Radford,' or river Ryton, at Blyth, a fact which helps to explain Roger de Buslis' grant of toll, fair, and market there.[2] The other road from the south to York ran from London through Huntingdon to Lincoln, and then, crossing the Trent at Littleborough, passed across the north-eastern corner of Nottinghamshire, entering Yorkshire at Bawtry, and probably joining the road from Leicester and Nottingham at the same place.[3]

A slight ambiguity attends the word *fossa* in the Domesday passage quoted above. Mr. Ballard takes it to mean 'the city ditch';[4] but there does not appear to be any evidence in support of this. By Mr. Green and his followers it is taken in close connexion with *via versus Eboracum*, and translated 'the ditch and road that runs to York.'[5] But this reading does not seem very natural, and in the translation below the word is taken to mean 'the Foss Way.' This great road, running from Lincoln to Leicester and the south-west, passed through the three southern wapentakes of Nottinghamshire, and for 12 miles formed part of the high road from Newark to Nottingham. The Lincoln Cathedral charters show its position as a 'royal road.' In one of them the bishop is allowed to divert the *regia strata*, which goes through Newark, whither he will.[6] Mr. Stevenson has recently suggested that the words 'In Snotingeham, aqua Trente . . . . custodiuntur' in the above Domesday passage may indicate 'some control over the county' as belonging to the burgesses of Nottingham.[7] This may no doubt be so, but it is also possible that the word *scire* was omitted after 'Snotingeham,' and that the passage is merely indicating the manner in which the main lines of communication running through the county were safeguarded.

On the whole the local geography of Nottinghamshire has exhibited somewhat unusual stability. If we combine Domesday with the twelfth-century chartularies which we possess there will be few hamlets in the county which we cannot trace back to a period beyond 1160, while a still smaller number of the place-names mentioned in the survey have passed altogether out of remembrance. In 1086 the county seems to

[1] The copy of the charter given by Dr. Stubbs in his *Select Charters*, p. 167, reads 'usque ad aquam de Radefud in Norhantesire,' but this is merely a wrong expansion of the Nor' of the original.

[2] 'Theloneum et passagium de Radefud usque in Thornewat' . . . feriam et merchatum in eadem villa.' *Mon. Angl.* iv, 623.

[3] It was by this latter road that Harold marched south in 1066, and William in 1068.

[4] *The Domesday Boroughs*, 85.

[5] *Conquest of England* (ed. 1883), 439.

[6] *Mon. Angl.* viii, 1273.

[7] *English Historical Review*, April, 1905, p. 349.

have had precisely its present boundaries, a statement which is worth making in view of the general belief that Nottinghamshire was combined with Rutland in Domesday, and that its frontier accordingly requires rectification.[1] Now the south of Rutland was actually included in the Domesday account of Northamptonshire, and several manors in north Rutland are duplicated in the Lincolnshire Domesday, but the connexion between Rutland and Nottinghamshire in 1086 was purely fiscal. The district which is called Rutland in Domesday consisted of the wapentakes of 'Alfnodestou' and 'Martinsley,' representing the three modern hundreds of Alstoe, Martinsley, and Oakham soke. At the beginning of the survey of this district these two wapentakes are named with the statement that they belong to the sherifdom of Nottingham with reference to the king's geld (*ad geldum regis*), and in particular we are told that Alstoe is 'half in Thurgarton and half in Broxtow wapentake.' Perhaps the simplest possible explanation of this very difficult phrase would be that the proceeds of the Alstoe court were divided between Thurgarton and Broxtow wapentakes in the sense of being added in equal proportions to the perquisites drawn by the sheriff of Nottingham from each of the latter. We certainly cannot suppose that half the peasantry of Alstoe wapentake were expected to travel forty miles each month to attend the court at Thurgarton. The essence of the connexion doubtless was that the sheriff of Nottingham was answerable for the Rutland Danegeld, and it was nearly a century after Domesday before the latter became a fiscally independent shire. We get a glimpse of this association in another quarter, for when the Conqueror granted the churches of Uppingham and Wardley in Rutland to Westminster Abbey he addressed his writ to Bishop Remigius, Hugh de Port, and 'all his servants and lieges (*fidelibus*) of Nottinghamshire.'[2]

We may now pass on to certain matters which are suggested by the Nottinghamshire survey as a whole. If the survey is read with special attention to its statements of manorial values it will be noticed that while the great majority of values are expressed in simple multiples or fractions of a pound a considerable number are more complex. Thus the first four manors entered on the land of the king's thegns are valued respectively at 10*s*., 5*s*. 4*d*., 10*s*. 8*d*., and £2. Now this sum of 5*s*. 4*d*. with its fractions and multiples occurs in many entries in Nottinghamshire, and is found, though somewhat less frequently, in the Derbyshire Domesday also. The instances of its occurrence in the latter county are collected in the *Victoria History of Derbyshire*, where it is suggested that these figures are based upon the 'ora,' or ounce of silver, of 16 pence, a currency unit which we know to have prevailed in that district.[3] On

[1] *Domesday Book and Beyond*, 408.

[2] *Mon.* i, 301. Remigius is doubtless included as the bishop of the diocese in which these churches were situated, but it is difficult to explain the fact that Hugh de Port occupies in this charter (1081–1087) the place of a sheriff of Notts. We have no statement elsewhere to the effect that he ever held that office, and he held no land in this county in 1086.

[3] This is proved by the fact that the Burton Chartulary uses 'ora' and '16 pence' interchangeably. See Mr. Round in *Eng. Hist. Rev.* April, 1905; and *Feudal England*.

the other hand, in the survey of Leicester, the capital of another of the counties of the true Danelaw, as at Oxford, we are distinctly told that the ora consisted of 20 pence, but in Cambridgeshire and Bedfordshire we know that the reckoning of 16 pence held good. The denomination is not mentioned by name in Nottinghamshire, but the following table certainly suggests that the 16 pence equation was recognized in this county also :—

£	s.	d.	Value T.R.E. at :—	Value T.R.W. at :—
0	1	4	Clarborough	Clarborough
0	2	8	—	Kinoulton
			Thrumpton	Thrumpton
			—	Rempstone
			—	Oxton
			—	Calverton
			—	West Drayton
0	5	4	Aslockton	Aslockton
			—	Carlton on Trent
			Woodborough	Woodborough
			—	Trowell
			Chilwell	Costock
0	10	8	Fenton	Fenton
			Knapthorpe	Knapthorpe
			—	Welham
			East Markham	East Markham
			Cotham	Cotham
			Greasley	Beckingham
			Oxton	Kelham
0	16	0	Cossall	Eakring
			Normanton-by-Southwell	North Muskham
			Cropwell Butler	—
			Calverton	—
			South Muskham	—

The same unit is very prominent in the valuation of mills, a fact which Mr. Round has noticed elsewhere. Thus mills at Newark, Barnby in the Willows, Epperstone, Oxton, Staunton, and Hawton were valued at 5*s.* 4*d.* each, the mill at Tuxford was worth 10*s.* 8*d.*, while those at Laneham, East Markham, Kirklington, Warsop, Hickling, and Teversall, were estimated at 16*s.* each, and at Tilne, Clarborough, and Bole we read of 'two mills rendering £1 12*s.*' Apart from mills, the fishery at Dunham had been worth 10*s.* 8*d.*, and two of the most important ferries across the Trent, at Gunthorpe and Fiskerton, had brought in £1 10*s.* 8*d.* and £2 6*s.* 8*d.* respectively, the last of course representing a sum of seven half-marks.[1]

In the *Victoria History of Derbyshire* it was pointed out that the existence of this 'ora' of 16*d.* threw a little light upon the curious series of fines by which the king's peace was safeguarded in Nottinghamshire and Derbyshire. The statement in question, which is repeated

[1] For the value of the 'ora' compare *Studies in Anglo-Saxon Institutions*, by Mr. H. M. Chadwick, who, however, regards the Domesday evidence as pointing exclusively to an 'ora' of 20 pence.

with slight verbal differences in the Yorkshire and Lincoln surveys, runs:—

> In Snotingeham scyre et in Derbescyre pax regis manu vel sigillo data, si fuerit infracta emendatur per xviii hundrez. Unumquodque hund: viii libras.

Now £8 represents 120 'ores,' that is 100 according to the 'Anglicus Numerus' which was followed in the Danelaw, and this fact becomes significant when we read in a statement of the privileges of the church of York: 'Si quis enim quemlibet . . . infra atrium ecclesiae caperet et retineret, universali judicio vi hundreth emendabit. In hundreth viii librae continentur.'[1] In 1106 these privileges were declared to apply to the church of Southwell,[2] so that we are justified in extending their application into Nottinghamshire, and by combining this passage with the above quotation from Domesday we see that the 'hundred' was 100 'ores,' and that most probably on this account the sum of £8 came itself to be described as a 'hundred.' This is not the place in which to discuss the meaning of these 'hundreds' as fiscal groups, which has been treated by Mr. Round in *Feudal England*, nor can we enter into the difficult question of their possible connexion with the territorial hundreds mentioned here and there in the body of the survey of this county, but we may note that the Lindsey survey shows us that the Lincolnshire 'hundred' normally contained 12 carucates, which, as £8 represents 12 marks as well as 120 ores, illustrates in a striking way the neatness and artificiality of early fiscal arrangements.[3]

Nottinghamshire was one of those counties in which we may suspect that the compilers of Domesday did not deal very consistently with certain classes of society included in the original returns.[4] Two very important classes, slaves at one end of the social order and rent-paying tenants (here styled 'censores') at the other, are mentioned just sufficiently often to prove that nothing in the instructions issued to the Domesday commissioners directed their exclusion from the returns, but appear in our portion of the survey in a way which suggests that their entry depended on the caprice of the scribes. Thus not a single 'censor' or serf appears on the first fifteen folios of the Nottinghamshire survey; but at Colwick, the first manor entered on the fief of William Peverel, we meet with two serfs, and at Gonalston two 'censores' occur. On the next folio two serfs are entered at Stapleford, and four at Bilborough, and two serfs appear at Bulcote on the succeeding fief of Walter de Aincurt. The scribes would seem to have been more exact in their description of Geoffrey Alselin's land which follows, for in addition to the serfs who are found, in number five, six, and one respectively at Laxton, Stoke with Gedling, and Burton Joyce, an 'ancilla' or female serf is entered at the first

[1] *Feudal England*, 73.

[2] A statement of these privileges is entered in the (MS.) Liber Albus of Southwell.

[3] *Feudal England*, 75.

[4] The unsystematic methods of the scribes in matters of secondary importance for their purposes are illustrated in another way. In Notts. there occurs only one instance, at Gunthorpe, of the tallage (*tailla*) which is a prominent feature of the Lincoln survey, and cannot reasonably be supposed to have been levied on a single manor only in the former county.

and last of these places; but serfs, 'ancillae,' and 'censores' alike are entirely absent from the remainder of the survey. We shall not explain their casual appearance on geographical grounds, for if Stapleford and Bilborough are close to the border of Derbyshire, where the servile population reaches ·7 per cent., Laxton is within 7 miles of Lincolnshire, where, so far as the evidence of Domesday goes, there were no serfs at all. No doubt the proportion of the servile class is usually supposed to have reached its lowest point in the Danelaw, yet there were nearly 700 serfs in Leicestershire, while as for Nottinghamshire the fact that the *servi* are confined to three fiefs entered in the middle of the survey would alone make any conclusions based on their numbers in this county extremely precarious. No freemen, strictly so called (*liberi homines*), occur in Nottinghamshire, but we notice seven *franci homines*, who may be either franklins or Frenchmen,[1] at Newark, and one *francus homo* is to be found on William Peverel's portion of Langar. But the *Liber de Welbeck* gives one most interesting glimpse of an older order of society in its account of Norton Cuckney. The story runs that a certain 'Joceus the Fleming' came to England with the Conqueror, and received land in Cuckney. In the same vill there was dwelling one Gamelbere, who had held 2 carucates of land before the Conquest as a 'dreng,' on condition of shoeing the king's palfrey when he came to Mansfield, and of performing such duties as belonged to a holding of 2 carucates whenever there was need of military service in Wales. Gamelbere (the name is pure Danish) died in the time of Henry I, having presumably continued to hold his land according to pre-Conquest conditions of tenure up to his death, and the king gave his 2 carucates to Richard, son of the above-mentioned 'Joceus the Fleming.'[2] It is impossible to corroborate this story from Domesday evidence, for neither 'Joceus' nor Gamelbere is mentioned in the survey; but there seems no reason to doubt its truth, nor the fact that in 1086 there was still to be found in Nottinghamshire one of that class of 'drengs' who figure prominently in the land between Ribble and Mersey, and maintained their ancient tenures in the north for centuries after Domesday, but of whose existence we can find only the slenderest traces after the Conquest south of the Humber.[3]

The Nottinghamshire survey is not a very favourable specimen of the workmanship of the Domesday scribes. The earls, as we have seen, are entered before the ecclesiastical tenants, one folio is entirely vacant, and there are numerous blank spaces in the manuscript, while erasures, interlineations, and marginal entries are frequent. The account of the king's manor of Mansfield is somewhat unintelligible at first sight. It

[1] Probably the former. See Mr. Round's remarks in *V. C. H. Warwickshire*, i, 285.

[2] *Mon. Angl.*, vi, 872

[3] The most complete account of drengage is contained in Prof. Maitland's article on Northumbrian tenures, *Eng. Hist. Rev.* v, 625 et seq. See also Lapsley in *Amer. Hist. Rev.* ix, 670–695, and *V. C. H. Durham*, i, 284–291. It may be noted that the Worksop Priory documents contain references to land 'ad Inwara(m)' and 'ad Utwara(m)' so late as the reign of Henry II. See *Athenæum*, 24 June, 1905.

follows the description of his manor of Grimston, which, though designated as a 'manerium' by the symbol M in the margin of the entry, and possessing five pieces of appurtenant sokeland, is described as being a berewick in Mansfield. Then comes the survey of the latter, which is followed by a string of place-names with assessment figures annexed, of which we read that the total amounts to 13 carucates 6½ bovates. This is not true, for these figures work out at the much neater total of 15 carucates; but the survey then goes on to describe some of these places with their agricultural details, a plan which is followed more consistently in the account of the soke of Grantham in the Lincolnshire Domesday. One touch of personal interest occurs in these last details, for at Warsop we are told that 'there is 1 bovate which a blind man holds in alms of the king.' He is entered again on the thegns' land at the very end of the survey, and as the assessment of Warsop is complete as a 3-carucate vill without his bovate, it is quite possible that he was exempted from payment of the geld. Professor Freeman rather unnecessarily suggested that he had been 'blinded by the king's orders.'[1] We may also note that 1 bovate which the king held in Farnsfield 'prope Snotingeham' as belonging to Grimston soke is not improbably entered again on Walter de Aincurt's land as that bovate which was 'the king's, but belonged to the hundred of Southwell,' to which reference has already been made.[2]

The history of the eight Domesday wapentakes of Nottinghamshire is reasonably clear, the only changes of importance being that Oswardbeck has been united to Bassetlaw, of which it forms the North Clay division, and 'Lide' to Thurgarton, the name of the former being preserved in the old description of the latter as the wapentake of 'Thurgarton-a-Lee.' It is always worth while to try to trace the order in which the hundreds (or wapentakes) are entered in the survey, especially where, as in this county, the rubrication is not consistent, for a sequence once established may throw light on difficult problems of identification, and also has a bearing on the question of possible circuits which may have been made by the Domesday commissioners. In Nottinghamshire, the fief of Roger de Busli, which is rubricated throughout, shows the following order: Newark, Bassetlaw, 'Lide,' Thurgarton, Rushcliffe, (Broxtow), Bingham, Oswardbeck. The nine manors of Count Alan's fief, which is not rubricated at all, were scattered over five wapentakes which are entered in the above order, which also appears on the fiefs of Walter de Aincurt, Geoffrey Alselin, and (with the exception of his first manor) William Peverel. It is also observed on the king's land, for the description of his possessions in Oswardbeck wapentake immediately after Mansfield is explained by their connexion with the latter manor; and on that of Gilbert de Gand the mistaken rubrication of Newark wapentake at the head of his fief points to a practice by which the survey of a tenant's lands would normally begin therewith. It will be evident that this sequence violates all geographical order, for it leaps at once from Bingham wapentake in the

[1] *Norman Conquest*, iv, 197. [2] See above, p. 219.

extreme south of the county, to Oswardbeck wapentake in the extreme north.

There are a few difficult questions of identification in the Nottinghamshire Domesday, one of which has the rare distinction of being raised in a mediaeval law suit. In 1285, Henry de Purpunt and Annora his wife, lords of Sneinton, were impleaded by the men of that vill on the ground that while Sneinton was ancient demesne of the crown, Henry and Annora had increased the rents due from tenements there, and had interfered with the legal rights and privileges of their tenants, on whom they had also imposed an unaccustomed tallage of 100 marks. In reply it was urged that Sneinton was not ancient demesne, upon which Domesday Book was ordered to be searched, when 'Notintone' was found to be duly entered on the king's land. There the matter seems to have rested for two years, but in 1287 a jury found that Sneinton was always called by that name, and that 'Notintone' was a part of Nottingham on the side towards Arnold. On this the men of Sneinton were assessed, but in view of the undoubted fact that their predecessors had enjoyed the privileges of ancient demesne in the time of King John, and that in documents of the time the name appears as Snotintone or Snadinton, we shall not be disposed to attach much weight to the verdict of the jury of 1287.[1]

One of the few Nottinghamshire names which have quite vanished from the modern map is the 'Schidrintune' which is entered on the royal demesne, and also on the fiefs of Roger de Busli, Gilbert de Gand, and Geoffrey Alselin. We need, however, have little hesitation in identifying it with the modern Kirton, near Ollerton, for in the thirteenth century the latter was divided between the Everingham barony, representing the fief of Geoffrey Alselin, the earls of Lincoln, descendants of Gilbert de Gand, and the family of Fitz Alan (fitz Flaald), the founder of which had been enfeoffed by Henry I on certain of the escheated lands of Roger de Busli, and has been recognized by Mr. Round as the ancestor of the Stewarts.[2] Another name presenting difficulty is 'Cledretone,' which was part of the king's soke of Oswardbeck, and has also been already described as being divided equally between Count Alan and Roger de Busli. In all probability it is now represented by South Leverton, which formed part of Oswardbeck soke, and also, like 'Cledretone' in Domesday, was held of the honour of Richmond by the Musters family. It is probable that the 'Suderdeshale' which occurs in the king's land, for all the formidable appearance of the name, is in reality a corruption for 'Sud Ordeshale' (South Ordsall), with which it agrees in geographical position

No account of the Nottinghamshire Domesday would be complete which did not include a passing reference to the history of the county published in 1677 by Robert Thoroton, a most worthy member of the

[1] See the account of this case in Thoroton, *Hist. of Notts.* iii, 2, and Placita coram rege, Mich. 13-14 Edw. I, m. 28.

[2] Round, *Studies in Peerage and Family History*, 129.

great band of seventeenth-century antiquaries. It is perhaps the greatest merit of Thoroton's work that he fully grasped the essential fact that the key to all manorial history lies in the distribution of land recorded in Domesday, and that he carried out this principle with such thoroughness that, so far as the work of identification is concerned, independent investigation can often do little more than confirm his minuteness and accuracy. The extent of his knowledge, and the strength with which he applied it to the narrow but all-important study of manorial descent, make his book one of the best, as it is one of the earliest, examples of the systematic treatment of Domesday for purposes of local history.

NOTE

The reader should bear in mind that the date of the Domesday Survey is 1086; and that 'the time of King Edward' normally means the date of his death (5 January, 1066). The Domesday 'carucate' was a unit of assessment containing 8 'bovates.' The essential portion of the plough was its team of oxen, eight in number. The 'demesne' was the lord's portion of the manor, the peasantry holding the rest of it under him.

It must always be remembered that when Domesday speaks of a place as held by a certain tenant it does not follow that the whole of it is thereby meant; as the vills often comprised other manors which form the subject of separate entries.

In the survey of this county manors, berewicks, and soc-land are distinguished as a rule by the letters M., B., S., preceded by a numeral in cases where several pre-Conquest estates have been united.

The Nottinghamshire Wapentakes

Domesday Form	Modern Form
1. Bernedeselawe Bernedelawe Bernesedelawe Bernesedelaw	Bassetlaw
2. Brocolvestou Brolvestou Brochelestou[1]	Broxtow
3. Bingameshou Bingehamhou	Bingham
4. Torgartone Turgastune[1]	Thurgarton
5. Newerca . . Newerce . .	Newark
6. Riseclive . .	Rushcliffe
7. Wardebec Oswardebec	Comprises with the addition of the villages of Rampton and Treswell the present North Clay division of Bassetlaw wapentake.
8. Lide . . .	Now the North Division of Thurgarton wapentake.

[1] These forms occur in the Rutland introduction.

Reference is also made to the following 'Hundreds':—

1. Sudwelle = Southwell (trans. p. 274).
2. Bliduorde = Blidworth (trans. p. 281).
3. Pluntre = Plumtree (trans. p. 283).

And in the Aigrun [Averham] entry, p. 281, it is said that to this manor belong five sochmen in other hundreds.

This may suggest a system of small territorial hundreds such as occurs in the Leicester Survey.

DOMESDAY MAP

NOTES TO DOMESDAY MAP

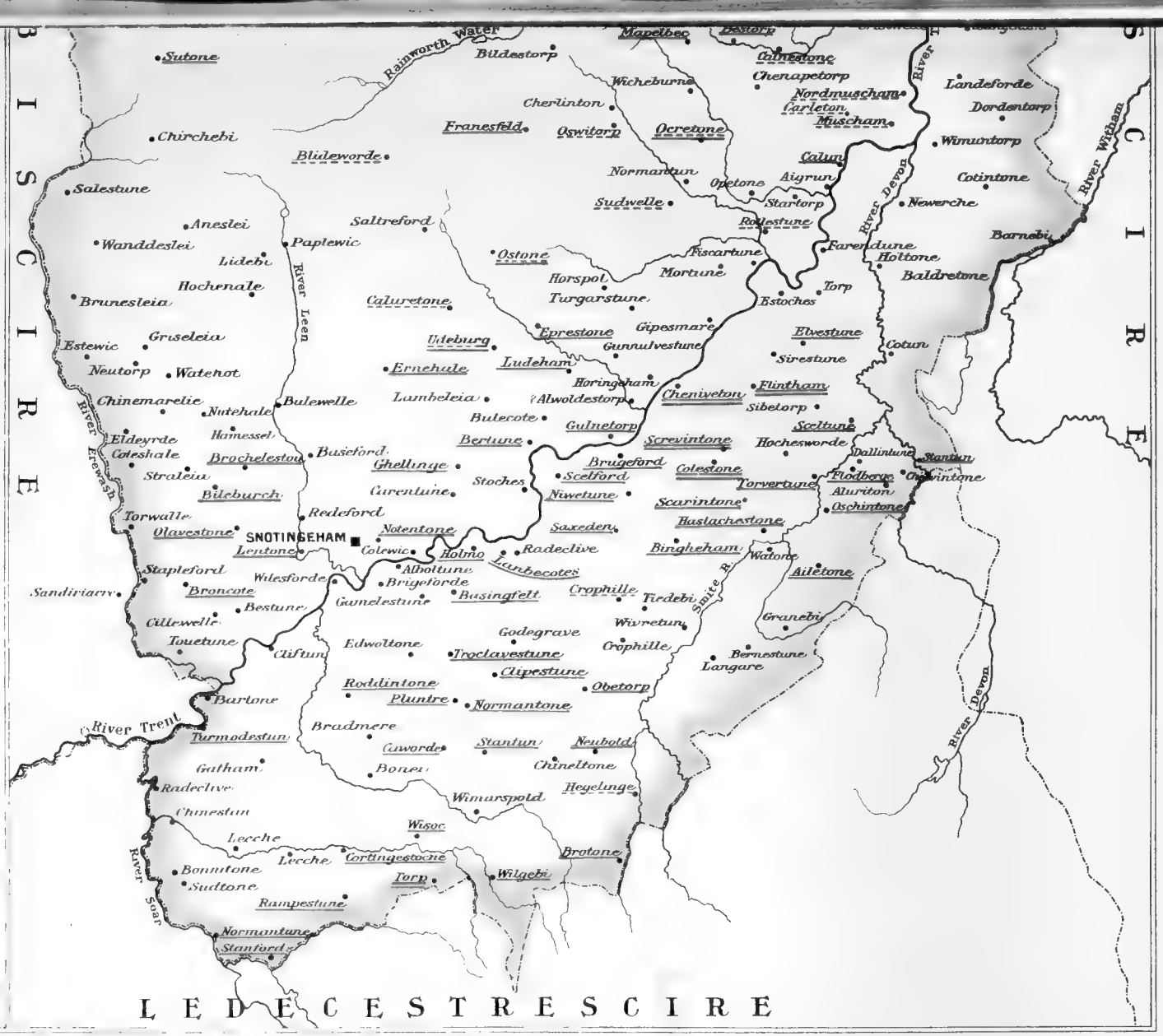
(Compiled by F. M. STENTON, B.A.)

In this map those manors in which the king had an interest have a red line under them; those in which the greatest ecclesiastical tenant, the Archbishop of York held land, are distinguished by a blue line (broken), and a green line denotes those in which Roger de Busli, the greatest lay tenant, held land.

No attempt has been made to mark the boundaries of the Wapentakes. The rubrication of the Survey is incomplete in this respect throughout the county, and is occasionally inaccurate; while the great estates of the Archbishop of York interrupted the continuity of the northern Wapentakes, and by preserving their own unity as a 'Liberty' distinct from the shire organisation, they render it impossible to reconstruct the Domesday Wapentakes from later evidence. It is clear, however, from Domesday that the Wapentakes were so disposed that their boundaries in every case extended for some distance along the Trent; even in the case of the great north-western district of

is interesting for the contrast it shows between the valley of the Trent and the north-west of the shire. It would appear that the latter district was settled later than the former, for a large proportion of the 'Danish' place names of the county is concentrated along the streams that flow to form the river Idle. Much of the western half of the county was probably woodland in 1086, for the medieval forest of 'Shirewood' included within its boundaries the district (roughly) between the rivers Meden and Trent. It agrees with the above distinction that there are very few entries of "woodland for pannage" relating to the country south of Trent.

The outline of the shire appears to have varied so little from that suggested by Domesday that the modern county boundary has been given. The river names are given in their modern form for convenience.



REFERENCE TO COLOURING

King's Manors	thus	Duncham
Archbishop of York's Manors	,,	Sudwelle
Roger de Busli's Manors	,,	Gulnetorp

Scale of English Miles

0 4 8

The Edinburgh Geographical Institute J G Bartholomew

SNOTINGHAMSCIRE

fol. 280a In King Edward's time there were in the borough of Snotingeham [Nottingham] 173 burgesses and 19 villeins. To this borough there belong (*adiacent*) 6 carucates of land (assessed) to the king's geld and 1 meadow and underwood (*silvæ minutæ*) 6 furlongs in length and 5 in breadth. This land was divided among 38 burgesses and rendered 75 shillings and 7 pence from the rent (*censu*) of the land and the services[1] (*operibus*) of the burgesses and 40 shillings from 2 moneyers (*monetarii*). In it (*Inibi*) earl Tosti(g) had 1 carucate of land from the soc of which land (*de cujus terre soca*) the king used to have the two pennies and the earl himself the third. Hugh, son of Baldric, the sheriff, found 136 men dwelling (there), now there are 16 less. Nevertheless Hugh himself built 13 houses, which were not before, on the earl's land in the new borough, adding them to the rent (*apponens eas in censu*) of the old borough.

In Snotingeham there is one church in the king's demesne to which there belong (*in qua iacent*) 3 burgess tenements (*mansiones burgi*) and 5 bovates of land of the above named 6 carucates with sac and soc (*saca et soca*), and to the same church belong $5\frac{1}{2}$ acres of land of which the king has the sac and soc. The burgesses have 6 carucates of arable land (*terre ad arand'*) and 20 bordars and 14 ploughs (*carucas*). They were accustomed to fish in the water of Trent, and now they make complaint that they are forbidden to fish.

In King Edward's time Snotingham rendered 18 pounds, now it renders 30 pounds and 10 pounds from the mint.

In Snotingham Roger de Busli has 3 tenements (*mansiones*) on which are established 11 houses rendering 4 shillings and 7 pence. William Pev(e)rel has 48 merchants' houses rendering 36 shillings and 12 horsemen's houses (*domus equitum*) and 8 bordars. Ralf de Burun has 13 horsemen's houses ; in one of these one merchant dwells. Gulbert (has) 4 houses. Ralf the son of Hubert has 11 houses ; in these 3 merchants dwell. Geoffrey Alselin has 21 houses and Aitard the priest 2 houses. In the priest's croft there are 65 houses and in these the king has sac and soc. The church with all the things that pertain to it is worth 100 shillings yearly. Richard Frelle has 4 houses. In the borough ditch (*fossatum burgi*) there are 17 houses and 6 other houses. The king granted to William Pev(e)rel 10 acres of land for making an orchard (*pomerium*).

In Snotingeham King Edward had 1 carucate of land with the geld. (There was) land for 2 ploughs. There the king has now

[1] i.e. the value of their labour services in respect of this land.

11 villeins having 4 ploughs and 12 acres of meadow. (There is) nothing[1] in demesne. In King Edward's time it was worth 3 pounds, (and it is worth) the same now.

In Snotingeham the water of Trent and the Foss (Way) and the road towards York are so guarded that if any one impedes the passage of boats or if any one ploughs or makes a ditch within two perches of the king's road he has to pay a fine of (*emendare per*) 8 pounds.[2]

fol. 280b

In Snotingehamscyre and in Derbiscyre if the king's peace, given under his hand or seal, be broken a fine is paid (*emendatur*) of (*per*) 18 hundreds. Each hundred (being) 8 pounds. The king has 2 parts of this fine (*emendationis*), the earl the third. That is, 12 hundreds pay to the king and 6 to the earl.

If any one be exiled according to law for any crime none but the king can restore peace to him.

A thegn having more than 6 manors does not give relief of his land except 8 pounds to the king alone. If he has only 6 or less he gives 3 marks of silver to the sheriff as relief wherever he dwells, in the borough or without. If a thegn having sac and soc forfeit his land the king and earl between them have half his land and money, and his lawful wife with his legitimate heirs, if there be any, have the other half.

Here are noted those who had soc and sac and thol and thaim and the king's dues (*consuetudinem*) of the two pennies.[3]

The Archbishop of York over his manors and the Countess Godeva over Newerca [Newark] Wapentake and Ulf fenisc over his land; the Abbot of (Peter) Borough over Colingeham [Collingham]; the Abbot of Bertune [Burton]; Earl Hugh (of Chester) over Marcheton [Markeaton, Derby]; the Bishop of Cestre [Chester]; Tochi; Suen the son of Suave; Siward barn; Azor the son of Saleva; Ulfric cilt; Elsi; Illinge; Lewin the son of Alwin; the Countess Alveva; the Countess Goda; Elsi the son of Caschin over Werchesoppe [Worksop]; Henry de Ferrars over Ednodestune [Ednaston, Derby] and Dubrige [Doveridge, Derby] and Breilesfordham [Brailsford, Derby]; Walter de Aincurt over Granebi [Granby] and Mortune [Morton, Derby] and Pinnesleig [Pilsley, Derby]. None of all these could have the earl's third penny except by his grant, and that for as long as he should live, except the Archbishop and Ulf fenisc and the Countess Godeva.

Over the soc which belongs to Cliftune [Clifton] the earl ought to have the third part of all customs and services (*operum*).

[1] i.e. no ploughs.

[2] The first column of this page (280a) ends here. The second column is devoted to Derby and is therefore treated in the *Victoria History of Derbyshire*, i, 327.

[3] i.e. the two-thirds of certain profits, of which 'the third penny' went to the earl.

HERE ARE ENTERED THE HOLDERS OF LANDS IN SNOTINGHAMSCIRE

I King William
II Count Alan (of Richmond)
III Earl Hugh (of Chester)
IIII The Count of Mortain
V The Archbishop of York
VI The Bishop of Lincoln
VII The Bishop of Bayeux
VIII The abbey of [Peter]borough
IX Roger de Busli
X William Pev(e)rel
XI Walter de Aincurt
XII Geoffrey Alselin
XIII Ralf the son of Hubert
XIIII Ralf de Limesi
XV Ralf de Burun
XVI Roger de Poitou
XVII Gilbert de Gand
XVIII Gilbert Tison
XIX Geoffrey de Wirce
XX Ilbert de Laci
XXI Berenger de Todeni
XXII Hugh the son of Baldric
XXIII Hugh de Grentemaisnil
XXIIII Henry de Fereires
XXV Robert Malet
XXVI Durand Malet
XXVII Osbern the son of Richard
XXVIII Robert the son of William
XXIX William the usher (*hostiarius*)
XXX The king's thegns[1]

fol. 281

I. THE KING'S LAND

BERNEDESLAWE [BASSETLAW] WAPENTAC

M. In DUNEHAM [Dunham] with (its) 4 berewicks RAGENEHIL [Ragnall], WIMENTUN [Wimpton], DERLUVETUN [Darlton], SUANESTERNE [Swansterne] King Edward had 5½ carucates of land (assessed) to the geld. (There is) land for 12 ploughs. Now the king has there 2 ploughs in demesne and 50 villeins and 3 bordars having 10 ploughs and 1 mill (rendering) 3 shillings and 1 fishery (rendering) 10 shillings and 8 pence and 120 acres of meadow. Wood(land) for pannage (*silva pastilis*) 6 furlongs in length and 4 in breadth. In King Edward's time it rendered 30 pounds and 6 sestiers (*sextarii*) of honey; now (it renders) 20 pounds with everything that belongs to it.

The Soc of this Manor

S. In DRAITONE [East Drayton] (there are) 2 carucates of land and 3 bovates and the fifth part of 1 bovate (assessed) to the geld. (There is) land for 5 ploughs. There 16 sochmen and 17 villeins have 13 ploughs and 20 acres of meadow. Wood(land) for pannage 1 furlong in length and half (a furlong) in breadth.

S. In MARCHAM [East Markham] (there are) 3½ carucates of land (assessed) to the geld. (There is) land for 10 ploughs. There 25 sochmen and 15 villeins have 10 ploughs. There (is a church and a priest and 40 acres of meadow and a little underwood (*silvæ minutæ*).

S. In GRENLEIGE [Little Gringley] (there are) 2 bovates of land and the sixth part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There 5 sochmen and 1 bordar have 2 ploughs. Wood(land) for pannage 4 furlongs in length and 4 in breadth.

S. In ORDESHALE [Ordsall] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen have 1 plough and 3 acres of meadow and 3 acres of wood(land).

S. In HEDUNE [Headon][2] (there is) half a bovate of land (assessed) to the geld. (There is) land for 1 ox and 2 acres of meadow. It is waste.

S. In UPETONE [Upton] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen and 2 bordars have 1½ ploughs and 3 acres of meadow. Wood(land) for pannage 2 furlongs in length and 1 in breadth.

S. In NORMENTONE [Normanton by Clumber] (there are) 1½ bovates of land (assessed) to the geld. Half of this land belongs to

[1] This list is followed immediately by one of the holders of lands in that portion of Rutland of which the survey follows that of Nottinghamshire. This is reserved for the *Victoria History of Rutland*.

[2] Hedune added above 'Grave' [Grove], underlined for deletion.

Dune [Dunham], the other (half) to Bodmesceld [Bothamsall]. It is waste. (There is) wood(land) for pannage 3 furlongs in length and 2 in breadth.

M. In Bodmescel [Bothamsall] Earl Tosti(g) had 12 bovates of land (assessed) to the geld. (There is) land for 8 ploughs. Now the king has there 5 villeins and 1 bordar, with 2 ploughs and 1 mill (rendering) 8 shillings and 40 acres of meadow. Wood(land) for pannage half a league in length and 4 furlongs in breadth. In King Edward's time it was worth 8 pounds; now (it is worth) 60 shillings.

The Soc of this Manor

S. In Elchesleig [Elkesley] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There (is) a church and a priest and 6 sochmen with 1½ ploughs, and 1 mill (rendering) 4 shillings and a little underwood (*silvæ minutæ*).

S. In Mortune [Morton] and another Mortune (there are) 10 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There 7 sochmen and 1 bordar have 4 ploughs. Wood(land) for pannage 2 furlongs in length and 1 in breadth.

S. In Baburde [Babworth] (2½ bovates) and Odestorp[1] [ ] (4½ bovates) and Ordeshale [Ordsall] (1 bovate) all together (there are) 7½ bovates of land (assessed) to the geld. (There is) land for 3 ploughs. It is waste except for 1 villein and 2 bordars with half a plough. (There are) 10 acres of meadow.

S. In Ranesbi [Ranby] (3 bovates) and Suderdeshale [South Ordsall] (2 bovates) (there are) 5 bovates of land (assessed) to the geld. (There is) land for 1½ ploughs. It is waste.

S. In Ranebi [Ranby] (there are) 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. It is waste.

S. In Madresseig [Mattersey] (there are) 11 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There 12 sochmen and 2 villeins and 3 bordars have 6½ ploughs. Meadow, 3 furlongs in length and 1 in breadth. Wood(land) for pannage 1 league in length and 1½ furlongs in breadth.

S. In Lund [Lound] and Barnebi [Barnby Moor] (there are) 6 bovates of land[2] (assessed) to the geld. There 3 sochmen have 1 plough and 3½ acres of meadow. Wood(land) for pannage 2 furlongs in length and half a furlong in breadth.

[1] Not identified.

[2] '*et dim' et iii pars uni' bou*'' is added here, but is underlined for deletion.

M. In Grimestune [Grimston][3] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. (This manor is a) berewick of (*in*) Mammesfed [Mansfield]. There 3 sochmen and 3 bordars have 2 ploughs and 2 acres of meadow. Wood(land) for pannage half a league in length and 4 furlongs in breadth.

The Soc of this Manor

S. In the same place (*Ibidem*) (there are) 1½ bovates of land (assessed) to the geld. (There is) land for 2 oxen. There 2 sochmen have half a plough.

In Schidrintune [Kirton][4] (there is) half a bovate (assessed) to the geld.

S. In Wilgebi [Willoughby] and Walesbi [Walesby] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen have 1 plough. Wood(land) for pannage 4 perches in length and 4 in breadth.

S. In Bestorp [Besthorpe] (2 bovates) and Carletone [Carlton on Trent] (2 bovates) (there are) 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen and 3 bordars have 2 ploughs and 30 acres of wood(land) for pannage.

In Franesfeld [Farnsfield] the king has 1 bovate of land (assessed) to the geld near to (*prope*) Snotingeham.

Brocolvestou [Broxtow] Wapentac

M. In Mamesfelde [Mansfield] and Schegebi [Skegby] (B') and Sutone [Sutton in Ashfield] (B') King Edward had 3 carucates of land and 6 bovates (assessed) to the geld. (There is) land for 9 ploughs. There the king has 2 ploughs in demesne and 5 sochmen on (*de*) 3 bovates of this land and 35 villeins and 20 bordars with 19½ ploughs, and 1 mill and 1 fishery (rendering) 21 shillings and 24 acres of meadow. Wood(land) for

[3] The village of Grimston has long been decayed, but its position can be fixed with certainty owing to the fact that Jordan Foliot, 36 Henry III. obtained leave to embattle his manor house of Grimston. The 'site of Jordan's castle' is marked on the Ordnance maps, and the eminence on which it rests is still known as Grimston Hill.

[4] This name has no modern equivalent. The identification with Kirton is based on the substitution of some form of the latter for 'Schidrintune' in such later lists of holdings as admit of collation with relative entries in Domesday. Perhaps the clearest instance of such correspondence occurs in an inquisition on the death of Henry de Lacy, Earl of Lincoln, in which the descent of all the fees mentioned can be traced from the Domesday estate of Gilbert of Gaunt if 'Kirketon' replace 'Schidrintune.'

pannage 2 leagues in length and 2 in breadth. There (are) 2 churches and 2 priests.

In WARSOPE [Warsop] 1 bovate. In CLUNE [Clown, Derby] 4 bovates. In CARBERTONE [Carburton] 2 carucates. In CLUNBRE [Clumber] 3 bovates. In BUTEBI [Budby] 2 carucates. In TURESBI [Thoresby] 6 bovates. In SCOTEBI [Scofton] and TORP [Perlethorpe] and ROWETONE [Rayton] 2 carucates. In EDENESTOU [Edwinstowe] 1 carucate. In GRIMESTONE [Grimston] half a carucate. In ECERINGHE [Eakring] 3½ bovates. In MAPELBEC [Maplebeck] 2 bovates. In BESTORP [Besthorpe] 2 bovates. In CARENTUNE [Carlton on Trent] 2 bovates. In SCHITRINTONE [Kirton] 1½ bovates. In WILGEBI [Willoughby] 1½ bovates. In ALMUNTONE [Ompton][1] 1½ bovates. In CARETONE [Carlton in Lindrick] 4 carucates.

In all (there are) 13 carucates of land and 6½ bovates (assessed) to the geld.

In WARESOPE [Warsop] (there is) 1 bovate of land which a certain blind man (*cæcus*) holds of the king in alms (*elemosina*), where he has 1 bordar with 6 ploughing oxen (*bobus in car'*)

In TORP [Perlethorpe] (there is) the fourth part of 1 bovate of land which belongs (*iacet*) to MAMESFELD [Mansfield]. It is waste.

BEREWICK

B. In GRIMESTONE [Grimston] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There the king has 1 plough and 8 villeins and 1 bordar having 2 ploughs. Wood(land) for pannage 6 furlongs in length and 4 in breadth.

BEREWICK

B. In EDENESTOU [Edwinstowe] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There (is) a church; and a priest and 4 bordars have 1 plough. Wood(land) for pannage half a league in length and half (a league) in breadth.

S. In MAPELBERG [Maplebeck] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 3 sochmen have 1 plough.

S. In CARLETONE [Carlton in Lindrick] (there are) 2 carucates. In SCOTEBI [Scofton] and RENETON [Rayton] and TORP [Perlethorpe] (there are) 2 carucates;[2] this is 4 (carucates assessed) to the geld. The soc belongs to (de) MAMESFELD [Mansfield]. They are waste.

Also Soc[land] in Wardebec [Oswardbeck] Wapentac

S. In TILNE [Tilne] (there are) 2 bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen and 1 villein and 1 bordar have 6 ploughing oxen (*boves in car'*). There (are) 2 mills (rendering) 32 shillings and 6 acres of meadow. It is worth 40 shillings.

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S. In CLEDRETONE [South Leverton][3] (there are) 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There 22 sochmen and 11 villeins have 9 ploughs.

In King Edward's time these sochmen rendered 10 shillings by way of (*de*) custom (*consuetudine*).

In FENTUNE [Fenton] (there is) half a carucate (of land assessed) to the geld.

S. In LITELBURG [Littleborough] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 14 sochmen and 2 villeins and 4 bordars have 5 ploughs. Meadow, 3 furlongs and 10 rods in length and 2 furlongs in breadth. This soc (*soca*) is worth 10 shillings.

S. In ESTRETONE [Sturton le Steeple] (there are) 2 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There 24 sochmen and 11 villeins and 7 bordars have 8 ploughs. Meadow, 1 league in length and 1 furlong in breadth. Wood(land) for pannage 1 league in length and 5 furlongs in breadth. This soc is worth 40 shillings.

S. In WATELEIE [Wheatley] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 6 sochmen and 1 villein have 2 ploughs. Wood(land) for

[1] '·1· *bov*'' added above 'Almuntone.'

[2] 'In Ranebi ii. car' terrae' is added in the original but erased. 'de bodmescel' is interlined in explanation, and the total number of carucates in the entry is corrected from 6 to 4.

[3] The name 'Cledretone' is not found after Domesday. But South Leverton formed part of 'Oswardbeck Soke' and the patronage of its church remained with the Dean and Chapter of Lincoln until 1884 probably as a result of Rufus's gift to that body of the churches belonging to his manor of Mansfield. Further on (p. 254). 'Cledretone' appears to be dependent on Treswell, the adjoining village to South Leverton. Both villages were divided equally between Roger de Busli and Count Alan of Richmond; and the descendants of Robert de Mosters, tenant of the latter half of Treswell, are seen from the Testa de Nevil and earlier records to have held land in Leverton.

North Leverton ('Legretone' below) seems to have lain in the archbishop's soke of Laneham, not in the king's soke of Oswardbeck, and it formed a prebend in Southwell Minster.

pannage 1 league and 1 furlong in length and 1½ furlongs in breadth. In King Edward's time it was worth 3 shillings; now (it is worth) 7 (shillings).

S. In WACHERINGHAM [Walkeringham] (there are) 12½ bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There 13 sochmen and 2 villeins and 3 bordars have 4 ploughs. Meadow 6 furlongs in length and 4 in breadth. Wood(land) 8 furlongs in length and 4 in breadth. It is worth 20 shillings.

S. In MINISTRETONE [Misterton] (there are) 5 bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 5 sochmen and 6 villeins and 1 bordar have 1 plough. Meadow, 1 furlong in length and half a furlong in breadth. It is worth 7 shillings.

S. In WISETONE [Wiseton] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There 7 sochmen and 7 villeins and 4 bordars have 6 ploughs. Meadow, 2 furlongs in length and 2 in breadth. Wood(land) for pannage 14 furlongs in length and 4 in breadth. It is worth 10 shillings.

S. In CLAUORDE [Clayworth] (there is) 1 carucate of land and 6 bovates (assessed) to the geld. (There is) land for 3 ploughs. There 12 sochmen and 1 villein and 18 bordars have 10 ploughs. Meadow 2 furlongs in length and 1½ in breadth. Wood(land) for pannage 10 furlongs in length and 6 in breadth. It is worth 26 shillings and 4 pence.

S. In CLAUREBURG [Clarborough] and TILLE [Tilne][1] (there are) 2 bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There (are) 2 sochmen and 1 villein and 1 bordar having 6 ploughing oxen (*boves in car'*) and 2 mills (rendering) 32 shillings and 6 acres of meadow. It is worth 40 shillings.

S. In WELLUN [Welham] and SIMENTONE [ ] (there are) 5 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There 5 sochmen and 1 villein and 1 bordar have 2 ploughs. Meadow, 1½ furlongs in length and 1 furlong and 10 perches in breadth. Wood(land) for pannage 9 furlongs in length and 2½ in breadth. It is worth 10 shillings and 8 pence.

S. In GRENELEIG [Gringley on the Hill] (there are) 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 6 sochmen and 1 villein and 1 bordar have 2 ploughs. Wood(land) for pannage 6 furlongs in length and 4 in breadth. It is worth 10 shillings.

In SANDEBI [Saundby] 1 villein holds 1 orchard (*ortum*); rendering salt for the king's fish in BIGREDIC [Bycar Dyke].

M. In ERNEHALE [Arnold] King Edward had 3 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There the king has 1 plough and 20 villeins and 4 bordars having 7 ploughs. Wood(land) for pannage, scattered (*per loca*), 3 leagues in length and 3 in breadth. In King Edward's time it was worth 4 pounds and 2 sestiers (*sextarii*) of honey; now (it is worth) 8 pounds and 6 sestiers of honey.

The Soc of this Manor

In BRONCOTE [Bramcote] (there are) 5 bovates of land (assessed) to the geld. (There is) land for 6 oxen.

B. In WALETONE [Wollaton] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 1 plough. BER[EWICK]. It is waste.

S. In LENTONE [Lenton] (there are) 4 bovates of land (assessed) to the geld. The soc belongs to (*in*) ERNEHALE [Arnold]. It is waste.

S. In BRUCHELESTOU [Broxtow] (there is) 1 bovate of land (assessed) to the geld. It is waste. The soc belongs to (*in*) ERNEHALE.

In BILEBURCH [Bilborough] (there is) 1 bovate of land (assessed) to the geld.

BINGAMESHOU [BINGHAM] WAPENT[AC]

M. In OSCHINTONE [Orston] King Edward had 3 carucates of land (assessed) to the geld. (There is) land for 10 ploughs. There the king has 3 ploughs and 3 sochmen on (*de*) 1 carucate of this land and 19 villeins and 11 bordars having 14 ploughs. There (is) a church and 2 priests having 1 plough and 1 ox, and 180 acres of meadow. In King Edward's time it was worth 30 pounds by tale (*ad numerum*); now (it is worth) 20 pounds.

Berewick of this Manor

B. In SCARINTONE [Scarrington] (there are) 2 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There the king has 2 ploughs and 23 villeins and 4 bordars having 5½ ploughs.

In STANTON [Staunton] (there are) 7 bovates and 3 acres of land (assessed) to the geld.[2] (There is) land for 3 ploughs. There (are) 10 sochmen and 3 bordars with 3 ploughs and 60 acres of meadow.

[1] 'et Tille' added above Claureburg.

[2] The rest of this entry is in the margin.

S. In TORVERTUNE [Thoroton] (there are) 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There (is) 1 sochman and 18 villeins and 1 bordar[1] having 7 ploughs. There (is) a priest.

S. In SCREVINTONE [Screveton] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 3 ploughs. There 3 sochmen and 2 villeins and 1 bordar have 1½ ploughs and 8 acres of meadow.

S. In COLESTONE [Car Colston] (there are) 4 bovates and 4 acres of land (assessed) to the geld. (There is) land for 1 plough. There 5 sochmen have 1½ ploughs.

S. In ASLACHETONE [Aslockton] (there is) 1 bovate of land (assessed) to the geld; 1 villein ploughs there.

M. In NEUBOLD [Newbold][2] Earl Morcar had 3 carucates of land (assessed) to the geld. (There is) land for 8 ploughs. There the king has 3 ploughs and 13 sochmen and 13 villeins and 3 bordars having 7 ploughs and 2 acres of underwood (*silva minuta*). There (is) a priest and a church. In King Edward's time it was worth 4 pounds; now (it is worth) 10 pounds.

M. In BROTONE [Upper Broughton] Earl Algar had 2 carucates of land (assessed) to the geld. (There is) land for 7 ploughs. There the king has 2 ploughs and 23 villeins and 4 bordars having 7 ploughs and 1 mill (rendering) 5 shillings, and 100 acres of meadow. In King Edward's time it was worth 3 pounds; now (it is worth) 4 (pounds).

Berewick

B. In TORP [Thorpe-in-the-Glebe] (there are) 10 bovates of land (assessed) to the geld. (There is) land for 10 oxen. It is waste. There (are) 12 acres of meadow. It is worth 2 shillings. In King Edward's time (it was worth) 40 shillings.

M. In FLINTHAM [Flintham] Elwin had 14 bovates of land and three parts of 1 bovate (assessed) to the geld. (There is) land for 5 ploughs. There the king has 2 ploughs in demesne; and 5 sochmen and 4 villeins and 5 bordars having 3 ploughs. There (is) a church and a priest having half a plough and 60 acres of meadow. Underwood (*silva minuta*) 3½ furlongs in length and 1 furlong in breadth. In King Edward's time it was worth 60 shillings, now (it is worth) 40 (shillings).

In CHENIVETON [Kneeton] (there are) 3 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 1 sochman has half a plough and 1 acre of meadow.

In NOTINTONE[3] [Sneinton] the king has 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There 11 villeins have 4 ploughs and 12 acres of meadow. It is worth 3 pounds.

In MERINGE [Meering] William had 6½ bovates of land (assessed) to the geld.

In MISNE [Misson] the king has 3 bovates (assessed) to the geld. Tostig had (it). There are 6 villeins with 3 ploughs. The soc belongs to (*in*) CIRCETON [Kirton-in-Lindsey].

In the same place (*Ibidem*, *sc.* MISNE) (there is) half a bovate (assessed) to the geld. It belongs (*iacet*) to LESTON [Laughton, near Gainsborough, Lincoln]. There (is) 1 villein. Guy (*Wido*) holds (it) and Alvred of him.

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II. THE LAND OF COUNT ALAN

M. In SIBETORP [Sibthorpe] Unspac had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. Count Alan has (it). Fredgis holds (it) of him, and has there 1 plough and 4 sochmen on (*de*) 1 bovate of land and 2 bordars having 1 plough. There (is) a priest and a church, to which the fourth part of the land belongs. There (are) 10 acres of meadow. In King Edward's time (it was worth) 20 shillings; now (it is worth) 12 shillings.

M. In the same place [*Ibidem*] Osbern had 1 bovate of land and 3 acres (assessed) to the geld. (There is) land for half a plough. There (is) a priest and 2 bordars and 4 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 4 shillings.

(*)M[4]. In SIRESTUNE [Syerston] Ailric had 3 bovates (assessed) to the geld. (There is) land for 1½ ploughs; (and) there 3 sochmen have them. There (are) 12 acres of meadow. Robert holds (it) of Count Alan. Formerly (it was worth) 40 shillings; now (it is worth) 20 shillings.

M. In SUDTONE [Sutton upon Trent] William the son of Scelward had 2 carucates of land and 6 bovates (assessed) to the geld. (There is) land for 5 ploughs. There Hervey (*Herveus*), Count Alan's man, has 2 ploughs and 13 sochmen on (*de*) the half of this land, and 17 villeins

[1] 'et 1 bord.' interlined.

[2] In Kinoulton parish.

[3] See above p. 245.

[4] The three entries marked (*) follow each other in the margin.

and 3 bordars having 8 ploughs. There (is) a priest and a church and 3 fisheries and 100 acres of meadow. Wood(land) for pannage, 1 league in length and half a league in breadth. In King Edward's time it was worth 4 pounds and (it is worth the same) now.

(*)In CARLETUNE [Carlton on Trent] (there is) 1 bovate (assessed) to the geld. There are 3 villeins with 1 plough. William holds (it).

M. In RODINTUN [Ruddington] Leviet had 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Count A(lan) has in demesne 1 plough and (there are) 6 sochmen and 7 villeins having 3 ploughs. There (are) 55 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 30 shillings.

M. In CHENIVETONE [Kneeton] Elsi had 1 carucate of land (assessed) to the geld. (There is) land for 12 oxen. There Count A(lan) has 1 plough and 3 sochmen and 5 villeins having 2 ploughs. There (is) a priest and half a church and 1 mill (rendering) 10 shillings and 5 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 40 (shillings).

M. In the same place [*Ibidem*] Ulvric had 1 carucate of land (assessed) to the geld. (There is) land for 12 oxen. There is 1 villein and 1 bordar.

M. In TIRESWELLE [Treswell] Ulmar had 6 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 4 ploughs. Robert de Mosters, Count A(lan's) man, has 1 plough and 8 villeins and 5 bordars having 4 ploughs and 40 acres of meadow. Wood(land) for pannage 4 furlongs in length and 1½ furlongs in breadth. In King Edward's time it was worth 40 shillings, and (it is worth the same) now.

(*)In CLEDRETONE [South Leverton] Godric and Ulmar had 7 bovates of land and the fifth part of 1 bovate (assessed) to the geld. Count Alan and Roger de Busli have held this land up to the present. (There is) land for 2 ploughs. It is worth 20 shillings.

III. THE LAND OF EARL HUGH

M. In SUDTONE [Sutton] Harold had 1½ carucates of land (assessed) to the geld. (There is) land for 1 plough. Earl Hugh has (it) now. Robert[1] holds (it) of him and has there 1½ ploughs and 3 sochmen and 6 villeins having 3½ ploughs and 1 mill (rendering) 20 shillings and 15 acres of meadow. In King Edward's time it was worth 40 shillings, and (it is worth the same) now.

[1] '*filius Willelmi*' erased.

Soc[land]

S. In NORMANTON [Normanton upon Soar] (there are) 2 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. It is waste. There (are) 3 acres of meadow. In King Edward's time it was worth 5 shillings; now (it is worth) 3 shillings.

M. In BONNITONE [Bonington[2]] Harold had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Robert, the earl's man, has 3 sochmen and 5 villeins having 2½ ploughs. There (are) 10 acres of meadow. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

2 M.[3] In CHINESTAN [Kingston]. Lewin and Richard had 3½ bovates of land (assessed) to the geld. (There is) land for 10 oxen. There 1 sochman has now half a plough and 9 acres of meadow under (*sub*) Earl Hugh. In King Edward's time it was worth 30 shillings; now (it is worth) 10 shillings.

IIII. THE LAND OF THE COUNT OF MORTAIN

M. In NORMANTUNE [Normanton upon Soar] Stori had 10 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Now the Count of Mortain has (it), Alden holds (it) of (*de*) him, and has there 1 plough and 2 sochmen and 2 villeins and 3 bordars having 2 ploughs. There (are) 15 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

M. In SUDTONE [Sutton Bonington][4] Stori had half a carucate of land (assessed) to the geld. (There is) land for 12 oxen. (There is) now 1 plough in demesne and 5 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 20 shillings.

M. In GATHAM [Gotham] Stori had 2 carucates of land and 3½ bovates (assessed) to the geld and 5 acres. (There is) land for 6 ploughs. There Count R(obert) has 3 ploughs in demesne, and 3 sochmen and 20 villeins

[2] Bonington is the parish of St. Michael's, Sutton Bonington, while Sutton is the parish of St. Anne's, Sutton Bonington.

[3] $(\frac{II}{M})$; showing the union of two pre-Conquest manors.

[4] i.e. St. Anne's parish. See note above under Bonington.

and 2 bordars having 9 ploughs and 80 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 40 shillings.

The Soc of this Manor

In LECHE [Leake] (there are) 2 bovates of land (assessed) to the geld. There is nothing there.

M. In STANTUN [Stanton on the Wolds] Stori had 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There Alvred, the count's man, has 1 plough and 6 villeins and 3 bordars with 2 ploughs. There (are) 20 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 20 (shillings).

M.[1] In the same STANTUN Frane had 1 bovate of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for half a plough. There 3 villeins have now 1 plough.

M. In CAWORDE [Keyworth] Stori had 3 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There Alvred, the count's man, has 2 sochmen and 1 villein and 1 bordar with 1½ ploughs. In King Edward's time it was worth 20 shillings; now (it is worth) 10 (shillings).

In NEUTORP [Newthorpe] Æluin had 1 bovate of land (assessed) to the geld. (There is) land for 2 oxen. There (is) wood(land) for pannage 8 furlongs in length and 2½ (furlongs) in breadth. In King Edward's time it was worth 2 shillings; now (it is worth) 12 pence.

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V. THE ARCHBISHOP OF YORK'S LAND

TORGARTONE [THURGARTON] WAPENTAC

M. In SUDWELLE [Southwell] with its berewicks (*Berewitæ*) there are 22½ carucates of land (assessed) to the geld. (There is) land for 24 ploughs. There Archbishop Thomas has 10 ploughs in demesne and 10 sochmen and 75 villeins and 23 bordars having 37 ploughs. There (are) 2 mills (rendering) 40 shillings and a fish pond (*piscina*) and ferry (*passagium*) (rendering) 6 shillings.

Of this land 6 knights (*milites*) hold 4½ carucates. 3 clerks (*clerici*) have 1½ carucates; 2 bovates of it are in a prebend (*prebenda*). 2 Englishmen (*anglici*) have 3 carucates of land and 5 bovates.

[1] In the text this paragraph follows Caworde, but its proper place is indicated by marks in the margin.

The knights have 7 ploughs in demesne and 35 villeins and 28 bordars having 21 ploughs and 1 mill (rendering) 8 shillings.

The clerks have 1½ ploughs in demesne and 7 villeins and 5 bordars having 3 ploughs.

The Englishmen have 4 ploughs in demesne and 20 villeins and 6 bordars having 6½ ploughs.

To SUDWELLE belong 188 acres of meadow. Wood(land) for pannage 8 leagues in length and 2½ furlongs in breadth. Arable land (*terra arabilis*) 5 leagues in length and 3 in breadth. In King Edward's time it was worth 40 pounds; now (it is worth) 40 pounds and 15 shillings.

In SUDWELLE there are reckoned (*numerantur*) 12 berewicks.

In NORDMUSCHAM [North Muskham] (there are) 1½ carucates (assessed) to the geld.

BINGEHAMHOU [BINGHAM] WAPENTAC

M. & B. In CROPHILLE [Cropwell Bishop] and HEGELINGE (B') [Hickling] SAINT MARY OF SUDWELLE [Southwell] had 2½ carucates of land (assessed) to the geld. (There is) land for 7 ploughs. The canons have 2 ploughs there in demesne; and 5 sochmen and 15 villeins and 4 bordars having 6 ploughs and 2 oxen and 20 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 50 (shillings).

M. & B. In LANUN [Laneham] with these berewicks, ASCAM [Askham], BECHINGHAM [Beckingham], SANDEBI [Saundby], BOLUN [Bole], BURTONE [West Burton], WATELAIE [South Wheatley], LEGRETONE [North Leverton], (there are) 9 carucates of land and 2 bovates (assessed) to the geld. There is land for 27 ploughs. In the demesne of the hall (*dominium aulæ*) there are 10 bovates of this land. The remainder is soc(land). Now Archbishop Thomas has there 4½ ploughs and 35 villeins and 6 bordars having 16 ploughs. There (is) a church and a priest and 2 fisheries (rendering) 8 shillings and 1 mill (rendering) 16 shillings. Wood(land) for pannage 3 leagues in length and 1½ leagues in breadth. (There are) 100 acres of meadow.

In the berewicks mentioned above as belonging to this manor there are 38 sochmen and 17 villeins and 20 bordars having 14½ ploughs. There are also 33 other sochmen and 6 villeins and 18 bordars having 15 ploughs. 2 knights (*milites*) hold these with their land of the archbishop.

M. In MUSCHAM [Muskham] and CARLETON [Carlton on Trent] (there are) 4 carucates of land and 5 bovates (assessed) to the geld.

(There is) land for 9½ ploughs. Archbishop Thomas has there 2 ploughs in demesne and 20 sochmen and 7 villeins and 16 bordars having 6 ploughs. There (is) a mill (rendering) 2 shillings and 66 acres of meadow and 80 acres of underwood (*silvæ minutæ*). In King Edward's time it was worth 16 shillings; now (it is worth) 10 (shillings).

In ROLLESTONE [Rolleston] Alvric had for a manor (*pro manerio*) 4½ bovates (assessed) to the geld. (There is) land for 1 plough which 5 villeins have there. There (are) 12 acres of meadow. (It was) formerly (worth) 20 shillings; now it is worth 10 shillings.

M. & B. In SUDTONE [Sutton] and SCROBI (B') [Scrooby] and LUND (B') [Lound[1]] (there is) 1 carucate of land and 6 bovates (assessed) to the geld. (There is) land for 6 ploughs. Archbishop Thomas has there 2 ploughs in demesne; and 14 villeins and 6 bordars having 6 ploughs. There (are) 7 acres of meadow. Wood(land) for pannage half a league and 8 furlongs in length and 8½ furlongs in breadth. In King Edward's time it was worth 8 pounds, (and it is worth) the same now.

The Soc of this Manor

In ETTONE [Eaton] 2 carucates (assessed) to the geld. In TILNE [Tilne] 2 bovates and the fourth part of 1 bovate. In WELLON [Welham] and SIMENTON [ ] 5 bovates and the fourth part of 1 bovate. In GRENELEI [Little Gringley] 1 bovate and the fourth part of 1 bovate. In SCAFTEORDE [Scaftworth] 1 carucate. In EVRETONE [Everton] 1 carucate and the third part of 1 bovate. This land is (sufficient) for 12 ploughs. There 38 sochmen with 18 villeins and 20 bordars now have 25 ploughs. In TILNE [Tilne] 1 mill rendering 30 shillings belonging to LANUM [Laneham].[2] In REDFORDE [Retford] 1 mill belonging to SUDTONE [Sutton]. In CLAUEBURCH [Clarborough] 6½ bovates. Meadow 4½ furlongs in length and the same in breadth and 45 acres in addition. Wood(land) for pannage 2½ leagues in length and 2 leagues in breadth.

M. In BLIDEWORDE [Blidworth] the Archbishop of York had 9 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. Archbishop Thomas has there 5 villeins having 2 ploughs and 1 mill which is in LUDEHAM [Lowdham]. Wood(land) for pannage 3 leagues in length and 1 in breadth.

[1] 'Madressei' in original is underlined for deletion, and 'Lund' is written over it.

[2] 'pertinens ad Lanū' interlined.

BER[EWICK]

B. In CALVRETONE [Calverton] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There 7 villeins and 2 bordars have 2 ploughs. There (is) a church and a priest and 2 acres of meadow. Wood(land) for pannage 8 furlongs in length and 3 (furlongs) in breadth. In King Edward's time it was worth 40 shillings and (it is worth the same) now.

M. In OSTONE [Oxton] Elnod had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Archbishop Thomas has 1 plough in demesne and 1 sochman and 1 villein and 1 bordar having 2 ploughs. The king has 1 bovate of this land. The remainder belongs (*iacet*) to BLIDEWORDE [Blidworth]. In King Edward's time it was worth 40 shillings; now (it is worth) 20 (shillings).

In RAVESCHEL [Ranskill] (there are) 4½ bovates of land (assessed) to the geld. There is land for 1 plough. It was and is waste. Godric held (it). The archbishop holds (it).

M. In NORTWELLE [Norwell] SAINT MARY of SUDWELLE [Southwell] had 12 bovates of land (assessed) to the geld. (There is) land for 6 ploughs. There (are) now 2 ploughs in demesne and 22 villeins and 3 bordars having 7 ploughs. There (is) a church and a priest and 1 mill (rendering) 12 pence, and 1 fishery and 73 acres of meadow. Wood(land) for pannage 2 leagues in length and 1 in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 100 shillings.

The Soc of this Manor

S. In OSWITORP[3] [Osmondthorpe] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 4 sochmen have 2 ploughs. (There are) 8 acres of meadow. Wood(land) for pannage 4 furlongs in length and 3 in breadth.

S. In WILGEBI [Willoughby] (there are) 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen and 3 villeins have 2 ploughs and 16 acres of meadow.

S. In CALNESTONE [Caunton] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 1 sochman and 5 bordars have 1½ ploughs and 2 acres of meadow. Wood(land) for pannage 3 furlongs in length and 2 in breadth.

In OCRETONE [Hockerton] (there is) 1 bovate of land (assessed) to the geld. There (is) 1 villein and 1 bordar and 1 acre of meadow.

[3] The scribe evidently read 'Osmutorp' as 'Osunitorp.'

In UDEBURG [Woodborough] (there are) 7 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There (is) half a plough in demesne, and 2 villeins and 1 bordar have 1 plough. It belongs to SUDWELLE [Southwell].

IN THE SAME PLACE (*Ibidem*) 1 clerk (*clericus*) has 1 bovate of land (assessed) to the geld under (*sub*) the archbishop.

fol. 283b.

VI. THE LAND OF THE BISHOP OF LINCOLN

M. In NEWERCHE [Newark] with (its) two berewicks BALDRETUNE [Balderton] and FARENDUNE [Farndon] Godeva the countess had 7 carucates of land and 2 bovates (assessed) to the geld. (There is) land for 26 ploughs. There Bishop Remi has 7 ploughs in demesne and 56 burgesses (*burgenses*) and 42 villeins and 4 bordars having 20½ ploughs. There (are) 10 churches and 8 priests having 5 ploughs. There 7 free men (*franci homines*) have 5½ ploughs. There (is) 1 mill (rendering) 5 shillings and 4 pence and 1 fishery. To NEWERCHE belong (*adiacent*) all the customs (*consuetudines*) of the king and the earl from (*de*) that wapentake. In King Edward's time it rendered (*reddebat*) 50 pounds; now (it renders) 34 pounds.

The Soc of this Manor

S. In BALDRETONE [Balderton] (there are) 6½ bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There 26 sochmen and 3 bordars have 9 ploughs.

S. In CHELVINTONE [Kilvington] (1 bovate), SIRESTUNE [Syerston] (1½ bovates), ELVESTUNE [Elston] (1 bovate), STOCHES [East Stoke] (1½ bovates), HOLTONE [Hawton] (2½ bovates), COTINTONE [Coddington] (1 carucate), BARNEBI [Barnby-in-the-Willows] (2½ bovates of land), WIMUNTORP [Winthorpe] (6½ bovates), together there are 3 carucates and half a bovate (assessed) to the geld. (There is) land for 10½ ploughs.

There 77 sochmen with 4 bordars have 15½ ploughs. In these (members) (there are) 163 acres of meadow.

S. In SCORNELEI [South Scarle] (2½ carucates), GRETONE [Girton] (1½ carucates), SPALDESFORDE [Spalford] (3½ bovates), TORNESHAIE [Thorney] (1 carucate) and WIGESLEIE [Wigsley] (7 bovates), HERDREBI [Harby] (1 bovate), COTUN [Cotham] (1 bovate), together (there are) 6½ carucates and half a bovate (assessed) to the geld. (There is) land for 21 ploughs and 3 oxen. There 71 sochmen and 7 bordars have 21½ ploughs. There (are) 280 acres of meadow. Wood(land) for pannage 5 furlongs in length and 4 furlongs in breadth.

2 M. In ELVESTUN [Elston] Lewin and Pilewin had 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 1 villein and 3 bordars have 1 plough. There (are) 12 acres of meadow. In King Edward's time it was worth 10 shillings and (it is worth the same) now. Ravenesort and Arnegrim hold (it) of the bishop.

M. In COTINTONE [Coddington] Ulvric had 1 bovate of land (assessed) to the geld. (There is) land for 2 oxen. The bishop has there half a plough and 1 acre of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 20 shillings.

M. In the same place Bugo had 1½ bovates of land (assessed) to the geld. There is land for half a plough. It is waste. Botild holds (it) and it is worth 2 shillings. There (are) 2 acres of meadow.

M. In CLITONE [Clifton] Ulviet had 6½ bovates of land (assessed) to the geld. There is land for 3 ploughs. Bishop R(emi) has there 3 sochmen on (*de*) 3 bovates of this land and 1 bordar with 1 plough. There (are) 30 acres of meadow. Wood(land) for pannage half a league in length and 3 furlongs in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings. Ralph holds (it).

M. In HERDEBI [Harby] Godwin had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 5 villeins have now 2 ploughs and 12 acres of meadow. Woodland for pannage half a league in length and half (a league) in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 20 (shillings).

M. In CLIFTONE [Clifton] Frane had 3½ bovates of land (assessed) to the geld. (There is) land for 12 oxen. Bishop Re(mi) has there 1 plough and 6 villeins and 2 bordars having 1½ ploughs. There are 14 acres of meadow. In King Edward's time it was worth 40 shillings; now it is worth 20 shillings. Siwate holds (it).

fol. 284.

M. In the same place Ulviet had 1½ bovates of land (assessed) to the geld. (There is) land for 1 plough. It is waste. Ralf holds (it). There is the fourth part of 1 church and 8 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings.

M. In the same place Agemund had 2½ bovates of land (assessed) to the geld. The same Agemund holds (it) of the bishop and has 2 ploughing oxen (*boves in car'*) and 2 villeins likewise (with) 2 ploughing oxen and 8 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 6 shillings.

IN BERNEDELAWE [BASSETLAW] WAPENTAC

M. In FLADEBURG [Fledborough] the Countess Godeva had 1 carucate and 3½ bovates (assessed) to the geld. (There is) land for 4 ploughs. There Nigel, the bishop's man, has 2½ ploughs and 16 villeins and 5 sochmen on (*de*) 1 bovate of this land having 5 ploughs. There (is) a priest and a church and 1 mill (rendering) 12 pence. Wood-(land) for pannage 1 league in length and half a league in breadth. In King Edward's time it was worth 8 pounds; now (it is worth) 5 (pounds).

Soc[land]

S. In NORMENTONE [Normanton upon Trent] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There 11 sochmen have 3 ploughs and 6 acres of meadow.

M. In ESTOCHES [East Stoke] the Countess Godeva had 6 bovates of land and a third part and a fifteenth (assessed) to the geld. (There is) land for 12 oxen. There Nigel the bishop's man has 5 sochmen and 4 bordars having 3 ploughs and 6 acres of meadow and underwood (*silvæ minutæ*). In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

VI. THE LAND OF THE BISHOP OF BAYEUX

M. In COTES [Cotham] Levric had 3 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There Wazelin the man of the bishop of Bayeux has 1 plough and 5 villeins and 1 bordar having half a plough and 20 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

M. In BARNEBI [Barnby in the Willows] Ulvric had 7 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Losuard the man of the bishop of Bayeux has 1 plough and 4 sochmen on (*de*) 2 bovates of this land and 9 villeins and 6 bordars having 4½ ploughs. There is a priest and a church to which there belongs (*in qua jacet*) half a bovate of this land and 1 mill (rendering) 5 shillings and 4 pence and 30 acres of meadow, and underwood (*silva minuta*). In King Edward's time it was worth 40 shillings; and (it is worth the same) now.

M. In COTINTON [Coddington] Ulvric had 3½ bovates of land (assessed) to the geld. (There is) land for 12 oxen. There Losoard the bishop's man has 2 villeins and 4 bordars with 1 plough and 3 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 10 (shillings).

M. In COTINTONE [Coddington] Levric had 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Oudchel has under (*sub*) the bishop half a plough and 4 sochmen on (*de*) 4 bovates of this land and 3 bordars with half a plough and 5 acres of meadow.

M. In ROLLESTONE [Rolleston] Godwin had 2½ carucates of land (assessed) to the geld and the fourth part of 1 bovate. (There is) land for 6 ploughs. There Losoard the bishop's man has 1 plough and 11 villeins and 9 bordars having 4½ ploughs. There (is) 1 mill (rendering) 27 shillings and 68 acres of meadow. In King Edward's time it was worth 8 pounds; now (it is worth) 4 pounds and 10 shillings. To this manor there belong 7 sochmen in OPETONE [Upton] and COLINGEHAM [Collingham].

M. In SCREVETONE [Screveton] Toti had 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Hugh, kinsman (*nepos*) of Herbert, the bishop's man, has 5 sochmen and 4 villeins and 1 bordar having 3 ploughs and 6 oxen and 12 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 32 shillings.

VII. THE LAND OF ST. PETER OF BURG [PETERBOROUGH]

M. In COLINGEHAM [Collingham] St. Peter of Burg had 4 carucates of land and half a bovate (assessed) to the geld. (There is) land for 14 ploughs. In demesne there are now 2 ploughs and (there are) 37 sochmen on (*de*) 2 carucates and 3 bovates of this land and 8 villeins and 20 bordars having 14 ploughs. There (is) a priest and 2 churches and 2 mills (rendering) 20 shillings and 200 acres of meadow. Underwood (*silva minuta*) 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 9 pounds (and it is worth) the same now.

M. In NORD MUSCHAM [North Muskham] St. Peter of Burg had 10 bovates of land

(assessed) to the geld. There is land for 4 ploughs. In demesne there is now 1 plough and (there are) 2 sochmen on (*de*) 2½ bovates of land and 5 villeins and 3 bordars having 1½ ploughs and 2 mills (rendering) 20 shillings and 1 waste, and half a fishery and 30 acres of meadow. In King Edward's time it was worth 60 shillings; now it is worth 40 shillings.

fol. 284b.

VIII. THE LAND OF ROGER DE BUSLI

Newerca [Newark] Wapentac

M. In Elvestune [Elston] Oudenecar had 2 bovates of land (assessed) to the geld. (There is) land for half a plough. There Norman the priest has of Roger de Busli 5 villeins having 5 ploughing oxen (*boves in car'*). In King Edward's time it was worth 10 shillings and (it is worth the same) now.

M. In Sceltone [Shelton] and Flodberge [Flawborough] Ælsi (had) 7½ bovates of land (assessed) to the geld. (There is) land for 2½ ploughs. There Robert, Roger's man, has 1 plough, and 6 villeins and 2 bordars have 2 ploughs. There is a church and the site of 1 mill and 30 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

M. In Clistone [Clifton] Oudgrim had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger, Roger's man, has 1 plough and 1 sochman on (*de*) 1 bovate of this land and 7 villeins with 3 ploughs and the fourth part of a church and 30 acres of meadow. Wood(land) for pannage (*silva pastilis*) 2 furlongs in length and half (a furlong) in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

Soc[land]

S. In Spaldesforde [Spalford] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen have half a plough and 12 acres of meadow.

M. In Brodeholm [Broadholme][1] Alwi had 3 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There (are) 4 sochmen on (*de*) 2 bovates of this land and 3 villeins having 4 ploughs and 12 acres of meadow. Roger de Busli holds (it). In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

[1] 'Vel Cliftune' added over 'Brodeholm.'

Bernesedlawe [Bassetlaw] Wapentac

M. In Marcham [East Markham] Edwi had 9 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Geoffrey, Roger's man, has 1 plough; and 9 villeins and 5 bordars have 3 ploughs. There is a church and 1 mill (rendering) 16 shillings. In King Edward's time (it was worth) 3 pounds; now (it is worth) 4 pounds.

M. In the same place Frane had 3½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Turold, Roger's man, has 1 plough and 1 villein with 2 ploughing oxen (*bobus in car'*). In King Edward's time it was worth 20 shillings and (it is worth) the same now.

2 M. In the same place Godwin and Ulchel had 7½ bovates of land (assessed) to the geld. (There is) land for 3½ ploughs. There Ulchel and 4 sochmen and 2 bordars have 1½ ploughs. In King Edward's time it was worth 16 shillings and (it is worth the same) now.

[2]In Hedune [Headon] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 2 oxen. The soc belongs to (*in*) Markham and (there are) 2 acres of meadow. There 1 sochman has 2 oxen.

[2]In Upetun [Upton] (there are) 2½ bovates of land (assessed) to the geld. There is land for 2 ploughs. The soc belongs to (*in*) Markham. There 9 sochmen and 2 bordars have 4 ploughs and 6 acres of meadow.

[2]In Gamelestune [Gamston] (there is) 1 orchard (*ortum*) and 1 sochman belonging to Marcham and 1 orchard belonging to Etone [Eaton].

2 M. In Tuxfarne [Tuxford] Elwi and Ulmer had 12 bovates of land (assessed) to the geld. (There is) land for 10 ploughs. There Roger has 4 ploughs and 32 villeins and 2 bordars having 14 ploughs and 1 mill (rendering) 10 shillings and 8 pence. In King Edward's time it was worth 10 pounds; now (it is worth) 8 pounds.

The Soc of this Manor

S. In Schidrinton [now Kirton][3] and Walesbi [Walesby] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There 5 sochmen and 1 bordar have 2 ploughs.

S. In Agemuntone [Egmanton] (there are) 1½ bovates of land (assessed) to the geld.

[2] These entries are added at the foot of the page, with a mark to indicate their proper position under Marcham.

[3] See note p. 250.

(There is) land for 1 plough. There 1 sochman and 3 villeins have 2 ploughs. Wood(land) for pannage 1 league in length and half a league in breadth.

3 M. In AGEMUNTONE [Egmanton] Torchetel and Ulmer had 4½ bovates (of land) and the third part of 1 bovate (assessed) to the geld. (There is) land for 3 ploughs. There Roger has 4 ploughs and 13 villeins and 9 bordars having 8 ploughs. There (are) 2 mills (rendering) 30 shillings. In King Edward's time it was worth 4 pounds and (it is worth) the same now.

M. In BUCHETONE [Boughton] Ædwi had 3 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There (is) now 1 plough in demesne and 2 villeins and 1 bordar with 1 plough. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

M. In ALRETUN [Ollerton] Alwold had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There now 5 sochmen and 1 villein have 2 ploughs and 1 mill (rendering) 6 shillings and 8 pence. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

M. In COTUNE [Cotham] Hardulf had 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Fulco, Roger's man, has 8 villeins with 2 ploughs. In King Edward's time it was worth 16 shillings and (it is worth the same) now.

4 M. In ORDESHALE [Ordsall] Osward, Turstin, Ordric and Turstin had 4 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There 2 men of Roger have 3 ploughs and 5 villeins and 2 bordars having 2 ploughs. There (are) 16 acres of meadow. Wood(land) for pannage 1 furlong in length and half a furlong in breadth. In King Edward's time it was worth 28 shillings; now (it is worth) 24 shillings.

10 M. In ÆTTUNE [Eaton] 10 thegns had each his hall (*aula*). Between them (there were) 6½ bovates of land and the sixth part of 1 bovate (assessed) to the geld. (There is) land for 4 ploughs. There Fulco, Roger's man, has 1 plough and 14 villeins and 9 bordars having 7 ploughs and 2 mills (rendering) 20 shillings and 60 acres of meadow. Wood(land) for pannage 5 furlongs in length and 3 in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 3 (pounds).

[1]In MISNA [Misson] (there is) 1 bovate of land (assessed) to the geld. It belongs to ETTONE [Eaton].

M. In GRAVE [Grove] Alwi and Osmund had 4½ bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Robert, Roger's man, has 1½ ploughs and 6 villeins and 3 bordars and 1 sochman having 2½ ploughs. There (is) a priest and a church and 8 acres of meadow. Wood(land) for pannage 1 league in length and half (a league) in breadth. In King Edward's time it was worth 40 shillings and (it is worth) the same now.

[2]In ORDESHALE [Ordsall] (there are) 1½ bovates. (There is) land for 1 plough.

S. In RANEBI [Ranby] (there are) 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. The soc belongs to (*in*) GRAVE. It is waste.

In RANEBI [Ranby] there is 1 bovate (assessed) to the geld. The soc belongs to (*in*) ETUNE [Eaton].

M. In HEDUNE [Headon] Godric and 6 other thegns had each a hall (*hallam*). Between them (there were) 8 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 5½ ploughs. There William, Roger's man, has 2 ploughs and 14 sochmen and 9 villeins and 6 bordars having 16 ploughs. There (are) 26 acres of meadow. Wood(land) for pannage 5 furlongs in length and 4 in breadth. In King Edward's time it was worth 4 pounds and (it is worth) the same now.

S. In UPETUNE [Upton] (there is) half a bovate of land (assessed) to the geld. (There is) land for 2 oxen. There are 3 sochmen and 2 bordars with 1 plough and 2 acres of meadow.

M. In WESTMARCHAM [West Markham] Godric had 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 2 ploughs and 4 villeins and 2 bordars having 2 ploughs and 16 acres of meadow. Wood(land) for pannage 5 furlongs in length and 3 in breadth. In King Edward's time it was worth 40 shillings (and it is worth) the same now. Claron holds (it.)

fol. 285.

S. In WESTMARCHAM [West Markham] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. The soc belongs to (*in*) TUXFARNE [Tuxford].

[1] Added at the foot of the page, with a mark to indicate its proper position.

[2] In the margin.

There 6 sochmen and 5 villeins have 4½ ploughs. There (are) 16 acres of meadow.

S. In the same place (there is) 1 bovate of land (assessed) to the geld (of which) the soc belongs to (*in*) GRAVE [Grove] and 1 bovate (assessed) to the geld (of which) the soc belongs to (*in*) ETUNE [Eaton] and 1 bovate (assessed) to the geld (of which) the soc belongs to (*in*) DRAITONE [Drayton]. (There is) land for half a plough. There 3 sochmen have 2 ploughs.

2 M. In DRAITONE [West Drayton] Swen and Ulstan had 4 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There 2 men of Roger's have 1 plough and 8 villeins and 1 bordar having 2 ploughs. There (are) 3 mills rendering 50 shillings and 7 acres of meadow. Wood(land) for pannage 3 furlongs in length and half a furlong in breadth. In King Edward's time it was worth 30 shillings; now (it is worth) 17 shillings and 4 pence.

2 M. In ELCHESLIE [Elkesley] Locre and Ulchel had 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Claron has 1 plough, and 3 villeins and 1 bordar have 1½ ploughs. In King Edward's time it was worth 26 shillings and (it is worth the same) now.

M. In BABURDE [Babworth] Ulmar had 2½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Geoffrey, Roger's man, has 1 plough and 1 bordar with half a plough. Wood(land) for pannage 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 10 shillings.

2 M. In NORDERMORTUNE [North (?) Morton] Assord and Lufchel had 2 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. It is waste. Wood(land) for pannage 1 furlong in length and half a furlong in breadth. In King Edward's time it was worth 16 shillings.

M. In CALDECOTES [Old Coates] Caschin had 1 bovate of land (assessed) to the geld. (There is) land for 4 oxen. It is waste. There are 6 acres of meadow and 2 mills (rendering) 20 shillings. In King Edward's time it was worth 30 shillings.

2 M. In CUCHENAI [Cuckney] Alric and Ulsi had 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There Geoffrey, Roger's man, has 1 plough and 9 villeins having 3 ploughs. Wood(land) for pannage 2 furlongs in length and 2 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 2 shillings less.

2 M. In TORP [Perlethorpe] Turstan and Ulmer had 10 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Richard, Roger's man, has 4 ploughs and 5 villeins and 4 bordars having 2½ ploughs and 7 acres of meadow. Wood(land) for pannage [ ] furlongs in length and 4 in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 26 shillings.

Soc[land] belonging there

S. In GLETORP [Gledthorpe] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There 4 sochmen have 2 ploughs. Wood(land) for pannage 1 furlong in length and 1 in breadth.

2 M. In CLIPESTONE [Clipstone] Osbern and Ulsi had 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs There Roger has in demesne 1½ ploughs and (there are) 12 villeins and 3 bordars having 3½ ploughs, and 1 mill (rendering) 3 shillings. Wood(land) (fit) in places for pannage (*per loca pastilis*) 1 league in length and 1 in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings).

3 M. In WARESOPE [Warsop] Godric and Leviet and Ulchel had 3 carucates of land (assessed) to the geld. (There is) land for 6½ ploughs. There Roger has in demesne 3½ ploughs and (there are) 6 sochmen on (*de*) 2 bovates of this land and 15 villeins and 11 bordars having 3 ploughs. There (is) a priest and a church and 1 mill (rendering) 16 pence and half the site of a mill. Wood(land) for pannage 5 furlongs in length and 4 in breadth. In King Edward's time it was worth 64 shillings; now (it is worth) 4 shillings less.

2 M. In CLUNBRE [Clumber] Adelwol and Ulchil had 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Part (2 bovates) is waste, which Fulc holds. In the other (part) Ulchel has under (*sub*) Roger 1 plough and 1 mill (rendering) 12 pence. Wood(land) for pannage 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 4 shillings.

S. In ODESTORP [ ] and REDFORD [Retford] (there are) 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. The soc belongs to CLUMBRE. It is waste.

M. In WERCHESOPE [Worksop] Elsi had 3 carucates of land (assessed) to the geld.

(There is) land for 8 ploughs. There Roger has 1 plough in demesne and 22 sochmen (*de*) on 12 bovates of this land and 24 villeins and 8 bordars having 22 ploughs and 7 acres of meadow. Wood(land) for pannage 2 leagues in length and 3 furlongs in breadth. In King Edward's time it was worth 8 pounds; now (it is worth) 7 (pounds).

2 M. In ROLVETUNE [Rayton] Ulsi and Archil had 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger, Roger's man, has 1 plough and 4 sochmen on 2 bovates of this land and 1 bordar with 1 plough. There (are) 2 acres of meadow. Wood(land) for pannage 6 furlongs in length and 3 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings. In the same place (there is) 1 bovate of land assessed to the geld. Soc(land). It is waste.

M. In BILLEBI [Bilby] Grimchel had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Ingran, Roger's man, has 1 plough and 9 villeins and 1 bordar having 3 ploughs and 6 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 20 (shillings).

M. In ODESACH [Hodsock] Ulsy had 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There Turold, Roger's man, has 2 ploughs and 3 sochmen on (*de*) 4 bovates of this land and 12 villeins having 9 ploughs. There (are) 2 mills (rendering) 16 shillings and 4 pence and 8 acres of meadow. Wood(land) for pannage 1 league in length and half a league in breadth. In King Edward's time it was worth 60 shillings and (it is worth the same) now.

The Soc of this Manor

S. In BLIDE [Blyth] (there is) 1 bovate of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 4 villeins and 4 borders have 1 plough and 1 acre of meadow.

[1] In the same place (there is) 1 carucate of land (assessed) to the geld. (It is) soc(land) of the king's manor of MAMESFELD [Mansfield].

[1] In the same place (there is) 1 carucate of land. The soc and geld (belong) to (*ad*) the king's manor of BODMESCEL [Bottamsall].

6 M. In CARELTUNE [Carlton in Lindrick] 6 thegns had each a hall. Between them all (there were) 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There Turold, Roger's man, has 2 ploughs, and 2 sochmen and 16 villeins and 3 bordars having 4 ploughs. There (is) a church and 2 mills (rendering) 21 shillings and 20 acres of meadow. Wood(land) for pannage 1½ leagues in length and half a league in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 3 (pounds).

M. In LUND [Lound] Ulchel had 2 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. In demesne there (is) 1 plough and (there are) 6 villeins with 2 ploughs and 5 acres of meadow. Wood(land) for pannage 6 furlongs in length and 2 in breadth. In King Edward's time it was worth 20 shillings; now it (is worth) 10 (shillings.)

M. In SERLEBI [Serlby] Alvric had 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. There Gilbert, Roger's man, has 1 plough and 5 villeins and 8 bordars with 3 ploughs and 1 mill (rendering) 3 shillings. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

2 M. In TURDEWORDE [Torworth] Brixi and Caschi had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Azo the priest has (it) of Roger and it is waste. Wood(land) for pannage 1 league in length and 1 furlong in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 3 shillings.

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2 M. In BARNEBI [Barnby Moor] Turverd and Sorte had 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. It is waste. There (is) 1 acre of meadow. Wood(land) for pannage 1 furlong in length and half a furlong in breadth. In King Edward's time it was worth 10 shillings; now (it is worth) 12 pence.

3 M. In HAREWORDE [Harworth] Wade, Ulfiet and Ulstan had 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There Fulc, Roger's man, has in demesne 1 plough and (there are) 8 villeins and 1 bordar with 3 ploughs. There (is) a church. Wood(land) for pannage 1 league in length and 1 in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 30 shillings.

Soc[land] belonging there

S. In MARTUNE [Martin] there is 1 carucate of land (assessed) to the geld. (There

[1] These two entries are in the margin, and probably refer to Hodsock.

is) land for 2 ploughs. There 10 villeins have 5 ploughs. Wood(land) for pannage 1 league in length and half a league in breadth.

3 M. In ESTIRAPE [Styrrup] Leving, Torchil and Leuric had 7 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Bernard, Roger's man, has 1 plough and 9 sochmen on (*de*) half a carucate of this land and 7 villeins and 5 bordars having 3½ ploughs. There (are) 6 acres of meadow and 10 acres of wood(land) for pannage. In King Edward's time it was worth 50 shillings; now it is worth 25 shillings.

In the same place (there is) 1 bovate of land (assessed) to the geld. It is soc(land). It is waste.

IN LIDE WAPENTAC[1]

M. In CALUN [Kelham] Turchil and Godric had 10 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 3 ploughs. There Turold, Roger's man, has 1 plough and 7 sochmen (*de*) on 5 bovates of this land and 3 villeins and 3 bordars having 2½ ploughs. There (are) 22 acres of meadow. Underwood (*silvæ minutæ*) 16 furlongs in length and 74 rods in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 28 shillings.

M. In HOCRETONE [Hockerton] Ulsi and Turchil had 1 carucate of land (assessed) to the geld. (There is) land for 2½ ploughs. There Roger has in demesne 2 ploughs and (there are) 11 villeins and 4 bordars having 4 ploughs. There (are) 36 acres of meadow. There (is) a church. Wood(land) for pannage 1 league in length and 4 furlongs and 4 rods in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 3 (pounds).

In CARLETUN [Caunton] Roger has 12 acres of meadow.

2 M. In GRESTORP [Grassthorpe] Dunning and Grim had 6½ bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There Roger, Roger's man, has 2 ploughs and 4 sochmen and 12 villeins and 1 bordar having 5 ploughs. There (are) 3 mills (rendering) 20 shillings and 12 acres of meadow and 4 acres of wood(land) for pannage. In King Edward's time it was worth 3 pounds and (it is worth the same) now.

S. In SUDTONE [Sutton-on-Trent] there is 1 bovate of land (assessed) to the geld. (It is) soc(land). It is waste. There (are) 6 acres of meadow.

2 M. In MARNEHAM [High Marnham] Alvric and Dane had 6½ bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There Fulo, Roger's man, has 1 plough and there 1 sochman has 12 acres of land and (there are) 10 villeins and 4 bordars having 4½ ploughs. There (are) 40 acres of meadow. In King Edward's time it was worth 40 shillings; now it is worth 20 (shillings).

M. In another MARNEHAM [Low Marnham] Ulsi had 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There Roger has in demesne 4 ploughs and (there are) 2 sochmen on 40 acres of land and 20 villeins having 7 ploughs and 1 mill (rendering) 4 shillings and 1 fishery and 24 acres of meadow. Underwood (*silva minuta*) half a league in length and the same in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 3 pounds.

M. In SCACHEBI [Skegby] Alwold and Ulchet had 1 carucate of land (assessed) to the geld. (There is) land for 2½ ploughs. There 2 men of Roger's have in demesne 3 ploughs and (there are) 7 villeins and 2 bordars having 3 ploughs. There (are) 16 acres of meadow. Wood(land) for pannage half a league in length and 3 furlongs in breadth. In King Edward's time it was worth 48 shillings; now (it is worth) 40 shillings.

Soc[land]

S. In SUDTONE [Sutton upon Trent] (there is) 1 bovate of land (assessed) to the geld. (There is) land for half a plough. There 1 sochman has 1 plough.

S. In NORMENTUNE [Normanton upon Trent] (there is) half a bovate of land (assessed) to the geld. There 2 villeins and 2 bordars have 1 plough.

5 M. In NORMENTUNE [Normanton upon Trent] 5 thegns, Justan, Durand,[2] Elward, Ulmar, Aseloc, had each his hall (*aula*) and each of them (had) 1 bovate of land and the fifth part of 1 bovate (assessed) to the geld. (There is) land for 12 oxen. There Roger, Roger's man, has 9 sochmen and 4 bordars having 3 ploughs and 12 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 6 shillings.

[1] Now the North Division of Thurgarton Wapentake.

[2] 'Durand' is added over 'Aseloc,' marked for deletion.

6 M. In WESTONE [Weston] Elmer, Elwi, Osbern, Grim, Edric, Stenulf had each his hall (*aula*).[1] Between them (there were) 6½ bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Fulc, Robert and Turold, Roger's men, have 4½ ploughs and 1 sochman and 14 villeins and 3 bordars having 3½ ploughs. There (is) a church and 1 mill and 30 acres of meadow. Wood(land) for pannage half a league in length and the same in breadth. In King Edward's time it was worth 70 shillings; now (it is worth) 50 shillings.

Soc[land] belonging there (*Ibidem*).

S. In ODESTORP [ ] and REDFORD [Retford] (there is) half a bovate of land (assessed) to the geld. (There is) land for 4 oxen. There is 1 villein and the fourth part of 1 mill and 4 acres of meadow.

IN TORGARTONE [THURGARTON] WAPENTAC

M. In GHELLINGE [Gedling] Dunstan had 9½ bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 2 ploughs and 9 villeins and 1 bordar having 2 ploughs and 10 acres of meadow. Wood(land) for pannage 2 furlongs in length and 1 furlong in breadth. In King Edward's time it was worth 32 shillings; now (it is worth) 40 shillings.

M. In EPRESTONE [Epperstone] and UDESBURG [Woodborough] Ulviet had half a carucate of land (assessed) to the geld. (There is) land for 12 oxen. There Roger has 1 plough and 2 sochmen on (*de*) 1 bovate of this land and 3 villeins having 1½ ploughs. There (is) 1 mill (rendering) 5 shillings and 4 pence and 3 acres of meadow. In King Edward's time it was worth 5 shillings; now (it is worth) 1 mark of silver.

M. In GULNETORP [Gunthorpe] Morcar had 3 carucates of land and 3 bovates (assessed) to the geld. (There is) land for 6 ploughs. There Roger has in demense 4 ploughs and (there are) 5 sochmen on 1½ bovates of this land and 40 villeins and 7 bordars having 16 ploughs. There (is) toll (*theloneum*) and a (ferry) boat (*navis*) rendering 30 shillings and 8 pence and 2 fisheries (rendering) 25 shillings and 180 acres of meadow. Wood(land) for pannage 6 furlongs in length and 5 in breadth. In King Edward's time it was worth 15 pounds; now (it is worth) 10 pounds. Talliage (*tailla*) 30 shillings.

[1] '*Unus quisque* 1 *bo' terre*' in the original, but deleted.

S. In BERTUNE [Burton Joyce] and LUDHAM [Lowdham] (there are) 12 bovates of land (assessed) to the geld. (There is) land for 1 plough. The soc belongs to (*in*) GUNNETORP [Gunthorpe]. There 4 sochmen and 2 villeins have 1 plough. There (are) 4 acres of meadow.

2 M. In OSTONE [Oxton] Turstan and Odincarle had 1 carucate of land (assessed) to the geld. There is land for 2½ ploughs. There Roger has 2 ploughs and 5 villeins and

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6 bordars having 2 ploughs and 1 mill (rendering) 5 shillings and 4 pence. In King Edward's time it was worth 40 shillings; now (it is worth) 60 shillings.

IN RISECLIVE [RUSHCLIFF] WAPENTAC

M. In STANFORD [Stanford upon Soar] Elsi had 10 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 1 plough and 5 sochmen and 3 villeins and 2 bordars having 2 ploughs. There (is) half a mill (rendering) 6 shillings and 8 pence and 11 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 40 shillings.

S. In NORMANTONE [Normanton upon Soar] (there are) 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. (It is) soc(land). It is waste. There (are) 4 acres of meadow. In King Edward's time it was worth 4 shillings (and it is worth the same) now.

M. In TURMODESTUN [Thrumpton] Lewin and Elnod had 7 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 1 plough and 3 sochmen and 2 villeins and 2 bordars having 1½ ploughs. In King Edward's time it was worth 40 shillings; now (it is worth) 20 shillings.

M. In HOLMO [Holme Pierrepont] Toret had 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger has 2 ploughs and 14 villeins and 2 bordars having 5 ploughs and 1 mill (rendering) 5 shillings and 80 acres of meadow. In King Edward's time it was worth 6 pounds and (it is worth the same) now.

[2] In BASINFELT [Bassingfield] (there are) 10 bovates of land (assessed) to the geld and 2 parts of 1 bovate. (There is) land for 2 ploughs. (It is) soc(land) of HOLMO [Holme

[2] This paragraph is written at the bottom of the next column, but is marked for insertion here.

Pierrepont]. There 8 sochmen have 3 ploughs and 15 acres of meadow.

2 M. In PLUNTRE [Plumtree] Ulfac and Godric had 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger has in demense 3 ploughs and (there are) 33 villeins having 5 ploughs. There (is) a church and 23 acres of meadow. In King Edward's time it was worth 60 shillings and (it is worth the same) now.

Soc[land] belonging there

S. In RODDINTONE [Ruddington] (there are) 10 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There 18 sochmen have 3 ploughs and 33 acres of meadow.

M. In NORMANTONE [Normanton on the Wolds] Unfac had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger has in demesne 2 ploughs and (there are) 6 villeins and 3 bordars and 4 sochmen with 3 ploughs. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

B. IN THE SAME PLACE (*Ibidem*) (there are) 4½ bovates of land (assessed) to the geld. (There is) land for half a plough. There 2 villeins and 1 bordar have half a plough. It belongs to (*jacet*) PLUNTRE [Plumtree].

S. In STANTUNE [Stanton on the Wolds] (there is) half a bovate of land (assessed) to the geld. There 1 villein has 5 ploughing oxen (*boves in car'*). It belongs to (*pertinet*) PLUNTRE.

S. In CAUORDE [Keyworth] (there are) 2 bovates of land (assessed) to the geld. There 2 villeins have half a plough. It belongs to (*pertinet*) PLUNTRE.

3 M. In CAWORDE [Keyworth] Harold, Ricard and Frane had 6 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 4 sochmen and 3 villeins and 2 bordars having 3 ploughs. There (are) 16 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 17 shillings.

M. In LECHE [Leake] Godric had 2 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 4 oxen. There Ernulf, Roger's man, has 2 ploughs and 2 villeins with half a plough and 8 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 10 shillings.

IN BROLVESTOU[1] [BROXTOW] WAPENTAC

3 M. In WISOC [Wysall] Estan, Elsi, Gladuin had 3 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger, Roger's man, has 3 ploughs in demesne and 15 villeins and 5 sochmen on (*de*) 6 bovates of this land and 1 bordar having (*habentes*) 10 ploughs. There (is) a church. In King Edward's time it was worth 45 shillings; now (it is worth) 48 shillings.

[2] In the king's (land of) TORP [Thorpe in the Glebe] (there are) 7 bovates of land (assessed) to the geld belonging to (*pertinentes*) WISOC [Wysall]. (It is) soc(land). It is waste. There (are) 6 acres of meadow and it is worth 2 shillings.

In WILLEBI [Willoughby on the Wolds] (there is) the fourth part of 1 bovate of land (assessed) to the geld. It is waste.

M. In WILGEBI [Willoughby on the Wolds] Odincar had 6 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There 2 sochmen on (*de*) 1 bovate of this land and 3 villeins and 15 bordars have 4 ploughs and 13 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 10 (shillings).

2 M. In COTINGESTOCHE [Costock] and REPESTONE [Rempstone] Godric and Algar had 13 bovates of land (assessed) to the geld. (There is) land for 13 oxen. There Roger has 2 sochmen on (*de*) 2 bovates of this land and 3 villeins with 2 ploughs. One carucate of this land is waste. There (are) 30 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 12 shillings.

[1] The places which stand under this rubrication, like those which precede them, belong to Rushcliff wapentake. But the rubrication of this fief is so accurate throughout that the introduction of a fresh heading at this point probably has a meaning, which seems to be that these five villages, in a group at the extreme south of the county, were annexed, temporarily at least, to the somewhat distant wapentake of Broxtow. This is borne out by the fact that in Ralf de Burun's fee Costock and Rempstone both stand under the Broxtow rubrication. It is also significant that in these three manors (as in those of Ralf de Burun's fee) the number of ploughlands is equal to the numbers of carucates. The average ratio in the county is more than 2 to 1 and identity is very characteristic of the assessment of Broxtow wapentake. It is to be noted that Roger de Busli held no manor in the modern wapentake of Broxtow.

[2] This entry follows 'Wilgebi,' but is marked for insertion here.

In Bingameshou [Bingham] Wapentac

M. In Troclauestune [Tollerton] Elsi had 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There Roger in demesne has 1½ ploughs and (there are) 11 villeins and 1 bordar having 3 ploughs and 8 sochmen with 3½ ploughs and 2 mills (rendering) 3 shillings. There (is) a church and 30 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 60 (shillings).

2 M. In Lanbecote [Lamcote] Frane and Odincar had 7½ bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There Roger has 1½ ploughs and 1 villein and 2 acres of meadow. In King Edward's time it was worth 15 shillings and (it is worth the same) now.

M. In Bingheham [Bingham] Tosti(g) had 3 carucates of land and 2½ bovates (assessed) to the geld. (There is) land for 5 ploughs. There Roger in demesne has 4 ploughs and (there are) 26 villeins and 5 bordars and 14 sochmen having 12½ ploughs. Wood(land) for pasture 1 league in length and 8 furlongs in breadth. In King Edward's time it was worth 10 pounds and (it is worth the same) now. In Niwetune [Newton] (there are) 3 bovates (assessed) to the geld.

2 M. In the same place [*Ibidem*, sc. Bingheham] Hoga and Helga had 5 bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There is 1 sochman and 8 villeins and 1 bordar having 1 plough and 24 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 13 (shillings).

S. In Scelforde [Shelford] (there are) 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. The soc belongs to (*in*) Bingheham [Bingham]. There 3 sochmen have 1 plough.

M. In Brugeford [East Bridgeford] Odincar had 4 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There Roger in demesne has 3 ploughs and (there are) 20 sochmen on (*de*) 10 bovates of this land and 15 villeins and 3 bordars having 11 ploughs. There is a priest and a church and 12 acres of meadow. In King Edward's time it was worth 3 pounds; now (it is worth) 5 pounds.

3 M. In the same place (*Ibidem*) Turstan and Roschet and Iustan had 6 bovates of land (assessed) to the geld. (There is) land for 1 plough. There (are) 3 acres of meadow. The land is not cultivated. In King Edward's time it was worth 8 shillings; now (it is worth) 3 shillings.

M. In Chenivetone [Kneeton] Ulviet had 5 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There Roger has 1 plough and 2 villeins with 1 plough and 4 acres of meadow. In King Edward's time it was worth 10 shillings and (it is worth the same) now.

2 M. In Saxeden [Saxondale] Ulviet and Unspac had 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Roger has in demesne 2 ploughs and (there are) 5 sochmen and 5 villeins and 3 bordars having 2 ploughs. There (is) a church and 1 acre of meadow. In King Edward's time it was worth 25 shillings and (it is worth the same) now.

M. In Clipestune (Clipston) Ulviet had 3 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There Roger in demesne has 2 ploughs and (there are) 3 sochmen and 12 villeins and 1 bordar having 6 ploughs. There (are) 20 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings).

M. In Wareberg [ ] Godric had 12 bovates of land (assessed) to the geld. (There is) land for 12 oxen. It is waste. There (are) 10 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 5 shillings.

M. In Escreventone [Screveton] Odincar had 5 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 1 sochman with 1 bordar has 1 plough. In King Edward's time it was worth 5 shillings; now (it is worth) 8 shillings.

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M. In Colestone [Car Colston] Ulviet had 6 bovates of land and 1 acre (assessed) to the geld. (There is) land for 5 ploughs. There Roger, Roger's man, has 2 ploughs in demesne and 13 sochmen and 3 villeins and 7 bordars having 8 ploughs. There (are) 17 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 40 (shillings).

M. In Flintham [Flintham] Odincar had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger, Roger's man, has 1 plough and 2 sochmen and 3 villeins and 4 bordars having 2 ploughs.

In King Edward's time it was worth 20 shillings and (it is worth the same) now.

S. In the same place (*Ibidem*) (there are) 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. The soc belongs to (*in*) CHENIVETONE [Kneeton]. Ernuin the priest has it of (*de*) Roger. There 2 sochmen and 1 bordar have 1 plough. There (are) 8 acres of meadow.

M. In AILETONE [Elton] Morcar had 7 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Ralf, Roger's man, has 3 ploughs and 3 sochmen and 11 villeins having 6 ploughs. There (is) a church and 12 acres of meadow. In King Edward's time it was worth 4 pounds and (it is worth the same) now.

M. In OVETORP [Owthorpe] Helge had half a carucate of land (assessed) to the geld. (There is) land for 3 ploughs. There William, Roger's man, has 1 plough and 4 sochmen and 8 villeins having 3 ploughs. There (are) 12 acres of meadow. In King Edward's time it was worth 30 shillings and (it is worth the same) now.

IN OSWARDEBEC [OSWARDBECK] WAPENTAC

3 M. In FENTONE [Fenton] Ulsac and Levric and Grim had 1 bovate of land and the third part of 1 bovate (assessed) to the geld. The land is waste except for one bordar (*bord'*). There (are) 30 acres of wood(land) for pannage. In King Edward's time it was worth 5 shillings.

In the same place (*Ibidem*) Speravoc had 2 bovates of land and two parts of 1 bovate (assessed) to the geld. There is land for 1 plough with soc and soc (*soca et soca*) without a hall (*aula*). It is waste. There (are) 60 acres of woodland for pannage. In King Edward's time it was worth 10 shillings and 8 pence and (it is worth the same) now.

2 M. In ESTRETONE [Sturton le Steeple] Sperhavoc and Archil had 4½ bovates of land (assessed) to the geld. (There is) land for 2½ ploughs. There (are) now 2 villeins and 2 sochmen and 2 bordars having 7 ploughing oxen (*boves in car'*) and 8 acres of meadow. Wood(land) for pannage 6 furlongs in length and 3½ furlongs in breadth. In King Edward's time it was worth 2 marks of silver. (It is worth) the same now.

5 M. In WATELEIA [North Wheatley] 5 thegns had 9 bovates of land (assessed) to the geld. (There is) land for 8 ploughs. There Roger has in demesne 4 ploughs and 4 sochmen and 25 villeins having 12½ ploughs and 5 acres of meadow. Underwood (*silva minuta*) 1 league in length and 1 furlong in breadth. In King Edward's time it was worth 8 pounds and (it is worth the same) now.

M. In BURTONE [Burton] Sperhavoc had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Geoffrey, Roger's man, has 1 plough and 1 sochman and 1 villein and 2 bordars have 1½ ploughs. There is 1 fishery (rendering) 200 eels. Underwood (*silva minuta*) 1 furlong in length and 1 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 40 shillings.

Soc[land] belonging there

S. In EVRETONE [Everton] and HEREWELLE [Harwell] there are 2 bovates of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 1 sochman has half a plough and 1½ acres of meadow. Wood(land) for pannage 1 furlong in length and 1 in breadth.

M. In BOLUN [Bole] Turvert had 7 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There now 4 sochmen and 4 bordars have 3 ploughs. To this manor belong (*adiacent*) 6 bovates of land (assessed) to the geld, of which the soc belongs to (*in*) SANDEBI [Saundby]. There is land for 2 ploughs. There Geoffrey, Roger's man, has 1 plough and 2 sochmen and 4 villeins and 3 bordars have 1½ ploughs. Meadow 8 furlongs in length and 2 in breadth. Wood(land) for pannage 1 league in length and 3 furlongs in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 50 shillings.

M. In BECHINGEHAM [Beckingham] Osbern had 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Geoffrey, Roger's man, has 1 plough and 15 acres of meadow. Wood(land) for pannage 7 furlongs in length and 1 in breadth. In King Edward's time it was worth 10 shillings; now (it is worth) 16 shillings.

M. In WACHERINGEHAM [Walkeringham] Adestan had 10½ bovates of land (assessed) to the geld. There Roger, Roger's man, has 4 sochmen and 1 villein and 5 bordars having 2 ploughs. Meadow 2 furlongs in length and 1 in breadth. Wood(land) 4 furlongs in length and 1 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 15 shillings.

5 M. In MINISTRETONE [Misterton] 5 thegns had 13½ bovates of land (assessed) to the geld. (There is) land for 2½ ploughs. There Roger has 8 villeins and 5 bordars having 2½ ploughs. There is a church and meadow 3 furlongs in length and 1½ in breadth. Wood(land) for pannage 12½ furlongs in length and 2 furlongs in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 2 shillings more.

7 M. In GRINGELEIA [Gringley on the Hill] 7 thegns had 3 carucates of land (assessed) to the geld. (There is) land for 8 ploughs. There Roger, Roger's man, has 3 ploughs and 10 villeins and 6 bordars having 8 ploughs. There is a church and 1 fishery (rendering) 1,000 eels and 40 acres of meadow. Wood(land) for pannage 1 league in length and 3 furlongs in breadth. In King Edward's time it was worth 10 pounds; now (it is worth) 4 pounds.

Soc[land] belonging there

S. In MINISTRETONE [Misterton] (there are) 7½ bovates of land (assessed) to the geld. (There is) land for 12 oxen. There 5 sochmen and 1 villein and 5 bordars have 1½ ploughs. Meadow 4 furlongs in length and half (a furlong) in breadth. Wood(land) for pannage 4 furlongs in length and 1½ furlongs in breadth.

S. In HEREWELLE [Harwell] and EVRETONE [Everton] (there are) 3 bovates of land and three parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 1 sochman and 1 villein have half a plough and 3 acres of meadow. Wood(land) for pannage 5 furlongs in length and 2 in breadth.

M. In BOLUN [Bole][1] Ulmer had 1½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There Roger has 1 plough and the fourth part of a church and 2 mills (rendering) 32 shillings and 10 acres of meadow. In King Edward's time it was worth 40 shillings (and it is worth) the same now.

M. In CLAUORDE [Clayworth] Grinchil had 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There Fulc, Roger's man, has 3 sochmen and 3 bordars with 3½ ploughs. Meadow, 2½ furlongs in length and 18 perches in breadth. Wood(land) for pannage 3 furlongs and 10 perches in length and the same in breadth. In King Edward's time it was worth 4 shillings; now (it is worth) 5 shillings.

M. In CLAUREBURG [Clarborough] Ragenald had 2 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Fulc, Roger's man, has half a plough and 8 villeins and 1 bordar with 1½ ploughs and 7 acres of meadow. Wood(land) for pannage 4 furlongs in length and 2 in breadth. In King Edward's time it was worth 6 shillings; now (it is worth) 20 shillings.

fol. 287.

IN THE SAME PLACE (*Ibidem*) Ulchil had half a bovate of land (assessed) to the geld with sac and soc (*saca et soca*). (There is) land for 2 oxen. The same Ulchil himself holds (it) of (*de*) Roger and has there 2 bordars with 2 oxen and 1 acre of meadow. Wood(land) for pannage 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 16 pence and (it is worth the same) now.

M. In TIRESWELLE [Treswell] Godric had 6 bovates of land and the third part and the fifteenth part of 1 bovate (assessed) to the geld. (There is) land for 4 ploughs. There Roger, Roger's man, has 2 ploughs and 14 villeins and 5 bordars having 5 ploughs. Meadow 4 furlongs in length and 1 furlong in breadth. Wood(land) for pannage 4 furlongs in length and 1½ furlongs in breadth. In King Edward's time it was worth 50 shillings and (it is worth the same) now.

In CLEDRETONE [South Leverton] (there are) 3½ bovates and half a fifth part of 1 bovate of land (assessed) to the geld. Roger has this land and there he has 7 villeins having 1½ ploughs. There (is) half a church. There is wood(land) for pannage 1½ furlongs in length and 1 furlong in breadth and meadow 1½ furlongs in length and 1 furlong in breadth. Roger has half of this wood(land) and meadow. It is worth 10 shillings. (There is) land for 1 plough.

7 M. In RAMETONE [Rampton] 7 thegns had 2 carucates of land and 3 bovates and the fifth part of 1 bovate (assessed) to the geld. (There is) land for 7½ ploughs. There Roger de Busli with his four men has 3 ploughs, and 11 sochmen and 8 villeins and 6 bordars having 5½ ploughs. There (is) a church and 3½ fisheries (rendering) 3 shillings

[1] 'Bolun' may stand here, and on page 267, for Bolham, another village in this wapentake. But it appears (Thoroton, iii. 280) that the latter was reckoned part of the manor of Gringley, while Bole certainly later was part of the honour of Tichhill. Also the fact that Bole formed a prebend in York Cathedral suggests its identification with the 'Bolun' of the Archbishop of York's see on page 255.

and 6 pence. There are 65 acres of meadow. In King Edward's time it was worth 54 shillings; now (it is worth) 4 shillings less.

Soc[land]

S. In MADRESSEI [Mattersey] (there is) 1 bovate of land (assessed) to the geld. There (is) 1 sochman and 2 acres of meadow.

IX. THE LAND OF WILLIAM PEVEREL

M. In COLEWIC [Colwick] Godric had 7 bovates of land (assessed) to the geld. (There is) land for 1 plough. There William Peverel has 1 plough in demesne and 7 villeins and 6 bordars having 3 ploughs. There is a priest and a church and 2 serfs and 1 mill (rendering) 5 shillings and half a fishery and 30 acres of meadow and 15 acres of underwood (*silva minuta*). In King Edward's time it was worth 20 shillings; now (it is worth) 40 (shillings). Walan holds it.

2 M. In SIBETORP [Sibthorpe] Lewine and Turber had 4 bovates of land (assessed) to the geld. (There is) land for 13 oxen. There Robert, William's man, has 1 plough and 5 villeins with 1 plough and 1 mill (rendering) 20 pence and 17 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 24 shillings.

M. In GUNNULVESTUNE [Gonalston] and MILETUNE [Milton] Ulsi cilt had 2 carucates of land and 2 bovates and two parts of 1 bovate (assessed) to the geld. (There is) land for 3 ploughs. There William in demesne has 1 plough and 2 sochmen on (*de*) 3 bovates of this land and 7 villeins and 2 bordars and 2 rent-paying tenants (*censores*) having 3 ploughs and 2 mills (rendering) 40 shillings and 10 acres of meadow. Wood(land) for pannage 5 furlongs in length and 3 in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 60 shillings.

M. In TURMODESTUN [Thrumpton] Staplewin had 3 bovates of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen have 1 plough and 5 acres of meadow. In King Edward's time it was worth 5 shillings and 4 pence and (it is worth the same) now.

M. In CLIFTUN [Clifton] the Countess Gode had 2½ carucates of land (assessed) to the geld. (There is) land for 5 ploughs. There William has 2 ploughs in demesne, and 4 sochmen and 19 villeins and 8 bordars having 9 ploughs. There (is) a priest and a church and 1 mill (rendering) 12 pence and 12 acres of meadow. In King Edward's time it was worth 16 pounds; now (it is worth) 9 pounds.

[1] In BARTONE [Barton in Fabis] (there are) 2 bovates and the third part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 3 sochmen have 2 ploughs and 3 acres of meadow.

S. In WILESFORDE [Wilford] soc(land) (there are) 3 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There 23 sochmen have 7 ploughs. There (is) a priest and 18 acres of meadow and half a fishery.

S. In BRIGEFORDE [West Bridgeford] soc(land) (there are) 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There William has half a plough in demesne and 3 sochmen and 4 villeins and 2 bordars having 4½ ploughs and 12 acres of meadow.

S. In NORMANTUN [Normanton on the Wolds] (there are) 1½ bovates. In CAUORDE [Keyworth] the third part of 1 bovate. In WILLEBI [Willoughby on the Wolds] 2½ bovates. In STANTUN [Stanton on the Wolds] 2 bovates and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. The soc belongs to (*in*) CLIFTUNE [Clifton]. There (are) 4 sochmen and 1 villein and 1 bordar having 3 ploughs. There William has in demesne in STANTUN [Stanton] 1 plough and 2 acres of meadow.

S. In COTINGESTOCHE [Costock] (there is) 1 bovate of land (assessed) to the geld. There 1 sochman has 1 plough and 2 acres of meadow. There is land for 1 ox.

In ALBOLTUNE [Adbolton] (there are) 6 bovates (assessed) to the geld.

S. In BASINGFELT [Basingfield] (there are) 5 bovates of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen and 2 bordars have 1 plough and 5 acres of meadow.

S. In GAMELESTUNE [Gamston] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen have 1 plough and 7 acres of meadow.

M. In REDEFORD [Radford] Alvric had 3 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There William in demesne has 2 ploughs and 11 villeins and 4 bordars having 4 ploughs. There (are) 4 mills (rendering) 3 pounds and 30 acres of meadow and 3 acres of underwood (*silva minuta*) and half a fishery. In King Edward's

fol. 287b.

[1] This entry stands in the margin.

time it was worth 4 pounds and (it is worth the same) now.

Of the same land Ulnod holds 1 bovate in the thegn-land.

4 M. In STAPLEFORD [Stapleford] Ulsi cilt and Stapleuin and Godwin and Gladuin had 2 carucates of land and 6 bovates (assessed) to the geld. (There is) land for 3 ploughs. There William has in demesne (Robert holds of (*de*) him) 3 ploughs and 6 villeins and 2 serfs with 6 ploughs. There (is) a priest and a church and 58 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings).

M. In MORTUNE [Morton][1] Bovi had 1½ carucates of land (assessed) to the geld. (There is) land for 12 oxen. There William has 1½ ploughs and 5 sochmen on (*de*) 3 bovates of this land and 12 villeins and 1 bordar having 9½ ploughs. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

M. In NEUBOLD [Newbold] Morcar had 12 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There William in demesne has 1½ ploughs and 9 villeins having 3 ploughs and 40 acres of meadow. In King Edward's time it was worth 60 shillings and (it is worth the same) now.

S. In LENTUNE [Lenton] (there are) 2 carucates of land (assessed) to the geld. The soc belongs to (*in*) NEUBOLD. (There is) land for 2 ploughs. There 4 sochmen and 4 bordars have 2 ploughs and a mill.

3 M. In LIDEBI [Linby] 3 brothers had 1½ carucates of land (assessed) to the geld. (There is) land for 2 ploughs. There William has 3 ploughs and 12 villeins and 2 bordars having 5 ploughs. There (is) a priest and 1 mill (rendering) 10 shillings. Wood(land) for pannage 1 league in length and 1 league in breadth. In King Edward's time it was worth 26 shillings and 8 pence; now (it is worth) 40 shillings.

In PAPLEWIC [Papplewick] 5 bovates of land belong to (*adjacent*) this manor.

M. In BASEFORD [Basford] Alwin had 10 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There Safrid, William's man, has 1 plough and 2 villeins and 5 bordars and 1 sochman having 2½ ploughs. There (is) a priest and 1 acre of meadow and 1 acre of wood(land). In King Edward's time it was worth 20 shillings and (it is worth the same) now.

[1] Near Nottingham but now lost: given by William Peverel to Lenton Priory at its endowment.

M. In LENTUNE [Lenton] Unlof had 4 bovates of land (assessed) to the geld. (There is) land for half a plough. Now it is in the wardship (*custodia*) of William. There the same Ulnod has 1 plough and 1 villein and 1 bordar having 1 plough and 1 mill (rendering) 10 shillings and 10 acres of meadow and 10 acres of underwood (*silva minuta*). In King Edward's time it was worth 10 shillings; now (it is worth) 15 (shillings).

M. In TOVETUNE [Toton] Aldene had 3 carucates of land (assessed) to the geld. (There is) land for 3½ ploughs. There Warner, William's man, has 3 ploughs and 4 sochmen on 3 bovates of this land and 16 villeins and 3 bordars having 6 ploughs. There (is) half a church and a priest and 2 mills (rendering) 8 shillings and 100 acres of meadow and a little plantation of willows (*salictum*). In King Edward's time it was worth 60 shillings and (it is worth the same) now.

Soc[land] of this manor

S. In CHIDEWELLE [Chilwell] (there are) 3 bovates of land (assessed) to the geld.

M. In STRALEIA [Strelley] Godric had 6 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There Godwin the priest has of (*de*) William 1 plough and 3 villeins and 2 bordars having 2 ploughs. In King Edward's time it was worth 10 shillings, and (it is worth the same) now.

M. IN THE SAME PLACE (*Ibidem*) Brun had 3 bovates of land (assessed) to the geld. Ambrose now holds (them) of (*de*) William. In King Edward's time it was worth 3 shillings; now (it is worth) 12 pence.

M. In GRISELEIA [Greasley] Ulsy had 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There William has 1 plough and 5 villeins and 2 bordars having 3 ploughs. There (is) a priest and a church. Wood(land) for pannage 9 furlongs in length and 6 furlongs in breadth. In King Edward's time it was worth 16 shillings; now (it is worth) 10 shillings.

M. IN THE SAME PLACE (*Ibidem*) Ulsi had 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. It is waste. Ailric holds (it) of (*de*) William.

M. In BRUNESLEIA [Brinsley] Brun had 4 bovates of land (assessed) to the geld. (There is) land for half a plough. There Ailric has under (*sub*) William 1 plough and 1 villein having 1 plough and 2 acres of meadow. Wood(land) for pannage 6 furlongs in length and 3½ furlongs in breadth. In King Edward's time

it was worth 6 shillings and 8 pence ; now (it is worth) 4 shillings.

M. In Estewic [Eastwood] Ulfchetel had 4 bovates of land (assessed) to the geld. (There is) land [ ].[1] It is waste (and) is in the wardship of William (*Willelmus custodit*). Wood(land) for pannage 3 furlongs in length and 3 in breadth. In King Edward's time it was worth 5 shillings.

M. In Neutorp [Newthorpe] Grinchel had 7 bovates of land (assessed) to the geld. There is land for half a plough. It is waste. In King Edward's time it was worth 5 shillings ; now (it is worth) 2 shillings.

3 M. In Bestune [Beeston] Alfag and Alwine and Ulchel had 3 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There William in demesne has 2 ploughs and (there are) 17 villeins and 1 sochman having 9 ploughs. There (are) 24 acres of meadow. In King Edward's time it was worth 30 shillings and (it is worth the same) now.

M. In Olavestune [Wollaton] Ulsi cilt had 1½ carucates of land (assessed) to the geld. (There is) land for 12 oxen. There Warner, William's man, has 1 plough and 7 sochmen and 4 villeins having 4 ploughs. Underwood (*silva minuta*) 1 league in length and 1 furlong in breadth. In King Edward's time it was worth 100 shillings ; now (it is worth) 60 shillings.

B. In Coteshale [Cossall] berewick (there are) 6 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There in demesne (is) 1 plough and (there are) 2 villeins and 1 acre of meadow. Wood(land) for pannage 4 furlongs in length and 2 in breadth.

S. In Brunecote [Bramcote] soc(land) (there are) 6 bovates of land (assessed) to the geld. It is waste.

S. In Sudtone [Sutton Passeys] soc(land) (there are) 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. It is waste.

2 M. In Bileburg [Bilborough] Ailric and Ulsi (and) Suen had 7 bovates of land (assessed) to the geld. (There is) land for the same number of oxen. There Ambrose, William's man, has 1 plough and 2 sochmen and 3 villeins and 4 serfs with 1 plough. There are 8 acres of meadow, and underwood (*silva minuta*). In King Edward's time it was worth 30 shillings, now (it is worth) 20 shillings.

[1] The amount of the land is omitted.

M. In Nutehale [Nuthall] Aldene had 4½ bovates of land (assessed) to the geld. (There is) land for the same number of oxen. There William has 1½ ploughs and 3 villeins and 4 bordars having 1 plough. Underwood (*silva minuta*) 5 furlongs in length and 1 in breadth. In King Edward's time it was worth 10 shillings and (it is worth the same) now.

In Brochelestou [Broxtow] there belong (*adiacent*) 5 acres.

S. In Watenot [Watnall] soc(land) (there are) 2 bovates of land (assessed) to the geld.

M. In Watenot [Watnall] Grinchel had 1 carucate of land (assessed) to the geld. (There is) land for 1 plough. There William has 3 ploughs in demesne. Wood(land) for pannage 5 furlongs in length and 2 in breadth.

M. In Watenot [Watnall] Siwart had 2 bovates of land (assessed) to the geld.

S. In the same place (*Ibidem*) Grim (had) 2 bovates of land (assessed) to the geld. The soc belongs to (*in*) Watenot [Watnall].

S. In the same place (*Ibidem*) Ælmar (had) 2 bovates of land (assessed) to the geld. The soc belongs to (*in*) Bulewelle [Bulwell]. (There is) land for 1 plough. There in demesne (is) 1 plough, and 1 sochman and 2 villeins and 2 bordars have 2 ploughs. Wood-
land) for pannage 5 furlongs in length and 3 fol. 288.
furlongs in breadth. In King Edward's time it was worth 40 shillings ; now (it is worth) the same. Gozelin and Grinchel hold (it).

M. In Chinemarelie [Kimberley] Azor had 4 bovates of land (assessed) to the geld and Grinchitel 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen and 1 villein and 5 bordars have 3½ ploughs. Underwood (*silva minuta*) 4 furlongs in length and 2 in breadth. In King Edward's time it was worth 10 shillings and (it is worth the same) now.

M. In Eldeurde[2] [Awsworth] Alwin (had) 4 bovates of land (assessed) to the geld. It is waste. It is in the wardship of William (*Willelmus custodit*).

M. In Hochenale [Hucknall Torkard] 2 brothers had 4 bovates of land (assessed) to the geld. (There is) land for half a plough. There 3 villeins have 1 plough. In King Edward's time it was worth 8 shillings ; now (it is worth) 4 shillings.

S. In Hamessel [Hempshill] (there are) 6½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen and

[2] Added over 'ibidem.'

2 villeins and 2 bordars have 2 ploughs and 4 acres of underwood (*silva minuta*). This soc(land) belongs to (*jacet*) BULEWELLE [Bulwell] and WATENOT [Watnall].

2 M. In BASEFORD [Basford] Alfag and Algod had 2 carucates of land and 3 bovates (assessed) to the geld. (There is) land for the same number of ploughs and oxen. There Pagen and Saffrid, William's men, have 1 plough and 2 villeins and 5 bordars having 2 ploughs and 3 mills (rendering) 25 shillings and 4 pence, and 6 acres of meadow, and underwood (*silva minuta*). In King Edward's time it was worth 40 shillings; now (it is worth) the same.

In the same place (*Ibidem*) (there is) 1 bovate (assessed) to the geld. Escul held (it).

M. In CORTINGESTOCHES [Costock] Fredghis had 2 bovates of land (assessed) to the geld. (There is) land for 2 oxen. There Godwin under William has 1 plough, and 2 villeins (have) 1 plough and 3 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings and 4 pence.

M. In RAMPESTUNE [Rempstone] Fredgis had 6 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There 5 villeins have 1 plough and 15 acres of meadow. In King Edward's time it was worth 10 shillings; now it is worth 5 shillings and 4 pence.

2 M. In RADECLIVE [Radcliffe on Trent] Fredgis had 1½ carucates of land (assessed) to the geld. (There is) land for 3 ploughs. Now Fredgis and Ulviet under (*sub*) William have there 2 ploughs and 15 villeins and 6 bordars having 4 ploughs and 18 acres of meadow and the site of half a fishery and the third part of one fishery. In King Edward's time it was worth 60 shillings; now (it is worth) 32 shillings.

M. In ALBOLTUNE [Adbolton] Godwin the priest had 6 bovates of land (assessed) to the geld. (There is) land for 1 plough. There William in demesne has 1 plough and (there are) 6 villeins and 1 bordar having 2 ploughs. There (is) a church and 7 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 20 (shillings).

M. In TIEDEBI [Tithby] Ulvric had 4 bovates of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for 1 plough. Now Fredgis under (*sub*) William holds (it). There 1 sochman and 5 villeins and 4 bordars have 2½ ploughs and 20 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

M. In WIVRETUN [Wiverton] Ulvric had 1 bovate of land and 3 parts of 1 bovate (assessed) to the geld. (There is) land for half a plough. There 3 villeins and 1 bordar have 1 plough and 6 acres of meadow. In King Edward's time it was worth 10 shillings and (it is worth the same) now.

M. In LANGARE [Langar] Godric had 2 carucates of land and 4½ bovates (assessed) to the geld. (There is) land for 6 ploughs. There William in demesne has 3 ploughs and (there are) 15 sochmen on 6 bovates of this land and 19 villeins and 6 bordars having 11 ploughs and 2 mills (rendering) 5 shillings and 50 acres of meadow. There 1 free man (*francus homo*) has 1 plough. In King Edward's time it was worth 100 shillings; now (it is worth) 10 pounds.

S. In WIVRETUNE [Wiverton] soc(land) (there are) 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 7 sochmen and 1 bordar have 3 ploughs and 2 oxen and 8 acres of meadow.

M. In BERNESTUNE [Barnston] Godric and Azor had each a hall (*aula*) and each (had) 4 bovates of land and 7 parts of 1 bovate (assessed) to the geld. (There is) land for 4 ploughs. There William in demesne has 3 ploughs and (there are) 7 sochmen on 4 bovates of this land and 7 villeins and 6 bordars having 4½ ploughs. There (are) 36 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 4 pounds.

M. In NEUTORP [Newthorpe] Grinchel had 5 bovates of land (assessed) to the geld. (There is) land for half a plough.

B. In the same place (*Ibidem*) (there are) 2 bovates of land (assessed) to the geld. (There is) land for 2 oxen. (It is) a berewick of (*in*) CHINEMARELEIE [Kimberley]. Each (of these estates) is waste.

In MENNETUNE [Manton] Elwin and Ulviet (had) 1 carucate of land (assessed) to the geld for 2 manors. (There is) land for 2 ploughs. There are 3 sochmen with 3 ploughs. It was and is worth 10 shillings.

In SALESTUNE [Selston] Ulmer, Gladuin and Ulvric had 3 bovates of land for 3 manors. There is land for 1 plough. There 4 villeins and 2 bordars have 2 ploughs. There (is) a church and 3 acres of meadow. Formerly it was worth 8 shillings; now it is worth 10 shillings.

In Bulwelle [Bulwell] Godric had 2 carucates of land for a manor. (There is) land for 2 ploughs. There is 1 plough and 1 villein and 1 bordar and 2 acres of meadow. Formerly it was worth 12 shillings; now it it worth 5 shillings.

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X. THE LAND OF WALTER DE AINCURT

M. In Flodberga [Flawborough] Ulvric had 2 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Walter de Aincurt has 1 plough and 4 villeins with 1 plough. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

M. In Stantune [Staunton] Tori had 10 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There (are) now 3 ploughs in demesne and 4 sochmen on (*de*) 1½ bovates of this land and 11 villeins and 2 bordars having 2 ploughs. There (is) a priest and a church and 1 mill (rendering) 5 shillings and 4 pence and 80 acres of meadow. In King Edward's time it was worth 4 pounds; now (it is worth) 100 shillings.

The Soc of this Manor

S. In Alvretun [Alverton] and Flodberge [Flawborough] and Dallintune [Dalington] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 12 sochmen have 3 ploughs and 100 acres of meadow. Malger holds (it).

2 M. In Cotes [Cotham] Suen and Tori had 9 bovates of land (assessed) to the geld. (There is) land for 6 ploughs. There Walter in demesne has 1 plough and (there are) 10 villeins and 8 bordars having 3 ploughs. There (is) a priest and a church and 60 acres of meadow. In King Edward's time it was worth 100 shillings; now it is worth 6 pounds.

Soc[land]

S. In Flodberge [Flawborough] (there are) 1½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There (are) 24 acres of meadow. There 5 sochmen have 1½ ploughs and 24 acres of meadow.

M. In Stoches [East Stoke] Tori had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There in demesne (is) 1 plough and (there are) 3 villeins and 5 bordars having half a plough and 60 acres of meadow. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings). Osbert holds (it).

S. In Houtune [Hawton] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 6 sochmen have 2 ploughs and 20 acres of meadow.

M. In Hocretune [Hockerton] Tori had 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Walter has 1 plough and 5 villeins and 5 bordars having half a plough and 16 acres of meadow. Wood(land) for pannage 1 league in length and 1½ furlongs in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 15 (shillings).

M. In Chenapetorp [Knapthorpe] Tori had 4½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There in demesne (is) 1 plough and (there are) 5 villeins and 3 bordars having 1½ ploughs and 2 acres of meadow. Wood(land) for pannage 8 furlongs in length and 2 in breadth. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

M. In Bulecote [Bulcote] Swen cilt had 2 carucates of land and 2 bovates (assessed) to the geld, and in the same place (*ibidem*) 15½ bovates of land (assessed) to the geld, soc(land) of the same manor. (There is) land for 5½ ploughs. There in demesne is 1 plough and (there are) 8 sochmen and 11 villeins and 12 bordars and 2 serfs with 3 ploughs. There (are) 76 acres of meadow. Wood(land) for pannage, scattered (*per loca*) 1 league in length and 8 furlongs in breadth. In King Edward's time it was worth 4 pounds and (it is worth the same) now.

M. In Oxetune[1] [Oxton] Tori had 4 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There (is) 1 sochman on (*de*) the third part of 1 bovate of this land with 1 bordar having half a plough and 4 acres of meadow. In King Edward's time it was worth 16 shillings; now (it is worth) 5 shillings and 4 pence.

M. In Turgarstune [Thurgarton] and in Horspol [Horsepool][2] Suain had 3 carucates of land and 3 bovates (assessed) to the geld. (There is) land for 6 ploughs. There Walter has in demesne 2 ploughs and 10 sochmen on (*de*) 9 bovates of this land and 12 villeins and 2 bordars having 6 ploughs. There is a priest and a church and 40 acres of meadow. Wood(land) for pannage 1 league in length and half a (league) in breadth. In

[1] [O]'stune' interlined.

[2] A decayed farm about 1 mile north of Thurgarton.

King Edward's time it was worth 3 pounds; now (it is worth) 4 pounds.

In TIEDBI [Tithby] (there are) 2 bovates (assessed) to the geld.

M. In HORINGEHAM [Hoveringham] Suain had 2 carucates of land and 2 bovates (assessed) to the geld. (There is) land for 4 ploughs. There Walter has in demesne 2 ploughs and (there are) 6 sochmen on (*de*) 3 bovates and the third part of 1 bovate of this land and 9 villeins and 3 bordars having 4 ploughs. There (is) a priest and a church and 2 mills (rendering) 40 shillings and 2 fisheries (rendering) 8 shillings and 40 acres of meadow. In King Edward's time it was worth 4 pounds; now (it is worth) the same and 10 shillings more.

S. In FISCARTUNE [Fiskerton] Walter has half a carucate of land (assessed) to the geld, of which (*unde*) the soc belongs to (*pertinet*) SUDWELLE [Southwell]. There he himself has 1 plough and (there are) 3 villeins with 1 plough.

S. In MORTUNE [Morton] Walter has half a carucate of land (assessed) to the geld, of which (*de qua*) the soc belongs (*pertinet*) to SUDWELLE. There he himself has 1 plough and 3 villeins have 1 plough.

S. In FARNESFELD [Farnsfield] Walter has 2 bovates of land (assessed) to the geld. One is in the soc of SUDWELLE and the other in the king's (soc), but nevertheless it belongs (*pertinet*) to the hundred of SUDWELLE. There (is) 1 plough in demesne. In King Edward's time it was worth 5 shillings; now (it is worth) 8 shillings.

M. In ROLDESTUN [Rolleston] Tori had 11 bovates of land and the fourth of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There (is) 1 plough in demesne and (there are) 8 villeins and 6 bordars having 3 ploughs and 3 oxen. There is a priest and a church and 32 acres of meadow. Wood(land) for pannage 4 furlongs in length and 2 in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 60 shillings.

The Soc of this Manor

S. In CALUN [Kelham] (there are) 9 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 2½ ploughs. There 18 sochmen and 3 bordars have 7½ ploughs and 16 acres of meadow. Underwood (*silva minuta*) 9 furlongs in length and 50 rods in breadth.

M. In FISCARTUNE [Fiskerton] Tori had 2 carucates of land and 2 bovates (assessed) to the geld. (There is) land for 5 ploughs. There Walter has in demesne 1 plough and (there are) 11 villeins having 4 ploughs. There (are) 2 mills and 1 fishery and 1 ferry (*passagium*) (rendering) 46 shillings and 8 pence and 42 acres of meadow. Wood(land) for pannage 2 furlongs in length and 1 furlong in breadth. In King Edward's time it was worth 3 pounds; now (it is worth) 4 (pounds).

S. In this FISCARTVNE Walter has 6 bovates of land of which (*unde*) the archbishop has the soc.

M. In ASLACHETUNE [Aslockton] Tori had 1 carucate of land (assessed) to the geld. (There is) land for 3 ploughs. There Walchelin, Walter's man, has 2 ploughs and 1 sochman on (*de*) 1 bovate of this land and 6 villeins and 2 bordars with 1½ ploughs and 24 acres of meadow. In King Edward's time it was worth 30 shillings and (it is worth the same) now.

S. In HOCHESUORDE [Hawksworth] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 2 oxen. Soc(land). There 2 sochmen and 1 bordar have 2 ploughing oxen (*boves in car'*) and 2 acres of meadow.

M. In COLESTUNE [Car Colston] Tori had 2 bovates of land and a half and 1 acre of land (assessed) to the geld. (There is) land for 1 plough. There 1 bordar ploughs with 1 ox. There are 3 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings. Walchel holds it.

M. In FLINTEHAM [Flintham] Tori had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 1 sochman and 7 villeins and 1 bordar have 2 ploughs

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and 24 acres of meadow. Raynold, Walter's man, has 1 plough. Underwood (*silva minuta*) 1 furlong in length and 1 furlong in breadth. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

M. In GRANEBI [Granby] Haminc had 1½ carucates of land (assessed) to the geld. (There is) land for 12 ploughs. There Walter in demesne has 4 ploughs and (there are) 44 villeins and 9 bordars having 10 ploughs. There (is) a priest and a church and 1 mill (rendering) 2 shillings and 200 acres of meadow. In King Edward's time it was worth 12 pounds; now (it is worth) 20 pounds.

The Soc of this Manor

S. In BERNESTUNE [Barnston] (there is) half a carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There 5 sochmen and 1 bordar have 2 ploughs and 2 ploughing oxen (*boves arantes*) and 11 acres of meadow.

S. In LANGARE [Langar] (there are) 4½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There 8 sochmen have 2 ploughs and 6 ploughing oxen. There (is) half a church and 13 acres of meadow.

S. In WIVRETUNE [Wiverton] (there are) 6½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 5 sochmen have 2 ploughs and 2 ploughing oxen and 20 acres of meadow.

In HECHELINGE [Hickling] (there are) 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There 8 sochmen and 1 villein and 10 bordars have 5 ploughs. There (is) a mill (rendering) 16 shillings and 80 acres of meadow.

S. In CHINELTUNE [Kinoulton] (there are) 7 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There (are) 9 sochmen and 4 bordars having 3 ploughs and 7 ploughing oxen and 20 acres of meadow.

S. In CROPHILLE [Cropwell Butler] and WIVRETUNE [Wiverton] (there are) 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen and 7 bordars have 2 ploughs and 13 acres of meadow.

M. In RADECLIVE [Radcliffe on Trent] Suain had 1½ carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There in demesne are 2 ploughs and (there are) 14 villeins and 3 bordars having 2 ploughs and 19 acres of meadow. In King Edward's time it was worth 40 shillings and (it is worth the same) now.

XII. THE LAND OF GEOFFREY ALSELIN

In LAXINTUNE [Laxton] Tochi had 2 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There Walter, a man of Geoffrey Alselin's, has 1 plough and 22 villeins and 7 bordars having 5 ploughs and 5 serfs (*servi*) and 1 female serf (*ancilla*) and 40 acres of meadow. Wood(land) for pannage 1 league in length and half a league in breadth. In King Edward's time it was worth 9 pounds; now (it is worth) 6 pounds.

The Soc of this Manor

S. In SCHIDRINCTUNE [Kirton] [1] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 3 sochmen have 1 plough.

In WILGEBI [Willoughby] there is 1 orchard (*ortum*) belonging (*pertinens*) to LAXINTUNE [Laxton].

S. In WALESBI [Walesby] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 2 sochmen have 1 plough.

S. In ECHERINGHE [Eakring] (there is) half a bovate of land (assessed) to the geld. It is waste.

S. In ALMENTUNE [Ompton] (there are) 2 bovates of land (assessed) to the geld. It is waste.

S. In CHENAPETORP [Knapthorpe] (there is) 1 bovate of land (assessed) to the geld. It is waste. (There is) land for 2 oxen.

S. In CALNESTUNE [Caunton] (there are) 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There 8 sochmen and 10 bordars have 5 ploughs. There (is) 1 mill (rendering) 2 shillings and 8 acres of meadow. Wood(land) for pannage 1 league in length and 4 furlongs in breadth.

S. In BESTORP [Beesthorpe] (there are) 2 bovates of land (assessed) to the geld. (There is) land for half a plough. There 2 sochmen and 1 bordar have half a plough and half an acre of meadow. (There are) 10 acres of wood(land) for pannage.

S. In CARLETUN [Carlton on Trent] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 1 plough. There 4 sochmen have 2 ploughs and 20 acres of meadow. Wood(land) for pannage 4 furlongs in length and 4 in breadth.

M. In NORDMUSCHAM [North Muskham] Ulvric had 3 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There in demesne is 1 plough and (there are) 4 villeins and 7 bordars having 1½ ploughs. There (is) 1 mill (rendering) 10 shillings and 12 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 (shillings).

[2] In the same place (*Ibidem*) (there are) 2½ carucates of land (assessed) to the geld. (There is) land for 4 ploughs. In demesne are 3 ploughs and (there are) 16 sochmen and 5 villeins and 2 bordars with 6 ploughs. There are 2 mills (rendering) 20 shillings and 40 acres of meadow and 40 acres of wood-

[1] See note, p. 250.

[2] This entry is added in the margin.

(land). Formerly (it was worth) 100 shillings; now it is worth 4 pounds. Tochi held it for a manor.

S. In the same place (*Ibidem*) (there are) 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. Soc(land). It is waste. There (are) 12 acres of meadow.

S. In CARLETUN [Carlton on Trent] (there is) 1 bovate of land (assessed) to the geld. There are 2 sochmen having nothing.

M. In WILGEBI [Willoughby] Tochi had 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. It is waste. There (is) half a mill and 12 acres of meadow.

M. In STOCHES [Stoke Bardolph] and GHELLINGE [Gedling] Tochi had 3 carucates and 2 bovates and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 4 ploughs. There in demesne Geoffrey has 2 ploughs and (there are) 15 villeins and 6 serfs and 21 bordars having 8 ploughs. There (is) a priest and a church and 1 fishery and 2 mills (rendering) 20 shillings and 30 acres of meadow. Wood(land) for pannage 3 furlongs in length and 3 furlongs in breadth. In King Edward's time it was worth 110 shillings; now (it is worth) 6 pounds.

S. In CARENTUNE [Carlton by Nottingham] and GHELLINGE [Gedling] and COLEWI [Colwick] (there are) 15 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There 30 sochmen have 10½ ploughs and 20 acres of meadow. Underwood (*silva minuta*) 3 furlongs in length and 1 in breadth.

M. In BERTUNE [Burton Joyce] Suen had 1 carucate of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 2 ploughs. There Geoffrey has 1 sochman on (*de*) 5 acres of land and 5 villeins and 1 bordar and 1 serf and 1 female serf (*ancilla*). All together (*simul*) they have 3 ploughs. There (is) a church and a priest and 16 acres of meadow. Wood(land) for pannage 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 1 mark of silver and (it is worth the same) now.

M. In SCELFORD [Shelford] Tochi had 4 carucates of land (assessed) to the geld. (There is) land for 8 ploughs. There (are) now 36 villeins and 12 bordars having 9 ploughs and fol. 28gb.
1 mill (rendering) 4 shillings and 1 fishery. There (is) a priest and a church. In King Edward's time it was worth 8 pounds; now (it is worth) 4 pounds.

The Soc of this Manor

S. In NEUTONE [Newton] (there are) 9 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There (are) 9 sochmen and 4 bordars having 4 ploughs and 4 acres of meadow.

In OBETORP [Owthorpe] Tochi had 1 carucate of land (assessed) to the geld. Nothing is had there.

In CHENATORP [Knapthorpe] (there is) half a bovate (assessed) to the geld. It belongs to (*jacet*) NORTWELLE [Norwell].

In CARLENTUN [Carlton on Trent] (there are) 2 bovates of land (assessed) to the geld. (There is) land for half a plough. There (are) 4 sochmen and 3 acres of meadow. Formerly it was worth 8 shillings; now (it is worth) 3 shillings.

XIII. THE LAND OF RALF THE SON OF HUBERT

M. In BARTONE [Barton in Fabis] Levric had 13 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Ralf the son of Hubert has 2 ploughs and 18 villeins and 5 bordars having 5½ ploughs. There (are) 48 acres of meadow. Underwood (*silva minuta*) 2 furlongs in length and half a furlong in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 100 shillings, with the two CILUELLIS [Chilwell] in which (are) 7 sochmen and half a church.

M. In THE SAME PLACE [*Ibidem*, sc. BARTONE] Ulvric had 2 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Ralf has 1 plough and 2 villeins and 1 bordar with 1 plough. In King Edward's time it was worth 20 shillings and (it is worth the same) now.

B. In CLIFTUNE [Clifton] (there are) 2 bovates of land (assessed) to the geld belonging (*pertinentes*) to BARTONE [Barton in Fabis].

S. In CILLEWELLE [Chilwell] and ESTRECILLEUELLE [East (?) Chilwell] (there are) 3 carucates of land and 3 bovates (assessed) to the geld. It is (soc)land belonging to (*de*) BARTONE [Barton in Fabis]. (There is) land for 4½ ploughs. There Ralph has 1 plough and 2 sochmen and 5 villeins and 13 bordars having 6 ploughs and 2 ploughing oxen (*boves arantes*). There (are) 70 acres of meadow and half a church and 4 acres of underwood (*silva minuta*) and 4 acres of willow plantation (*salictum*).

In CIDWELLE [Chilwell] (there are) 5 bovates of soc(land) (assessed) to the geld belonging to (*in*) TOLVESTUNE [Toton].

M. In BONEI [Bunney] Levenot had 2 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There Ralf has in demesne 2 ploughs and (there are) 18 villeins and 7 sochmen and 2 bordars having 7 ploughs. There (is) a church and a priest and 1 mill (rendering) 12 pence and 160 acres of meadow and underwood (*silva minuta*) 10 furlongs in length and 1 in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 60 shillings.

M. In CAWORDE [Keyworth] Frane had 5 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Ralf has 1½ ploughs and 3 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

M. In TEVRESHALT [Teversall] Levric had 6 bovates of land (assessed) to the geld. (There is) land for 1½ ploughs. There Ralf has 2 ploughs and 1 sochman on (*de*) 1 bovate of land and 9 villeins having 3½ ploughs. There is 1 mill (rendering) 16 shillings and 8 acres of meadow and underwood 1 league in length and 1 in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 30 (shillings). Geoffrey holds (it).

M. In CHIRCHEBI [Kirkby in Ashfield] Levenot had 10 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Ralf has in demesne 3 ploughs and (there is) 1 sochman on (*de*) 1 bovate of land and 20 villeins and 6 bordars having 12 ploughs. There is a church and a priest and 2 mills (rendering) 3 shillings and 3 acres of meadow. Wood(land) (fit) in places for pannage (*per loca past'*) 2 leagues in length and 1 in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 3 pounds.

M. In WANDDESLEI [Wansley] Levric had 5 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Ralf has half a plough and 3 villeins and 2 bordars. There (is) a priest and half a church and 4 acres of meadow. Wood(land) for pannage 4 furlongs in length and 4 in breadth. In King Edward's time it was worth 8 shillings; now (it is worth) 10 shillings.

M. In ANESLEI [Annesley] Levenot had 1 carucate of land (assessed) to the geld. (There is) land for 12 oxen. There Ralf has 1 plough and 19 villeins and 1 bordar having 7 ploughs and 3 acres of meadow. Wood(land) for pannage 1 league in length and 1 league in breadth. In King Edward's time it was worth 40 shillings and (it is worth the same) now. Ricard holds (it).

In COTESHALE [Cossall] Levenot had 6 bovates of land (assessed) to the geld. (There is) land for the same number of oxen. There are 3 ploughs with 3 villeins and 5 acres of meadow. Formerly (it was worth) 16 shillings; now it is worth 10 shillings.

In GIPESMARE [Gibsmere] and MORTUN [Morton] (there is) 1 carucate of land and 3 bovates (assessed) to the geld. The soc belongs to (*de*) SUDWELLE [Southwell]. (There is) land for 3½ ploughs. It was and is worth 28 shillings.

In WIMARSPOL [Widmerpool] (there is) 1 bovate of land (assessed) to the geld and it belongs (*iacet*) to BONEI [Bunney].

XIIII. THE LAND OF RALF DE LIMESI

M. In HOLTONE [Hawton] Tored had 4½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Ralf de Limesi has 2 ploughs and 4 sochmen on (*de*) 2½ bovates of land and 5 villeins and 5 bordars having 3 ploughs. There (is) a priest and 2 churches and 1 mill rendering 5 shillings and 4 pence.

4 M. IN THE SAME PLACE (*Ibidem*) Bugo, Rainald, Toruet and Bugo had 6½ bovates of land (assessed) to the geld. (There is) land for 2½ ploughs.

Soc[land]

S. IN THE SAME PLACE (*Ibidem*) (there are) 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. On these lands (*In his terris*) are 18 sochmen and 2 villeins and 10 bordars having 6 ploughs. Alvred holds these 5 manors of (*de*) Ralf. In King Edward's time it was worth 100 shillings; now (it is worth) 4 pounds and 10 shillings.

Soc[land]

In DORDENTORP [Danethorpe] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 2 oxen. There 5 sochmen and 6 bordars have 2 ploughs. There (is) a church and a priest with 1 plough and 80 acres of meadow.

M. In EPSTONE [Epperstone] and UDEBURG [Woodborough] Ulvric and Elsi, (who had) no hall,[1] had 3 carucates of land and 4 bovates (assessed) to the geld. (There is) land for 6 ploughs. There Ralf has in demesne 3 ploughs and (there are) 14 sochmen on (*de*) 6 bovates and a farthingland (*ferding*) (1 bovate)[2] of this land and 12 villeins and 10 bordars having 6 ploughs. There (is) a church and a

[1] '*ñ aulā*' interlined above Elsi.
[2] '*i bov*'' interlined above '*ferding*.'

priest and 4 mills (rendering) 77 shillings and 8 acres of meadow. Wood(land) for pannage 2 leagues in length and 9 furlongs in breadth. In King Edward's time it was worth 5 pounds; now (it is worth) 7 pounds.

In GUNNULVESTONE [Gonalston] Ralf Limesi has 5 bovates and the third part of 1 bovate[1] (assessed) to the geld.

M. In TORP [Thorpe by Newark] Ulvric had 6½ bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Mainfrid, Ralf's man, has 1 plough and 9 villeins and 5 bordars having 3 ploughs and 72 acres of meadow.

S. In SCELTUN [Shelton] and COLINGEHAM [Collingham] (there are) 5½ bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There (are) 8 sochmen and 5 villeins having 3 ploughs and 60 acres of meadow and 2 acres and 1 rood of wood(land) not for pannage. In King Edward's time it was worth 4 pounds; now (it is worth) 40 shillings.

fol. 290.

XV. THE LAND OF RALF DE BURUN

BERNESEDELAU [BASSETLAW] WAP[ENTAC]

M. In OSCHINTONE [Ossington] Osmund had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Ralf de Burun has 3 ploughs and 4 sochmen on (*de*) half a bovate of this land and 16 villeins and 6 bordars having 6 ploughs and 28 acres of meadow. Wood(land) for pannage 2 leagues in length and 1 league in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings).

In ALMENTUN [Ompton] (there are) 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 bordars have 1 plough.

M. In CALUN [Kelham] Osmund had 2 bovates of land and the third part of 1 bovate (assessed) to the geld. There William, Ralf's man, has 1 plough and 3 bordars with 2 ploughing oxen and 9 acres of meadow. Underwood (*silva minuta*) 8 furlongs in length and 12 rods in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 16 shillings.

BROCOLVESTOU [BROXTOW] WAPENT[AC]

M. In HOCHEHALE [Hucknall Torkard] Ulchet had 12 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Osmund, Ralf's man, has 1 plough and 5 villeins having 3½ ploughs. Wood(land) for pannage, 1 league in length and half (a league) in breadth. In King Edward's time it was worth 30 shillings; now (it is worth) 15 shillings.

M. In CORTINGESTOCHE [Costock] Seric and his 2 brothers had 14 bovates of land (assessed) to the geld. (There is) land for 14 oxen. There William, Ralf's man, has 3 ploughs and 1 sochman on (*de*) 2 bovates of land and 9 villeins and 4 bordars having 5 ploughs. There (are) 30 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 shillings.

M. In RAMPESTONE [Rempstone] Ulchetel had 6 bovates of land (assessed) to the geld. (There is) land for 6 oxen. It is waste. In King Edward's time it was worth 10 shillings; now (it is worth) 2 shillings. There (are) 10 acres of meadow.

BINGAMESHOU [BINGHAM] WAP[ENTAC]

M. In LANBECOTE [Lamcote] Ulchet had 5 bovates of land (assessed) to the geld. There Osmund, Robert's man, has 1 plough and 1 villein and 6 acres of meadow. In King Edward's time it was worth 10 shillings, and (it is worth the same) now.

M. In GODEGRAVE [Cotgrave] Oghe had 2 carucates of land (assessed) to the geld. (There is) land for 3 ploughs. There in demesne are 3 ploughs; and (there are) 7 sochmen and 4 villeins and 4 bordars having 4½ ploughs. There (is) half a church. Underwood (*silva minuta*) 1 furlong in length and 1 furlong in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 60.

M. IN THE SAME PLACE [*Ibidem*] Turchil had 1 carucate of land (assessed) to the geld. (There is) land for 1 plough. There Gozel, Ralf's man, has half a plough and 5 villeins and 1 bordar having 2 ploughs. There (are) 30 acres of meadow. Underwood (*silva minuta*) half a furlong in length and half (a furlong) in breadth. In King Edward's time it was worth 10 shillings and (it is worth) the same now.

In GODEGRAVE [Cotgrave] Warner has 6 bovates of the land of the same manor.

XVI. THE LAND OF ROGER OF POITOU

BERNESEDELAV [BASSETLAW] WAP[ENTAC]

M. In GAMELESTUN [Gamston] Gamel and Suain had 1 carucate of land (assessed)

[1] Interlined above 'iiii. car' terræ' erased.

to the geld. (There is) land for 8 ploughs. There Roger of Poitou has in demesne 2 ploughs and (there are) 7 sochmen on (*de*) 2 bovates of this land and 3 villeins and 1 bordar having 3½ ploughs. There (are) 2 mills (rendering) 40 shillings and 20 acres of meadow and 20 acres of underwood (*silva minuta*). In King Edward's time it was worth 4 pounds (and it is worth) the same now.

M. In the same place [*Ibidem*] Chetelbern had 1 bovate of land (assessed) to the geld. (There is) land for 1 plough. Chetelbern has this (manor) of (*de*) Roger, and there he has 1 plough and 2 bordars and 3 acres of wood(land) fit in places for pannage (*per loca past'*). In King Edward's time it was worth 20 shillings and 8 pence; now (it is worth) 12 shillings.

Torgartone [Thurgarton] Wapent[ac]

M. In Calvretone [Calverton] Ulvric had 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There are now 2 villeins and 1 rod of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 5 shillings and 4 pence.

Riseclive [Rushcliffe] Wapent[ac]

M. In Edwoltone [Edwalton] Stepi had 6 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There in demesne (is) now 1 plough and (there is) 1 villein and 16 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 10 shillings.

2 M. In Wilgebi [Willoughby on the Wolds] Godric and Ernui had 6½ bovates of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 12 oxen. There (are) now in demesne 1½ ploughs and (there are) 2 sochmen and 6 villeins and 2 bordars having 2½ ploughs. There (are) 9 acres of meadow. In King Edward's time it was worth 50 shillings; now (it is worth) 22 shillings.

Bingameshou [Bingham] Wapent[ac]

M. In Crophelle [Cropwell Butler] Ulvric had 2 carucates and 6 bovates of land (assessed) to the geld. (There is) land for 6 ploughs. There Roger has 3 ploughs and 8 sochmen and 17 villeins having 6 ploughs. There (are) 20 acres of meadow. Wood(land) for pannage half a league in length and 4 furlongs in breadth. In King Edward's time it was worth 8 pounds; now (it is worth) 100 shillings.

M. In Godegrave [Cotgrave] Ulvric had 3 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. There Roger has 1 plough in demesne, and 6 sochmen and 10 villeins and 1 bordar having 5 ploughs. There (are) 30 acres of meadow. Underwood (*silva minuta*) 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 4 pounds; now (it is worth) 40 shillings.

M. In Warberga [ ] Fredgis had 13½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Roger has 1 plough and 2 sochmen and 1 bordar having 1 plough and 10 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 12 shillings.

M. In Hoctun [Haughton] Baldric had 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. It is waste. There (are) 16 acres of meadow and wood(land) for pannage 1 furlong in length and 8 perches in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 20 shillings.

Soc[land]

S. In Walesbi [Walesby] (there is) half a bovate of land (assessed) to the geld. (There is) land for 4 oxen. It is waste.

M. In Draitun [West Drayton] Suain had 2 bovates of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. Now Ulsi holds (it) of (*de*) Roger and there he has half a plough and 1 villein and 1 bordar with half a plough. There (are) 3 acres of meadow. Wood(land) for pannage 1 furlong in length and half a furlong in breadth. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings and 4 pence.

In Wilgebi [Willoughby on the Wolds] Ernui had 5 bovates of land for a manor. (There is) land for the same number of oxen. There are 2 ploughs with 1 villein and 6 bordars and 4 acres of meadow. Formerly (it was worth) 20 shillings; now it is worth 10 shillings.

fol. 290b.

XVII. THE LAND OF GILBERT DE GAND

Newerce [Newark][1] Wap[entac]

M. In Buchetun [Boughton] Ulf[2] had 3 bovates of land (assessed) to the geld. (There

[1] In error for Bassetlaw Wapentake.

[2] This seems to be the 'Ulf fenisc' of the prologue to the shire's survey. In the original a blank is left after his name whenever it appears in this column. In Derbyshire 'Ulf fenisc' was the 'antecessor' of Gilbert de Gand in the manor of Ilkeston.

is) land for 3 ploughs. There Gilbert de Gand has 3 villeins and 1 sochman and 1 bordar having 3½ ploughs. There (are) 4 acres of meadow. Wood(land) for pannage 3 furlongs in length and 3 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

M. In SCHIDRICTUNE [Kirton][1] Ragenalt had 2 bovates of land (assessed) to the geld. (There is) land for half a plough. There 4 villeins have 2 ploughs. Wood(land) for pannage 1 furlong in length and 1 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

M. In ALRETUN [Ollerton] Wade had 5½ bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There William, Gilbert's man, has 1 plough and 6 sochmen on (*de*) 2 bovates of land and 3 villeins having 6 ploughs. There (are) 2 mills (rendering) 16 shillings. Wood(land) for pannage 1 league in length and 4 furlongs in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 30 shillings.

M. In RUGFORDE [Rufford] Ulf had 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Gilbert in demesne has 1 plough and (there are) 10 villeins having 3 ploughs. There (are) 20 acres of meadow. Wood(land) 1½ leagues in length and 1 league in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 60 shillings.

Soc[land belonging] there

S. In BILDESTORP [Bilsthorpe] (there are) 2 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There 13 sochmen and 6 bordars have 6 ploughs and 4 acres of meadow. Wood(land) for pannage 1 league in length and 4 furlongs in breadth.

B. In WIRCHENEFELD[2] [ ] there is 1 carucate of land (assessed) to the geld. (It is) a berewick. It is waste.

M. In ECHERINGHE [Eakring] Ingolf had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There William, Gilbert's man, has 1 plough and 3 sochmen on 3 bovates of this land and 2 villeins and 3 bordars having 2 ploughs. There (is) a priest and a church and 3 acres of meadow. Wood(land) for pannage 6 furlongs in length and 4 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 16 shillings.

M. IN THE SAME PLACE (*Ibidem*) Echebrand had 6 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. The same Echebrand holds (it) of (*de*) Gilbert and has there 1 plough and 6 sochmen on (*de*) 4 bovates of land and 2 villeins and 2 bordars having 2½ ploughs. There (are) 3 acres of meadow. Wood(land) for pannage 6 furlongs in length and 4 in breadth. In King Edward's time it was worth 20 shillings; now (it is worth) 16 shillings.

M. In CHENESHALE [Kneesall] and CHERVESHALE [Kersall] Ulf had 12 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Gilbert in demesne has 3 ploughs and (there are) 8 sochmen on (*de*) 3 bovates of land and 16 villeins and 4 bordars having 12 ploughs. There (are) 22 acres of meadow. Wood(land) for pannage 1 league in length and half (a league) in breadth. In King Edward's time it was worth 8 pounds; now (it is worth) 6 pounds.

Soc[land belonging] there

S. In ALMENTUN [Ompton] (there are) 1½ bovates of land (assessed) to the geld. (There is) land for 2 oxen. There 2 sochmen and 1 bordar have 2 ploughs.

S. In MAPLEBERG [Maplebeck] (there are) 14 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Gilbert (has) 1 plough and 9 sochmen on (*de*) 10½ bovates of this land and 5 bordars having 4 ploughs and 30 acres of meadow. Wood(land) for pannage 1 league in length and 3 furlongs in breadth.

M. In CREILEGE [? Wellow[3]] Ulf had 2½ carucates of land (assessed) to the geld. There is land for 4 ploughs. There Gilbert has 2 ploughs and 22 villeins and 2 bordars having 9 ploughs and 26 acres of meadow. Wood(land) for pannage half a league in length and half (a league) in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 3 pounds.

In CHERLINTON [Kirklington] Ulf had 4½ bovates of land (assessed) to the geld. (There is) land for 2 ploughs. The soc belongs to the archbishop's manor of SUDWELLE [Southwell]. There Gilbert has 1 plough and 4

[1] See note p. 250.

[2] Appears in an inquisition of 36 Hen. III as 'Wackfeld in the forest of Wiclewod,' but no further identification can be made.

[3] According to Thoroton, iii, 200, 'Creileye' included the modern village of Wellow. Gilbert of Gaunt gave 'Cratela' to Rufford Abbey at its foundation; the name persists for some time, then ceases, and 'Wellhagh' takes its place among the possessions of the abbot of Rufford.

villeins h(aving) 2 ploughs and 1 mill (rendering) 16 shillings. In King Edward's time it was worth 40 shillings; now (it is worth) 30 shillings.

In NORMANTUN [Normanton by Southwell] Ulf had 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There Gilbert has 4 villeins with 1 plough. The soc belongs to (*in*) SUDWELLE [Southwell]. In King Edward's time it was worth 16 shillings; now (it is worth) 8 shillings.

M. In RODDINTON [Ruddington] Ulf had half a carucate of land (assessed) to the geld. (There is) land for 1 plough. There (is) now in demesne 1 plough and (there are) 4 sochmen and 5 villeins and 2 bordars having 3 ploughs. There (are) 33 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 8 shillings.

BINGAMESHOU [BINGHAM] WAPENT[AC]

M. In WATONE [Whatton] Ulf had 2½ carucates of land (assessed) to the geld. (There is) land for 9 ploughs. There Roger, Gilbert's man, has 3 ploughs and 28 villeins and 12 bordars having 9 ploughs and 1 mill (rendering) 4 shillings and 80 acres of meadow. There (is) 1 stone pit (*molaria*) where mill stones (*molæ*) are quarried rendering (*de*) 3 marks of silver. In King Edward's time it was worth 20 shillings; now (it is worth) 8 (shillings).

Soc[land] of the same Manor

S. In HOCHESWORDE[1] [Hawksworth] (there are) 13 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There 20 sochmen and 1 bordar have 4½ ploughs and 20 acres of meadow.

S. In HASLACHESTONE [Aslockton] (there is) half a carucate of land (assessed) to the geld. (There is) land for 1½ ploughs. There 9 sochmen have 4 ploughs.

fol. 291.

XVIII. THE LAND OF GILBERT TISON

M. In AIGRUN [Averham] Suain had 3 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There Gilbert Tison has in demesne 2 ploughs and (there are) 8 sochmen on 6 bovates of land and 21 villeins and 22 bordars having 12 ploughs. There (is) a church and a priest and 1 mill (rendering) 5 shillings and 80 acres of meadow. Underwood (*silva minuta*) 8 furlongs in length and 4 in breadth. In King Edward's time it was worth 6 (pounds); now (it is worth) 10 pounds and 12 pence. To this manor belong (*appendunt*) 5 sochmen in other hundreds.

S. In CRUNWELLE [Cromwell] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 2 sochmen have 1 plough.

M. In FENIGLEI [Finningley] Suain had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Gilbert has half a plough and 15 villeins and 4 bordars having 5½ ploughs. Wood(land) for pannage 2 leagues in length and 2 in breadth. In King Edward's time it was worth 40 shillings; now (it is worth) 45 shillings.

M. In CALUN [Kelham] Alvric had 2 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There (is) 1 sochman and 1 bordar with half a plough and 6 acres of meadow. Underwood (*silva minuta*) 8 furlongs in length and 14 rods in breadth. In King Edward's time it was worth 16 shillings; now (it is worth) 3 shillings.

M. In WICHEBURNE [Winkburn] Suain had 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Gilbert has 2 ploughs in demesne and 15 sochmen on 4 bovates of land and 7 villeins and 5 bordars having 7 ploughs. There (is) a church and 16 acres of meadow. Wood(land) for pannage 1 league in length and half a league in breadth. In King Edward's time it was worth 100 shillings; now (it is worth) 60 shillings. 5 thegns held 2 bovates of this land. One of them was the senior of the others. This (land) did not belong to Suain.

M. In ALWOLDESTORP [ ][2] Adestan had 4 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Gilbert has 1 plough in demesne and 4 bordars. There (are) 10 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 10 shillings.

BLIDEUORDE [BLIDWORTH] HUNDRED

M. In STARTORP [Staythorpe] Suain had 9 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. There Gilbert has 1 plough and 12 villeins and 4 bordars having 4½ ploughs and 1 mill (rendering) 5 shillings and 60 acres of meadow. In King Edward's time it was worth 60 shillings (and it is worth) the same now.

[1] Originally 'Holesworde,' but the first five letters are erased and 'Hoches' is added above them.

[2] Identified by Thoroton with Caythorpe near Lowdham.

XIX. THE LAND OF GEOFFREY DE WIRCE

M. In Landeforde [Langford] Levric had 2 carucates of land, and 3 bovates and the fifth part of 1 bovate (assessed) to the geld. (There is) land for 8 ploughs. There Rannulf, the man of Geoffrey de Wirce, has 2½ ploughs and 16 sochmen and 17 villeins and 4 bordars having 7 ploughs. There (is) a priest and a church and 2 mills (rendering) 12 shillings and 1 fishery and 100 acres of meadow. In King Edward's time it was worth 4 pounds; now (it is worth) the same and 10 shillings more.

XX. THE LAND OF ILBERT DE LACI

M. In Sibetorp [Sibthorpe] Pilewin had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. Now Ilbert de Laci has (it). Arnegrim holds of (*de*) him. There is 1 plough in demesne and 3 sochmen on (*de*) half a bovate of land and 16 bordars having 3 ploughs and the third part of 1 mill (rendering) 10 pence and 10 acres of meadow. The fourth part of this land belongs to the church of the same manor. There (is) a priest. In King Edward's time it was worth 30 shillings and (it is worth the same) now.

Soc[land]

S. In Sceltun [Shelton] and Alvriton [Alverton] and Chilvintun [Kilvington] and Toruentun [Thoroton] (there are) 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 6 villeins and 1 bordar have 2 ploughs and 30 acres of meadow.

M. In Stoches [East Stoke] Turchil had 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Mainfrid holds (it) of (*de*) Ilbert and has there half a plough and 3 sochmen and 5 bordars having 1 plough and 2 ploughing oxen (*boves arantes*) and 64 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 15 (shillings).

In Elvestune [Elston] Ilbert has 3 dwellings (*mansuræ*) in which are 2 sochmen and 1 bordar belonging to (*ad*) Stochas [East Stoke]. They have no land.

Ilbert claims the priest's land against Bishop R(emi) and in Stoches [Stoke] he claims the fourth part of the vill.

M. In Elvestun [Elston] Godwin had 6 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. Arnegrim holds (it) of (*de*) Ilbert and has there 1 plough and 3 sochmen on 2 bovates of land and 1 villein and 5 bordars having 2 ploughs. There (are) 30 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 25 shillings.

M. In Aslachetone [Aslockton] Leving had 1 bovate of land (assessed) to the geld with sac and soc (*saca et soca*). (There is) land for half a plough. Ulvric holds (it) of (*de*) Ilbert, and there he has 2 ploughing oxen (*boves arantes*) and 2 sochmen and 1 bordar having half a plough and 8 acres of meadow. In King Edward's time it was worth 5 shillings and 4 pence (and it is worth) the same now.

2 M. In Crophille [Cropwell Butler] Ulviet and Godric had 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Ilbert de Laci was seised of this estate (*terra*), but when Roger of Poitou received (his) estate he seised this manor away from (*super*) Ilbert. The wapentake (court) bears witness that Ilbert was seised. Now it is in the king's hand except the third part and the thegn(land) (*tainum*) which is the head of the manor, which Ilbert holds. There is now 1 plough in demesne and 4 sochmen having 9 ploughing oxen (*boves in car'*) and 6 acres of meadow. In King Edward's time it was worth 16 shillings; now (it is worth) 10 shillings.

In Echelinge [Hickling] (there are) 3½ carucates of land (assessed) to the geld. Turchil and Godwin held (it) for 2 manors. (There is) land for 8 ploughs. In demesne are 3 ploughs; and 4 sochmen and 23 villeins with 1 bordar have 6 ploughs. There (are) 200 acres of meadow. Formerly (it was worth) 6 pounds; now it is worth 4 pounds.

fol. 291b.

XXI. THE LAND OF BERENGER DE TODENI

M. In Stoches [East Stoke] Sbern croc had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. Berenger de Todeni has (it). Ralf, his man, holds (it). There he has 1 plough and 2 villeins and 3 bordars ploughing with 2 oxen. There (are) 40 acres of meadow. In King Edward's time it was worth 12 shillings; now (it is worth) 10 shillings.

M. In Sirestun [Syerston] Sbern croc had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. Godwin holds (it) of Berenger, and has there 1 plough and 1 sochman and 2 villeins with half a plough. There (are) 10 acres of meadow. In King

Edward's time it was worth 30 shillings; now (it is worth) 20 shillings.

In BRODEHOLM [Broadholm] Turgot and Halden had 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. It is waste. Now Berenger de Todeni and William de Perci have (it.) The land belongs (*iacet*) to NEWERCE, [Newark] but the service (*opus*) of the villeins belongs to SAXEBI [Saxelby] in LINCOLESCIRA [Lincolnshire]. There (are) 30 acres of meadow. Wood(land) for pannage 1 league in length and another in breadth.

XXII. THE LAND OF HUGH THE SON OF BALDRIC

M. In CHELVINCTONE [Kilvington] and ALURITONE [Alverton] Colegrim had 3 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Hugh the son of Baldric has (it), Ansger holds (it) of (*de*) him, and has there 2 ploughs and 1 sochman on half a bovate of land, and 3 villeins and 2 bordars having 2 ploughs and 20 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 20 shillings.

M. In CUCHENAI [Cuckney] Suen had 2 carucates of land (assessed) to the geld. (There is) land for 4 ploughs. Richard holds (it) of Hugh and has there 2 ploughs in demesne and 3 sochmen on (*de*) 2 bovates of land and 10 villeins and 5 bordars having 3 ploughs. There (is) a priest and a church and 2 mills (rendering) 8 shillings. Wood(land) for pannage 4 furlongs in length and 4 furlongs in breadth. In King Edward's time it was worth 30 shillings and (it is worth the same) now.

XXIII. THE LAND OF HUGH DE GRENTEMAISNIL

In EDWOLTUN [Edwalton] Gode had 6 bovates of land (assessed) to the geld. (There is) land for 2½ ploughs. There Hugh de Grentemaisnil has in demesne 2 ploughs and (there are) 6 sochmen and 1 villein having 1½ ploughs and 20 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 20 shillings. It belongs to STOCTUN [Stockerston, Leicester].

In TURMODESTUN [Thrumpton] (there are) 1½ bovates (assessed) to the geld. (There is) land for 1 plough. There (are) 2 sochmen and 2 bordars with 2 ploughs and 3 acres of meadow. It belongs (*iacet*) to SANDIRIACA [Sandiacre, Derby].

XXIIII. THE LAND OF HENRY DE FERREIRES

M. In LECCHE [East Leake] Siward had 2 carucates of land (assessed) to the geld. (There is) land for 6 ploughs. There Henry de Ferrariis has in demesne 4 ploughs, and (there are) 16 sochmen and 16 villeins having 17 ploughs. There (is) a priest and a church and 1 mill (rendering) 2 shillings and 50 acres of meadow and underwood (*silva minuta*) 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 6 pounds; now (it is worth) 7 pounds.

To this manor belongs (*adiacet*) the berewick of LECCHE [West Leake] where there are 2 carucates of land to the geld. This belongs to (*iacet in*) PLUNTRE [Plumtree] Hundred.

In BONNITON [Bonnington] Siward had 1½ bovates of land (assessed) to the geld. (There is) land for 4 oxen. There 3 villeins have 1½ ploughs and 3 acres of meadow. In King Edward's time it was worth 6 shillings (and it is worth) the same now.

In WILGEBI [Willoughby on the Wolds] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 3 oxen. The soc belongs to (*in*) BADELEIE [ ].[1] It is waste. There (are) 6 acres of meadow.

XXV. (THE LAND OF) ROBERT MALET

M. In BRADEMERE [Bradmore] Azor had 12 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There Robert Malet has in demesne 3 ploughs and (there are) 16 villeins and 8 bordars having 5 ploughs. In King Edward's time it was worth 60 shillings and (it is worth the same) now.

S. In RODINTONE [Ruddington] (there is) 1 bovate of land and the third part of 1 bovate (assessed) to the geld. (There is) land for 2 oxen. The soc belongs to (*in*) BRADEMERE [Bradmore].

XXVI. (THE LAND OF) DURAND MALET

M. In OVETORP [Owthorpe] Rolf had half a carucate of land (assessed) to the geld. (There is) land for 3 ploughs. There Durand Malet has 1 plough and 4 sochmen and 3 villeins having 2 ploughs. There (are) 12 acres of meadow. In King Edward's time it was worth 30 shillings; now (it is worth) 20 shillings.

[1] See Introduction, p. 233.

fol. 292.

XXVII. THE LAND OF OSBERN THE SON OF RICHARD

M. In Grenebi [Granby][1] Earl Algar had 3 carucates of land (assessed) to the geld. (There is) land for 10 ploughs. Osbern the son of Richard has (it) now. Robert de Olgi holds (it) of him and has there 4 ploughs and 22 sochmen and 14 villeins and 8 bordars having 10 ploughs. There (is) a priest and a church and 2 mills (rendering) 10 shillings and 10 acres of meadow. In King Edward's time it was worth 8 pounds; now (it is worth) 15 pounds.

S. In Wivretone [Wiverton] (there are) 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There 7 sochmen have 2 ploughs. The soc belongs to (*in*) Coleton [Colston Basset].

B. In Saltreford [Salterford] (there are) 6 bovates of land (assessed) to the geld. It is waste. (It is) a berewick of (*in*) Coletone [Colston Basset]. Wood(land) for pannage 1 league in length and 4 furlongs in breadth.

XXVIII. (THE LAND) OF ROBERT THE SON OF WILLIAM

M. In Stanford [Stanford upon Soar] Ælfag had 10 bovates of land (assessed) to the geld. (There is) land for 4 ploughs. There Robert the son of William has 1 plough and 4 sochmen and 7 villeins and 2 bordars having 7 ploughs. There (is) the site of a mill and 15 acres of meadow. In King Edward's time it was worth 40 shillings.

Soc[land belonging] there

S. In Leche [Leake][2] (there is) 1 bovate of land (assessed) to the geld. (There is) land for 4 oxen. There 2 sochmen have 1 plough. It belongs to Stanford.

M. In Brochelestou [Broxtow] Godric had 3 bovates of land (assessed) to the geld. (There is) land for 3 oxen. There Robert has 1 plough and 1 villein. Underwood (*silva minuta*) 1 furlong in length and 1 in breadth. In King Edward's time it was worth 16 shillings; now (it is worth) 8 shillings.

XXIX. (THE LAND) OF WILLIAM THE USHER (*Hostiarius*)

4 M. In Bruncote [Bramcote] Ulchel, Godric, Alvric and Levric had 12 bovates of land (assessed) to the geld. (There is) land for 12 oxen. There William the usher has 1 plough and 4 villeins and 1 bordar having 3½ ploughs. In King Edward's time it was worth 60 shillings; now (it is worth) 20 (shillings).

M. In Torwalle [Trowell] Uctebrand had 1½ carucates of land (assessed) to the geld. (There is) land for 12 oxen. There William the usher has 1 plough and 6 villeins with 4 ploughs. There is a priest and half a church and 6 acres of meadow. In King Edward's time it was worth 100 shillings; now (it is worth) 20 shillings.

fol. 292b.

XXX. THE LAND OF THE THEGNS

Bernesedelawe [Bassetlaw] Wapentac

2 M. In Osbernestune [Osberton][3] Elwine and Ulviet had 1 carucate of land (assessed) to the geld. (There is) land for 4 ploughs. Now Suan and Ulviet hold (it) of the king and have there 5 sochmen having 4 ploughs, and a church and 20 acres of meadow. Wood(land) for pannage 6 furlongs in length and 3 in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 10 shillings.

M. In Carlentune [Carlton on Trent] Ulchel had 3 bovates of land (assessed) to the geld. (There is) land for 6 oxen. Alden has (it) of the king. There 2 bordars have 3 ploughing oxen and 10 acres of meadow. Wood(land) for pannage 2 furlongs in length and half (a furlong) in breadth. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings and 4 pence.

M. In Chenapetorp [Knapthorpe] Alden holds of the king 2 bovates of land (assessed) to the geld. (There is) land for 6 oxen. There he has 1 plough and 4 bordars having 1 ploughing ox (*bovem in car'*) and 4 acres of meadow. Wood(land) for pannage 2 furlongs in length and 1 in breadth. In King Edward's time it was worth 10 shillings and 8 pence and (it is worth the same) now.

M. In Crunwelle [Cromwell] Alden holds of the king 2 carucates of land and 6 bovates (assessed) to the geld. (There is) land for 4 ploughs. There he has 1 plough and 5 sochmen on 1 carucate of this land and 8 villeins and 2 bordars having 4½ ploughs. There (is) a church and 1 mill

[1] See above, p. 233.

[2] 'Leche' is interlined above 'Stantone,' which is not however marked for deletion.

[3] 'Ormestune' is underlined for deletion and 'Osbernestune' written over it.

(rendering) 12 pence and 1 fishery. Meadow 6 furlongs in length and 3 in breadth. In King Edward's time it was worth 60 shillings; now (it is worth) 40 (shillings).

M. In LAMBELEIA [Lambley] Ulchet had 2 carucates of land and 2 bovates (assessed) to the geld. (There is) land for 3 ploughs. Alden holds (it) of the king and has there 1 plough and 20 villeins and 3 bordars having 4 ploughs and 3 sochmen on (*de*) half a carucate of land with 1 plough. There (are) 2 mills (rendering) 20 shillings and 20 acres of meadow. Wood(land) for pannage 1 league in length and 4 furlongs in breadth. In King Edward's time it was worth 60 shillings and (it is worth the same) now.

M. In UDEBURG [Woodborough] Ulchel had 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There Aldene has 3 villeins having half a plough. In King Edward's time it was worth 5 shillings and 4 pence and (it is worth the same) now.

M. In NORDMUSCHAM [North Muskham] Siward had 3 bovates of land (assessed) to the geld. (There is) land for 3 ploughs. There the same Siward has 2 bordars and 1 mill (rendering) 10 shillings and 12 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 16 shillings.

M. In COLUI [Colwick] Alvric (3) and Buge (2) had 5 bovates of land (assessed) to the geld. (There is) land for 1 plough. The same hold (it) of the king and have there 2 ploughs and 1 sochman on (*de*) 1 bovate and 6 villeins and 1 bordar with 2 ploughs. There (are) 31 acres of meadow and 8 acres of underwood (*silva minuta*). In King Edward's time it was worth 25 shillings and 4 pence.

M. In UDEBURG [Woodborough] Ulchel had 3 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. The same holds (it) of the king and has there 1 plough and 3 villeins and 1 bordar with 1½ ploughs and 1 mill (rendering) 20 shillings and 1 rod of meadow. Wood(land) for pannage 2 leagues in length and 5 furlongs in breadth. In King Edward's time (it was worth) 20 (shillings); now (it is worth) 30 shillings.

[1]In UDEBURG [Woodborough] Alvric has 5 bovates (assessed) to the geld. (There is) land for 2 ploughs which are there with 3 villeins and 1 bordar. There (is) a mill (rendering) 20 shillings. The same held it for a manor in King Edward's time.

M. In NORMENTUN [Normanton] Arnui the priest has 5 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. It is waste.

M. In ODESTORP [ ] Ulmer had 2½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There in demesne is 1 plough and half a mill (rendering) 4 shillings and 10 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 4 shillings.

In CALVRETONE [Calverton] Alvric (has) 3 bovates of land (assessed) to the geld. (There is) land for 1 plough. There 2 sochmen and 4 villeins have 2 ploughs. Formerly (it was worth) 16 shillings; now (it is worth) 10 shillings. The same holds (it).

RISECLIVE [RUSHCLIFF] WAPENTAC

M. In NORMANTUN [Normanton on Soar] Osgod had 3½ bovates of land (assessed) to the geld. (There is) land for 1 plough. There (are) 2 villeins and 2 acres of meadow. In King Edward's time (it was worth) 20 shillings; now (it is worth) 6 shillings.

B. In BONNITONE [Bonington] (there are) 1½ bovates of land (assessed) to the geld. (There is) land for half a plough. It belongs to NORM(AN)TUN [Normanton]. There (are) 5 villeins with 1 plough and 3 acres of meadow. In King Edward's time (it was worth) 6 shillings and (it is worth the same) now.

M. In the same NORM(AN)TUN Raven (has) 2 bovates of land (assessed) to the geld.

M. In SUTONE [Sutton] Leword had 3 bovates of land (assessed) to the geld. Siward holds (it) of the king.

M. IN THE SAME PLACE (*Ibidem*) Coleman (has) 1½ bovates of land (assessed) to the geld.

M. In CHINESTAN [Kingston] Algar had 3 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Sawin holds (it) of the king and has there 2 villeins with 1 plough and the site of a mill and 10 acres of meadow. In King Edward's time (it was worth) 20 shillings; now (it is worth) 10 shillings.

M. In RADECLIVE [Ratcliffe upon Soar] Osgod had 10 bovates of land and 4 parts of 1 bovate (assessed) to the geld. (There is)

[1] This entry is added in the margin.

land for 6 ploughs. Sawin holds (it) of the king and has there 2 ploughs and 9 villeins and 3 bordars having 2 ploughs. There (is) a priest and a church and 1 mill (rendering) 10 shillings and 6 acres of meadow. In King Edward's time it was worth 100 shillings; now (it is worth) 60 shillings.

S. In CHINESTAN [Kingston] (there is) 1 carucate of land (assessed) to the geld. (There is) land for 2 ploughs. There 8 sochmen and 3 villeins have 3 ploughs.

M. In the same place (*Ibidem*) Ulchet had 1½ bovates of land (assessed) to the geld. (There is) land for 1 plough. Godric holds (it) now, but the men of the country do not know from whom (*per quem*) (or) how. There is 1 villein and 6 acres of meadow. In King Edward's time it was worth 20 shillings; now (it is worth) 3 shillings.

M. In BARTONE [Barton in Fabis] Ælgar had 1½ bovates of land and the fourth part of 1 bovate (assessed) to the geld. (There is) land for 1 plough. There Sawin has 1 villein and 2 bordars with 2 ploughing oxen and 3 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 3 shillings.

M. In GATHAM [Gotham] Godric had 3½ bovates of land and 1 acre (assessed) to the geld. There is land for 1 plough. It is waste. Sawin has (it). There (are) 12 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 2 shillings.

In CLIFTUN [Clifton] Ulchel has of the king 1 bovate of land (assessed) to the geld. There he has 1 villein with 2 ploughing oxen (*boves arantes*) and 1 acre of meadow.

S. In WILLEBI [Willoughby on the Wolds] Algar had 2½ bovates of land (assessed) to the geld. The soc belongs to (*in*) TORP [Thorpe-in-the-Glebe]. There (are) 2 sochmen with 3 ploughs and 3 acres of meadow.

M. In CHIRCHEBI [Kirkby in Ashfield] Alvric had 2 bovates of land (assessed) to the geld. (There is) land for 2 oxen. The same holds (it) of the king and has there 1 plough. In King Edward's time (it was worth) 5 shillings; now (it is worth) 2 shillings.

2 M. In BASEFORD [Basford] Alvric had 1 bovate (assessed) to the geld (which) is waste, and Escul 1 bovate (which) is waste.

In PAPLEWIC [Papplewick] Alvric and Alsa and Elric had 2 carucates of land and 3 bovates (assessed) to the geld. These are waste. There (is) wood(land) for pannage 1 league in length and half (a league) in breadth. In King Edward's time it was worth 20 shillings.

M. In TORWALLE [Trowell] Ulchel had half a carucate of land (assessed) to the geld. (There is) land for 4 oxen. It is waste. Alden has (it). There (are) 2 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings and 4 pence.

fol. 293.

M. In SRAELIE[1] [Strelley] Ulchel had 3 bovates of land (assessed) to the geld. (There is) land for 3 oxen. Now Ulsi and Godwin hold (it) of the king and have there 4 villeins and 1 bordar. In King Edward's time it was worth 4 shillings; now (it is worth) 3 shillings.

M. In NUTEHALE [Nuthall] Aschil had 3½ bovates of land (assessed) to the geld. (There is) land for 3½ oxen. Alvric holds (it) of the king and has there 6 villeins with 2 ploughs. In King Edward's time it was worth 10 shillings; now (it is worth) 6 shillings and 8 pence.

M. In ELDESUORDE [Awsworth] Ulchete had half a carucate of land (assessed) to the geld. Aldene holds (it).

M. In BASEFORD [Basford] Alvric had 4 bovates of land (assessed) to the geld. (There is) land for half a plough. The same holds of the king and has there 1 villein with 1 plough and 1 acre of meadow and 2 mills (rendering) 16 shillings and 1 acre of underwood (*silva minuta*). In King Edward's time it was worth 20 shillings and (it is worth the same) now.

2 M. In WILGEBI [Willoughby on the Wolds] Sbern and Ulmer had 3 bovates of land (assessed) to the geld. (There is) land for 3 oxen. Elwin and Ernuin hold (it) of the king. It is waste. There (are) 5 acres of meadow and 5 bordars. In King Edward's time it was worth 10 shillings and 4 pence; now (it is worth) 4 shillings.

BINGAMESHOU [BINGHAM] WAP[ENTAC]

M. In LAMBECOTES [Lamcote] Ulchel had 5 bovates of land and the third part of 1 bovate (assessed) to the geld. Aldene holds

[1] 'SRAELIE' is written over 'STADELIE' underlined for deletion.

(it) of the king and has there 1 plough in demesne and 6 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings.

M. In ASLACHESTONE [Aslockton] Levric had 1 bovate of land (assessed) to the geld. (There is) land for 4 oxen. Ulvric holds (it) of the king and has there 2 ploughing oxen (*boves in car'*) and 2 sochmen and 1 bordar with half a plough. There (are) 8 acres of meadow. In King Edward's time it was worth 5 shillings and 4 pence and (it is worth the same) now.

M. In CHINELTONE [Kinoulton] Azor had 1 bovate of land (assessed) to the geld. (There is) land for 3 oxen. Now Azor's son holds (it) of the king and has there 3 villeins with 3 ploughing (*arant'*) oxen and 3 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 2 shillings and 8 pence.

M. In CLAUREBURG [Clarborough] Ulmer had 1½ bovates of land (assessed) to the geld with sac and soc (*saca et soca*) without a hall. (There is) land for 3 oxen. The same holds (it) of the king and has there 2 villeins and 3 bordars with half a plough and 3 acres of meadow. Wood(land) for pannage 6 furlongs in length and 3 in breadth. In King Edward's time it was worth 3 shillings; now it is worth 2 shillings.

NEWERCE [NEWARK] WAP[ENTAC]

M. In SIRESTUNE [Syerston]—(this) is the king's[1]—Turvert had 2 bovates of land (assessed) to the geld. (There is) land for 5 oxen. There 2 villeins and 1 bordar have 1 plough and 5 acres of meadow. In King Edward's time (it was worth) 10 shillings; now (it is worth) 5 shillings.

M. In ELCHESLEIE [Elkesley] Aschil had 4 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Ernuin the priest holds (it) of the king. There 4 villeins have 1½ ploughs. In King Edward's time it was worth 8 shillings; now (it is worth) 10 shillings.

In NORTMORTVN [North (?) Morton] (there are) 3 bovates of land (assessed) to the geld. Aschil held (it), Ernuin holds (it). It is waste.

M. In MISNA [Misson] Cnut had 1½ bovates of land (assessed) to the geld. (There is) land for 3 oxen. Ernuin has there 4 villeins with half a plough and 2 sochmen with 1 plough and a fishery (rendering) 3 shillings. Wood(land) for pannage 1 furlong in length and 1 in breadth. It is worth 8 shillings.

S. In the same place [*Ibidem*] (there are) 3 bovates of land (assessed) to the geld. The soc belongs to (*de*) CHIRCHETON [Kirton-in-Lindsey]. There 6 villeins have 3 ploughs.

M. In CALUN [Kelham] Ulchel had 1 bovate of land and 2 parts of 1 bovate (assessed) to the geld. (There is) land for 6 oxen. There Aldene has 2 villeins and 2 bordars with 1 plough and 6 acres of meadow. Underwood (*silva minuta*) 8 furlongs in length and 8 rods in breadth. In King Edward's time (it was worth) 20 shillings; now (it is worth) 10 (shillings).

M. In MUSCHAM [Muskham] Sortebrand had 6 bovates of land (assessed) to the geld. (There is) land for 1½ ploughs. Seric holds (it) of the king and has there 1 sochman and 2 bordars with 2 ploughing oxen (*bobus in car'*) and 12 acres of meadow. Wood(land) for pannage 1 league in length and 1 in breadth. In King Edward's time it was worth 16 shillings; now (it is worth) 5 shillings.

M. In WIMARSPOLD [Widmerpool] William had 11 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Aldene has there 14 sochmen and 2 villeins and 2 serfs with 6 ploughs and 20 acres of meadow. In King Edward's time it was worth 40 shillings; now (it is worth) 30 shillings.

IN THE SAME PLACE [*Ibidem*] 4 thegns had 6 bovates of land (assessed) to the geld. (There is) land for 1 plough. Alden has there 1 sochman with 3 ploughing oxen (*bobus in car'*) and 6 acres of meadow. In King Edward's time it was worth 21 shillings; now (it is worth) 6 shillings.

S. In GUNNULFESTONE [Gonalston] Ernuin the priest with 4 sochmen had 5 bovates of land (assessed) to the geld. (There is) land for 12 oxen. The soc belongs to (*in*) ERNEHALE [Arnold]. There 4 sochmen have 1 plough and 5 acres of meadow and 16 acres of underwood (*silva minuta*).

M. In TROWALLE [Trowell] Alvric had half a carucate of land (assessed) to the geld. (There is) land for 4 oxen. The same holds (it) of the king and has there 3 villeins with 2 ploughs and 2 acres of meadow. In King Edward's time it was worth 9 shillings and (it is worth the same) now.

[1] '*Regis est*' interlined.

M. In the same place (*Ibidem*) Ulvric had half a carucate of land (assessed) to the geld. (There is) land for half a plough. Ernuin has 1 bordar and 1 villein with 1 plough and 2 acres of meadow. In King Edward's time it was worth 10 shillings; now (it is worth) 5 shillings and 4 pence.

One bovate of land belongs there (*iacet ibi*). Soc(land). It is waste.

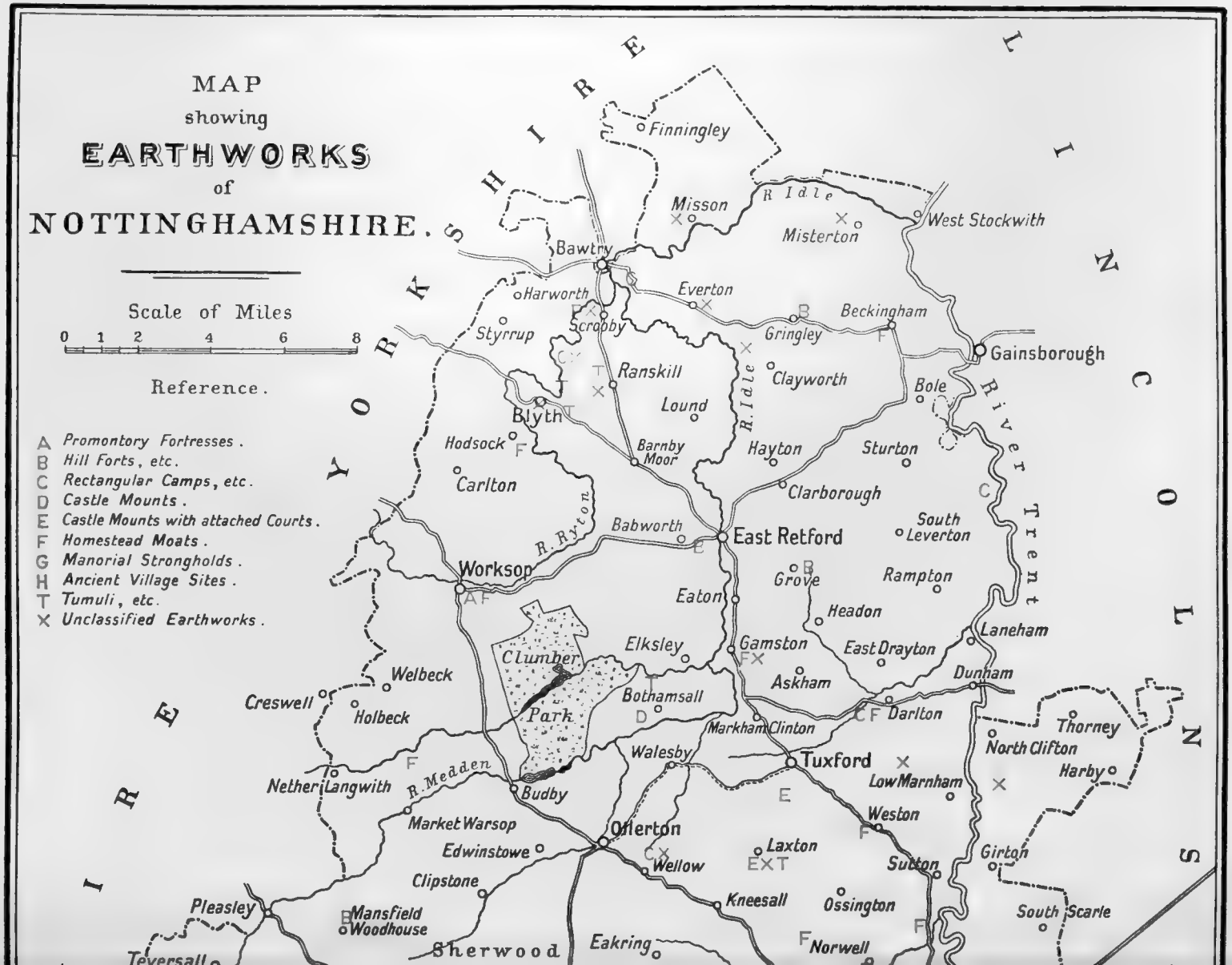
M. In ESTRECILLEWELLE [? East Chilwell] Dunninc had 5 bovates of land (assessed) to the geld. (There is) land for 5 oxen. Ernuin has there 1 villein with half a plough and 12 acres of meadow. In King Edward's time (it was worth) 5 shillings and 4 pence; now (it is worth) 3 shillings and 4 pence.

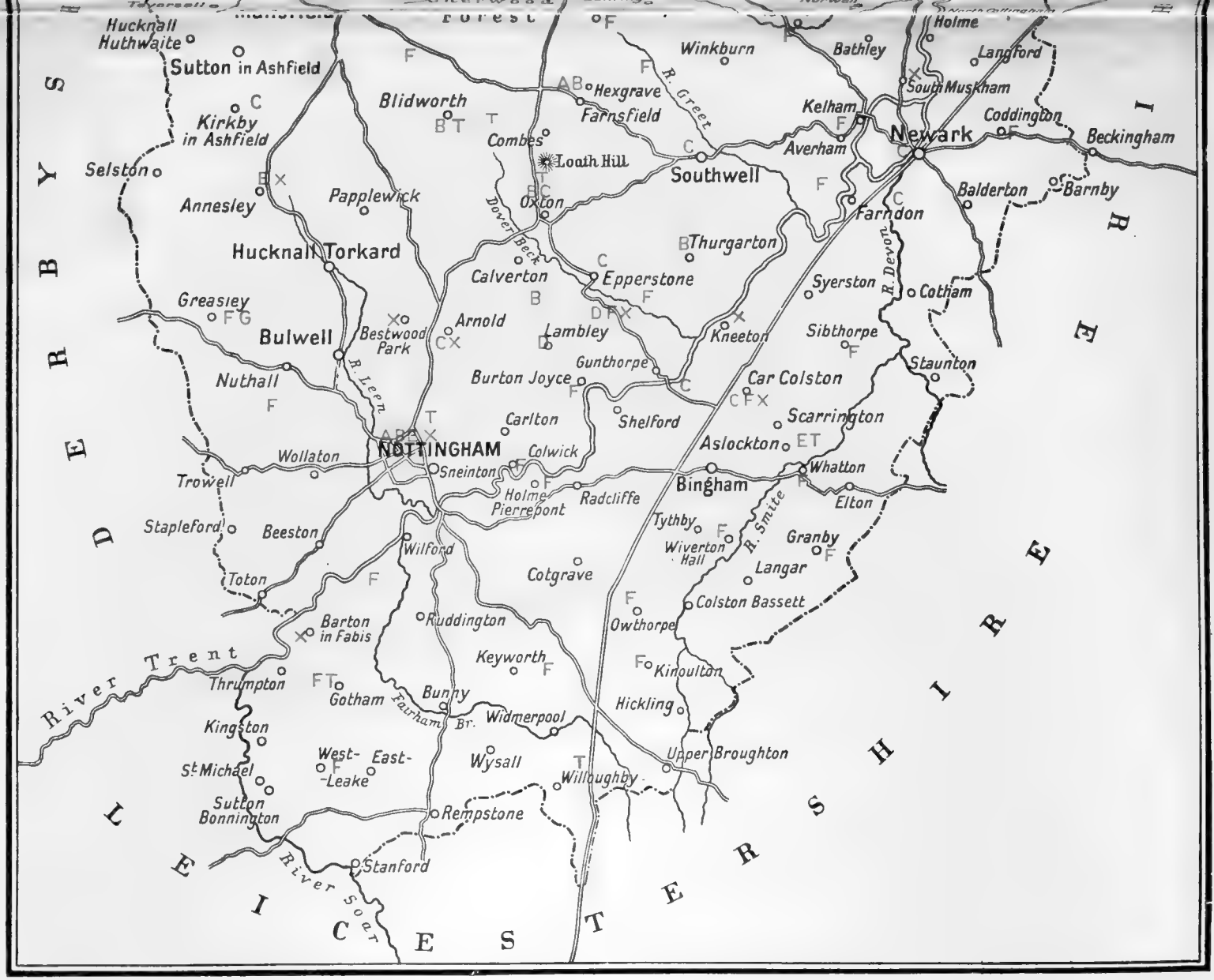
In WARESHOPE [Warsop] a certain blind man (*cecus*) holds 1 bovate in alms (*elemosina*) of the king.

In CLAUREBURG [Clarborough] (there are) 2 bovates of land (assessed) to the geld. (There is) land for 2 ploughs. Archil held (it). Ernuin holds (it). There (are) 2 villeins and 6 acres of meadow. It was worth 4 shillings; now (it is worth) 2 shillings.

In SUTONE [Sutton Passeys] Alvric and Brun (had) 12 bovates of land (assessed) to the geld, for 2 manors and Ulsi (had) 1½ carucates (assessed) to the geld. The soc belongs (*iacet*) to OLLAVESTONE [Wollaton]. There is land for 3 ploughs. It is waste.

In ORDESHALE [Ordsall] (there is) 1 bovate (assessed) to the geld. (There is) land for 4 oxen. Ernui holds (it).


MAP
showing
EARTHWORKS
of
NOTTINGHAMSHIRE.
Scale of Miles
0 1 2 4 6 8
Reference.
A Promontory Fortresses.
B Hill Forts, etc.
C Rectangular Camps, etc.
D Castle Mounts.
E Castle Mounts with attached Courts.
F Homestead Moats.
G Manorial Strongholds.
H Ancient Village Sites.
T Tumuli, etc.
X Unclassified Earthworks.
YORKSHIRE
LINCOLNSHIRE
IRELAND
Finningley
Misson
R Idle
Misterton
West Stockwith
Bawtry
Harworth
Everton
Scrooby
Styrrup
Beckingham
Gringley
Gainsborough
Ranskill
Clayworth
Bole
Lound
Blyth
R. Idle
River Trent
Hodsock
Barnby Moor
Hayton
Sturton
Carlton
Clarborough
R. Ryton
Babworth
East Retford
South Leverton
Worksop
Grove
Rampton
Eaton
Headon
Laneham
Elksley
Gamston
East Drayton
Clumber Park
Askham
Dunham
Welbeck
Creswell
Holbeck
Bothamsall
Darlton
Markham Clinton
Thorney
North Clifton
Walesby
Tuxford
Harby
Low Marnham
Nether Langwith
R. Meaden
Budby
Weston
Market Warsop
Ollerton
Laxton
Girton
Edwinstowe
Wellow
Sutton
Clipstone
Kneesall
Ossington
South Scarle
Pleasley
Mansfield Woodhouse
Sherwood
Eakring
Norwell
Teversall



Between pages 288, 289.

ANCIENT EARTHWORKS

INTRODUCTION

Neither physically nor strategically do the gentle contours of Nottinghamshire provide sites for those great hill fortresses to be found on the crests of the hills in many other counties.

The great water-way of the Trent divides Nottinghamshire as it flows northwards into the estuary of the Humber; and many minor rivers, notably the Soar, Erewash, and Idle, made the very heart of the county easily accessible to inimical incursions. With few exceptions its natural features did not lend themselves to fortification; this was compensated for in the Pennine Range of Derbyshire, on the west, which over-looked the comparatively level surface of this county, and formed a barrier to the invaders of the territory of the Coritani, a tribe which occupied approximately the present shires of Lincoln, Nottingham, and Leicester.

Forest and swamp occupied a large part of Nottinghamshire; remains of old woods are extant in the Hays of Birkland and Bilhagh, to the north of Ollerton and Edwinstowe; while in the north-eastern extremity the swamps that intervened between the northern boundary and the Isle of Axholme were almost impassable.

Viewed through the medium of its earthworks, it appears to have been sparingly inhabited by early man, possibly owing to the poor protection the open character of the country afforded. There are few headlands like the Castle-rock or the old-town area of Nottingham, which could be cut off by rampart and fosse, to constitute forts. There are, however, a number of rounded hills, the summits of which have been utilized as military sites. Though great defensive works of a martial character are absent, we find numerous sites of moated manor houses, less interesting, possibly, than the former, but necessary for the preservation of household property and domestic peace.

Such earthworks as are traceable are here classified according to the following scheme, adopted by the Congress of Archaeological Societies in 1903; and we find examples illustrating all but class H.

Class A. Fortresses partly inaccessible, by reason of precipices, cliffs, or water, additionally defended by artificial works, usually known as promontory fortresses.

Class B. Fortresses on hill-tops with artificial defences, *following the natural line of the hill*; or, though usually on high ground, less dependent on natural slopes for protection.

Class C. Rectangular or other simple enclosures, including forts and towns of the Romano-British period.

Class D. Forts consisting only of a mount with encircling ditch or fosse.

Class E. Fortified mounts, either artificial or partly natural, with traces of an attached court or bailey, or of two or more such courts.

Class F. Homestead moats, such as abound in some lowland districts, consisting of simple enclosures formed into artificial islands by water moats.

Class G. Enclosures, mostly rectangular, partaking of the form of F, but protected by stronger defensive works, ramparted and fossed, and in some instances provided with outworks.
Class H. Ancient village sites protected by walls, ramparts, or fosses.
Class X. Defensive works which fall under none of these headings.

Class A.—Of the three examples of Promontory Fortresses, Nottingham is by far the boldest ; but that at Worksop was originally more characteristic. All in this class are situated on the great ancient thoroughfares ; but none of them exhibits those prominent features such as are found in the same type of stronghold in certain other districts.

Class B.—Eight examples only, and those not of a typical character, can be included in this category of Hill Fortresses ; and even most of those have perished or are much mutilated. We look in vain for examples of complicated entrances such as are found in many other counties, or for those stupendous aggers which excite wonder at the skill and patience of their engineers ; the only one that remains sufficiently perfect to reveal a cunningly contrived defence is the camp called ' Oldox ' in the parish of Oxton.

Class C.—All but one in this class—of which there are but few in the county—are of very simple construction. The camps at Arnold and Harworth meet those requirements generally considered characteristic of the Roman camps, and that of Southwell recalls to mind some of those entrenchments usually attributed to the nation ; but among these the camp at Woodborough is incomparably the most interesting.

Class D.—The four mounts in Nottinghamshire are also very simple, that at Lowdham being the best defined.

Class E.—Four only of the mount and bailey type can be found for our attention. The most interesting is that in Laxton parish, where the mount is doubled, the main work being crowned by a monticle, and the design of the double court is distinct.

Class F.—As usual in an agricultural and pastoral country, the moat defences of manor houses and farmsteads are to be found more abundantly than in a district of hilly and rocky character. A considerable number are recorded and apparently many of them have been filled in for modern convenience at a comparatively modern date. In those examples left there is but little to guide us in attributing them to any given age, and although no history of them is known, they cannot be relegated to a pre-historic period.

Class X.—Those works excluded from either of the above mentioned divisions are naturally of varied types. The great Bykersdyke is of remote antiquity ; and the collateral lines of entrenchments at Barton impress one with the idea of hasty and temporary measures of defence. The curious series of low mounds on Laxton Common provide food for speculation as to their date and purpose.

PROMONTORY FORTRESSES

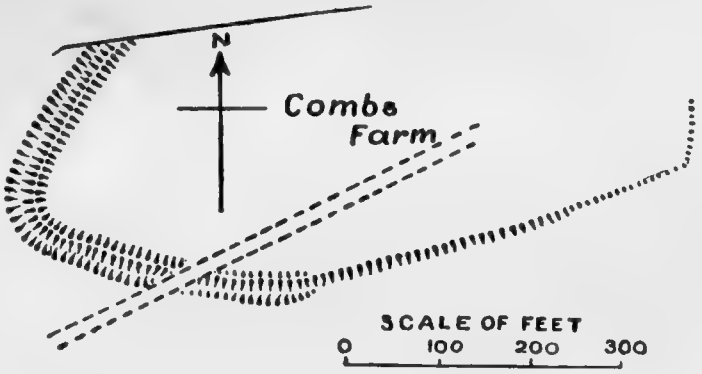
[Class A]

Farnsfield : Combs Farm Camp.—On a promontory jutting out eastward from the neighbouring high-lands, situated 1¼ miles south-west of Farnsfield, and 4½ miles north-west by west from Southwell, is an irregular

elliptical camp, commanding the ancient road, the 'Stone Street,' from Nottingham to Bawtry, that passes south and north-west of its site.

Major Rooke, writing in 1785, says :—

> At a farm on an eminence called the 'Combs,' a Roman camp is plainly made out, the ditch and vallum are perfect at the west end and in most part of the south side. The south-eastern part is occupied by the house and garden; here I found fragments of Roman bricks and tiles turned up in ploughing. About fifty yards to the north of the camp is a circular vallum of earth near forty yards in diameter, part of which has been lately destroyed by the plough. The camp, which is fully 250 yards long and seventy yards wide, commands an extensive view NW. over Sherwood Forest. The great road from Southwell to Mansfield goes through Farnsfield between this and the Hexgreave camp.[1]



COMBS FARM CAMP, FARNSFIELD.

About 3 acres of ground are enclosed by the fosse, in which several weapons were found in the beginning of the eighteenth century ; and some ninety years later two small implements of war resembling battle-axes, but of diminutive size, made of copper, and cast in a mould, were found near these works in a bed of ashes 2 ft. beneath the surface; one of these, illustrated by Major Rooke, is a bronze socketed and fluted celt.

NOTTINGHAM : THE CASTLE AREA AND PRECINCTS are situated on a sandy rock which towards the south forms a precipitous promontory.

The origin of this fortress possibly dates from King Edward's visit to the town in 924, when the Old Borough (dealt with in Class B) may have existed ; and he 'commanded a burh to be built on the south side of the river, over against the other, and the bridge over the Trent, between the two burhs.'[2] No evidence remains to show that this was done, or that the promontory fortress supplied the royal demand, though it seems impossible that so commanding a position could have been neglected by former warriors.

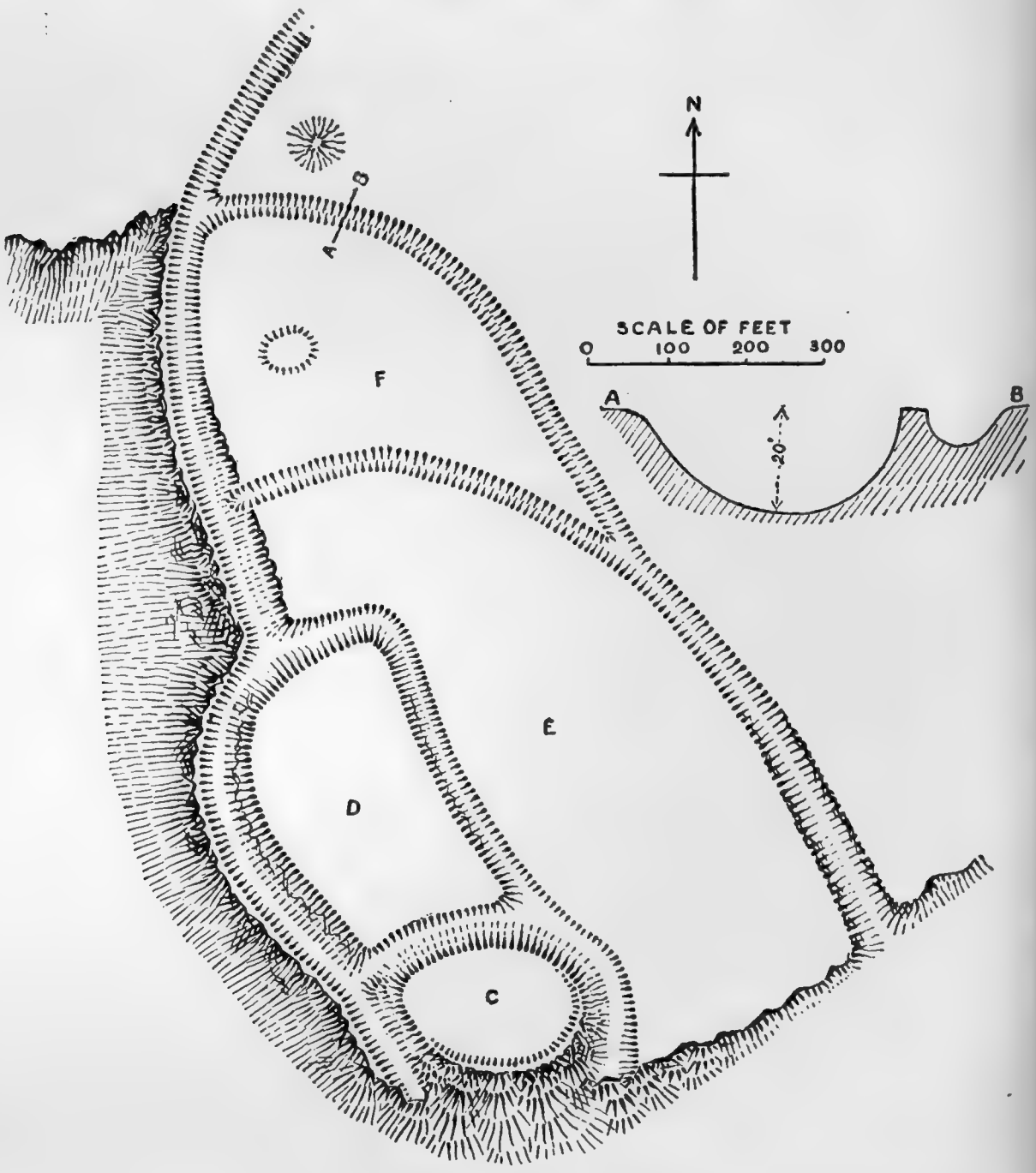
The natural fastness, precipitous on the southern side and largely so on the western, was strengthened artificially by a fosse and steep escarpment over it which ran the whole length of the cliff edge. On the north and east the lines are wholly artificial, but of enormous proportions, being hewn out of the solid rock ; this entrenchment divided the promontory from the main-land, which slopes downward to the site of the old entrenched town on the east.

The plan consists of four courts, sub-divisions of the original prehistoric enclosure, three of which from the time of William I to that of Edward I were utilized for and absorbed by the royal castle ; the fourth remained an open field to become the camping ground of Charles I in 1642, in the midst of which, 'on a flat and round spot,' now obliterated, he erected his standard

[1] *Arch.* ix, 200.

[2] *Anglo-Saxon Chron.* A. 924. The site of the burh on south side may possibly be identified with Micklesborough Hill

of war. It is an open question whether these sub-divisions date before or after the Norman Conquest. Divested of their later masonry and viewed as earthworks alone, which was undoubtedly their state in the first century after the Conquest, they much resemble the mound and bailey type of the Normans, under which heading (Class E) they will be further noted.



Nottingham Castle and Precincts.

Beyond the north line of this original entrenchment was a large tumulus, utilized by Colonel Hutchinson during the Civil War as a platform for a piece of ordnance ; in its later history it was known as 'Derry Mount,' and at one time was adopted as the site of a windmill. It was levelled in 1781, when no fewer than five interments were found in it, one of them being accompanied by a dagger.

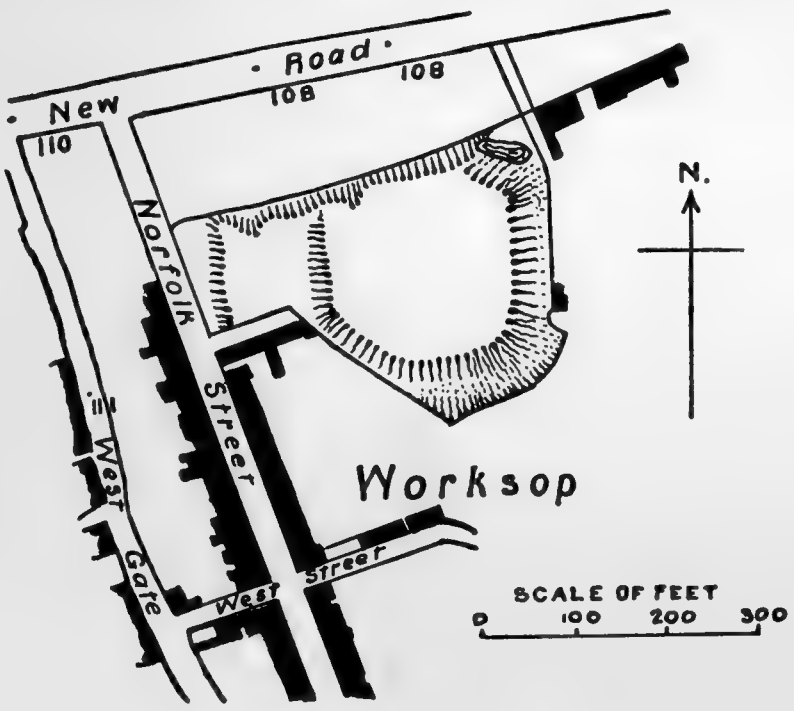
The strength of this defence consisting of a double ditch may be gathered from the record of the late James Shipman,[1] F.G.S., who says that—

> The more northerly of the ditches was much smaller and shallower than the other one, being only 13 feet in width; the dimensions of the larger ditch could not be accurately ascertained as the excavations did not go far enough south . . . : but it could hardly have been less than 50 feet in width, and was about 20 feet in depth. The smaller ditch was semicircular in shape and went down 16 feet below the surface of the sand rock. [In the filling-in of the excavations] a few bones, apparently those of animals, were found; among them was the back part of a human skull, having probably come from some other part when the ground was levelled in 1782 [possibly from the remains found in the 'Derry Mount'] . . . Between the ditches was a narrow ridge of rock six feet in width. The northern side of the great ditch was a vertical cliff of more than seven feet. The bottom of the great ditch appeared to rise with the ground towards the west; . . . the ditches followed a general east-to-west line, and cut across the top of the hill.

A great line of fosse sweeping away to the north connected the castle and the old town, enclosing the intervening valley of the new borough. The west part appears to be the oldest, as it continued further north to the brow of the hill overlooking the Larkdale valley, now the depression of Shakespeare Street, where it played no part in recorded history. The date of this enclosing line is unknown, but at one time it was partially strengthened by a stone wall. In 1898, this northern fosse was cut through by the railway, and found to be hewn out of the solid rock, over 30 ft. in width and 20 ft. in depth.

Worksop.—A prominent feature of this village is the Castle Hill, a headland dominating an ancient road which appears to be a continuation of the route from Stamford to Newark via Kelham and the Gorge Dyke at Wellow. It is a hill of red sandstone, from which the ford derives the name of 'Redford,' now called Radford.

There is, apparently, no evidence that a mediaeval castle was ever built here; and although Leland said 'the old castle on the hill by the town is clene down, and scant known where it was,' he was probably misled by the name 'Castle Hill,' and the earthwork—such as remains—is the work of an earlier age, undisturbed by any structure of stone.



Castle Hill, Worksop.

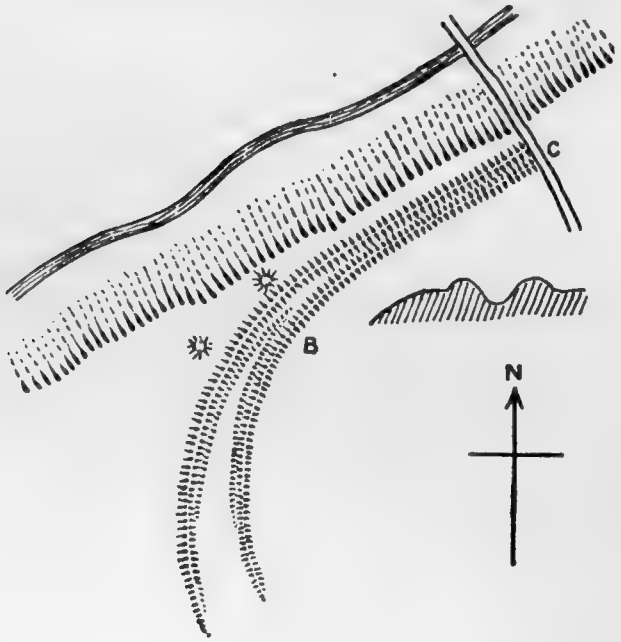
The remains consist of a fosse, which cuts off the promontory, upon which is a flat mound of somewhat circular plan.

[1] *Excavations at the Nott. Gen. Hospital*, 7.

HILL FORTRESSES

[Class B]

Blidworth.—The Blidworth Camp is situated 1½ miles north-west of Blidworth village and 3 miles south-east of Mansfield, above a little rivulet called the Rainworth Water, a tributary of the River Maun.



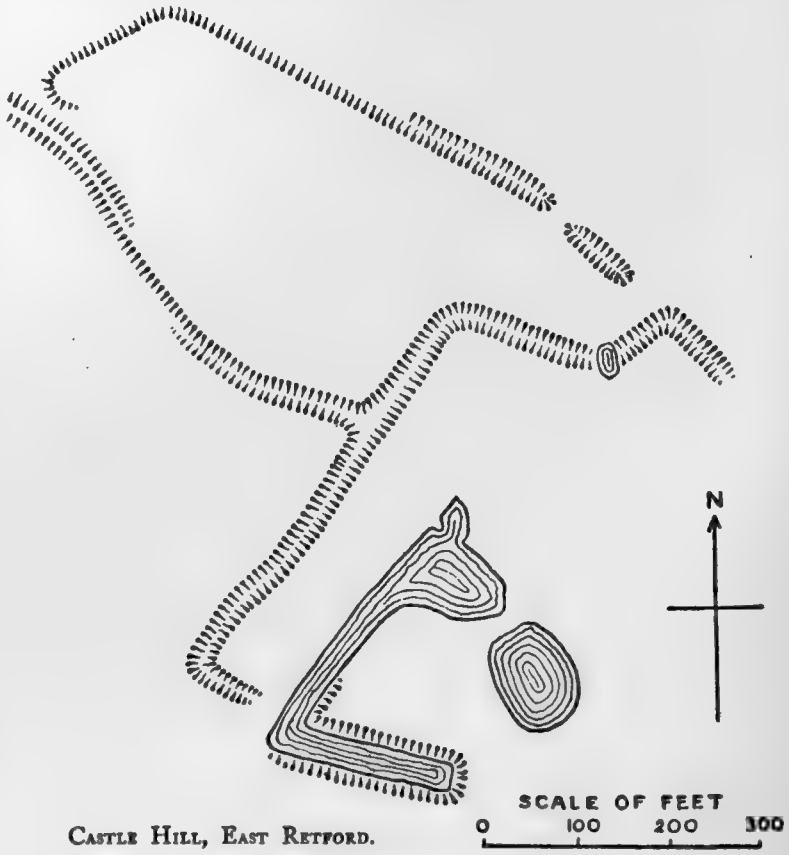
Blidworth Camp.

Major Rooke, writing in 1788, says, 'The remains of this camp is on a hill within 3 miles of Mansfield. On part of the north and north-west sides of the camp the ditch and vallum appear perfect.' From C to B, a length of 127 yds. is a double vallum with an intermediate fosse; but from B towards the south the entrenchments widen and branch into a double vallum, each with its fosse. From B the defences curve to the south for 140 yds., where the ditches are obliterated, but the ramparts appear to have continued up the rising ground. The vallum and fosse on the southern and eastern sides have been destroyed, owing to the hill having been enclosed and cultivated.

On the north side the ground slopes down to a morass some 90 ft. wide, through which runs the Rainworth Water.

Close to the vallum on the north-west are two tumuli 105 ft. apart.

East Retford.—Castle Hill, on the boundary of this parish and that of Grove, is 2 miles east-south-east of Retford and 6 miles south of Gringley on the Hill.

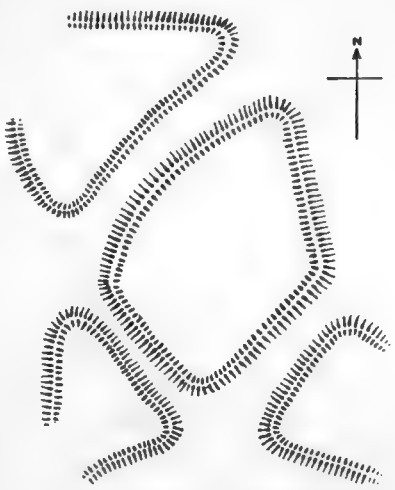


Castle Hill, East Retford.

Extensive earthworks are situated on this high ground, of which the principal part only is seen on this plan. It consists of an irregular fortified area which was apparently connected with another and larger entrenchment. The rampart and fosse have suffered greatly from the levelling process. From the north-west part the works extend westward as rampart and fosse for half a mile ; for the first half of this distance the fosse is on the north side, where the ground falls away. The other or western half is a vallum with evidence of a second or inner one. South-east of these entrenchments are one complete side and portions of two others of the larger camp, with an entrance between the two; but the destruction of the ancient work and the construction of the more modern moat render it impossible to trace the system of the pre-historic defences. Possibly this mutilation was occasioned by the Parliamentarian war, when this neighbourhood was one of the scenes of that lamentable contention.

Concerning these earthworks Laird remarked that : ' Being so near the line of the Roman Road (Lincoln to York via Littleboro'), the situation could not escape that warlike people as fit for an exploratory station, and we may conclude that the moat on Castle Hill was occupied by them for military purposes, though it may originally have been a British work.'

Farnsfield : Hill Close Camp.—To the east of Hexgreve Park, and about three quarters of a mile to the north-west of Kirklington, a curious series of entrenchments crown the summit of a hill.



Hill Close Camp, Farnsfield

William Dickinson furnishes an engraving of the plan, and Major Rooke, in 1788, describes the vallum and fosse as perfect in places, but so destroyed by the plough in other parts that the precise shape cannot be made out.

The extremities of the outworks were destroyed before 1818, but the remains exhibited a central enclosure within a vallum, slightly higher than the surrounding ground. In 1864 it was said that the vallum and fosse could be traced, but that the intermediate lines were destroyed. Around this main camp appeared three other ramparted areas, which, when perfect, were probably four in number, one at each of the irregular sides; but how the broad fosse between these apparently independent works branched out and consolidated them into one great stronghold is almost beyond conjecture.

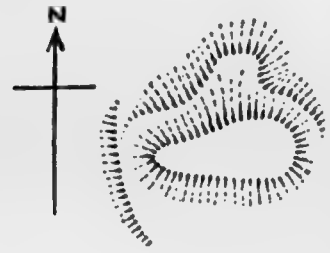
Standing in a high position, Hill Close Camp overlooked the valley of the Greet, along which an ancient road passed from the Trent, via Southwell, to Mansfield and the west.

In 1849 Roman remains were found near this spot.

Gringley on the Hill : Beacon Hill Camp.—As the name implies, this is an elevated site. It is situated in the north-east of the county, abutting in old times on miles of bog-carr or swamp-land, separating the Isle of Axholme, which lies to the north. From the Beacon Hill near the church

very extensive views of the country round are obtained, embracing a circle of some sixty miles, whence the approach of an invader would be seen at a far distance. It is a natural hill, fairly round in form, which rises 35 ft. above the level of the road immediately at its foot; in all it is 275 ft. above the sea-level.

The camp is on the north side of the hill and follows the natural contour; it is elongated in plan, the long axis being east and west, depending largely for its strength on the escarpment of the hill. Some distance from the summit, on the north side, is an outer defence or terrace of more erratic curves following the natural line of the hill, its very irregularity enhancing its strategical importance. The important question of a water-supply was overcome in this instance by the rise of a small tributary to the River Trent, which flows to the east of the camp.

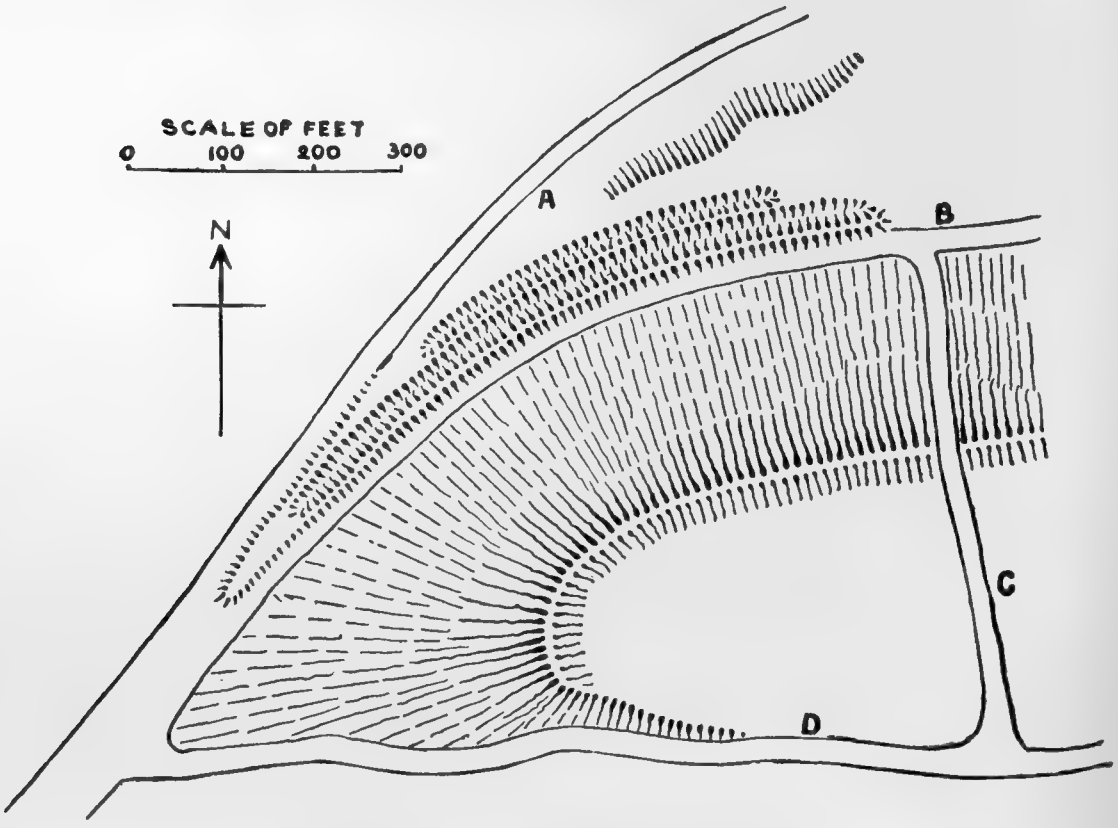


Beacon Hill Camp, Gringley on the Hill.

About 1½ miles to the south-west passes an ancient road from Lincoln, via Littleborough, to Doncaster, which is embraced in the VIth and VIIIth *Iters* of Antoninus.

This site was occupied by Prince Rupert in 1644 when he routed the Parliamentary army and succoured Newark Castle.

Grove.—Part of the earthworks on Castle Hill is in this parish, but the whole is treated of above under the parish of East Retford.



Winny Hill Camp, Mansfield Woodhouse.

Mansfield Woodhouse: Winny Hill Camp.—A small eminence to the north-east of Mansfield Woodhouse and 1¾ miles north-north-west of

Mansfield is called Winny Hill, on and around which are the remains of a camp. On the crown of the hill the camp follows the natural line, but on the east side, C, the vallum appears to have gone up the hill, where a hedge has been planted upon it, and on the south side, at D, it apparently turned down by the side of a sunk road, which, at 300 ft. to the east, terminates at a brook.

At the base of the hill on the north-west side is a double vallum and double fosse extending about 160 yds. The inner vallum rises 4 ft. from the foot of the hill and descends nearly 8 ft. into a fosse 6 ft. wide at the bottom; the second vallum, 12 ft. in thickness, is of the same height as the first, and the outer fosse, slightly wider than the other, is 4 ft. deep.

Outside these entrenchments is the road A, the 'Leeming Lane'—the 'Leeming Street' of Mansfield—which appears to have been a branch of an ancient street that divided the watershed of the rivers Maun and Leen by the ridge of Robin Hood Hills and to have passed Mansfield on its way to the ford of Retford for Littleborough and Lincoln. B is a road from Mansfield to Clipston, Edwinstowe, and Ollerton, which now passes between the foot of the hill and the entrenchments.

From the top of the hill a view is commanded of all the neighbouring camps and roads, especially the great camp in Pleasley Park, county Derby.

NOTTINGHAM, ST. MARY'S HILL.—The site of the old English borough or town of Nottingham is, owing to being built over for many centuries, not indicated on the Ordnance maps as a feature that can be scheduled under class B. Nevertheless it is known to have been an important area defended by fosse and vallum: the south line is a precipitous rock rising from the meadow to the height of nearly 100 ft. Its western line is still the boundary of two parishes, the old and new boroughs of Domesday. Those of the north and east are preserved by existing inner and outer lines of streets that bore, as records testify, descriptive names implying walls (*earthen*) or defences.

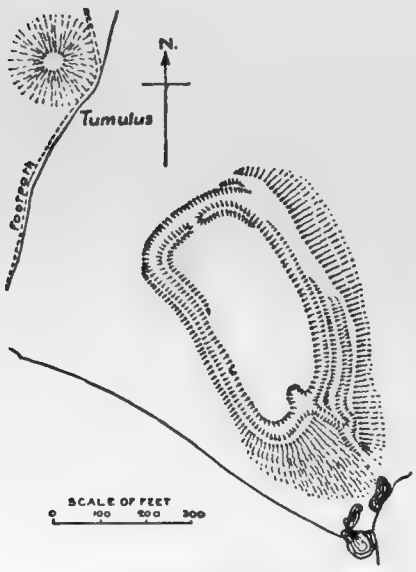
The town was intersected by two ancient roads. Through its long axis, east and west, ran the old trackway or ridgeway bordering the Trent valley, and through its short axis—almost north and south—is the Stone Street, Broad Street, or York Street of Nottingham, passing in its way north to Bawtry, Saltersford, and the Coniswath (King's Ford). South of the town this road takes a short rectangular bend, which is a sunken way in the rock, by which to ascend from the meadow to the high level of the camp; the straight line of the road, from the precipitous character of the rock, being impracticable.

A vallum and fosse surrounded the north, west, and east sides, the cliff forming the southern defence, but all have for long been built over; rebuilding operations however occasionally expose the ancient fosse. At the south-west corner, when cut through by the Great Central Railway, it was found to be 16 ft. wide and 7 ft. deep, its section being nearly semi-circular.

When the central part of the northern fosse was exposed a few years ago, two small objects of solid earthenware were found, modelled on the lines of

Roman amphorae, which were identified by the late Sir Wollaston Franks, of the British Museum, as hand-warmers.[1]

Oxton.—A well-planned camp remains in good preservation nearly one mile north of Oxton village and south-east of Oxton Grange, locally known as 'Oldox,' which is probably derived from *Old Works*; this camp—governed to a certain extent by the natural line of the hill—has a plan something between an oval and a parallelogram. It is surrounded by a double vallum and single fosse, except on the east, where there is a triple vallum and a double fosse, and here its strength is greatly augmented by the steep escarpment of the hill on the south and east.



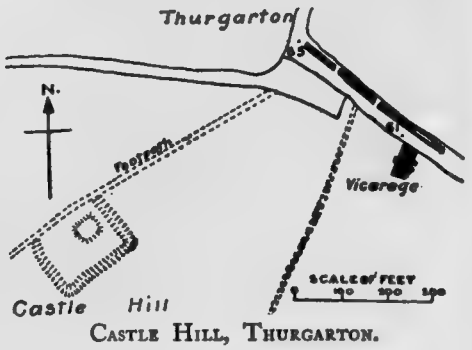
Camp at Oxton.

The entrance, at the south-east, is by a sunk road which rises 200 ft. up the hill side. At half that distance a path curves from it on the right and continues in the outer fosse; but the main path continues to the inner fosse, where it is confronted by an indentation in the vallum, at which spot the invaders would be thrown into confusion by an all-round assault from the defenders. On the eastern side, beneath the second rampart and the outer ditch, is a berm or fairly wide platform, which forms a coign of vantage over the sunk path entrance and provides a thoroughfare to the northern part of the camp. At the north-east the works are mutilated, but the middle agger and outer fosse, with the intermediate berm, apparently merge into one broad ditch, from which an entrance through the inner rampart gives access to the central area.

The engineering skill displayed in the construction of this earthwork is of a high order, and well repays a careful study.

Three tumuli are in a westward line from this camp, the farthest not being over a mile distant, and half a mile to the west is the rectangular camp at Lovely Grange.

Thurgarton.—In this parish, 3¼ miles south-west from Southwell, is Castle Hill, a slight eminence in the valley of the Trent. It is quite close to the village, from which a footpath leads to a small, almost square, entrenchment 200 ft. by 160 ft. The footpath covers the site of the north-west side. Within the enclosure is a small mound.

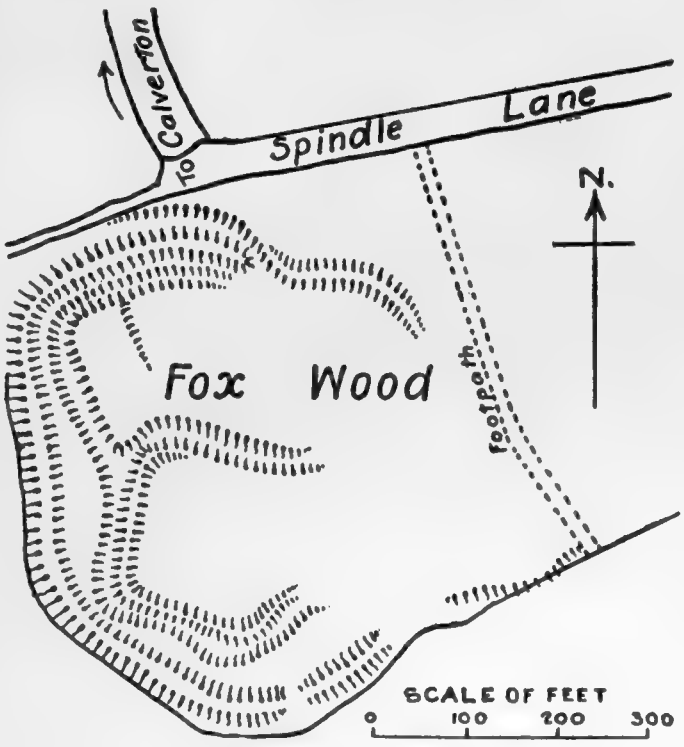


Castle Hill, Thurgarton.

Woodborough.—Five miles north-east from Nottingham and half a mile south of Calverton is Fox Wood, in which is one of the most interesting earthworks of the county. It is a matter of regret that destructive forces have shorn it of its original size and plan. The swell of the ground gives a prominence to the site.

[1] *Proc. Soc. Antiq.* 28 Jan. 1892.

At present the remains are somewhat oval in form. The strongest position, approaching a square, has three sides of a vallum and fosse ; but on the eastern side they begin to curve outwards into another court, which possibly provided a well-defended entrance into this innermost area. On the north is another court with the fosse remaining on the north and west sides ; at the north-east the defence changes into a vallum which apparently, by the progress of its line, joined the northern entrenchments of the inner court ; but the eastern side is lost.



Woodborough Camp

From the middle of the northern side a strong vallum, embracing all the inner works, passes around the western and southern sides, at the extremity of which latter it is destroyed ; this entrenchment is probably older than the interior works. At the middle-north point is an entrance, difficult of access ; the agger is here incurved, while another rampart, taking the same curve outwardly, forms a sunken approach, which for 180 ft.—even in its mutilated state—could be covered by a cross-fire from both sides.

On the western side the intervening ground between the inner fosse and outer vallum widens into a broad platform.

The position of this stronghold is the centre of many surrounding camps, and communication could easily be made with those at Lambley on the south ; Lowdham and Thurgarton on the east ; Epperstone and Oxton on the north ; and the two in the parish of Arnold on the west.

RECTANGULAR CAMPS, ETC.

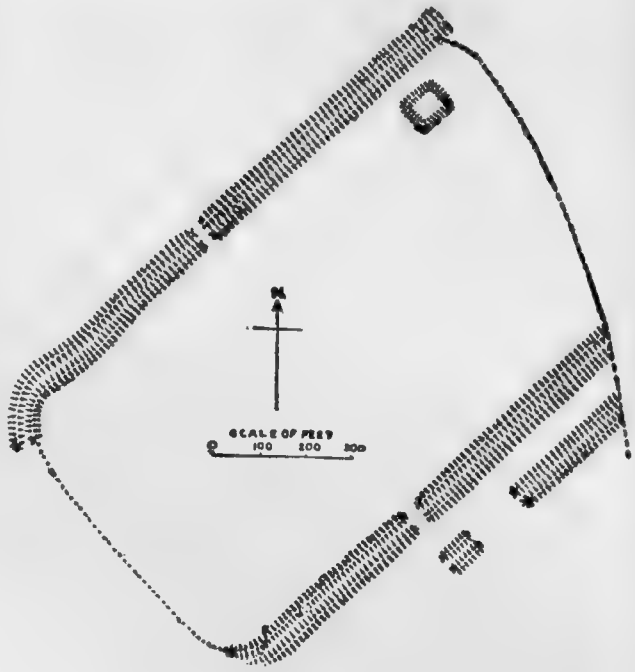
[Class C]

Arnold.—Nearly 2 miles north of Arnold, and 5 miles north of Nottingham, is the site of a camp on Hollinwood Hill *alias* Cockpit Hill, on a point 521 ft. above sea-level.

This camp dominates the ancient road from Nottingham to Bawtry and the north, which passes this elevated site three-quarters of a mile to the west. It is a point where the roads, or ridgeways, and three parishes meet, viz., those of Arnold, Calverton, and Woodborough.

Major Rooke thus speaks of the camp: 'These works appear to have continued eastward beyond the hedge into an enclosed field, where there is hardly any trace of the ditch; an old native remembered it extending a long way in that direction. It has had a double ditch and vallum; but the plough has destroyed a great part of it.'[1]

The portion then remaining showed a rectangular plan 1,251 ft. long and 720 ft.

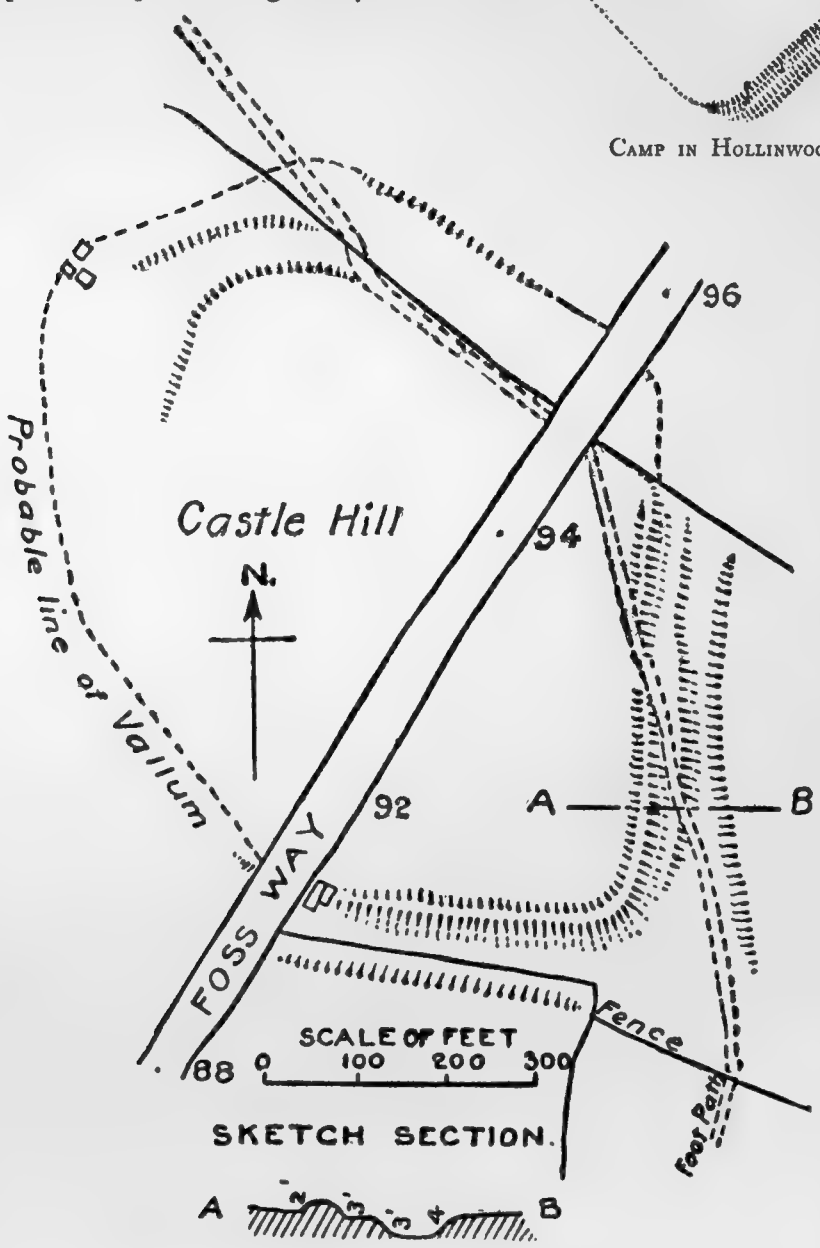


Camp in Hollinwood Hill, Arnold.

wide, its long axis lying due north-east by south-west. Beyond the surrounding vallum and fosse, on the south-east side, was a platform and the remains of an outer vallum and fosse. Two entrances were visible, almost opposite each other, one in each of the long sides. Near the north-western works, and presumably about the centre of the original length, was an enclosure 51 ft. square.

Several Roman coins have been found here.

Car Colston.—On Castle Hill, 1½ miles north of Bingham, is a large



Castle Hill, Car Colston

[1] *Arch.* x, 378.

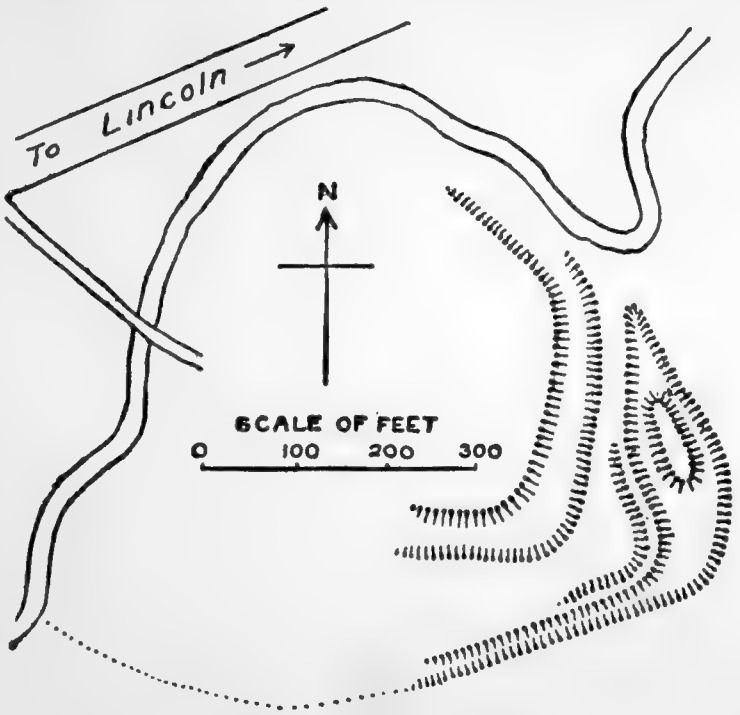
camp through which runs the great Fosse Way towards Newark; this being the boundary between two parishes, part of the camp is in Car Colston and part in East Bridgford.

It is an irregular camp with a single vallum, depending to a slight extent on the natural slope, which is steepest on the south and south-east, decreasing as it proceeds northwards. On the north-west side of the Fosse Way the northern defences are said to have been in two tiers, this being the most accessible side for an enemy approaching from the direction of Newark. The inner defence curved round the north and turned into the central area, forming a defended entrance to the interior. The whole of the western defence has been obliterated by the plough. Just beyond the fort to the west is a spring of water.

Many Roman coins and fragments of pottery have been found within the circumvallation, and it is generally supposed to have been the site of the Roman station of Margidunum.

DARLTON: CAMP AT KINGSHAUGH.—Two and a half miles north-east of Tuxford is a system of earthworks embracing an area of about 7 acres. The northern boundary is a small stream flowing eastward towards the River Trent, about three miles distant.

The inner work is a broad ditch which originally appears to have enclosed an irregular circle, the extant half being on the east. On the same side is an outer vallum and ditch, the latter broadening and again narrowing towards the entrance, the widest part containing a mound for the additional defence of the narrow passage by which access was gained to the interior.



KINGSHAUGH CAMP, DARLTON.

In mediaeval times these defences were adapted to the old Kingshaugh House, which formed part of the manor of Dunham.

EAST BRIDGFORD.—Part of the camp mentioned under Car Colston is in this parish.

EPPERSTONE.—In Epperstone Park, 6 miles north-east from Nottingham, on 'Solly Hill,' Mr. Dickinson mentions the presence of a Roman camp 'very little obliterated.'[1] It is also noticed by Dr. Gale, who considered it to be the Causennae of the Itinerary. A number of Roman coins were found here in 1776.

[1] *Exploratory Observations*, p. 17.

HARWORTH.—In the extreme north-west of the county, at Martin, about a mile north-north-west of Bawtry, where the ancient road provides the only thoroughfare out of Nottinghamshire in the direction of Doncaster, is a square camp with double vallum and fosse, which is thus described by Mr. W. Peck, writing in 1815 : 'This camp is now covered with trees and underwood, which have contributed to preserve it to the present time ; the ditches are nearly grown up, though they evidently have been deep. This place most probably was a station to defend the Roman road that passed near to it : several smaller stations are adjoining ; but of late years the ditches have been filled up. A little to the north-east are traces of a Roman pottery, many broken vessels of various forms are now found, several pieces I have seen are made of blue clay and slightly baked. At the time of the enclosure of the adjoining parish of Austerfield several curious remains of arms were found near the site of the great camp, such as parts of swords and heads of battle-axes.'[1]

Francis White, writing in 1864, says : 'Here is the site of a Roman station where, in 1828, three silver coins of Antonius, Adrianus, and Faustina were found, together with part of a Roman vase, and numerous pieces of Roman pottery. The form of the fort or station may still be distinctly traced, and even when the field is covered with full-grown wheat an octagon figure is slightly perceptible, from the stems being shorter on the site of the building than in other places.'[2] We give this quotation as a contribution to the state of the camp at that date ; but it is of questionable assistance : the writer's conception of an earthwork was his own, and the 'octagon figure' can only be explained by the two four-sided ramparts. The outer vallum was 215 ft. on either side, with rounded corners, and the inner defence, leaving a court 50 ft. wide between the two entrenchments, had its two opposite angles at the north-west and south-east considerably rounded.

HAWTON.—In this parish immediately south-west of Newark is 'Sconce Hill,' the largest earthwork of the Civil War in the county. It was the work of the royalist engineers and remains in a well-preserved condition.

This mound, called the 'Queen's Sconce,' is rectangular in form with projecting bastions at the angles, capped with an earthen breastwork, the centre being depressed. It is surrounded by a deep moat and artificially escarped ground stretches away a considerable distance.

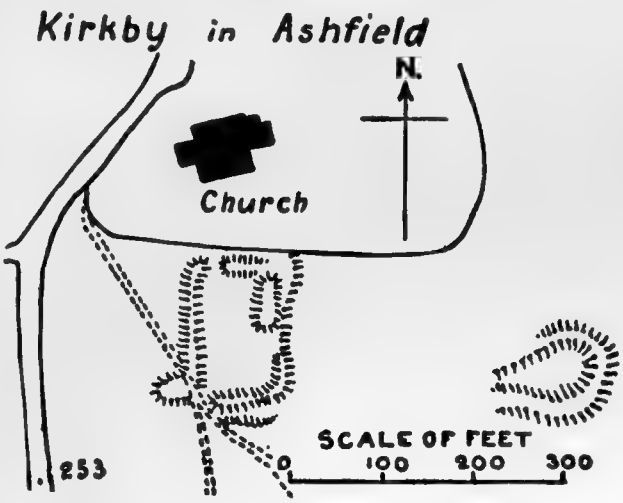
It formed the north-west end of the defensive earthworks that constituted a cincture round the town of Newark, the north-east termination having a similar work on a smaller scale, of which some remains may be seen. They each occupied the south-east or right bank of the river. A view of the entire works is furnished in Dickinson's *History of Newark*. A plan is given in the *Guide to Newark* by T. M. Blagg, F.S.A., who also refers to a somewhat similar earthwork on the east bank of the river which was raised by Cromwell's army.

KIRKBY IN ASHFIELD : CASTLE HILL CAMP.—This village lies 5¼ miles south-west from Mansfield ; and although the name would appear to demand its classification under B, the natural features of the site do not justify so doing.

[1] *Topog. Account of the Isle of Axholme*, p. 6.
[2] *Hist. etc. of the County of Notts.* p. 680.

The camp immediately south of the church is a small rectangular area surrounded by a vallum, with the remains of a fosse on the southern side. At the south-west angle the entrance is guarded by a projecting platform at the extremity of the western agger, which counterbalances the rampart and ditch on the other side of the entry. Another entrance is at the north-west angle, between two ramparts; and within the area is an agger 60 ft. long lying parallel to the east boundary.

Due east of this camp, 220 ft. distant, are the remains of a work, pear-shaped in plan, consisting of a vallum which possibly joined the south-east angle of the camp.

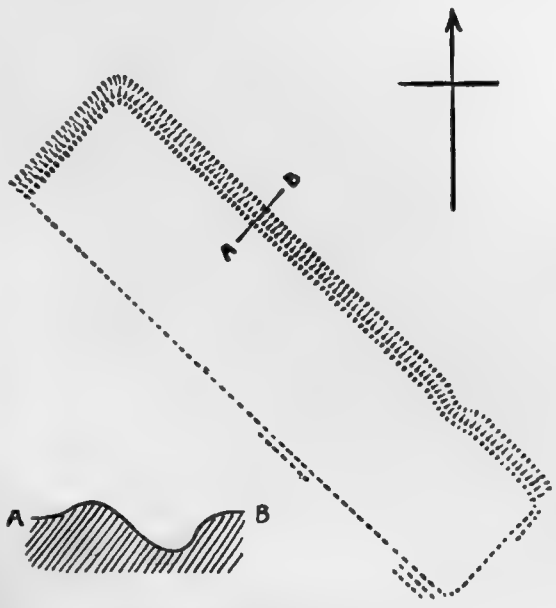


Castle Hill Camp, Kirkby in Ashfield.

Littleborough. — Traces of a fosse are perceptible, indicating probably part of the original defences of this Roman station of Segelocum.

Newark.—In the valley of the Trent, on the Fosse Way from Leicester to Lincoln, was a strong military post to control both land and water communication. That it was a very ancient stronghold is seen in the Roman remains discovered.

Oxton: Camp at Lonely Grange.—About half a mile east of the Oxton camp called Oldox is a field named 'Lonely Grange,' in which, situated on the side of a hill within 200 yds. of the top, was an elongated rectangular camp.



Camp at Lonely Grange, Oxton.

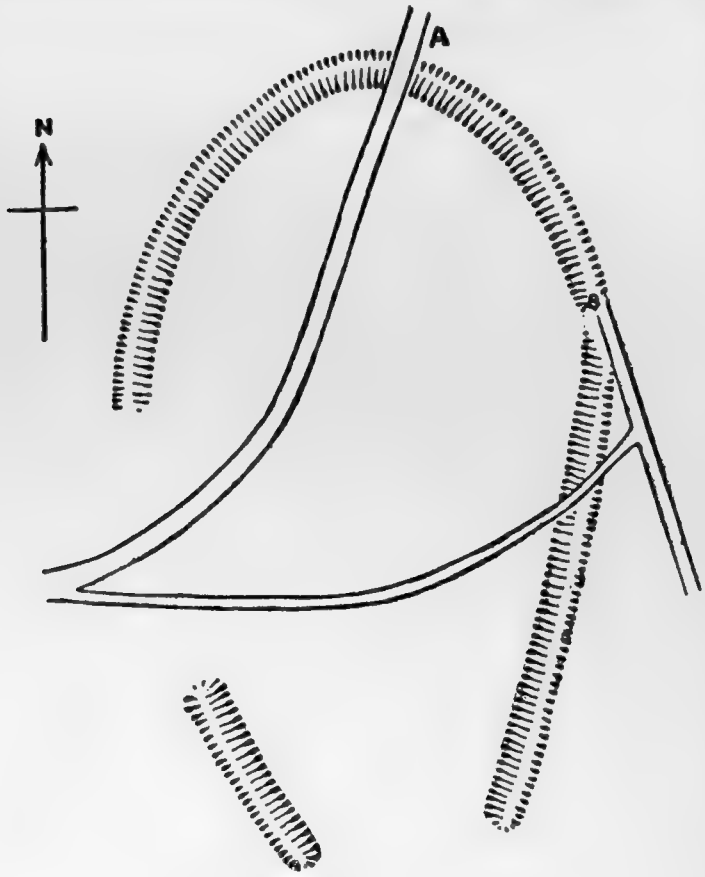
In 1790 Major Rooke[1] described the rampart and fosse on the north-east and north-west sides as plainly distinguished; but with very slight traces on the other two sides. The length of the long axis was 942 ft., the short one 201 ft. Its high position provided an extensive view, whence signals could be seen from other camps.

The site of this camp may now be recognized as 'Grangefield Farm,' 1½ miles north-east from Oxton and 3½ miles west of Southwell.

Scaftworth.—Until recently an earthwork similar to that at Martin, in the parish of Harworth, was situated about half a mile to the east of Bawtry; it is figured in some of the old county maps.[2]

[1] *Arch.* x, 349. [2] County Map in Pigot's Directory, 1841. W. Peck, *A Topographical History of Bawtry.*

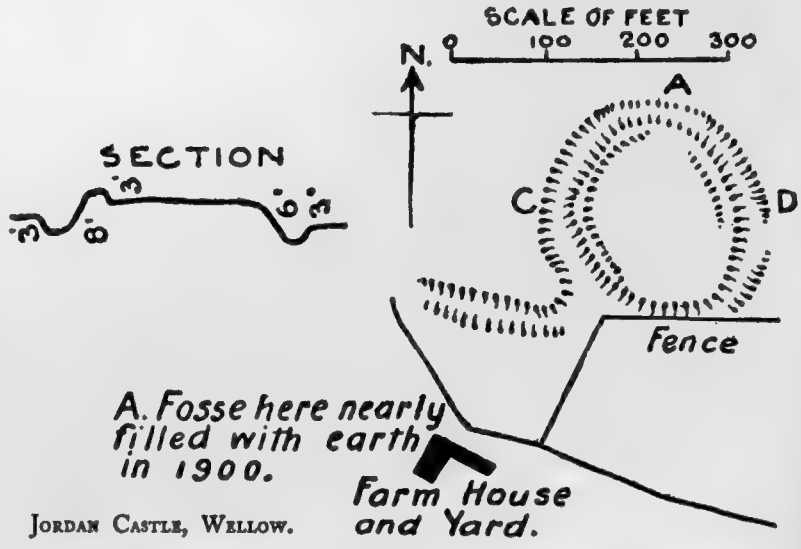
During the enclosure of the common several specimens of Roman antiquities were found. This discovery seems to confirm the opinion that the vestiges of some fortifications near the village are the remains of a Roman fort or station, through which passed the Roman road between Doncaster and Littleborough.[1]



Camp on Burgage Hill, Southwell.

Southwell: Camp on Burgage Hill.—On a hill to the north-east of the River Greet and north of the town of Southwell was an oval camp, the plan of which is figured in Dickinson's *History of Southwell*, published in 1801. The site was then largely built upon and in part enclosed. It is a matter for regret that, as in the parallel case of the Hexgreve Camp, he gave no measurements.

The site was intersected by two roads, A, the route to Hockerton on the north and a minor branch connecting it with another road in the bottom of the fosse. At B the fosse has been utilized as a public road, which mutilated the line of entrenchments at this point. The narrow or south end of the oval was also destroyed by the making of a sewer, obliterating all indications of the entrance, which was probably at this spot.



Jordan Castle, Wellow.

Wellow: Jordan Castle.—One mile and a half south-east by east of Ollerton and half a mile north-east of the village of Wellow, the ground rises to a comparative height above the surrounding country. On this swelling emi-

[1] F. White, *Hist. etc. of Nottinghamshire*, p. 397.

nence is a circular earthwork about 250 ft. in diameter, a broad fosse which opens on the south-west side to the surrounding land where vestiges of further works are seen. These may have been a continuation of the camp or a defended approach to the small fortification, for there is no doubt the entrance was at this point.

CASTLE MOUNTS

[Class D]

Bothamsall.—Fully 4 miles north-west of Tuxford on the north bank of the River Meden is a conical mound called 'Castle Hill,' but the fosse is obliterated and the general contour of it has not been so well preserved as the mounts at Egmanton and Laxton.

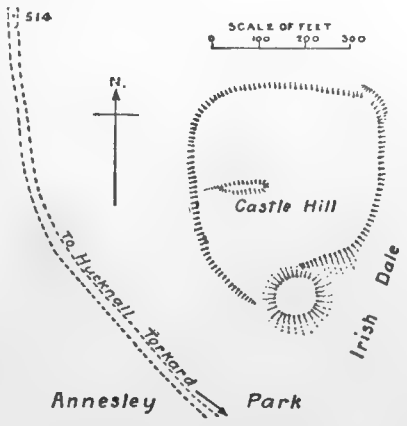
Lambley.—Five miles north-east from Nottingham and 2½ miles from Lowdham on the Cocker Beck is a simple mound known as the 'Round Hill.'

Lowdham.—Six miles north-east of Nottingham above Cocker Beck is a well-defined circular mount and fosse, situated on the west side of the existing old manor house and a short distance from the church. It is only small in size, and the encircling fosse is nearly levelled up ; but its situation in the meadow implies that it was formerly greatly strengthened by surrounding waters.

CASTLE MOUNTS WITH ATTACHED COURTS

[Class E]

Annesley.—In Annesley Park, 2½ miles from Hucknall Torkard, on rising ground towards the western boundary of the county, is Castle Hill. It is a simple form of the mount and bailey type, largely depending on the natural formation of the ground for its defence. The court is on the north of the mound, but irregularly approaching its base at the north-west, guided thus by the natural escarpment of the hill. A fragment of the fosse remains at the north-east angle of the court, and a transverse agger 120 ft. in length extends across a third of the middle of the court on the western side.

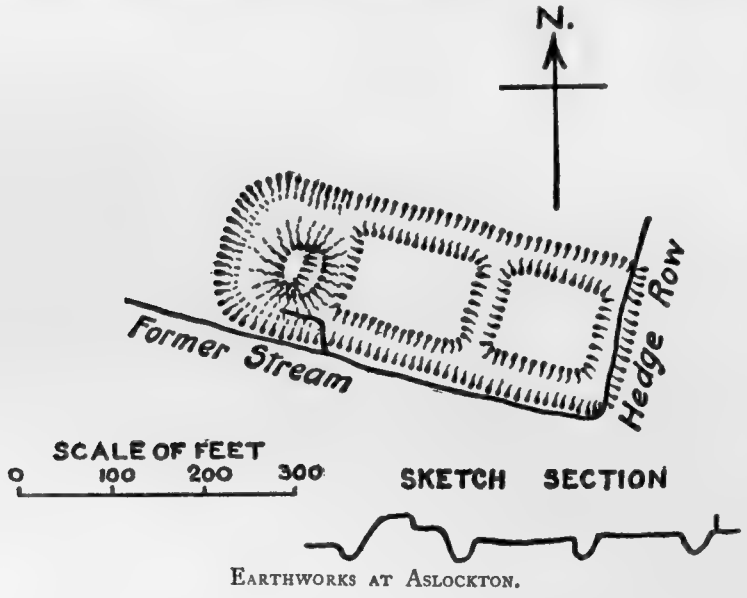


Castle Hill, Annesley.

Aslockton or Aslacton.—The works here considered are in the village of Aslockton, which lies 10 miles east of Nottingham and 2 miles beyond Bingham on the left bank of the River Smite.

The mount, about 16 ft. high, originally circular, but lately excavated for ballast on its south-east, is marked as a tumulus on the early ordnance maps, but on the later as 'Cranmer's Mound.' The latter is accounted for by this town being the ancestral home and birthplace of Thomas Cranmer,

archbishop of Canterbury, but the earthworks date from an earlier period and are probably the remains of a late Norman stronghold.

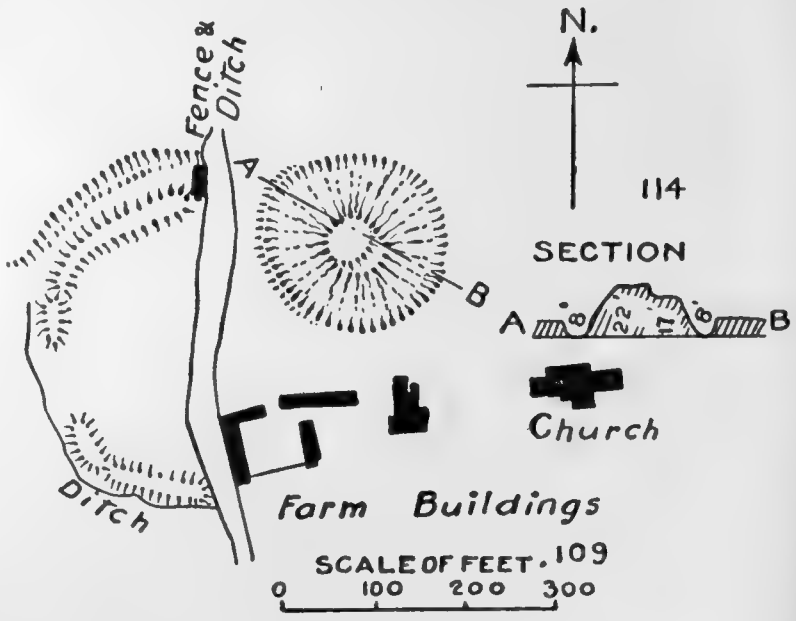


Earthworks at Aslockton.

Two rectangular courts on the south-east are slightly raised and appear to be surrounded by fosses, in a large measure filled up. The moat proper to the mount is still well supplied with water on the south and west.

Egmanton.—Near the Great North Road 1½ miles south of Tuxford stood one of the best examples of the mount and bailey type of defences in the county, still striking attention by the altitude of the mount.

This artificial mount, called 'Gaddick Hill,' is 460 ft. in circumference at the base and 198 ft. at the top, with an escarpment of 50 ft. slope at its highest; but it has been mutilated by the local games upon it on every recurring Shrove Tuesday. The terrace on the south-east of the summit may be the result of modern vandalism, but is more likely an original feature, providing a landing place for the draw-ladder by which the keep was approached.

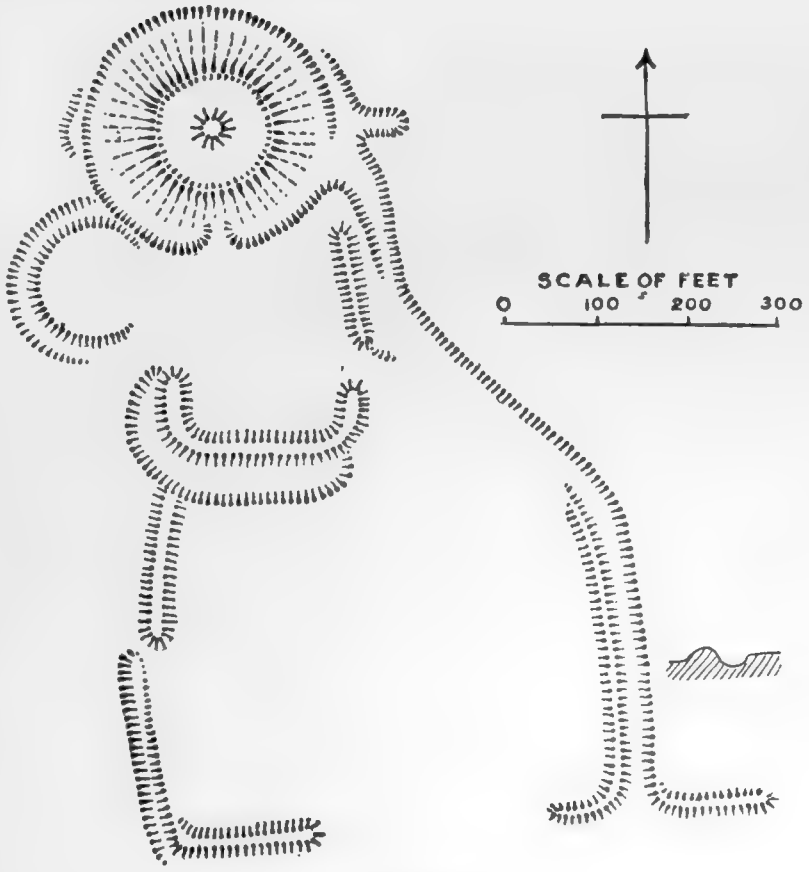


Gaddick Hill, Egmanton.

In the construction of the farm house and yard a large portion of the vallum and fosse of the bailey has been destroyed. This was provided with an entrance in the middle of the arc, and from the extant fragments it appears to have been of some strength.

Laxton, formerly Lexington.—Half a mile north of Laxton and 2½ miles south-west of Tuxford is the largest and best preserved work of this class in the county; it is situated fully a mile south-west of the last-mentioned fortification in Egmanton, and stands on higher ground than its neighbour.

The great mount, with its fosse nearly perfect, has a stage or terrace on its upper part; the cap surmounting it appears like a tumulus on the mound proper. At the base it is 816 ft. in circumference, and 426 ft. at the top of an escarpment of 71 ft.; this is surmounted by a ditch and ring of earth and the small mount, which latter is 147 ft. in circumference at the base and 8 ft. perpendicular height. The fosse around the great mount branches off on the east into a sunk road passing into the bailey, and on the same side a projecting platform protects this junction; on the west side also is a fragment of a similar defence.



Laxton Castle.

On the south access to the mount was gained from the inner court, which occupies this side, and is rectangular with an exceedingly strong vallum and fosse on the south, the rampart being strengthened by rough stone walling. At either end of this defence was an entrance; that on the east into an outer court, that on the west to the exterior of the fortress; the latter, needing greater protection, has the western fosse around a circular platform, by which the approach is well covered. The works on the east of the court have been mutilated, but appear to have been arranged to command the entrance to the sunk road into the fosse and the entrances to the bailey.

The outer and larger court encloses a considerable area. The vallum and fosse are fairly perfect on the eastern side; on the west the vallum has been levelled and the fosse partly choked with earth; evidence of an oblique entrance is at the middle of this side defended by overlapping entrenchments. On the south portions of the rampart remain, but the works were originally far more extensive on this side; a paved causeway leads to an ancient well, and yet further south a small circular mount and ditch may be traced. On the high land a few yards east of these works is a small circular mount; it is well defined and girt round with a shallow ditch.

On the north of these ancient defences the ground falls rapidly, the mount standing on the brow of the hill.

NOTTINGHAM.—The castle of Nottingham has been included in Class A on account of its natural position and the deep fosse which cuts off a rocky promontory, otherwise it would have been recorded in this section, as in mediaeval days its main features were those of a mount and bailey stronghold.

HOMESTEAD MOATS

[CLASS F]

These earthworks occur in considerable numbers throughout the length and breadth of the county. In nearly every case they appear to be rectangular in form, and composed of raised areas with a fosse or ditch strengthened by water. They appear to mark the original sites of the lords' residences in their agricultural centres.

In some instances, as at Hodsock, etc., they are still occupied, the moats being spanned by bridges and defended by gate-houses; in others, as at Wiverton and Colwick, they were abandoned centuries ago, and the manor houses or halls rebuilt on the open land adjoining.

In other instances, as at Clifton near Nottingham, and Holme Pierrepont, the line of the earthworks has been destroyed, the manor houses or halls and the adjacent churches remaining as their record; or, as at Whatton, Norwell, and Weston, they remain as landmarks in the grass fields adjoining the churches. They constitute a subject upon which careful study would meet with ample reward.

At Stanton on the Wolds, situate in an ancient territory called Seggeswold, from which Sixhills, of old Seggeshill, in the neighbouring county of Leicester, drew its name, the area enclosed is about four acres. An enclosure at Gamston, on the right bank of the River Idle, is equally large. An enclosure suggestive of ancient origin occurs at Wilford, near Nottingham, in which the village itself is situate, the centre of its river bank being the site of the ancient ford, opposite to which on the Nottingham side a pre-historic dwelling site or settlement was found when sinking the shaft of the Clifton Colliery.

A fine enclosure occurs on the right bank of the River Ryton at Scrooby, in which the old archbishops of York had one of their Nottingham palaces.[1] Leland describes it as 'The great manor place standing within a moat, longing to the archbishops of York.' It had a bridge and a gate-house, and was walled round in the middle ages. The fosse is silted up, and the rough area is a pasture field containing a farmstead.

At Rolleston, near Southwell, are extensive moated areas, occupied down to the seventeenth century by the Neville family, now a pasture field near the church.

At Sibthorpe, near the Fosse Way, there is a considerable area enclosed by a moat, now forming a swampy depression. At Coddington, two miles east of Newark, in a slight depression on the Beacon Hill, is a well-preserved moated site; two of its four sides are somewhat elongated.

At Granby, or Sutton, hard by, in the vale of Belvoir, a great manor *temp.* Edward the Confessor, a moated site remains, the interior of which is

[1] *Bygone Notts*, p. 248.

uneven in its surface, two of the four corners being raised into small mounds, one of which until lately was occupied by a windmill; this was the caput or chief residence of the Norman d'Eyncourts.

At Norwell Woodhouse and at Belle Vue Park near Kirklington, and about a mile west of Egmanton church and mound, are moated sites occupied by farmsteads.

The Fosse Way in passing through the county forms with slight exception a clear manorial line; the village sites, a number of them with their moated manors, are set back as agricultural centres from the road, on an average of a mile or more, clearly with the view of cultivation being conducted round them.

AVERHAM.—Two miles west of Newark, on the west of St. Michael's church.

BECKINGHAM.—On the eastern boundary of the county and the west of the River Trent, west of Gainsborough, is a moat surrounding an area called 'Dog Island.'

BILSTHORPE.—Five miles north-west from Southwell.

BURTON JOYCE.—Five miles north-east by east from Nottingham, on the north bank of the Trent, is the *Bertune* of the Domesday Survey. In the time of Henry II it belonged to the family of Joez, from whom it derived the adjunct to its name. A moat remains at Burton Lodge.

CAR COLSTON.—Nine miles south-west by south from Newark the remains of a moat lie to the south-east of Car Colston Manor House.

CARLTON ON TRENT.—Six and three-quarter miles north from Newark. A moat lies ¾ of a mile south-west of the village.

CAUNTON.—Five and a half miles north-west by north from Newark. A moat is on Earlshaw Hall Farm, south-west of the village.

CLIFTON.—Four and a half miles south-west from Nottingham; now destroyed.

CODDINGTON.—Two and a quarter miles east by north from Newark, and north of Coddington Windmill, is a moat with two of its sides elongated.

COLWICK.—Two and a half miles east of Nottingham.

CUCKNEY or NORTON-CUCKNEY.—Five and a half miles south-south-west from Worksop.

DARLTON.—Three and a quarter miles north-east by east from Tuxford is a moat on the site of Kingshaugh Hall.

GAMSTON.—South of East Retford, on the River Idle; area enclosed is about 4 acres.

GONALSTON.—Four and three-quarter miles south-south-west from Southwell.

GOTHAM.—Seven and a half miles south-south-west from Nottingham. 'Rushcliffe Moat' Water House, to the north of Crow Wood Hill, near the boundary of the parishes of Gotham and West Leake.

GRANBY.—Four miles south-east from Bingham is the moated site of a manor of the time of Edward the Confessor. At two of the angles are mounds.

GREASLEY.—Seven miles north-west from Nottingham. Beauvale Priory to the west of Callis Hagg.

HODSOCK.—Two miles south-west from Blyth. The site is still occupied.

HOLME PIERREPONT.—South-east of Nottingham. The moat is now destroyed.

KINOULTON.—Nine miles south-east from Nottingham. A moat is near the boundary of this parish and that of Hickling, to the south-west of Kemps Spinney. The Fosse Way forms the western boundary of the parish.

KIRKLINGTON.—Three and a half miles north-west from Southwell. The site is occupied by a farmstead.

LINDHURST.—Three miles south-east from Mansfield is a moat to the west of Friar Tuck's Well, where Rainworth Water divides Mansfield and Lindhurst parishes.

LOWDHAM.—Seven and three-quarter miles north-east from Nottingham is an old manor house—now a farm—where the defences of an earlier fortified house may be traced.

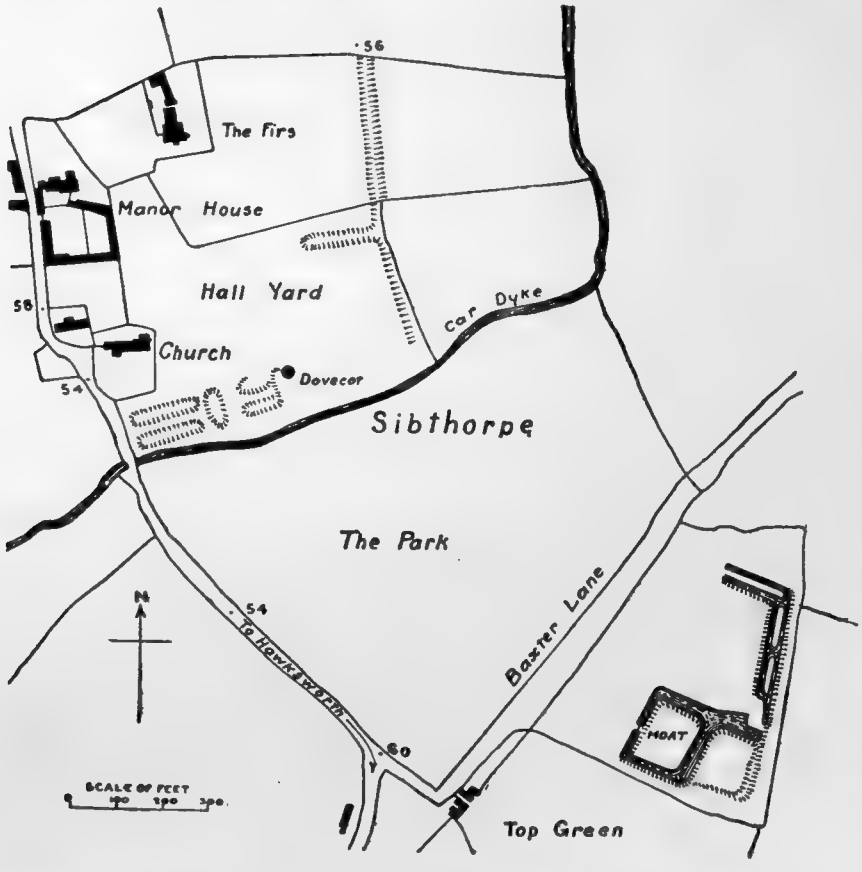
NORWELL.—Six miles north by west from Newark. One moat is to the south-east of the village, near the Hall and St. Lawrence's church; and another close to the Black Horse Inn.

NORWELL WOODHOUSE.—Seven miles north-north-west from Newark. A moat is to the south of the township.

OWTHORPE.—Eight and a half miles south-east by east from Nottingham, at Nanney's Plantation. The Fosse Way bounds the parish on the west.

ROLLESTON.—Two and a half miles south-east from Southwell are a moat and fragments of earthworks.

SCROOBY.—One and three quarter miles south of Bawtry. On the right bank of the Ryton is the site of an archiepiscopal manor of the prelates of York.



SIBTHORPE.

SIBTHORPE.—Nearly 7 miles south-south-west from Newark. A moat 620 ft. long runs in a line north to south on the east side of the manor house, with a branch at right angles 160 ft. in length. A number of small dykes are in the neighbourhood of the Dovecote south-east of the church. To the south-east of the park two quadrangular areas about 120 ft. square are surrounded by a moat, which extends to the north, and appears to have originally surrounded a third and larger area.

STANTON ON THE WOLDS.—Seven and a half miles south-east from Nottingham. The moat encloses 4 acres.

STRELLEY.—Four and a half miles west-north-west from Nottingham. In the park of Strelley Hall is an extensive area surrounded by a moat.

WEST LEAKE.—Three miles east from Kegworth, to the south and east of Pithouse Lane.

WESTON.—Three miles south-east from Tuxford. A moat is in the Hall Yard.

WHATTON.—Two and three-quarter miles east from Bingham. A moat is to the west of the village, just above Whatton Bridge.

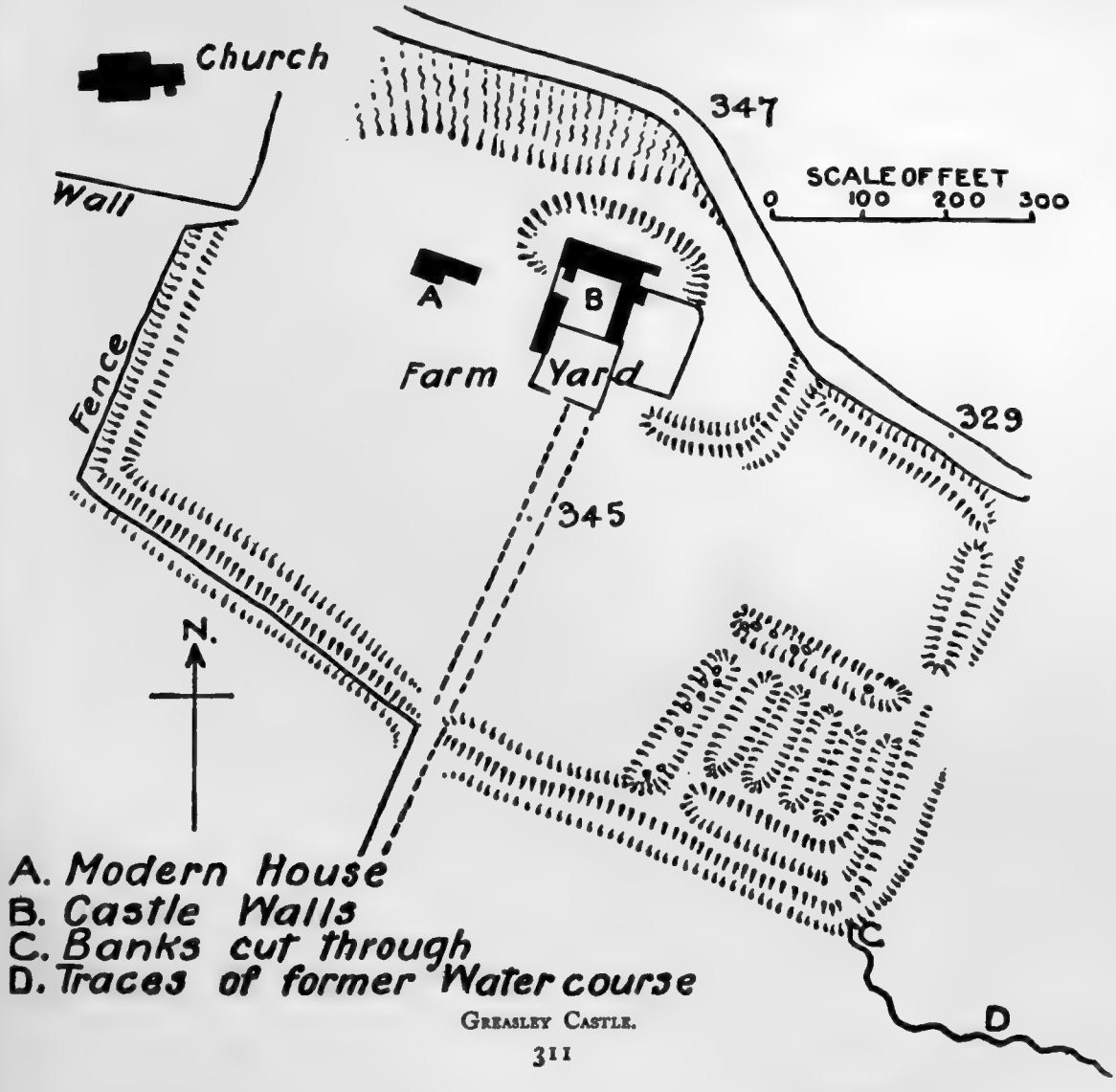
WIVERTON HALL.—Two miles south of Bingham. The moat of Wiverton Hall is on the west side of the River Smite, and south-east of Wiverton Farm.

WORKSOP.—Two miles north of Worksop is the moat of Gateford Hall.

MANORIAL STRONGHOLD

[CLASS G]

GREASLEY.—Seven miles north-west from Nottingham are the ruins of Greasley Castle, built amid earthen defences. A length of vallum on the



GREASLEY CASTLE.

south of the building, a fosse at right angles, and two other ramparts apparently formed the boundaries of two courts. South-west of the castle is a long length of rampart; at the west end it returns north for a distance of 300 ft., and at its eastern extremity is a similar return, the angle thus formed is moated and contains a series of parallel hollows. This was no doubt the manorial fish stew, and though high and dry on the sloping hill-side there is evidence that water once flowed from this spring-fed stew-pond. The rampart of earth south-east is high enough to have held back the water to fill the four stews, though the base of them is 5 ft. higher than that of the moat.

UNCLASSIFIED EARTHWORKS

[Class X]

Annesley.—Fragments of earthworks remain on the west and south-west of Annesley Hall, near the Derby and Mansfield road.

Arnold.—Indications of entrenchments are visible to the north-east of the village. They run north and south, between Killisick Lane and Spout Lane.

Barton in Fabis.—Brent's, or Brand's Hill, 4 miles south-west of Nottingham, is above a small tributary of the Trent, and about half a mile south of the latter. Upon the side of this hill are certain lines of entrenchments, of which Camden says: 'On the side of the hill there appeared to be terraces like waves, or ploughed lands, one above another, in number fourteen or fifteen, and about a mile long. The works cross from the bottom of the hill.'

These lines of entrenchment run north-east and south-west in an almost straight line, curving slightly with the hill on the south-western extremity. Seven lines only are now well defined, the lowest extending barely half the whole distance, and the uppermost has been destroyed with the exception of 550 ft. They are possibly examples of prehistoric terrace ploughing.

Bestwood Park.—Remains of some earthworks are observable to the south of Bestwood Park, 1¼ miles north-west of Arnold.

Blyth.—An entrenchment is on the west side of Toad Holes Wood, not quite a mile to the north-west of the village.

Car Colston.—The remains of an entrenchment lie to the south-east of Car Colston Manor House.

Egmanton.—To the north of the great works at Laxton, in the valley beneath the mount and bailey, is a quadrangular moat and portion of an outer fosse, surrounding three depressions, which it has been suggested were for water storage or fish ponds, possibly of mediaeval date.

Everton.—Three miles south-east from Bawtry are some vestiges of fortifications which have been supposed to be Roman from their proximity to the ancient road and the discovery of some Roman coins.

Gamston.—Four miles north of Tuxford are indications of some earthworks to the south-west of the rectory.

Harworth.—A so-called 'Roman bank' forms the east boundary of Serlby Park.

KNEETON.—The remains of an entrenchment lie to the west of the village. The Fosse Way also passes the south-east boundary of the parish.

LAXTON.—On the common are a series of mounds of low elevation, rising from two to two and a half feet from shallow ditches. They form a group of five, with indications of extending further towards the west ; while a similar bank occurs at a considerable distance to the south-east. Tradition is silent respecting these mounds, and so far no satisfactory explanation has been forthcoming.

LOWDHAM.—Fragments of works remain to the west of the village.

MARNHAM.—Indications of earthworks, probably flood banks, lie around Low Marnham.

MISSON.—Remains of earthworks are on the east side of the village.

MISTERTON.—Bykersdyke. In the extreme north-east of the county is an ancient dyke, rampart, or waterway, which, for over four miles, constitutes the boundary between Nottinghamshire and Lincolnshire. Its object was to connect the River Trent with the Idle, which at this point was only about four miles distant to the west, and to make the site of Bawtry, on the Roman road from Lincoln to York, an inland port ; and as such it continued throughout the middle ages, and with varying fortunes until the introduction of railways.

This dyke is alluded to in the Domesday Survey, and mentioned in a charter of John, earl of Mortain, about the year 1189.[1] At some date before the publication of Saxton's map in 1580 the dyke was duplicated through higher ground about a mile further south, and designated the 'New Bykersdyke.' The ancient dyke was straightened, and the county boundary modified by the draining operations of Cornelius Vermuiden, under a patent of Charles I, since which time it has lost its identity, and is replaced in its west part by the comparatively modern 'Tindale bank,' while at its eastern end the name has been altered to 'Heckdyke' or 'Hocdyke.'

NOTTINGHAM.—Connecting the camp of the Old Borough of Nottingham on the east and Nottingham Castle on the west, a strong vallum and fosse enclosed the intervening ground—the New Borough of Domesday—on its northern boundary, a distance of 1,690 ft. The eastern end was supported by the entrenchments at the north-east corner of the old town, and making a huge arc was supported on the west by the cliff at the northern extremity of the prehistoric enclosure.

When the Great Central Railway track was made across this site in 1898 the fosse was found to have been hewn out of the solid rock ; it was over 30 ft. in width and 20 ft. in depth.

RANSKILL.—A strong rampart and ditch, which is also in the parish of Scrooby, and described under that name.

SCROOBY.—Between Blyth and Scrooby, in the north of the county, some three miles north of East Retford, is an important rampart and fosse, trending nearly south to north. It is nearly one and a half miles in length, and the fosse is used as a sunken road between the above villages. Its bank on the west side is enclosed in Serlby Park, to which it forms the manor boundary; the east side is fairly evenly divided between the parishes of Scrooby and Ranskill ; the lands in the latter parish belonged to the Saxon

[1] *Records of the Borough of Nottingham*, vol. i.

archbishops of York. The vallum is locally called 'The Roman Bank,' and the fosse 'Roman Bank Lane' and 'Long Bank Lane.'

Its origin is unknown, though possibly it is referred to in the following: 'Matilda de Mules, 10 Ric. I, ought one mark for licence to make a ditch between the wood of Serleby and the fields.'[1]

South Clifton.—Indications of earthworks lie to the west and south-west of the village.

South Muskham.—At Little Carlton, two miles north from Newark, and on the north side of the Trent, are the remains of an earthwork called 'The Mount'; it is described as 'an ancient place in the form of a cross, shaded by some ancient sycamore, mulberry, and walnut trees.'[2]

Wellow.—Gorge Dyke, possibly the eastern rampart and fosse of a rectangular village enclosure.

Wiseton.—Drakeholes lie to the north-west of Wiseton, where the road from Bawtry to Gainsborough meets the Chesterfield Canal.

BARROWS AND TUMULI

Aslockton.—A tumulus is figured in the Ordnance map near Bingham, but it has the appearance of a military mound. Another mound has been destroyed here.

Blidworth.—Several tumuli are in the neighbourhood. Two of them on the brow of a hill measure respectively 728 ft. and 159 ft. in circumference. The latter was explored by Major Rooke, who describes it as 53 ft. in diameter, containing an urn made of iron filled with calcined bones and ashes; also a large sword in a wooden scabbard broken in several pieces, two daggers, and fifteen glass beads—blue, yellow, and green.

Two other tumuli are situated on the side of Blidworth Camp, both of which were opened by Major Rooke, who thus describes them: 'Close to the vallum are two tumuli, thirty-five yards asunder. The diameter of the most northern one was near eight yards, the more southern one being only seven yards. These two I opened to the depth of near six feet from the top and about one foot and a half from the level of the natural soil. Here I perceived a thin body of smooth clay near 9 ft. 5 in. in length and 2 ft. 4 in. in breadth; on this lay ashes and burnt bones. On the edge of these clay beds the ashes were very black, owing, I imagine, to their not having been mixed with the burnt bones. At the end of one of these beds I found three teeth. There were no urns in these tumuli.'

Blyth.—In this parish are two tumuli; one of them stands a conspicuous object by the roadside two miles south-east of the village, from which point the ancient road from Nottingham to Bawtry and the north makes a détour westward. It was formerly known as 'Emmeslaw,' and was the site of the manor gallows, but is now called 'Blyth Law Hill.'

The other is in the middle of the highway in Blyth, the road dividing at its base. It is a well-defined mound of easy gradient, upon which a fourteenth-century building is placed. It is certainly an unrecorded cemetery, and evidence of very early interments have been found in delving below the surface.

[1] Thoroton, *Hist. of Notts.* 475. [2] Ibid. 488.

BOTHAMSALL.—Five miles south-south-west from Retford and one mile and a quarter east of the ancient road is Castle Hill, which is called a tumulus on the Ordnance map.

GOTHAM.—At 'Court Hill,' a central spot on high land, is a well-defined tumulus called the Cuckoo Bush, surrounded by a shallow ditch.

HAYWOOD OAK.—A large tumulus lies a quarter of a mile east of the village on the brow of a hill.

NOTTINGHAM.—'Derry Mount,' outside the northern fosse of the castle, where the General Hospital now stands, was levelled in 1777, when five skeletons and a dagger were found. Throsby mentions three or four barrows, in one of which a quantity of human bones were found at Nottingham Hill, about a mile from Nottingham.[1]

OXTON.—On the west side of the camp at Oxton is a tumulus thus noticed by Major Rooke: 'About one hundred yards west of this camp a hill rises in a conical shape; the top appears to be a large tumulus, from whence there is a very extensive view over the forest towards Mansfield.'

RANSKILL.—East of the village, extending to the River Idle, are several barrows, also a tumulus called 'Blakow Hill.'

SOUTH COLLINGHAM.—'Potter's Hill,' at a point where the Fosse Way leaves the county for Lincoln city, is said to be a tumulus; it was probably connected with the Roman station of Crococalana.

WILLOUGHBY ON THE WOLDS.—A tumulus called 'Crosshill,' by Stukeley, is close to the Red Cow Farm, to the east of the village.

The following is a list of parishes in which earthworks exist, with the class to which they belong:—

	Classes		Classes
Annesley	E X	Gamston	F X
Arnold	C X	Gonalston	F
Aslockton	E	Gotham	F
Averham	F	Granby	F
Barton in Fabis	X	Greasley	F G
Beckingham	F	Gringley on the Hill	B
Bestwood Park	X	Grove	B
Bilsthorpe	F	Harworth	C X
Blidworth	B	Hawton	C
Blyth	X	Hodsock	F
Bothamsall	D	Holme Pierrepont	F
Bridgford, East, see East Bridgford		Kinoulton	F
Burton Joyce	F	Kirby in Ashfield	C
Car Colston	C F X	Kirklington	F
Carlton on Trent	F	Kneeton	X
Caunton	F	Lambley	D
Clifton	F	Laxton	E X
Coddington	F	Leake, West, see West Leake	
Colwick	F	Lindhurst	F
Cuckney	F	Littleborough	C
Darlton	C F	Lowdham	D F X
East Bridgford	C	Mansfield Woodhouse	B
East Retford	B	Marnham	X
Egmanton	E	Misson	X
Epperstone	C	Misterton	X
Everton	X	Muskham, South, see South Muskham	
Farnsfield	A B	Newark	C

[1] Throsby, *Hist. of Notts.* (1795), 16.

	Classes
Norwell	F
Norwell Woodhouse	F
Nottingham	A B E X
Owthorpe	F
Oxton	B C
Ranskill	X
Retford, East, see East Retford	
Rolleston	F
Scaftworth	C
Scrooby	F X
Sibthorpe	F
South Clifton	X
South Muskham	X
Southwell	C
Stanton on the Wolds	F
Strelley	F
Thurgarton	B
Wellow	C X
West Leake	F
Weston	F
Whatton	F
Wiseton	X
Wiverton Hall	F
Woodborough	B
Worksop	A F

POLITICAL HISTORY

IN the making of the counties of England, as part of the making of England itself, the effect of geographical and physical conditions can hardly be overestimated. On these depended the lines of the Roman roads marking the way for Saxon settlements, the grouping of the Saxon kingdoms, and the grouping of the counties within the kingdoms. The district which was to become Nottinghamshire, being traversed by the Trent, invited Roman and Saxon along its waterway as a passage north and south. As a further development this passage had to be guarded, and round a fortified centre the county originated. The reasons which thus brought the county into existence gave it in later days its strategical importance, brought it actively into every insurrectionary movement of Scotland and the north of England, and made it of so much moment in the history of the Civil War.

There is little or no definite evidence to mark the progress of the Angle tribes who by the end of the sixth century had settled in the country round the Trent. At their coming the Trent valley, in spite of Roman roads and settlements,[1] was undoubtedly a wild tract of unreclaimed country hedged round by hills and stretches of forest. It was only along the Fosse road that they could slowly push on to the Trent and gradually people the territory which was to become Nottinghamshire, on their way to further conquests under the name of Middle English in Leicestershire and further west. Hence when, by a gradual series of annexations, the kingdom of Mercia had come into being by the end of the sixth century[2] Nottinghamshire evidently existed as a territorial district until the break-up of Mercia into shires under Edward the Elder in the ninth century.[3] However, the earliest mention of the county is not until 1016, when, during the final struggle between Cnut and Edmund Ironside, Cnut marched north and harried Nottinghamshire.[4]

No further mention of the county comes until 1064 or 1065, when Earl Morkere, whom the thanes of Yorkshire and Northumberland had chosen to be their earl after they had renounced and outlawed Earl Tostig, went south to meet his brother Edwin with all the shire (i.e. Yorkshire), and with Nottinghamshire, and Derbyshire, and Lincolnshire until he came to Northamptonshire.[5] The first definite outline of the bounds of the county and of the wapentakes composing it, comes, of course, in the Domesday Survey, and

[1] See section on 'Roman Remains,' for full account of the Roman occupation of the district.

[2] Hen. of Hunt. *Hist. Angl.* (Rolls Ser.), 53. The original kingdom of Mercia evidently comprised quite a small part of the later kingdom. Probably it included only the greater part of Staffordshire, Derbyshire, and Nottinghamshire, with parts of Warwickshire and Leicestershire. See Chadwick, *Studies in Angl.-Sax. Institutions*, 215.

[3] Stubbs, *Const. Hist.* i, 104–11.

[4] The spurious charter purporting to be made by King Wulfhere of Mercia in 664 granting Colingham 'in Notinghamscira' to the monastery of Peterborough is of necessity no proof that the shire existed so early. Rather the mention of the shire at that date is further evidence of the spuriousness of the charter. Kemble, *Cod. Dipl.* v, 4–8.

[5] *Angl.-Sax. Chron.* (Rolls Ser.), i, 331.

from that time, at least, possibly from the time of Edward the Elder, the general outline of the county has altered very little, and the wapentakes[1] have remained almost the same on their outer lines. They were then eight in number, Bassetlaw, Broxtow, Bingham, Thurgarton, Newark, Rushcliffe, 'Wardebec' or 'Oswardebec' (now with Rampton and Treswell forming the North Clay division of Bassetlaw) and 'Lide' (now the north division of Thurgarton).

The numbers remained the same until the seventeenth century, when John Speed, writing in about 1610, stated that 'for the taxe to the crown' Nottinghamshire was divided into eight wapentakes or hundreds.[2] By 1719[3] however the number had dwindled to the present number, six, since Bassetlaw had absorbed the wapentake of Oswardebec, and Thurgarton that of Lide. Bassetlaw, on account of its size, is now divided into North Clay, South Clay, and Hatfield.

It is inevitable that the early history and political importance of the county of Nottingham, as of so many others, must be gathered rather from the history of its chief town than from any direct evidence concerning the county in general. Evidently by the ninth century, if not before, the town of Nottingham had become of importance strategically. Although Roman soldiers had pushed their way along the banks of the Trent from Newark to the site of Nottingham, they came there either too late or too few in numbers to have left any lasting trace of their visit. Yet they had prepared the way for the Angle to find and utilize the natural fortification presented by the hill on which the castle of Nottingham was built in later days. During the eighth century, in the struggle for supremacy between the three great kingdoms, Nottingham must have often played a very important part for Mercia, since from its situation it formed both a point of contact with and a bulwark against the northern enemy. Again, at the end of the century, when under the consolidating rule of Offa Mercia was supreme, though her supremacy was unclaimed, the development of the town must have kept pace with the development of the kingdom. Hence it was that when the Danes under Hubba had struck at York and had defeated the two rival claimants of the Northumbrian crown, they turned in 868 to Nottingham and settled there for the winter in preparation for an attack on Mercia. Once there they could defy the united forces of Burhred of Mercia and Ethelred of Wessex,[4] and, although Mercia was probably saved from devastation by the refusal of the Danes to fight, it remained submissive under the terms of the forced peace. With Mercia submissive to the Northmen, Nottingham under the Peace of Wedmore became one of the chief centres of the Danish settlement in England, and one of the five boroughs. The reduction of the Danelaw and the regaining of the five boroughs was the work of Edward the Elder and his sister Ethelflaed, lady of the Mercians, and the conquest of Nottingham in 922 marked the climax of his successes. In the words of the chronicler 'he reduced the burgh and ordered it to be repaired,

[1] See section on the Dom. Surv. for evidence of Danish influence in division of the county into 'wapentakes,' not hundreds.

[2] Speed, *A Prospect of the Most Famous Parts of the World*, under Great Britain, bk. i, p. 56.

[3] See Overton's map of the county.

[4] *Angl.-Sax. Chron.* (Rolls Ser.), i, 132. Matt. Paris, *Chron. Maj.* (Rolls Ser.), i. 391. Burhred sent to Ethelred for help, and he, gathering a large force, came to Nottingham. 'Cumque pagani, arcis tuitione muniti, praelium conserere denegarent et Christiani muros confringere non sufficerent pace inter Mercios et paganos ad tempus composita singuli ad propria sunt reversi.'

and peopled both with Englishmen and with Danish.' Then it was that 'all the people who were settled in the Mercian's land submitted to him, both Danish and English.'[1] Two years later Edward again visited Nottingham and secured his conquest by a second 'burgh' stationed on the south side of the river opposite the other fortification, and connected with the other by a bridge 'built and manned there in the immediate neighbourhood.'[2] A mixed population of Danish and English seems to have inhabited the town and possibly the county of Nottingham until the reign of Edmund, a younger son of Edward the Elder. He, in the year 940 or 941, seems to have entirely repeopled the five boroughs with Englishmen.[3] If this statement is true it may be that Edmund's idea was to draw closer the union between Wessex and Mercia, and clench his father's policy. But Danish influence still remained strong in the county,[4] and all hope of continuing Edward's policy of concentration was frustrated by the weakness of the monarchy and the unhappy rivalry between the incapable Edwy and his brother Edgar, when the Danelaw, with English Mercia, chose Edgar for their king, while Wessex remained true to Edwy. When Edwy was dead and Edgar was sole king, Nottingham, both town and county, must have grown prosperous again under the just and peaceful rule of Edgar and his wise adviser St. Dunstan. But after Edgar's death, when England, prepared for subjugation by the unstable rule of Ethelred the Unready, was being forced into submission by the Danish Cnut, Mercia and the Danelaw had to be reduced, as the entrance to the north, and Nottinghamshire, as one of the most important keys to that position, suffered with the rest.[5] Yet there is little definite information concerning the part taken by the county in the desperate struggle which followed Cnut's death, and finally resulted in the battle of Hastings. The break up of Mercia under Harthacnut had meant the formation of a new earldom of the middle English, over which Earl Godwin set his nephew Beorn, brother of Swein Estrithson, and of which Nottingham formed part. After the treacherous murder of Beorn by Swein, son of Godwin, in 1049–50,[6] the earldom seems to have again become part of Leofric's earldom of Mercia, and so to have come to his grandsons Edwin and Morkere. Jealousy of the house of Godwin led these two Mercian earls to forsake Harold,[7] as jealousy of William's success led them later to rebel against him, and the men of Nottingham were of necessity drawn into their treachery. It was to Nottingham that William went with his whole army[8] in 1068, when he heard that 'the people of the north had gathered themselves together and would stand against him if he came.'[9] The burghs which Edward the Elder had raised were undoubtedly guarded against him, but it would almost seem as though the town was half-hearted in its defence, since the number of king's thegns retaining their land in the county at the time of the Domesday Survey would seem to suggest that it made an easy submission.

[1] *Angl.-Sax. Chron.* (Rolls Ser.), i, 195; ii, 84. Matt. Paris. op. cit. i, 445. *Ric. de Cirencestria* (Rolls Ser.), ii, 57.
[2] *Angl.-Sax. Chron.* (Rolls Ser.), i, 196; ii, 84.
[3] Ibid. ii, 89. Thus also Robert of Gloucester records that Edmund drove away 'the Saracens' that were yet remaining in Lincoln, Leicester, Derby, Stafford, and Nottingham, and 'brought back christian men in their stead.' *Rob. of Glouc.* (Rolls Ser.), i, 409.
[4] See Introd. to Dom. Surv.
[5] See former reference to the harrying of the county by Cnut.
[6] *Angl.-Sax. Chron.* (Rolls Ser.), i, 307; ii, 140.
[7] Ibid.
[8] *Flor. Wigorn* (Eng. Hist. Soc.), 'Rex Willelmus cum exercitu suo Snottingaham venit.'
[9] *Angl.-Sax. Chron.* (Rolls Ser.), i, 342; ii, 172.

The success of the Norman brought a fresh era of life for Nottingham. William, like Edward the Elder, secured his possession by making up a new castle,[1] not with Edward's idea of protecting the borough on either bank of the river, but on the highest point of the rock overhanging the town, where it would serve both to protect the town and keep the burghers submissive.[2] The importance with which Nottingham was regarded is perhaps nowhere better shown than in the Domesday entry reciting the duty of the burghers: 'In Snotingeham the water of Trent and the Fosse (Way) and the road towards York were so guarded that if any one should hinder the passage of boats, or if any one should plough or make a ditch within two perches of the king's road he should be compelled to amend it with 8 pounds.'[3] Although the existence of this castle must have added much to the political status of Nottingham, its existence is ignored by the Domesday Survey, and there is little or nothing known about its history during the reign of William except that it was committed to the custody of William Peverel, to whom nine manors in the county belonged.[4]

The reign of William Rufus, though it could hardly have been a time of prosperity,[5] seems to have brought little history for the county. Indirectly there comes almost the first mention[6] of the local levy, since Nottinghamshire evidently furnished its quota of men and money, when in 1094, by Ralph Flambard's connivance, 20,000 men were summoned from the English counties for service in Normandy, and dismissed at Hastings after their service money had been taken from them.[7] Again, the reign of Henry I brings very little history. The years of plague and famine, the heavy taxes caused by the constant petty warfare between the king and his vassals, must have fallen heavily on Nottinghamshire, as on all England. Doubtless, too, a time of prosperity seemed to be again beginning under the reforms which Henry inaugurated, only to be again ended, as the county was plunged into the disorders of Stephen's reign. Into these disorders Nottingham was of necessity drawn. Thus, when David of Scotland advanced into England against Stephen in 1138, the militia of Nottinghamshire, under William Peverel, fought for Stephen at the Battle of the Standard.[8] And now for the first time the castle of Newark comes definitely into history. Theories are rife that Newark was a Roman city, and that the site of the castle was occupied by a large granary like Colchester or London Tower.[9] Egbert, king of Wessex, is moreover said to have raised the first fortification, which fell into

[1] 'He went to Nottingham and there wrought a castle.' *Angl.-Sax. Chron.* (Rolls Ser.), i, 342.

[2] Thus Camden states that the castle was built 'to bridle the English, and was so strong by nature and art (according to William of Newburgh) that if properly defended it seemed as if nothing but famine could force it.' Camden, *Brit.* (ed. Gough), ii, 283.

[3] See section on Dom. Surv. [4] Ibid.

[5] See *Chron. Angl. Petrib.* (Caxton Soc.), 65. *Flor. Wigorn* (Engl. Hist. Soc.), iv, 35.

[6] The first mention would be that implied in 1053, when Earl Morkere went south 'with Nottinghamshire.' See *supra.*

[7] *Sax. Chron.* (ed. Earle), 230. 'Đa sende cyng hider to lande et hét abeodan at xx þusenda Engliscra manna him to fultume to Normandig. ac þa hi to sae coman. þa het hi man cyrran and þ feoh syllan to ðaes cynges behófe þe hi genumen hacfdon. þet wass asle man healf punda, and hi swa dydon.'

Flor. Wigorn (Engl. Hist. Soc.), ii, 35. 'Quibus ut mare transirent Heastingae congregatis pecuniam quae data fuerat eis ad victum Rannulphus Passeflambardus praecepto regis abstulit, scilicet, unicuique decem solidos et eos domum repedare mandavit; pecuniam vero regi transmisit.'

[8] *Symeonis monachi opera omnia* (Rolls Ser.), ii, 294. 'Affluit etiam cum suis copiis de Nottingham scira Willelmus Peverel.'

[9] Cornelius Brown, *Ann. of Newark-on-Trent;* Mackenzie, *Castles of England,* i, 449, quoting Stukeley.

the hands of the Danes,[1] but was recovered and rebuilt by Earl Leofric of Mercia, who held the manor of Newark.[2] The omission of any entry concerning it in Domesday is, of course, no evidence for its non-existence, and possibly some such fortifications as those built by Edward the Elder at Nottingham may have been raised for the defence of the town. However, the first actual fortress was built in 1123 by 'Alexander the Magnificent,' bishop of Lincoln, and brother of the famous Roger, bishop of Salisbury,[3] under the plea that such fortifications were absolutely necessary in his diocese in those times of lawlessness, *ad tutamen et dignitatem episcopi*.[4] Although Alexander had sworn allegiance to Maud as 'lady of England and Normandy,' he immediately transferred his allegiance to Stephen on Henry's death. However, in the anarchy which followed, both Alexander and his uncle, Nigel of Ely, fell under Stephen's suspicion, and in 1139 were thrown into prison until they should surrender their castles.[5] Alexander, kept *sub vili tugurio*, was hurried across England with Stephen and his army to Newark, and kept without food until the garrison surrendered. With Newark in Stephen's possession, and Nottingham in the hands of William Peverel,[6] one of his most trusted adherents, the county was inevitably drawn into alliance with Stephen's cause. In 1140, a few months before the siege of Lincoln was begun, Robert earl of Gloucester, one of Maud's adherents, by the prompting of Ralph Painel, who was evidently a private enemy of William Peverel, advanced on Nottingham and took the city. Some of the citizens fled, others were slain, and many burnt as they sought sanctuary in houses and churches; for when one citizen who seemed richer than the others was led to his house and forced to discover his treasure to the enemy, he led them into a cellar where his riches were kept, and while they were gloating over the spoil slipped out, shut and bolted the door behind him, and, setting fire to the house and cellars, burnt the spoilers with the spoil. But the fire spread over the whole city, and Nottingham, that noble city which, according to the chronicler, had remained peaceful, rich, and populous from the time of the Conquest, was utterly destroyed.[7] It seems evident, however, that even if the town was burnt so completely the castle must have escaped, as in the next year the Empress Maud, after her success at Lincoln, is said to have forced the castle from William Peverel, and to have given it into the custody of William Painel, who was probably some connexion of the Ralph before mentioned.[8] Early in 1142, when Maud's cause seemed to be hopeless, Stephen's adherents in the county seemed to have taken courage, and garrisoned themselves in an offensive position at Southwell. Thus William Painel went out from Nottingham with a body of troops to raze the fortifications that had been made in the precincts of the church of St. Mary, Southwell, and whither a

[1] Cornelius Brown, op. cit. 6. [2] Ibid. 8, 9.

[3] *Ann. Mon.* (Rolls Ser.), iv, 18. *Gervase of Cant.* (Rolls Ser.), vii.

[4] Will. of Malmes. *Gest. Reg. Angl.* sub Hist. Novell, ii, 547.

[5] Ibid. 548–55. The account of the seizure of the castles, and the later discussion of the case before the papal legate is here given in full.

[6] A descendant of the William Peverel, of Domesday, probably a great great grandson.

[7] *Gervase of Cant.* (Rolls Ser.), i, 112. *Flor. Wigorn* (Engl. Hist. Soc.), ii, 128, 129. 'Itaque destructa est Snottingaham, urbs nobilissima, cum, ex quo Normanni Angliam sibi subjugaverunt, usque ad hoc tempus, in summa pace et quiete, populosa multitudine et opulentia rerum omnium referta fuisset.'

[8] *Symeonis monachi opera omnia* (Rolls Ser.), ii, 309. 'Castrum de Notingham imperatrix Adela exegit a Willelmo Peverel, et imposuit custodem in eo Willelmum Painel cum militibus suis.'

multitudo provinciae had gathered. Being unable to cope with them with the forces at his disposal, he marched out to meet the empress and gain reinforcements. Meantime, however, William Peverel was plotting to regain the castle during Painel's absence, and having succeeded in gaining the confidence of two youths who had charge of the mills under the castle, managed by their connivance to scale the castle rock with his followers and seize the castle. Thereupon all the partizans of the empress were driven out of Nottingham.[1] The result of this was presumably a union of the forces at Southwell with those of Nottingham, and it is little likely that William Painel returned from York with his reinforcements.

The deliberate stand which Nottingham town and county had made for Stephen brought it early under the notice of Maud's son, Henry II, and brought the governor of Nottingham Castle under his disfavour. In 1152, as duke of Normandy, Henry granted the fee of William Peverel to Ranulf, earl of Chester, unless William should be able to clear himself of his crime and treason in his court ('nisi poterit se dirationare in mea curia de scelere et traditione.')[2] When he invaded England in the next year Henry realized the advisability of securing a hold on Nottingham, and having stormed Stamford and Ipswich he advanced to Nottingham and besieged the town. However, the garrison of the castle came out with great force and managed to break up the siege by setting fire to the town.[3] Then, since the town was destroyed, and the natural defence offered by the castle rock was so strong, being unwilling to waste his energies, Henry evidently abandoned all attempt to seize the fortress.[4] When Stephen died in October, 1154,[5] and Henry, according to the Treaty of Winchester, peacefully succeeded, he began at once to establish order by compelling the surrender of all adulterine castles,[6] among which was possibly the castle of Cuckney, in Nottinghamshire, built in Stephen's reign by Thomas de Cuckney.[7] In Nottingham itself he completed the humiliation of William Peverel (who had in the meantime contrived to poison his rival, Ranulf, earl of Chester) by depriving him of the castle and all his estates. William, on Henry's accession, had fled to a monastery and received the tonsure, and assumed the monastic habit.[8] When, in February, 1155, Henry advanced to Nottinghamshire, he again fled, leaving his castle and possessions in the king's hands.[9] Nottingham was thus secured as a royal station, and was held by the king until granted by him to Prince John in 1174 in the treaty which followed the great insurrection of that critical year.[10] During the next year Henry himself was at Nottingham, and while there sued the landowners of the county for breach of the forest laws, presumably in the forest of Sherwood, 'et posuit omnes in misericordia sua pro capta vensione.' In many cases they were bound to the king for more than their estates were worth, but he refused to yield them

[1] *Symeonis monachi opera omnia* (Rolls Ser.), ii, 311–12.
[2] Rymer, *Fœd.* i, 4.
[3] *Rob. of Glouc.* (Rolls. Ser.), ii, 864.
[4] Trivet, *Annals*, 29.
[5] *Chron. of the Reigns of Stephen, Hen. II, etc.* (Rolls Ser.), iv, 181.
[6] Ibid. 183. *Gervase of Cant.* (Rolls Ser.), i, 161.
[7] Mackenzie, *Castles of England*, i, 447.
[8] *Gervase of Cant.* (Rolls Ser.), i, 161.
[9] Ibid.
[10] *Gervase of Cant.* (Rolls Ser.), i, 78. Henry, since he had been completely successful in quelling the insurrection of his sons, allied with France and Scotland, against their father, could afford to be merciful. Thus he granted two castles in Poitou to Richard, others in Brittany to Geoffrey, and those of Nottingham and Marlborough to his favourite, John.

mercy, although Richard de Lucy, the justiciar, pleaded their cause, stating that the forest laws had been broken during the late hostilities by a special mandate given him by the king when in Normandy.[1] Henry again visited Nottingham in 1179, when he spent Christmas there, attended by William of Scotland and all the nobles of the realm,[2] and in 1181, when he held a council there.[3]

After a period of comparative peace under Henry II, the county was to see troublous times during the reigns of Richard and John, and again the chief scenes of its history were centred round the castles of Nottingham and Newark. Richard, on his arrival in England after his father's death in 1189, took possession of the royal treasure at Winchester, and proceeded to win his brother's favour by granting him many honours, among them the earldom of Nottingham.[4] The utter failure of all Richard's attempts to keep John faithful to him during his absence resulted in the open quarrel between John and Longchamp in 1191, the consequent seizure by John of the castles of Nottingham and Tickhill, probably in April 1191,[5] and his threat to the chancellor if he refused to give up the castle of Lincoln.[6] A compromise was effected by the queen-mother, and John surrendered Nottingham Castle to William Marshall, and Tickhill to William de Wendeval,[7] with special reservation that if Richard before his return should refuse the terms of the peace between John and the chancellor both the castles should be restored to John.[8] It seems unlikely that either William Marshall or William de Wendeval ever actively fulfilled the office of governor of the two castles.[9] Both, however, were granted to Roger de Lacy, constable of Chester, by Longchamp presumably about this date, and he, judging from the easy surrender that had been made to John how little the garrisons could be relied on to support Richard's cause, urged that Robert de Crokstone, governor of Nottingham, together with the governor of Tickhill, should be hanged for treachery. Being unable to accomplish this, since they refused to stand on trial, he seized and hung a certain Alan de Leck, or Lec, who had been in the castle with Robert, together with one of the officers of Tickhill. John interceded, but in vain, and in revenge seized the estates of the constable, and harried his lands.[10] From this time Nottingham evidently embraced John's cause, and the castle held out for him after all others he had seized had surrendered to Richard on his return from captivity in 1194. Hence Richard quickly marched to storm Nottingham, 25 March, 1194, but the garrison surrendered, and placed themselves at his mercy. Some he imprisoned, others he compelled to ransom themselves, since he was in great

[1] *Chron. of Hen. II and Rich. I* (Rolls Ser.), i, 94. *Roger of Hoveden* (Rolls Ser.), ii, 79.
[2] *Chron. of Hen. II and Ric. I* (Rolls Ser.), i, 244. [3] Ibid. 280.
[4] Ibid. ii, 78. *Roger of Hoveden* (Rolls Ser.), iii. 6. Matt. Paris, *Chron. Maj.* (Rolls Ser.), ii, 347–8. Matthew Paris says he granted the 'Castella de Notingeham' to John, but this hardly seems possible, since the castle was evidently held by a royal garrison in 1191.
[5] *L'Histoire de Guillaume le Maréchal* (Soc. de l'histoire de France), iii, 130, *n.* 1.
[6] *Chron. of Hen. II and Ric. I* (Rolls Ser.), ii, 207.
[7] The accounts of the two chroniclers Roger of Hoveden and Richard of Devizes differ. In the latter Nottingham is given to William de Wendeval, and that of Tickhill to Reginald de Wassevile.
[8] *Roger of Hoveden* (Rolls Ser.), iii, 136, 137.
[9] In the case of William Marshall this seems undoubtedly proved by the fact that the contemporary author of his life in the *Histoire de Guillaume le Maréchal* makes no mention even of the grant of the office.
[10] *Chron. of Hen. II and Ric. I* (Rolls Ser.), ii, 232–4.

need of money.[1] For a short time Richard remained at Nottingham, and Walter of Coventry and Roger of Hoveden tell how he made an expedition on 28 March to Clipstone and to Sherwood Forest, which he had never seen before, and they pleased him much (*et placuerunt ei multum*).[2] During the next few days a council was held at Nottingham at which Richard 'prayed that justice should be done him,' on John and his chief ally, Hugh, bishop of Coventry. As a result both were cited to appear within forty days or forfeit the one his claims to the kingdom, the other his offices in church and state, as well as all their possessions. From Nottingham Richard advanced to Clipstone to meet the king of Scots, spent Palm Sunday there, and reached Southwell on 4 April. Hence he went to Winchester for his second coronation on 17 April.[3]

Early in John's reign Nottingham was the scene of one of his characteristic acts of impetuous cruelty. Enraged at the Welsh rising of 1212, he revenged himself by marching to Nottingham, and there, before he had eaten (*antequam cibum sumeret*), he caused the eight Welsh hostages in the castle to be hung. Then, as he sat down to eat, messengers came from the king of Scots and from the Welsh queen, John's natural daughter, telling him of the disaffection of the northern barons.[4] In this year the discontent which had been brewing under John's misrule came to a crisis, but John's clever move in submitting to the pope warded off the danger for a time. A second clever move, the calling of the council of St. Albans in 1213, was followed by a visit to Nottingham, whither went also Archbishop Langton, who, unsuccessful in his attempts at peace, left Nottingham, and a few days later[5] produced Henry II's coronation charter, and gave the baronial party their watchword. John's submission at Runnymede was followed in 1215 by preparations against the barons, and an order to Philip Marc, constable of Nottingham, to fortify the castle as for a siege.[6] Evidently Nottingham was one of the king's chief stations, and when hostilities had begun, after his northern march in the same year, he retired *cum satellitibus suis nefandissimis* to Nottingham, and spent the following Christmas there.[7] The unsettled state of the county generally is implied by the order of Louis of France to Gilbert of Ghent in 1216 to repress the irruptions of the garrisons of Nottingham and Newark, since they were creating great devastations by spreading fire and slaughter in all the country round.[8] But all attempts made to overwhelm the garrisons were unsuccessful. Both Nottingham and Newark remained true to John, and it was to Newark that he went after his disastrous march of 1216, and at Newark that he died.[9]

On the death of John, William Marshall, earl of Pembroke, and Gualo, the papal legate, immediately proclaimed Prince Henry king, but as yet the

[1] Ralph de Coggeshall, *Chron. Angl.* (Rolls Ser.), 63. Matt. Paris, *Chron. Maj.* (Rolls Ser.), ii, 404. Robert of Gloucester tells the story thus :—'þo king richard com to engelond þer was joye inou. Mid joye & procession. þat fole ayen him drou. He pleyede nywe king at ome. þo he hom. com. Verst þe castel of notingham. vpe is broþer he nom. & suþþe is oþer londes, & deseritede him al clene.' *Rob. of Glouc.* (Rolls Ser.), ii, 697–8. A full account of the siege is given in *L'Histoire de Guillaume le Maréchal*, iii, 134–6, together with the details of the events of the day following, when Richard demanded homage from Walter de Lacy and William Marshall for their lands in Ireland.

[2] *Walter of Coventry* (Rolls Ser.), ii, 54. [3] *Roger of Hoveden* (Rolls Ser.), iii, 240–3.

[4] Matt. Paris, *Chron. Maj.* (Rolls Ser.), ii, 534. [5] Ibid. 551–2.

[6] 'Ut castra sua victualibus munirent fossatis ambirent, serventibus stipendiariis roborarent, balistas et machinas pararent, spicula fabricarent.' Ibid. 612.

[7] Ibid. 637–8. [8] Ibid. 663. [9] Ibid. 667–8.

whole county was in a state of disorder. Louis of France had received reinforcements, and with the insurgent barons he besieged the castle of Mountsorrel in Leicestershire. A plundering expedition into the surrounding country was made by the besiegers early in 1217, but some knights, reconnoitring (*exploratores milites*) from Nottingham, learning of their coming, set out to meet them, and succeeded in killing three of the enemy, and capturing ten knights and twenty-four squires.[1] Raising the siege of Mountsorrel, Louis and his allies turned to besiege Lincoln Castle, which held out for the king, although the town had surrendered. William Marshall hastened to gather an army, and ordered all governors of castles and their soldiers to come together at Newark, to proceed thence to Lincoln and break up the siege. And they came joyfully, being eager to fight with the Frenchmen.[2] After the fall of Lincoln and the defeat of the French fleet by Hubert de Burgh, Louis realized that his cause was hopeless, and, making peace with William Marshall, retired to France. But even after peace was made there were many who could not keep their hands from pillage ('nunc post pacem denuntiatam et omnibus concessam non potuerunt manus a praeda cohibere'). Thus Robert de Gaugi, even after several remonstrances from the king, refused to deliver up the castle and town of Newark to Hugh, bishop of Lincoln, to whom it properly belonged by right of its foundation by Alexander (see *supra*). Therefore the Earl-Marshal, by the king's orders, raised a large army, and, accompanied by the king, attacked the castle. The siege lasted for nearly eight days, during which time the friends of Robert treated for peace with the bishop, and a final agreement was made that the castle should be delivered to the bishop on payment of £100 sterling. And thus the siege being raised, every one returned to his home.[3]

From this time the reign of Henry III seems to have been one of material prosperity for Nottinghamshire. The frequent visits that Henry paid to the county are shown by the number of letters patent dated from Southwell, Newark, and Nottingham.[4] Moreover, he confirmed John's charter of 1200 to the burgesses of Nottingham, and granted them many fresh rights and privileges.[5] In 1264 the county was for the first time actively concerned in the Barons' War. The failure of the Provisions of Oxford to bring about any lasting settlement had resulted in the siege and capture of Northampton by the royal forces. Thence the army marched through Leicester into Nottingham. The castle was then held for the barons by William Bardolf, who, on the advance of the royal troops, immediately came out and surrendered to the king. While the army was quartered at Nottingham several Scotch nobles came to the king's help, among them John de Balliol, Robert Bruce, and Peter Bruce, with a strong fighting force.[6] From Nottingham the king sent out Prince Edward to harry the neighbouring counties of Derby and Stafford, and to seize on the lands of Robert de Ferrers, earl of Derby, who was among the hostile barons. When this was done, the king, hearing that Simon de

[1] Matt. Paris, *Chron. Maj.* (Rolls Ser.), iii, 11 ; Roger of Wendover, *Flores Hist.* (Rolls Ser.), ii, 208.
[2] Roger of Wendover, *Flores Hist.* (Rolls Ser.), ii, 212.
[3] Et sic, obsidione soluta, unusquisque ad propria remeavit. Ibid. 226-8.
[4] See various entries in the Calendars of Patent and Close Rolls.
[5] *Robt. Chart. in Turr. Lond.* (Rec. Com.), 39.
[6] Matthew of Westminster, *Flores Hist.* (Rolls Ser.), ii, 488.

Montfort was besieging Rochester, left Nottingham and marched south, but De Montfort, hearing of his coming, raised the siege and retreated to London to prepare his forces before the fateful battle of Lewes.[1] With the completion of peace, after the battle of Evesham in 1265, an order was sent to John de Grey, governor of Nottingham Castle, bidding him see that the king's peace was observed, on pain of loss of lands and estates, and that the prisoners remaining in the castle were sent to London.[2]

The régime of law and order under the strong rule of Edward I resulted, in Nottinghamshire, as elsewhere, in a repression of the strength of local jurisdiction and privilege. Hence, under the commission of 1275, the returns known as the Hundred Rolls were made, to search out and recover royal rights and jurisdiction. Edward saw that supreme influence in the state must ultimately belong to the power which controlled the law courts, and thus he determined to limit the jurisdiction of manorial lords and define the causes they might and might not try. The returns show how needful from the royal point of view such a policy was in Nottinghamshire as elsewhere. Suits had been withdrawn from the hundred courts ; thus the honour of Tickhill and the fee of Peverel were accustomed to send six suitors to the hundred court of Rushcliffe, but now two of the suitors had withdrawn, one of them paid suit instead to the court of Tickhill, the other to that of William Peverel.[3] The lords of the county claimed power of life and death and right to exclude the sheriff from their demesne ; thus the bishop of Lincoln claimed the right of *namium vetitum*, and the right to have gallows, pillory, tumbrel, and assize of bread and ale within half the wapentake of Newark[4] ; the bailiffs of the honour of Leicester refused to allow the king's ministers to fulfil their duties in their bailiwicks, and at the same time refused to put the king's mandates into execution themselves.[5] Again the Hundred Rolls show a state of oppression and extortion in every grade. In the wapentakes of Thurgarton and Lye, the sheriffs after the battle of Evesham had given up their bailiwicks to extortioners who forced all the free tenants to pay suit at the hundred court, or pay a fine on refusal.[6] An assize of 1287 shows the same system of oppression at work among small manorial lords. Henry de Pierrepoint and Alice his wife were called to answer concerning services other than customary exacted from their men of the manor of Sneynton. The tenants claimed that their services were defined by the Domesday entry concerning 'Notinton,' which was identical with Sneynton, but a complaisant jury was found to say that the 'Notinton' of Domesday was not Sneynton but a part of Nottingham, so that the case against Henry and Alice fell through.[7]

The reign of Edward I brought more than a régime of law and order to Nottinghamshire, for it brought the beginning of its parliamentary history. The first extant return of knights of the shire is for the Parliament of 1295,[8] for although writs were issued for those of 1282, 1283, 1290, and 1294, the returns are missing.[9] Writs were also issued to the burgesses of Nottingham for the Parliament of 1283,[10] but again there is no extant return until 1295.[11] Two members for the county and two members for the borough represented

[1] Matthew of Westminster, *Flores Hist.* (Rolls Ser.), ii, 488.
[2] Rymer, *Fœd.* i, pt. 2, 88.
[3] *Rot. Hund.* (Rec. Com.), ii, 28.
[4] Ibid. 29.
[5] Ibid. 28.
[6] Ibid. 29.
[7] *Abbrev. Plac.* (Rec. Com.), 209.
[8] *Parl. Writs* (Rec. Com.), i, 40.
[9] Ibid. i, 10, 16, 21, 26.
[10] Ibid. i, 16.
[11] Ibid. i, 40.

Nottinghamshire until 1572, when East Retford was made a parliamentary borough and sent two members. It was not until 1672–3 that Newark upon Trent was incorporated and entitled to send two members.

In the natural course of events Nottinghamshire played its part in the Welsh and Scotch wars of Edward I, both in contributing its share in money and victuals and in furnishing its quota of men. Thus in 1282, on the occasion of the second rising in Wales, the bailiffs of Nottingham were ordered to obey the commands of William Wyther, commissioner of array for the county, who was empowered to raise 300 foot soldiers in Nottinghamshire and Derbyshire.[1] Fresh disturbances in Wales during Edward's absence in 1287 brought a fresh demand for seventeen-score foot soldiers from the two counties.[2] The strained relations between Scotland and England, coincident with the attack of Philip IV on Gascony and a fresh insurrection in Wales, made warlike preparations an immediate necessity in 1294. Hence the commission in that year to Nottinghamshire, among the other counties north of the Trent, to provide its quota of footmen and send them to meet the king at Chester and march against the Welsh.[3] Footmen were also summoned from the county for each of the Scotch expeditions. For example, in 1299 a quota of 500 foot soldiers was ordered from Nottinghamshire,[4] and a writ was addressed to the commissioner of array for the county, with a command that if the men were unwilling to march to Newcastle because of the bad money current in the kingdom or the inclemency of the weather, they should be induced by promise of a bounty from the king beyond their regular pay.[5] In the next year a commission was issued to John Byron and Richard de Havering to make inquiry concerning and punish the bailiffs, bedels and others who lately took reward from the footmen of the county of Nottingham, when they came to Blyth, and gave them licence to return home.[6] In the June of the same year Richard Bingham and Robert Joyce, the commissioners appointed to select 1,500 footmen from Nottinghamshire for the Scotch war, were ordered also to select a proportionate number of constables in the county, well equipped with horses and arms, to come with the footmen to Carlisle.[7] A similar mandate in the next year, 1301, shows the quota required that year as 1,000 footmen.[8] Evidently the constant service was found to be very irksome, and thus there is another mandate for the punishment of the bailiffs and bedels who had received bribes from the 1,000 footmen selected in the county of Nottingham. All those who had stayed at home were to come without delay to the army at their own expense, and the bribed ministers were to be imprisoned and kept in gaol until further orders.[9]

But, in Nottinghamshire, as in most of the counties, the chief burden of the wars fell on the gentry of the county. In 1276, all who held in chief and were able to bear arms were ordered to muster at Worcester or provide substitutes.[10] A comparison of the names of those who held knights' fees in the county at the time of the Testa de Nevill,[11] and of those summoned at various times by parliamentary writs to perform military service,[12] shows how thoroughly the system was worked, and how every baronial lord was forced

[1] *Parl. Writs* (Rec. Com.), i, 245. [2] Ibid. [3] Ibid.
[4] Ibid. i, 326. [5] Ibid. [6] *Cal. of Pat.* 1292–1301, 489.
[7] Ibid. 519. [8] Ibid. 596. [9] Ibid. 601.
[10] *Parl. Writs.* (Rec. Com.), i, 196. [11] *Testa de Nevill* (Rec. Com.).
[12] *Parl. Writs* (Rec. Com.), i, under 'Writs for Military Service.'

to pay his service to the full. The representatives of the landed interest were also forced to take up arms. Thus, in 1282, a writ was directed to the sheriff of Nottingham, among others, ordering that, 'Since Lewelin son of Griffin and his accomplices had destroyed the peace of the realm,' all those who had more than £20 worth of land, and were not then with the king in Wales, were ordered to serve or purchase exemption.[1]

The military system which the wars of Edward I had developed was well tested in the reign of his son, when Edward II, estranged from his barons by his zealous attachment to Piers Gaveston, was forced to rely mainly on the militia in order to carry on the war with Scotland, which had been his father's glory but was to be his own disgrace. In July, 1308, came a commission for the levy of 500 footmen from the counties of Nottingham and Derby,[2] followed in the October of the next year by a commission for 400.[3] In 1311 a general order was sent to the sheriff of each county for the provision of one foot soldier from each town for the hosting of the war against the Scots,[4] and the sheriff of the counties was ordered to give 64*s*. for sixteen days to Richard Daniel and Thomas Folejaumbe, who were to lead the footmen of Nottingham and Derby to Roxburgh.[5] The levies of 1314 were evidently a longer time than usual in coming together, for in that year an order was sent to the sheriffs of several counties, including Nottingham and Derby, bidding them hasten in the gathering of the levies since Stirling was in great danger.[6] During the next year Thomas de Crecy was commissioned to choose sixty able footmen from the wapentake of Broxton, in Nottinghamshire, and lead them to Scotland for service. He, however, seems to have turned his office into a means of making money, since after the sixty men had been raised to be led to Scotland, he received various gifts from them to allow them to return home. An order to the sheriff to inquire into his conduct and punish the offence was accordingly made in the December of the same year.[7] The war still dragged on, since Edward refused all idea of making peace with Robert Bruce, and year after year, in spite of the disease and famine of 1315 and 1316, fresh demands for infantry were made from the counties. Thus, in 1316, came a demand for 1,000 footmen from Nottingham and Derby, of whom 200 were to be woodcutters (*lingatores*); in 1317, for 2,000 footmen, 200 of whom were to be slingers (*fundatores*).[8] From the town of Nottingham forty footmen were demanded in the next year, and ten from Newark.[9] These demands, like those from the other northern counties, were distinctly heavy, and show how the king's policy was to make the brunt of the war fall on the counties it most vitally affected.

During the reign of Edward II several entries on the Patent Rolls give a glimpse of town-life in Nottingham during the fourteenth century. There seems to have been a general feud between town and castle, and John Segrave, who was constable of the castle, was evidently on exceptionally bad terms with the townsmen. The mayor who was elected for the year 1313 sided with the constable. Hence the townsmen banded themselves together, slew the mayor and assaulted the royal officers and servants who were in charge of the castle. They went further, and when the murderer of the

[1] *Parl. Writs.* (Rec. Com.), i, 10.
[2] *Cal. of Pat.* 1307–13, 82.
[3] *Parl. Writs* (Rec. Com.), ii, pt. 2, 383.
[4] Ibid. 408.
[5] Ibid. 410.
[6] Ibid. 427.
[7] Ibid. 460.
[8] Ibid.
[9] Ibid. 506.

mayor was being led to the castle prison, bells were rung and a band of townsmen rushed forward to rescue the prisoner, while others secretly entered the castle, caused the crown of the murderer's head to be shaved, and committed other outrages. A commission of inquiry into the case was ordered to be made in the October of the same year.[1] In the April of 1315 John Segrave made a further complaint against the inhabitants of Nottingham concerning what seems to have been another riot. Robert Ingram and others having summoned the commonalty by the ringing of the common bell, 'with force and arms and banners displayed' attacked the castle, broke the gates, and besieged it for eight days, 'not allowing the constable or any of his men to go out thence to obtain necessary provisions, and assaulting such of his followers as they found without the castle in the town.'[2]

The unpopularity of the constable extended to the county as well as to the town. He was justice of the forest beyond Trent as well as keeper of Nottingham Castle, and in February, 1315, the 'good men' of the county of Nottingham united with those of the other northern counties in a petition against Segrave and his ministers of the said forest and county that they had committed many acts of extortion and oppression by the exaction of prises, carriages, and divers sums of money, both from the men of his bailiwick and custody and from the men of the county of Leicester.[3] This seems, indeed, to have been a favourite complaint against the constables of Nottingham. Another instance occurs at a later date, when in 1395 the Commons petitioned against the ministers of Stephen Rumbilows, the constable of Nottingham Castle, that they extorted 4*d.* from each cartload of charcoal passing along the high-road through Sherwood Forest for the sole use of the people of the surrounding district, and persisted in so doing, although the judgement had been passed against them in the court of the King's Bench.[4]

After the murder of Edward II Nottingham was brought actively into the history of the times, since Mortimer and Isabel, having aroused opposition on all sides, were fearful of the results of the meeting of the Parliament of 1330 at Nottingham, and fortified themselves in Nottingham Castle. Edward III, at last roused to a determination to throw off the domination of Mortimer, knowing himself secure in the support of the majority of the barons, who were the natural enemies of the earl, won over the aid of William Eland, constable of the castle, and made his well-known attack on the castle and on Mortimer and the queen. The subterranean passage through which he and his followers crept up into the castle still exists, and the whole scene is not difficult to picture.[5] From this time Edward was freed from tutelage, and was able to carry out his ambitious policy of war, involving the glory of victory overshadowed by the inevitable spectre of heavy taxation and a merciless drain on the nation's strength in money and men.

In the Scotch wars of Edward III, as in those of Edward I and II, the county of Nottingham was forced to play an active part. The king himself was frequently in the county, and used Nottingham as a station

[1] *Cal. of Pat.* 1313–17, p. 63.
[2] Ibid. p. 314.
[3] Ibid. p. 311.
[4] *Rolls of Parl.* (Rec. Com.), iii, 330*a*.
[5] See account in Rob. de Avesbury, *Hist. Edw. tercii* (ed. Hearne), p. 8.

from whence to advance into Scotland.'[1] In 1335 Thomas Lungvillers and John de Mountenay were relieved from furnishing forty light horsemen (*hobelers*) by a levy of £40 in the county, Newark excepted.[2] During the same year the inhabitants of the town of Nottingham made complaint that they had been overburdened by an order to provide ten light horsemen, and their quota was accordingly reduced to six.[3] In 1336 William de Shareshull and others were ordered to take an inquisition in the county, and to punish according to their crime certain light horsemen, archers, and others, chosen and arrayed to serve in the company of Thomas earl of Warwick, leader and captain of the army, 'who did not set out, or after coming to those parts stealthily withdrew and went home again, so that through their default the enemy again carried fire and sword into the realm.'[4] Each year while the war lasted came fresh demands and frequent attempts to evade the same.[5] For instance, in 1346, John FitzWilliam and others were sentenced to lose their lands and possessions because 'contemptibiliter detractaverant electionem hominum pro bello Scotiae.'[6]

The disasters both at home and abroad which marked the reign of Richard II were but the necessary outcome of the absorption of Edward III in continental warfare. His grandson had to carry on the French war, the character of which was changed by the fact that Crecy and Poitiers had taught the French a lesson in generalship. He had also to face the social upheaval which times of famine and plague, coming with times of heavy taxation and disarrangement of labour, made inevitable. For 'Richard the Redeless' both these tasks were impossible. He caught at the theories of absolutism which were occupying the minds of the great jurists of the time, and for him the king was to be *solutus legibus* in practice as in theory, whereas in the Middle Ages theory and practice could never agree. It was the battle between this absolutist theory and the counter-development of Wiclif's ideas into the Lollard theory of the sovereignty of the people that was the far-reaching cause of the Peasants' Revolt. Although the county of Nottingham was hardly affected directly by Lollardy, and thus took no active part in the Peasants' Revolt, it suffered under the general causes of the social discontent, and was moreover involved in Richard's absolutist schemes. It was at Nottingham Castle that, having forced the judges to uphold the prerogative of the crown, he prepared in 1387 for a *coup d'état* against the 'over-mighty subject,' which, had it been successful, might have seriously changed not only the course of Richard's reign, but the development of the constitution.[7] The 'Wonderful or Merciless Parliament' swept aside his schemes, and, baffled for a time, he resorted to a policy of constitutional government. But in 1397 came a second attempt to set up his royal prerogative. The duke of Gloucester and the earls of Arundel and Warwick, three of the lords appellant, were seized and sent to different castles. A council was called at Nottingham, and there they were appealed of treason.[8] By the end of the year Arundel was beheaded, Warwick banished, and

[1] Hence the majority of the great councils of the reign were held there, and many letters patent are dated thence.
[2] *Cal. of Pat.* 1334–8, p. 131.
[3] *Rot. Scot.* (Rec. Com.), i, 339*b*.
[4] *Cal. of Pat.* 1334–8, p. 575.
[5] See the frequent levies throughout the Rolls of Scotland.
[6] *Rot. Scot.* (Rec. Com.), i, 687*b*.
[7] Walsingham, *Hist. Angl.* (Rolls Ser.), ii, 161, 174.
[8] Ibid. p. 223.

Gloucester suffocated, and Parliament was as a catspaw in the king's hands.[1] Early in the next year Hereford and Norfolk, the last of the lords appellant, were banished, 'the king was rid of Parliament and began to rule more fiercely than before,'[2] until by his arbitrary rule he prepared the way for the Lancastrian.

Apart from the military service performed by the county, the reigns of the two first Lancastrians seem to have furnished little towards the political history of Nottinghamshire. Even the rebellion of 1450 seems hardly to have affected the county, the only connexion being that in 1451 the mayor of Nottingham let to farm a meadow in the common meadow of Nottingham to raise money to furnish men to march with the king to Blackheath to suppress Cade's rebellion.[3]

In the Wars of the Roses, although the strength of the Lancastrian party lay in the north of England, the county of Nottingham seems on the whole to have favoured the Yorkists, although the Lancastrians could reckon among their number many of the county nobles.[4] The castle seems to have been generally in Yorkist hands, and to have been one of the most useful stations of Edward IV. After his victory at the second battle of St. Albans, and his subsequent proclamation as king in London, the news that the queen was gathering her northern forces called Edward north to prepare for the victorious day at Towton. A commission was issued to Richard earl of Warwick to array all the able-bodied men in Nottinghamshire and the surrounding counties 'for defence against Henry VI and his adherents';[5] and Edward gathered his forces as he went, hoping that 'in the conflict of one day he might perfect all his travailes and victoreyes.'[6] At Nottingham he is said to have held a court 'to afford an opportunity to the nobility and gentlemen of the district to render him their honour and support.'[7]

His next recorded visit to the county seems to be in 1469 on his way northward to suppress Robert of Redesdale's rebellion.[8] Closely following on this came his visit early in 1470, when, hearing that the earl of Warwick, now supporting Henry, had landed in England with help from France, he marched to Nottingham, and there proclaimed Warwick and his adherents to be traitors.[9] In September, 1470, he was again at Nottingham, where he awaited the arrival of Thomas, Lord Montague, with a strong force of 6,000 men; but when Lord Montague, 'whom the king loved entirely,'[10] but whose loyalty he had rewarded by giving him a marquisate with 'a pye's nest to maintain it withal,'[11] had arrived near Nottingham, he suddenly declared for King Henry, and made a retrograde movement to meet Warwick and Clarence and attack the king. But Alexander Carlisle, 'that was sarjeant of the minstrels,' came to the king in great haste and told him of the treason of Montague. Whereupon Edward fled 'from his host beside Nottingham' to Bishop's Lynn in Norfolk, and thence to Holland.[12] On his return to

[1] Walsingham, *Hist. Angl.* (Rolls Ser.), ii, 224 et seq. [2] Froissart (ed. Berner), iv, chap. 78.
[3] Stevenson, *Rec. of the Boro. of Nott.* iii, 409.
[4] For example, Thomas Lord Roos, Lord of Orston, in Notts. was one of the lords deprived of their estates by attainder for allegiance to Henry, *Cal. of Pat.* 1461–7, 30.
[5] *Cal. of Pat.* 1461–7, 31. [6] Polydore Virgil, *Hist. of Hen. VI*, etc. (Camd. Soc.), 110.
[7] Thomas Bailey, *Annals of Notts.* i, 329.
[8] *Paston Letters* (ed. Gairdner), ii, 361.
[9] *Chron. of the White Rose* (ed. Giles), 229. [10] Ibid. 29. [11] Stow, *Annals*, 422.
[12] *Chron. of the White Rose*, 29; *Cont. Hist. Croyland*, 554.

England in March, 1471, he landed at Ravenspur in Yorkshire, and came south to Nottingham, where, according to Stow, 'Sir William Stanley, Sir William Norris, and divers others brought him men, so that hee had then 4,000 or more.'[1] Other chroniclers mention also Sir William Parr and Sir James Harington, who came 'with two good bands of men, well arrayed and habled for warr, the nombar of VI^{c} (600) men,'[2] and Sir Thomas Burgh and Sir Thomas Montgomerie, with their aids, 'which caused him at their first comming to make proclamation in his owne name, to wit, of King Edward the fourth, boldlie affirming to him that they would serve no man but a king.'[3] While he was at Nottingham Edward 'sent the scorers alabowte the contries adioynynge to aspie and serche yf any gadyeryngs were in any place agaynst hym.' These scouts reported that the duke of Exeter, the earl of Oxford[4] and others, with a body of 4,000 men, were garrisoned against him at Newark. But the duke and the earl, 'havynge knowledge that the sayde forrydars of the kyng's had bene aforne the towne in the evenynge,' and thinking that the whole army was coming upon them, determined on flight, and 'erly, abowte two of the cloke in the mornynge, they flede out of the towne, and ther they lost parte of the people that they had gathered and brought with them thethar.'[5] The king, however, directly he heard of the gathering at Newark, had set out thither, but learning, when he was within three miles of the town, that the leaders had fled, he returned to Nottingham, wishing 'to kepe the next and right way towards his sayde great Rebell, th' Erle of Warwick.'[6] From Nottingham the royal forces marched to Leicester, and thence to London, whence they rode to Barnet, where, 'under a hedge-side, were ready assembled a great people in array of the Earl of Warwick's.' Thus the scene of action was changed from north to south, and Nottinghamshire had no local part in the decisive battles of 1471.

During the few unsettled years of his reign Richard III was often at Nottingham, and seems to have done much to repair the damage done to the castle during the late wars. While he was there, in 1484, the town was the scene of an important gathering, when ambassadors came from James III of Scotland, bringing a commission 'for the abstines of were be twyen England and Scotland,' and 'for maryage by tweyne the Prince of Scottis, and one of the kynges blood.'[7] It was when Richard was 'kepyng his howse in the castell of Notyngham' in 1485 that the news of Henry of Richmond's landing with a small force in Wales was brought to him.[8] Determined to provide against any unexpected strength of the enemy, he sent commissions to John duke of Norfolk, and other of his supporters, 'wyllynge theim to mustre and viewe all their servauntes and tenentes, and to elect and choose the moost courageous and active persones of the whole nomber, and with them repaire to his presence with all spede and diligence.'[9] Hearing, however,

[1] Stow, *Annals*, 423.

[2] *Hist. of the Arrival of Edw. IV* (Camd. Soc.), 7; *Chron. of the White Rose* (ed. Giles), 45-6.

[3] Holinshed, *Chron.* iii, 680. This was contrary to the promise of allegiance to Henry that Edward had made to the citizens of York, which 'cast a great shame and dolor into the hartes of the citizens.' Hall's *Chron.* 292.

[4] See *Fenn's Letters*, ii, 59. The earl of Oxford, on hearing of Edward's arrival, had called upon the gentry of his county bidding them meet him at Lynn in full array to proceed to Newark to meet the enemy.

[5] *Hist. of the arrival of Edw. IV* (Camd. Soc.), 8. [6] Ibid. *Chron. of the White Rose*, 62.

[7] *Letters, etc. Ric. III and Hen. VII* (Rolls Ser.), i, 60-65. [8] *Hall's Chron.* (ed. Ellis), 412. [9] Ibid.

that Henry had reached Shrewsbury unchecked, he determined to advance, and having marshalled his forces outside Nottingham, 'with a frownynge countenaunce and truculente aspect, mounted on a great white courser,' rode with them to Leicester and to the field of Bosworth.[1]

Nottinghamshire, thus actively concerned in the events which made Henry VII king, was once more brought into the faction fight with the attempt of Lambert Simnel as the tool of Irish and Yorkist party to depose the king in 1489. Aroused like the rest of England to fight against an army composed of Irish and German forces, Nottinghamshire was wholly with Henry, and welcomed him on his march from Leicester to meet the rebel forces as they advanced from Masham, in Yorkshire. At Nottingham, 'by a lytle wood called Bowres, he pytched his feelde,' and to him came George Talbot, earl of Shrewsbury, and many other 'valeaunt capitaynes' and 'noble and expert men of warre,' for he had ordered that 'all the persons of the counties adjoyning that were hable and of strength to cary weapon should be ready in an houres warnynge in case that any nede should requyre.'[2] On the night of 15 June 'the king's hooste lay under the end of that hill towarde Nottingham Lentonwarde, and his forward before him to Nottingham bridge, and the Erle of Derby's hooste on the king's left hand to the meadows beside Lenton.' A council of war was held in Nottingham Castle, and in the morning the king set out with the army for Newark, accompanied by 'six goode and trewe men of the village of Ratcliffe, which showed his grace the best waye for to conduct his hooste.'[3] Tarrying a little while at Newark, Henry marched three miles farther on, so placing himself between the enemy and Newark, 'being loth that their army should get the commodity of that town.'[4] The earl of Lincoln with the rebel force 'passed softly on his journey,' and advancing probably through Mansfield and Southwell, forded the Trent, and planted his camp 'at a lytle village called Stoke, nygh to the king and his armye.' On the next day Henry divided his army into three battalions, and approached Stoke, 'where was an equall and playne place for both parties to darreigne the battaille.'[5] The armies joined and fought 'earnestly and sharply,' and 'for a space so sore and so egrely of both partes that no man could well judge to whom the victory was lyke to enclyne.' But at last the king's vanguard entered the fray with such force and violence that the enemy fled, leaving their leaders and about 4,000 men slain on the field.'[6]

When the beginnings of reform under Henry VIII took shape in the dissolution of the lesser monasteries, and aroused the conservatism of the north, Nottinghamshire came once more into history as marking the southern range of the 'Pilgrimage of Grace.' Early in October, 1536, rebellion was known to be brewing in the county and the districts round, and the rebels were gathering force at Newark. Thus in answer to a royal command 'to repress all evil-disposed persons lately assembled in those parts, and apprehend the ringleaders and examine them of the grounds of the insurrection,' the earl of Shrewsbury wrote from his 'poor cot at Herdewyche

[1] *Hall's Chron.* (ed. Ellis), 412.
[2] Ibid. 433.
[3] Account of herald quoted in full by Bailey, *Annals of Notts.* i, 347–8.
[4] Bacon, *Hist. of Hen. VII* (ed. Murray), 286.
[5] *Hall's Chron.* (ed. Ellis), 434.
[6] Ibid.

in the forest of Shrywood' that he was inclined to gather all the forces he could at Nottingham on the following Sunday.[1] Four days later he reported that the scouts whom he had sent out to Newark had taken a messenger from the enemy, who declared that his only object in bearing the missive was to escape from Newark.[2] The news that the rebels of Lincolnshire had retired on the duke of Suffolk's arrival quieted the king's fears, and thinking that the Yorkshire rebels would be as quickly subdued he wrote to Shrewsbury to advance upon them 'with my lords of Rutland and Huntingdon and all the forces of Leicestershire and Nottinghamshire,' and when all things were appeased in Lincolnshire and Holderness to dissolve the whole army and come home, sending the ordnance to Nottingham Castle.[3] However, the strength and the disciplined advance of the rebels showed that stronger measures were necessary, and later in the month the king wrote to the duke of Norfolk, who had been sent to crush the insurrection, suggesting that considering the diversity between these and the Lincolnshire rebels they should first be tempered by means of a letter, and if this would not serve, then by force. Meanwhile special care was to be taken to fortify the bridges of Nottingham and Newark and all other passages so that the rebels should have 'nowhere any passage out of Yorkshire.'[4] Wriothesley reported this command to Cromwell, remarking that Norfolk only had 2,000 men with him, 'which he thought enough,' the lord marquis had no more, and with 'the Gloucestershire men' the force would only number 5,000.[5] The king evidently realized how weak the forces were, and how important it was to keep the passages over the Trent and Don safe. Thus he wrote to Suffolk, stationed at Lincoln, concerning the fortifying of the passages. Shrewsbury was near Doncaster,[6] and had sent 1,200 men and six pieces to Doncaster and Rushington Bridge to keep the passages. In case Shrewsbury should be pressed by the rebels, or should be forced to attack them and be worsted, the passages over the Trent must be kept, and Suffolk on receiving notice from Norfolk of any such chance was to leave a sufficient force at Lincoln, but was himself to repair to 'such places as shall be thought fit for the keeping of the passages.'[7] A similar letter went to Norfolk, ordering him to withdraw with Shrewsbury to the passages of Nottingham and Newark, if the rebels seemed too strong, or any of Shrewbury's company should be ill-disposed, and fortify the same 'until we can repair to you with our royal army, having even more regard to the defence of us and of your natural country than to any dishonour that might be spoken of such retirement, for we assure you we would not expose our cousins of Norfolk or Shrewsbury

[1] *L. and P. Hen. VIII*, xi, 223. John Babyngton wrote to Cromwell that he and his cousin Hersy were doing their best in the county for the king's service. (Ibid. p. 245.) Sir John Markham wrote in answer to Cromwell's inquiry as to 'what men he could have within the forest of Sherwood by his office of chief justice of the same, no man offended,' that he thought he might have twenty of the retinue of the town of Nottingham and four who filled offices granted by the king's patent. He also stated that he had given orders to the tenants of the suppressed monasteries in Nottingham to retain themselves to no man, but be ready to serve the king in Cromwell's retinue. (Ibid. p. 222).

[2] Ibid. xi, 254.

[3] Ibid.

[4] Ibid. xi, 315.

[5] Ibid. xi, 329.

[6] It was by this speedy march over the Yorkshire border to Doncaster that Shrewsbury saved Nottinghamshire from being overrun by the rebels.

[7] *L. and P. Hen. VIII*, xi, 339. In another letter dated 14 Nov. 1536, in which the king granted pardon to the Lincolnshire rebels, he begged Suffolk 'remember his former letter touching the fortification of Newark and the passages there and the withdrawing of victual.' Ibid, p. 427.

or others with you to peril for any dominion we have on this side of Trent.'[1] Concerning any promises Norfolk might make to the rebels to stay them until his force was strengthened Henry bade him 'have such temperance as our honour shall remain untouched by any certain grant of what you cannot certainly promise.' Under such orders as these[2] Norfolk could do little to satisfy Aske's conditions of peace, and the rebel forces which had been disbanded were called back to the standard in the middle of November and again advanced to the Don.[3] However, in the meantime all royal forces had been kept in readiness. Thus early in November Nottingham and Newark Castles were reported to be fortified as if for siege.[4] Nottingham Castle, held by Thomas earl of Rutland,[5] and the knights of the county with between 400 and 500 men, was laid round with guns and stocked with provisions; grain was ordered to be brought in by the county. There was a new drawbridge at the entry to the castle, although the country round was for the king. Like provision for grain was made at Newark, and the captains there had decided to make a blockhouse at the bridge end and a drawbridge at Muskham. The 'commons' were on the king's side, but feared to be spoiled like the men of Lincolnshire.[6] The castle had three 'chesse' of guns, and was kept with 700 men. But Norfolk, who probably had much sympathy with the rebels, wrote to the king on the news of the fresh gathering at Doncaster,[7] begging him to grant a general pardon. The king's answer showed a non-relenting attitude. If the enemy was as strong and Norfolk's position as weak as he represented it was because he had not been 'so circumspect as he should have been.' First he had desired that Shrewsbury should not pass the Trent till he himself had joined him, taking upon himself 'such knowledge of the county as though he had been able to stay the passage of the rebels and thereby defeat them,' yet if Shrewsbury had not advanced early to Doncaster 'the country had been clearly overrun and a great number of our subjects spoiled who are now ready to serve us against the rebels.' Then again, after promises not to consider binding any terms he might make with the rebels, he soon 'fell to a point with them,' and dissolved the army 'without any exploit, leaving them in force.' Now he writes that if the king 'trust to treat or do he shall be deceived, adding beside the report of sixty gentlemen declaring other parties not to be trusted to.'[8] A second letter addressed to Norfolk and others runs: 'We wonder you all unite in such desperate sort as though the world would be turned upside down if we do not agree to the petitions of the rebels especially for a free pardon and a parliament . . . if the rebels be as cankeredly disposed and in

[1] *L. and P. Hen. VIII*, xi, p. 353.

[2] The uncertainty of the king's conduct towards the rebels is seen in two letters from Richard Cromwell to his father. One recounts orders to march on the morrow to Newark; the other tells how that day they were countermanded, then renewed one night and the next day discharged. 'Thus the Council do and undo, for they know not what determination the king has taken with them in the north.' Ibid. pp. 412, 416.

[3] Ibid. xi, 450. [4] Ibid, pp. 415, 465.

[5] Thomas earl of Rutland in a letter to Cromwell dated 10 November, 1536, states that 'lying at Nottingham Castle is very chargeable.' At Doncaster his own money, and that he had of his friends, was almost spent, and the duke of Norfolk sent him £500, which he delivered part to Peter Mewtes for conveying up gunners, part to the masters of the ordnance here for gunners, part to posts about Nottingham and Newark, and to divers gentlemen for fortifying fords beside Doncaster, so that he has little over £300 left. He has daily to lay out money on the castle, and doubts whether he will receive his rents in Yorkshire—a great part of his living—this year or not. He therefore begs Cromwell move the king for money.

[6] Lord Burght and the captains of Lincolnshire had seized the people's harness in the country round.

[7] *L. and P. Hen. VIII*, xi, 494. [8] Ibid.

as good a readiness as you write we marvel that neither you our cousin of Shrewsbury have been so diligent in viewing and fortifying the fords of the Don as we desired in former letters, nor that you our cousin of Norfolk and our admiral have devised upon the same since your arrival, knowing that we had the doing thereof so much at heart. . . If by your negligence the rebels should . . . cross the Don we should think ourselves ill served.'[1] Finally, however, the king agreed to Norfolk's request, pardon was promised, and the rebel forces disbanded. During the next year the earl of Shrewsbury was rewarded for his prompt measures to quell the rebellion by a grant of the lands and site of the lately suppressed monastery of Rufford in the county.[2]

The reigns of Edward VI and Mary seem to have furnished little towards the political history of the county which, on the whole, conformed to the religious changes and thus had small share in the religious rebellions that were rife during these years for religion's sake. In Elizabeth's reign, when the north was disaffected, Nottingham seems to have remained loyal. Thus in 1569 the sheriff reported to the council that Nottingham was quiet, and that many in the county had subscribed to the observance of the Statute of Uniformity.[3]

In 1562 Lord Robert Dudley was ordered to make preparations for a meeting at Nottingham between Queen Elizabeth and Queen Mary of Scots. Tilts were to be set and warning given to all lusty young knights to show feats of arms.[4] A letter was also directed in July to the sheriff of Nottinghamshire ordering him, since the queen had determined to meet the queen of Scots at Nottingham on 3 September next, 'bothe whose traines will amount to 4,000 personnes,' to repair 'to Nottingham, calling unto him as well the most experte and skilfull gentlemen of that shire as of the confynes of the shires adjoining,' and there prepare for the victualling of the train of the queen of Scots.[5] There still exists a scheme of devices 'to be shewed before the Queen's Majesty by way of maskinge at Nottingham Castell after the meeting of the Queen of Scots,' but these devices were set aside[6] since the meeting was eventually postponed.[7]

As a contrast to this suggestion of pageantry comes a tale of 'most lewd and foule parties and disorders committed in that county' in the years 1592 and 1593. The riots seem to have been caused by the erection of weirs upon the River Trent, and the rioters among other things defaced the coach of Sir Thomas Stanhope, and set up 'vile pictures' of the earl of Shrewsbury, the owners of the weirs.[8] Orders came from the council to the sheriff and justices of the county to seize and examine all suspected persons and imprison them without bail. A few months later came a censure from the council because the justices, in spite of the late commands, by their 'wilful negligence and partiality,' had shown contempt of justice and Her Majesty's commands rather than 'yealded any show of care' in the performance of their duties.[9]

But for Nottinghamshire, as for many other counties, the history of Elizabeth's reign with its intricate foreign policy resolves itself for the most

[1] *L. and P. Hen. viii*, xi, 494
[2] *Cal. S. P. Dom.* 1547–80, pp. 346, 350.
[3] *Acts of P. C.* vii, 110.
[4] Ibid. p. 202.
[5] *Acts of P. C.* vii, 114.
[6] Lansd. MS. v, No. 38. Camden, *Annals* for 1562, p. 60.
[7] Ibid. xii, pt. ii, 350.
[8] Ibid. xxiv, 77.
[9] Ibid. 267.

part into a long list of muster rolls. In the critical years before the Spanish Armada, when England's safety seemed to rest on such slender defences, English forces had to be sent to give Elizabeth's half-hearted aid to the Lords of the Congregation against the French faction in Scotland, to the Netherlanders against the French, and to the French against the Spaniards. In 1559 a levy of 200 men was ordered from Nottinghamshire to march to Berwick to help in the siege of Leith.[1] From Nottingham itself went forty-two able men, of whom ten were archers and thirty-one bill men, the latter having twelve 'harnesses' between them.[2] Again, in 1573, when the massacre of St. Bartholomew made definite action on Elizabeth's part a necessity, fresh musters were ordered from the town of Nottingham to advance to Edinburgh for the help of the king's party.[3]

The failure of her shifting policy and the events of 1576 drove the queen into negotiations with the Low Countries, and in accordance with her promise of help fresh musters were ordered throughout the country in 1577.[4] In April of that year the council wrote to the commissioner of trustees for Nottinghamshire concerning the training of the number of men appointed, and 'signefieing Her Majestie's pleasure that fiftie shalbe rebated.'[5] Further commissions were issued in 1580 and 1581, when 100 men from Nottinghamshire were ordered to help in the suppression of the rebels in Ireland.[6]

From this time until the Spanish Armada had become a thing of the past all energies were concentrated on preparations for defence against the threatened attack of Spain. Thus in 1580 musters were taken 'not to charge men in any foreign service,' but to ascertain the strength of the realm in case of any rebellion or invasion.[7] A change seems to have been made in the list of horsemen to be maintained by the county of Nottingham. The rate of assessment for the subsidy of that year was two light horse from land worth £10, a lance and a light horse from land worth £20, a lance and two light horse from land worth £30, and two lances and two light horse from land worth £40.[8] The gentlemen of the county were required to attend a muster at Newark in January, 1581, and those 'expected to show horses' were sixty-four in number.[9] Several pleas for exemption were put forward. Sir John Byron wrote to the lord-lieutenant that as he was now sheriff of Lancashire he trusted he would not be 'charged in Nottinghamshire.'[10] Sir Francis Willoughby stated that he could not provide the lances and horsemen and their furniture by the time appointed 'because the county yields not the same upon the sudden,' but would send two lances and two light horse.[11] Edward Stanhope petitioned that 'being a younger brother and having no residence in Nottinghamshire,' he should be excused from providing a demi-lance and a light horse.[12] In January, 1588, the beginning of the critical year, the earl of Rutland, with the consent of the gentlemen of Nottinghamshire, decided that the county should furnish 1,400 footmen of whom 400 were to be selected at once.[13] The quota originally required from the county

[1] *Hist. MSS. Com. Rep.* xii, pt. iv. vol. i, 71.
[2] Ibid. p. 70.
[3] *Acts of P. C.* viii, 107.
[4] *Hist. MSS. Com. Rep.* xii, pt. iv, vol. i, 112.
[5] *Acts of P. C.* ix, 335.
[6] Ibid. xiii, 45. *Hist. MSS. Com. Rep.* xii, pt. iv. vol. i, 119.
[7] Ibid. p. 125.
[8] Ibid. p. 123.
[9] Ibid. p. 124.
[10] Ibid. p. 125.
[11] Ibid.
[12] Ibid.
[13] The numbers for Nottinghamshire according to the musters of 1574 and 1575 are omitted in Peck's *Desiderata Curiosa*. See vol. i, liber ii, 75.

was 2,000, but since the earl had abated 600 from this number the gentlemen of the shire promised 'to persuade all persons able to do so, over and above their contributions, to provide themselves with private armour and weapons for their own furniture.' The earl was to be informed of all persons who were of the ability, and refused to furnish themselves as aforesaid.[1] Fresh orders were issued in May, 1589, 'for musters and getting in readiness of horsemen, footmen, pioneers, powder, matches, and such like, and for the maintenance of the beacons.' Also 'to maintain the peace in those parts and to suppress all riots and rebellion.'[2] The earl of Shrewsbury wrote to his brother-in-law Sir John Manners concerning these musters that there might be 'default in the selected bands of footmen' and thus he hoped that Sir John and some of the justices would view them before the day originally fixed. The greatest want he thought would be of powder and match.[3]

After the success of 1588 England turned to give help to France since Henry of Navarre was now king. In June, 1591, an army of 3,000 men was to be sent to Normandy 'for the succour of the French kinge,' and of these a contingent of 150 was ordered from Nottingham to be shipped at Hull.[4] In July an order was sent to the mayor of Nottingham that the town of Nottingham should contribute 'towards the furnishing of the armour and weapon and other necessary and incident thinges and charges for those nombers now to be leavied in that countie.'[5] Recruits to the number of fifty were required from the county in August of the next year for the 'aid of the French kinge in Britaigni.'[6] Five of these recruits seem to have been unwilling to serve abroad and to have 'runn away from their generall at the place where they should have embarked.' They with others who had deserted from various counties were to be committed to prison and punished as 'shalbe thought agreable with the qualitie of their offence.'[7] Levies were again ordered for service in Ireland in June, 1594, and forty foot and two horse were required from Nottinghamshire.[8] Concerning these it was reported that Nicholas Hamerton and John Elvas had shown themselves 'backward and undutyfull' in service and were ordered accordingly to appear before the council.[9] In March, 1595, the forty footmen were ordered to be sent to Ireland, 'sorted with their armor, weapons, and other furniture as before prescribed, that is one half of the whole to be shott, whereof one-fourthe parte to be muskettes, the other half of the whole to be armed with corselettes and pikes savinge some few halbertes.' Besides these fourteen, others were to be kept in readiness for future service.[10] A new levy of 100 men was ordered from the county for service in Ireland in 1598,[11] and a further levy of £120 for 'the provyding of fower light horse.' Concerning the raising of the latter the council wrote to the high sheriff and commissioners censuring 'the backward and obstinacy of them whose abilities are known to be of suche as they have no cause to pretend any excuse (for refusing payment) but of a perverse disposition.'[12] In June, 1600, came a new requirement of fifty foot from the county for Ireland. The choice of 'serviceable and sufficient' men was emphasized and a special warning given against the 'evill choise' of 'lewd and dissolute persons,' such as those who 'contynewallie either runne awaie before

[1] *Hist. MSS. Com. Rep.* xii, pt. iv. vol. i, 235.
[2] Ibid. p. 272.
[3] Ibid.
[4] *Acts of P. C.* xxi, 221.
[5] Ibid.
[6] Ibid. xxiii, 135.
[7] Ibid. p. 214.
[8] Ibid. xxv, 6.
[9] Ibid.
[10] Ibid. 48, 263.
[11] Ibid. xxviii, 609.
[12] Ibid. xxx, 67.

they come to embarque or abandon their service very soone after comming into Ireland.' Special conditions were also made as to the arming and apparelling of the soldiers.[1] Later in the same year came a fresh demand for fifteen men from the county to proceed from Chester to Lough Foyle in the north of Ireland. As there had been moderation used in the number demanded so Her Majesty had like regard in the 'arming and apparrelling' of the men 'to deminishe the charge of the county,' and therefore it should suffice that they were furnished with 'harquebuses, murrions, bandolyers, and Turkey swords with especiall good baskett hiltes,' while for their apparel they must have 'well lyned cassockes,' and must be provided with 'hose and shooes,' while for their coats there should be the ordinary government allowance of 4*s*. the piece.[2]

Meanwhile the government was also occupied in seeing that the home forces of the country were properly mustered and equipped. Thus, early in 1595, a letter was addressed to the mayor and burgesses of Nottingham, requiring that the commissioners for musters for that shire should 'take view of soch able men and souldiers as that towne hath heretofore enrolled and prepared, and see them trayned with the rest of the shire.'[3] This, the letter expressly stated, was not meant to be an infringement on the liberties of the burgesses, but in order that a true certificate might be sent to the council of the state of all the forces in the county.[4] Special care was advised in 1596 that the leadership of the Nottingham trained bands should not be committed to any 'Recusant in any sort.'[5] Certificates of the musters were sent to the council in June, 1596, and were acknowledged by a letter thanking the sheriff and commissioners for their pains and 'prayeinge and requiringe' them that as they had taken 'good order with the footbandes for change of their armes[6] . . . . and for supplie of their defectes,' so they would 'take a better view of the horses . . . . the nomber whereof we are sorie to fynde decayed.'[7] Concerning the provision of powder, match, and bullets to remain 'in stoare' in the county, the council advised of powder, 1,600 lb. weight; of match, 400 lb. weight; of bullets, 1,600 lb. or thereabouts.[8] A general order to increase all stores of powder, match, and bullet came in November, 1596, on account of 'the great preparacions the king of Spain doth make,' together with another command that all the inrolled numbers of the county, both of horse and foot, should be again viewed and mustered.[9] Although Nottinghamshire is not included in the great list of musters of Elizabeth's reign,[10] a paper, compiled about 1607–8, gives the total number of 'able men' available from the county at 4,000. Of these 1,500 were armed men, 100 were pioneers, 18 were demi-lances, and 100 light horse.[11]

The reign of James I, and the early years of Charles I carry on the long list of musters.[12] In 1621 the commissioners reported that the Nottinghamshire

[1] *Acts of P.C.* xxviii, 412–6.
[2] Ibid. 790, 796–8.
[3] The proportion furnished by the town seems to have been sixteen trained soldiers and twenty-four bowyers, maintained by private individuals. *Rec. of Boro. of Nott.*
[4] *Acts of P.C.* xxv, 9.
[5] Ibid. p. 411.
[6] A general attempt was being made to convert 'the bowes . . . unto callyvers and muskettes.' See ibid. 27.
[7] Ibid. p. 462.
[8] Ibid.
[9] Ibid. 292–5.
[10] See Peck, *Desiderata Curiosa*, vol. i, liber ii, 75; and *Ordinances of the Royal Household* (Soc. Antiq.).
[11] *Hist. MSS. Com. Rep. on MSS. of Lord Montagu of Beaulieu*, 81.
[12] Levies were constantly needed for foreign service, as in 1625, when 150 men were raised in the county. *Cal. S.P. Dom.* 1625–6, 46); and again in 1627, when 100 soldiers were required for the service of the king of Denmark (ibid. 284).

bands, both trained and untrained, were in good condition, except that the horse were lessened by the creation of some barons who claimed exemption, as did some of the king's servants.[1] In 1622 the bands were ordered to be ready for instant service, and to suppress riots if any should occur.[2] Three years later the store of powder in the county was considered insufficient,[3] and in 1626 William, Viscount Mansfield, wrote to Secretary Conway that in Nottinghamshire, although the 'Muscatires' were reasonably well 'for pikes and corslets, there were not above six in the whole shire right as they should be.'[4] He also reported that he had 'taken his own credit' to supply the deficiencies of the county musters, and promised to do his utmost to procure a benevolence from the county, but feared they would be governed by 'ill precedents and factions, the dregs of the last Parliament.'[5]

Already, indeed, the county as a whole was beginning to revolt against the illegal schemes fashioned to meet the financial difficulties of the Stuarts. In January, 1626, Sir Gervase Clifton had reported concerning the forty-five loans demanded under the Privy Seal that he had received amounts to £500 from thirty-four persons. Five persons (assessed together at £100) had been silent or refused, and six others (assessed together at £90) had sent excuses.[6] Again, in September, 1626, the forced loan was met by a refusal of 'the people in general, save a few whose offer amounted to £70 . . . . to give to His Majesty otherwise than by Parliament, which they alleged to be the ordinary way.'[7] However, in February, 1627, the commissioner for the loan reported that, though the country at first was 'not a little perplexed at the height of the demand, and the manner of it as not being included in Parliament,' it had ultimately been persuaded to submit 'on allowance of certain exceptions and the giving of time.'[8] Moreover, the gentlemen and others of the town of Nottingham 'willingly assented to the loan,' and promised 'to pay down half at once (i.e. £129),[9] and the residue in three months.'[10] Yet, though the county had yielded, there was a general simmering of discontent,[11] and this, added to the ravages of the plague, in 1630 and

[1] *Cal. S.P. Dom.* 1619–23, 262. [2] Ibid. 427. [3] Ibid. 1625–6, 377.
[4] *Cal. S.P. Dom.* 1625–6, 406. [5] Ibid.

[6] S.P. Dom. Chas. I, xix, No. 21. Of the latter George Jaques petitioned that he had no land but a poor cottage worth 40*s.* a year; that he lived upon a farm which, with a high rent, was scarcely worth £30 per annum, yet was the cheapest of his means, as for the estate and goods inherited from his uncle, brother, and mother there were at the most but £1,000, and of this he had not a sixth. Added to this slenderness of estate he was £200 in debt, to be paid by Candlemas next. Gabriel Armestreye made the quaint excuse, 'not forged to avoid it (the loan), but most true,' that he had great expenses since he had 'twelve children living, and more than one hundred children and children's children alive and dead.' George Abell had too little money for himself and family since he had no land, having lately sold it, no house of his own, and many children. Alexander Stowe was already overwhelmed with many debts he could not pay, and his lands, 'not being above £15 per annum,' he had a year ago conferred on his son in marriage, half in possession, half in reversion. Thomas Grantham wrote, 'I presume by this time you take notice that Mrs. Sacheverill hath changed her name, so as wee must both entreate you to make a faire excuse on our behalfe. And in so doing I shalbe reddye to performe the like kindness to any of yo^r freindes in Lincolnshire.' Richard Welshe wrote that about four years ago he had bestowed most of his estate on his eldest son in marriage, and had since had losses, 'the vallew of two hundred pounds in cattle and other sheepe, beinge by trade a butcher, by reason whereof I am greatly impoverished in my estate.'

[7] Ibid. p. 434. [8] *Cal. S.P. Dom.* 1627–8, 65. [9] Ibid. 338. [10] Ibid. 53.

[11] This is seen in connexion with the muster levies of 1633. The earl of Newcastle reported many defects and many refractory persons in the county. Thomas Flower, of Askham, was especially censured since he had refused to 'show his arms' with 'such sauciness' that if some course 'were not taken to reform him his Majesty's service would much suffer.' He had also 'denied to compound for knighthood,' and when threatened with a summons before the council had answered that 'he knew his way well enough thither, and it was but buying a new pair of shoes more' (ibid. 1633–4, 281). By April, 1634, this same Thomas had been brought to conformity by the council (ibid. p. 561).

1631,[1] made it in little humour to meet the fresh burden of ship-money. By the levy of 1635 the county was assessed at £3,509, of which £200 was due from Nottingham, £120 from Newark, and £30 from Retford.[2] At the assessment no one seems to have been refractory except Gervase Markham,[3] who wrote to the sheriff taxing him with favouritism in the assessment, and complaining of the great and intolerable oppression, and stating that 'if he had been commanded to present to him his head he would as willingly have done it.'[4] However, when the sheriff came to gather in the money there were few that would pay without distraint, yet though it was 'much to his trouble,' he got the money at last.[5] In March, 1636, £3,200 of the £3,500 charged on the county was paid over by the sheriff,[6] and the remainder, it was thought, would be paid by the end of September.[7] However, in January, 1637, the under-sheriff wrote that the late sheriff was 'fourscore years of age, and little able to go through such a weighty business as ship-money.' Only £30 then remained in arrear, and of this, Newark, he stated, was 'behind £20, whereof the earl of Berkshire, as the late mayor telleth me, should pay £10, and the town is poor.'[8] In the assessment of 1637 the hundreds of Newark, Hatfield, South Clay and North Clay were more heavily assessed than those of the north division, and complained that the sheriff, Sir Francis Thornhaugh, had favoured the part of the county in which he lived. This he disclaimed, contending that if, as the complainants asserted, the king's service should suffer in this matter it would be by their unjust interruption, and not by his assessment.[9] In March, 1638, he wrote to Secretary Nicholas that £650 had been sent to the treasurer of the Navy, and that he hoped to send more about May or Whitsuntide, but 'money is scarce in the county, and you know how I have [been] troubled about the assessment. I have neither spared care nor pains since I came down into the country. There is nobody denies, but only desires a little more time.'[10] Arrears for 1637 were still not paid by 1639. In the May of that year Sir Francis reported that Ambrose Wade, one of the chief constables of the hundred of Broxton, had retained £39 16*s*., part of the £250 6*s*. 5*d*. charged on that hundred, and that the town of Newark was in arrear £11, being part of the £80 charged on the town. The mayor of Newark and Ambrose Wade were therefore ordered to pay the said sums within eight days or appear before the council.[11] For the levy of 1638 the sheriff Lord Chaworth reported the payment of £700 towards the full sum required from the county, and begged that the council should suggest some mode of procedure in cases where he had been bidden to get the ship-money

[1] Thus in December, 1630, many parts of the county were 'so extremely visited in the plague' that the musters could not be taken with safety (*Cal. S.P. Dom.* 1629–31, 414).

[2] *Cal. S.P. Dom.* 1635–6, 253.

[3] The Markham family seems to have been generally recalcitrant. Thus in July, 1635, Thomas Markham, a cousin of Gervase, was accused of being in the company of a John Bensford and others the day after a training of the horses of the county at Newark, when certain disloyal words, overheard and reported by a beggar woman, had been spoken concerning the king. Markham was examined by the bishop of York, but denied that such words were spoken, protesting that he himself was ready to spend his life in His Majesty's defence (Ibid. 1635, 272). A further letter of February, 1536, states that Mr. Gervase Markham was the only person in the county who was refractory (Ibid. 216). In the next month he was suing for pardon 'in humblest manner that his heart can devise or a delinquent poor prisoner . . . express himself.' (Ibid. 1635–6, 290).

[4] *Cal. S.P. Dom.* 1635–6, 11. [5] Ibid. p. 190. [6] Ibid. 268.

[7] Ibid. 1636, 92. [8] Ibid. p. 186.

[9] Ibid. 1637–8, 43, 159, 184. [10] Ibid. 327.

[11] Ibid. 1639, 241. However, in 1640, the sheriff for that year signified that Ambrose Wade was 'dead intestate and of small estate.' Ibid. 1640, 244.

if he could, while the men who bade him get it kept their gates and fences so well maintained that 'no distress could be drawn out but by force.'[1] Earlier in the year he sent to the council a petition presented by the poor inhabitants of Newark, complaining of 'being overrated towards the business of shipping.' They pleaded that because of the smallness of their trade, the poorness of the people, and the removal of 'gentlemen and able men who formerly dwelt there and contributed to the taxes,' the levy of £45 towards ship-money was more than the weak estate of the town could support.[2] The council required the sheriff to examine the allegations, and if the town were overcharged then the proportion was to be 'eased,' but what was taken off was to be levied in the county elsewhere, 'which is either too easily rated, or may better bear it.'[3] As a result Newark was eased of £40, which was imposed on the rest of the county.[4]

Sir Thomas Williamson, sheriff for the next year, was able to collect £600 or £700 towards the charge on the county, but spent it at a later date in raising a garrison for the king at Newark.[5]

Meanwhile the attention of the king was being directed to Scotch affairs, and already in December, 1638, and January, 1639, the lord-lieutenants of the northern counties, Nottingham among them, had been notified that by reason of 'the extraordinary and unexpected occasion' at hand they should prepare the forces and strength of their counties to prevent such disorders as might otherwise fall on the kingdom.[6] An order also went out that, owing to the great want of armourers, gunsmiths, swordmakers, and bandoleer-makers those skilled in these trades should be allowed to set up and exercise any of the said trades as freemen of the corporation of any of the Nottinghamshire towns, as of all the counties of the north.[7] In February, 1639, Captain Roger Bradshaw reported to Windebank concerning the Nottinghamshire horse and foot. The footmen numbered 1,033 besides officers, the arms of the pikemen were 'passable,' but for 'musketeers' he had 'defected a great number by reason of the weight and length, some weighing 18 or 20 lbs., for no man is able to do service with them.' The horse numbered sixty-one, and both horse and arms were good, except a few pistols which he had 'defected.' The magazine was 2½ lasts of powder, 2½ tons of match, and 2½ tons of lead.[8] In 1640, 300 foot soldiers, fifty horses, and seventeen carters were required from the county,[9] and the lord-lieutenant promised they should be in readiness at time and place appointed. The numbers actually sent were 300 men and three drummers.[10] Although the war with Scotland was nominally ended by the Treaty of Ripon, the strain it had involved on the revenue made the Long Parliament a necessity, and with the Long Parliament came the Civil War.

The period of the Civil War was one of the most eventful in the history of Nottinghamshire. There was a strong royalist element in the county, and

[1] *Cal. S.P. Dom.* 1639, 150.
[2] Ibid. 1638–9, 234, and 1639, 134.
[3] Ibid. 1639, 134.
[4] Ibid. 1639–40, 465.
[5] *Proc. of Committee for Advance of Money*, i, 90. In March, 1662, Sir Thomas was 'discharged £500 ship-money levied in co. Notts. during his shrievalty, and by him paid in 1648 for the use of the garrison of Newark.' *Cal. S.P. Dom.* 1661–2, 312.
[6] Ibid. 1638–9, pp. 155, 307.
[7] Ibid. p. 373.
[8] Ibid. 444.
[9] Ibid. 1640, p. 272.
[10] Ibid. p. 544.

thus Mrs. Hutchinson writes that whereas 'some counties were in the beginning so wholly for the Parliament that the king's interest appeared not in them; some were so wholly for the king that the godly, for those generally were the Parliament's friends, were forced to forsake their habitations and seek other shelters: of this sort was Nottinghamshire.'[1] All the nobility and gentry and their dependents were generally for the king, and among them were the earl of Newcastle, the earl of Kingston, who 'a few months stood neuter,' until at length 'his fate drew him to declare himself absolutely on the king's side,' Lord Chesterfield, Lord Chaworth, the earl of Clare, who was 'very often of both parties, and . . . never advantaged either,' Sir John Byron, and Sir John Savill. Of the 'parliament men' Mr. Sutton, afterwards Lord Lexington and Sir Gervase Clifton 'forsook the Parliament, went to the king and executed his commission of array.' Others who were firm to the Parliament were Mr. Hutchinson and Mr. Henry Ireton.[2] Knowing the strength of his party in the county the king was quick to visit first Newark and then Nottingham and gather his forces. In July, 1642, he convened a meeting at Newark of all the principal gentry and landowners of the county, and declared that whereas he went to other places 'to confirm and undeceive' his subjects, he had come there only to 'thank and encourage' them.[3] A few days later he went on to Nottingham, where he held a similar meeting and summoned the trained bands which were arrayed under Sir Gervase Clifton.[4] The mayor, Alderman James, a parliament man—'a very honest bold man with no more but a burgher's discretion'[5]—had refused twice to go to York at the king's command, and had not published the king's proclamations, and the king, though he accepted the mace, 'gave him no hand to kiss.'[6] By 12 August the king was again at York, where he published his proclamation requiring the aid and assistance of all his 'well-affected subjects north of the Trent . . . for the suppression of the rebellion and the protection of his subjects from that slavery and insolvency which threatened them.'[7] By 17 August he was at Newark, the next day at Southwell, and the next at Nottingham, where he reviewed the cavalry. On Monday, 22 August, came the formal declaration of war with the setting up of the royal standard at Nottingham. A letter printed in *Remarkable Passages from Nottingham* gives the graphic account of an eye-witness: 'His Majesty came into the castle yard accompanied with the prince-duke Prince Robert (Rupert) and Maurice his brother, the duke of Richmond, and divers others, courtiers and cavaliers, and finding out the highest pointed hill in the yard from whence it might be perspicuous the standard was brought in and there erected. At which time all the courtiers and spectators flung up their caps and whooped crying: "God save King Charles and hang up the Roundheads"! and so whooped the king to his lodgings. After which the standard was removed to the highest tower of the castle, where it hangs blowing, and so must till the king advanceth his

[1] Mrs. Hutchinson, *Memoirs of Col. Hutchinson* (Bohn ed.), p. 116.
[2] Mrs. Hutchinson, op. cit, pp. 117–8.
[3] Rushworth, *Hist. Coll.* iii, vol. i, 653.
[4] *Truths from Nott. and Leic.* (B.M. Pamphlets, 669, fol. 657).
[5] Mrs. Hutchinson, op. cit. p. 132.
[6] *Truths from Nott. and Leic.* April, 1642 (B.M. Pamphlets, 669, fol. 657).
[7] Clarendon, *Hist. of Great Rebellion*, ii, 275.

camp forward; then it removes with him.'[1] Drums were beating about Nottingham for volunteers for the king, troops of horse were coming to be billeted on the county, and already rapine and spoil was being committed about Nottingham; gentlemen's houses were ransacked, and 'one Master Needham's oune cart' was made to 'bring away to Nottingham bedding, linen, pewter, butter, cheese, and other things out of his house,' because he was 'accounted a Roundhead.'[2]

Three days after the setting up of the standard, the king by the advice of his council sent a message to both Houses of Parliament hoping to find 'some remedy to prevent the miseries which are ready to overwhelm the whole nation by a civil war,' and proposing a treaty between himself and Parliament.[3] The Houses answered that the king by his proclamations and declarations against Parliament and by setting up his standard had put 'the two Houses of Parliament and in them the whole kingdom' out of his protection, and until His Majesty should recall the proclamation and take down the standard the Houses for 'the good and safety of the kingdom' could give him no answer. The king answered that he never had declared the Houses traitor, nor set up the standard against them, and if they would revoke all their proclamations made against his party he would do the same and would take down the standard.[4] The Parliament unmoved returned the same answer as before, and declared that the arms they had been forced to take up should not be laid down until His Majesty should withdraw his protection from such persons as had been voted delinquents by both Houses.[5] Meanwhile on 30 August the men of Nottinghamshire presented a petition to the king, 'humbly imploring his sacred Majesty to returne and joyne with both his Houses of Parliament,' and to take down the standard. Thereupon His Majesty 'struck with clemency immediately caused his standard to be taken downe . . . but the Cavalliers were not a little moved at the happy success this Petition found, wherefore some certain of them being ful of gall and spleen, and withall taking a cloak for their wicked intention, saying that the Petitioners were rather traytors than subjects . . . alleadging that his Prerogative was clipt, and ere they would suffer it their lives (as for their fortunes they had none) should be sacrificed to redeem his wrongs, in such like passions sought out for the Petitioners . . . and would have fallen upon them, but they . . . sent to the mayor . . . intreating that some of the

[1] (B.M. Pamphlets, 669, fol. 675). *Remarkable Passages from Nott. Letter from a Gentleman neere Nott. to a Friend in London.* The writer goes on to describe the standard as 'a long pole like a maypole, painted red on the upper end, whereof hangs a large silk flag (in form of a scutcheon) with a red crosse and two lyons passant upon two crownes.' He also tells how 'Prince Robert' (Rupert) was next day made general of the horse and how the king declared that whoso would go that afternoon with the prince against Coventry and Warwick 'it should be acceptable service.' A rather different account of the event is given in another description. There the writer says that the standard was 'taken out of the castle and carried into a field a little on the back side of the castle wall.' Of the standard he says that 'the likeness of the standard is much of the fashion of the City streamers used at the Lord Mayor's Show, having about twenty supporters, and is to be carried the same way; on the top of it hangs a bloody flag, the king's arms quartered, with a hand pointing to the crowne which stands above, with this motto: "Give to Caesar his due."' *A True and Exact Relation of the Manner of His Majesty's Setting up his Standard at Nottingham.*

[2] This account is, of course, written from a partial point of view. The writer of the letter has been thought to be Col. Hutchinson, who was certainly in Nottingham at the time. See Mrs. Hutchinson's *Memoirs of Col. Hutchinson.*

[3] *His Majesty's Gracious Message . . . sent from Nottingham, etc.* (B.M. Pamphlets, E. 116, No. 2).

[4] B.M. Pamphlets, E. 116, No. 2.

[5] Clarendon, *Hist. of Great Rebellion*, ii, 308.

Trained Bands should be in a readinesse to quell all uproars if it chanced that the Cavalliers should bee over busy.'[1]

There was thus another side to the history of the king's cause in Nottinghamshire. Though the gentry of the shire were on his side, Nottingham townsmen and the freeholders were against him,[2] and Clarendon reports how the king 'found the place much emptier than he thought the fame of his standard would have suffered it to be,' for 'at Nottingham (besides some few of the train-bands which Sir John Digby, the active shrieve of that county, drew into the old ruinous castle there) there were not of foot levied for the service yet 300 men.'[3] All the strength on which the king could depend was his horse, about 800 in number, now at Leicester with Prince Rupert, and Essex, with the parliamentary forces, was at Northampton, ready, it seemed, to march on Nottingham. But 'God blinded his enemies so that they made not the least advance towards Nottingham.'[4] By the end of August recruits were coming in from Yorkshire, Staffordshire, Lincolnshire, Shropshire, and Cheshire, and the hopes of the royal party were rising. Yet Nottingham 'seemed not a good post for His Majesty to stay in,' and on 13 September he marched from Nottingham to Derby. Thus Sir Edward Nicholas wrote to Sir Thomas Roe that the king was on that day 'setting forth with his army . . . to join with 5,000 foot and 400 horse, which are raised for the king in Wales and the borders. The king's army is much increased within these eight days, and near 2,000 arms have been hither brought in from this and the adjacent counties.'[5]

Meanwhile musters were gathering under the parliamentary commission of array. Three colonels had been nominated: Sir Francis Thornhaugh, Sir Francis Molyneux, and Francis Pierrepoint. Of these Sir Francis Molyneux utterly refused service: Sir Francis Thornhaugh raised a regiment of horse, and Colonel Pierrepoint a regiment of foot, of which Mr. John Hutchinson became lieutenant-colonel. Colonel Pierrepoint seems to have been very half-hearted, for Mrs. Hutchinson tells how he was six weeks before he could be persuaded 'to put on a sword or to enlist any men, which at length he did of substantial honest townsmen.'[6] With the beginning of the association of the counties after the battle of Edgehill, Nottinghamshire was placed with Leicestershire and other counties under Lord Grey, of Groby. Then the royalist gentry, headed by Lord Chaworth, 'finding an opposition they expected not,' seem to have made some vain effort to come to terms with the 'parliament men.'[7] In December, 1642, a meeting of the corporation of Nottingham and ten gentlemen of the county was held at the guildhall, and an agreement was made to invite the gentlemen of the county

[1] B.M. Pamphlets, E. 116, No. 3. *Nott. Pet. to the King.*

[2] Mrs. Hutchinson says: 'Although the town was generally more malignant (i.e. Royalist) than well-affected, yet they cared not to have the cavalier soldiers quarter with them, and, therefore, agreed to defend themselves against any force which should come against them; and being called hastily together as the exigence required, about 700 listed themselves, and chose Mr. George Hutchinson for their Captain' (*Memoirs of Col. Hutchinson*, ed. Bohn, 132). The ill effects on the king's cause of the unscrupulous billeting of the soldiers in the town is shown by the petition of 1642, presented to Parliament by the townsmen. William, earl of Newcastle, the lord-lieutenant, had 'withdrawn himself, with mischievous accomplices, to his own house in Nottingham, billeting his cavaliers and Papistical soldiers in the houses of the most substantial persons of that county,' who were forced to quit their houses and goods, or suffer the indignities imposed on them by 'those enemies of God and the Commonwealth in the ferocity of their barbarous dispositions' (B.M. Pamphlets, E. 84, No. 17).

[3] Clarendon, *Hist. of Great Rebellion*, ii, 293. [4] Ibid. p. 299.

[5] *Cal. S. P. Dom.* 1642–3, 389. [6] Mrs. Hutchinson, op. cit. p. 139. [7] Ibid. p. 140.

to join the townspeople for the defence of the town of Nottingham.[1] Those who would not threw themselves into Newark, where preparations for a strong defence were being made. Works were also begun round Nottingham, and from this time the progress of the Civil War in the county was to resolve itself into a struggle between the two rival garrisons of Nottingham and Newark. Nottingham was as important to Parliament as 'a considerable pass to the north' as Newark was to the king, yet early in 1643 the 'coldness' of Colonel Pierrepoint, and the growing 'disaffection' of the town, made it seem as though it could only with difficulty be preserved for Parliament. However, in February, 1642–3, the garrison decided to join with Lincoln and Derby and attack Newark, since 'it would be easier to prevent Newark from being made a fortified garrison than to take it when it was so.'[2] The forces from Nottingham and Derby were to advance on one side, those of Lincoln on the other. According to the parliamentary version Newark would have been forced to surrender had it not been for the treachery of the Lincolnshire commander, John Ballard, who, 'decayed in his family,' and owing his education to many of the royalist gentry within Newark, determined to cast aside the Parliament cause 'rather than ruin his old benefactors.'[3] He refused to attack the town at the right time, and probably betrayed the enemy's movements to the Newarkers, so that they prepared an ambuscade to intercept them. When the forces of Nottingham and Derby had come, being 1,000 strong, horse, foot, and dragoons, they attacked the town on one side, beat the Newarkers from the works, and entrenched themselves. Captain King, of the Lincolnshire forces, attacked the other side of the town, and had 'taken a street, cut up a chain, and placed a "drake" in a house,' when Ballard ordered him to retreat, and thereupon the whole force of Newark fell on the entrenched Nottingham and Derby forces. The latter fought bravely until a Lincolnshire trooper, sent by Ballard, came and bade them fly for their lives, or else they were lost men.'[4] The royalist version tells how the Nottingham and Derby regiments 'discharged against the towne from eleven of the clocke at noone untill six at night, but with more courage than successe.' The attack on the other side of the works failed completely, and the enemy retired, whereupon the governor attacked the Nottingham and Derby forces, and dislodged the enemy. 'There were killed of the king's side in this brave repulse but one man onely, a common souldier of the garrison, and not many hurt. But of the rebels were slaine no fewer than 200 men and many wounded, whereof the chiefe was Colonel Ballard, and no meane one neither.'[5]

For the next few months Nottingham seems to have felt the effect of the general royalist victories throughout the north and west. Sir Richard Byron, the new governor of Newark, brought all the zealous loyalty of his family to the help of the Newark garrison; Lord Chaworth, the earl of Chesterfield, and others had left Newark, and fortified their several houses in the royalist cause. The forces at Nottingham only numbered about 1,000 men,[6] but at Whitsuntide they were reinforced, and the numbers

[1] *Rec. of the Boro. of Nott.* v, 207. [2] Mrs. Hutchinson, op. cit. p. 143. [3] Ibid. p. 144.
[4] Mrs. Hutchinson, op. cit. p. 143–5.
[5] *A Brief Relation of the Remarkable Occurrences in the Northern Parts* (B.M. Pamphlets, E. 73).
[6] The queen wrote to Charles from Newark that 'all the force Parliament had in those parts was only 1,000 men in Nottingham.'

raised to about 5,000 or 6,000 by the gathering at Nottingham of the forces of the northern midlands for the rescue of the Fairfaxes from Newcastle's 'Popish army.'[1] Owing chiefly to the conduct of the younger Hotham, who was found to be in correspondence with the Newark garrison, there seems to have been much disorder in the town, and finally, probably by Cromwell's influence, Lord Grey was superseded by Sir John Meldrum[2] in the command of the associated forces. Sir John Meldrum being called off with the bulk of the Nottinghamshire forces to the relief of Gainsborough in July, 1643, the town was again in a desperate state, since only a few townsmen remained to guard both town and castle. These Colonel Hutchinson, who had been made governor of the castle the month before, ordered into the castle, since they were not sufficient in number to guard the works round the town, and ordered the fourteen guns upon the works to be brought up also. This action seems to have aroused much opposition, for the townsmen, since 'their houses, families, and estates were exposed, began to envy, then to hate the castle, as grieved that anything should be preserved when all could not.' Finally, out of the whole town and the four companies that remained under Colonel Pierrepoint only about 300 men were found to garrison the castle.[3] The defenceless state of the town naturally gave an opportunity to the garrison at Newark. They issued out in various parties, and swept the county round up to the very walls of Nottingham. On 18 September, 1643, Sir Richard Byron effected an entry into the town, and for five days was garrisoned in the old church of St. Nicholas. Failing to make any impression on the castle, he prepared to evacuate, but was attacked by a sally party from the castle. He thereupon retreated to the Trent bridge, and remained entrenched there until, hearing that reinforcements were on the way to Nottingham, he silently marched back to Newark.[4]

The next month brought the reinstatement of Parliament in the north with the defeat of Lord Newcastle by Fairfax, and the taking of Gainsborough by the earl of Manchester.[5] Royalist hopes in the north were failing, the treachery of the Hothams had been unavailing, 'and much about this time (i.e. December, 1563) there fell out another remarkable passage much to His Majesty's dishonour,' since the marquis of Newcastle 'plotted and contrived by one Colonel Dacre to have corrupted and undermined the valiant and most loyal governor of Nottingham Castle.' Colonel Hutchinson himself wrote to Mr. Millington, a member of the House of Commons, that he had three times been tempted to betray the castle, by Sir Richard Byron, by Mr. Sutton, and by the earl of Newcastle. Ten thousand pounds and 'to be made best

[1] *Mercurius Aulicus*, B.M. Pamphlets, E. 55, 14. *Certain Informations*, B.M. Pamphlets, E. 55, 4.

[2] Carlyle, *Cromwell's Letters*, i, Letter ix. Lord Grey's conduct in failing to meet with the united forces at the appointed rendezvous is here censured by Cromwell.

[3] Mrs. Hutchinson, op. cit. p. 155, et seq. The records of the borough for 1643 show the special provisions made for night guard: 'Those wattchmen that are appoynted to wattche the toun nightly for the flanckinge and strengthinge the centries and inner gards shalbe sworn to keepe their wattche until fower of the clocke in the morninge, and thatt whoesoever shall depart from his garde or wattche . . . shall pay for his fyne ii^{s} or ells in defalte thereof . . . be ymprisoned . . . and xxx^{tie} (are) to be appoynted everie nighte to wattche oute of the severall wardes' (*Rec. of Boro. of Nott.* v, 209).

[4] Mrs. Hutchinson, op. cit. pp. 176–180. Captain White and his horse returning from Lincolnshire to Leicester came to the rescue of the governor.

[5] B.M. Pamphlets, E. 212. *God's Arke overtopping the World's Waves*, p. 7

lord in Nottinghamshire' was the reward offered him.[1] Of Lord Newcastle's share in these transactions it is difficult to judge. Certainly if Nottingham could have been gained before the parliamentary forces under Sir John Meldrum and Lord Willoughby could march south the county would have formed a royalist wedge between north and east. Since Colonel Hutchinson could not be won over the garrison at Newark made a desperate effort to take both town and castle by storm in January, 1643–4. Fifteen hundred horse and foot from the garrison joined with royalist forces from the surrounding country, and about six o'clock in the morning of 16 January drew near the town from either side and forced an entry, driving back the governor and two foot companies into the castle. They then possessed themselves of St. Peter's Church and the houses and 'street ends' to prevent the garrison from sallying out. The ordnance from the castle, however, 'made a lane among them,' and the Parliamentary horse, seeing they could do no service mounted, took their muskets, and served on foot, and so succeeded in beating back the enemy.[2] 'In all this day's service,' Colonel Hutchinson wrote, 'we had not any assistance from the townsmen besides those which have all this year been in the castle with me, though I had twice summoned them to receive arms for the defence of the town . . . but now I am in some hopes that they will by this be brought to concur more cheerfully with me for their own defence and that the cavaliers (though they have no cause to bray of this) will more dearly buy their next entrance.'[3] In February, 1643–4, came an account, again from the parliamentary side, of the most 'admirable and marvellous deliverance' of the town and castle from a plot of the king's 'base cormorants.' Horses laden with straw were driven by thirty cavaliers, some 'in the habits of plain country men, others of them like unto homely country women,' from Newcastle towards Nottingham as though going to the market; but the 'supposed women' were suspected, and the 'cousening cormorants' being detected were examined and tortured until they confessed a plot to suddenly attack and kill the guard, and prepare the way for the horse and foot that were following. Thus warned the Nottingham garrison issued out and put the enemy to rout and retreat.[4]

Meanwhile Sir John Meldrum and Lord Willoughby had marched south, and by the middle of February the siege of Newark was begun.[5] By the middle of March the garrison was nearly starved out,[6] and so sure was Parliament of a speedy end to the siege that an order went from the Committee of Both Kingdoms to the earl of Manchester on 20 March that the Nottingham and Derby forces were to return from Yorkshire to secure their own counties, that the footmen of Lord Willoughby, then at Newark, should go with Sir John Meldrum to Yorkshire, and his horse to the earl of Denbigh.[7] On the next day, 21 March, Prince Rupert, who when at Chester had received orders from the king on 12 March to march to the relief of Newark,

[1] B. M. Pamphlets, E. p. 104. An interesting personal note comes into this letter since Mr. Hutchinson tells his friend 'your sonnes are both well here in the castle, and I heare your wife is so in the country: only I hear your goods and corne are plundered.'

[2] B. M. Pamphlets, E 312. *Gods' Ark overtopping the World's Waves*, p. 163. [3] Ibid. p. 163.

[4] Ibid. Mrs. Hutchinson, op. cit. pp. 214–5. [5] See *Cal. S. P. Dom.* 1644, 23.

[6] Yet Sir Edward Nicholas reported on 15 March that 'the rebels assaulted Newark in several places, but were repulsed with loss of about 500 dead on the place, besides some of their ordnance, particularly the great wars piece they took at Hull from my lord of Newcastle.' Ibid. p. 54.

[7] Ibid. p. 63.

having joined Lord Loughborough at Bingham, marched to Newark early in the morning, attacked Meldrum's forces, and relieved the town.[1] On 22 March the Committee of Both Kingdoms wrote to the earl of Manchester bidding him send what force he could to the help of the forces before Newark. 'We conceive if your forces come timely Prince Rupert's army may be in the straits yours is now conceived to be.'[2] A further account of the 'unhappy condition of affairs at Newark' was sent to Sir William Waller,[3] and Lord Denbigh and Commissary General Belire with the Nottingham and Derby forces, as well as those of the earl of Manchester, were reported to be marching towards those parts to hinder the royalist forces there from 'that fruit of their victory they might hope to reap by arming the country with those arms they had taken from our men.'[4] Lord Denbigh, in a letter written 27 March, feared that the enemy would 'follow their fortune' in the vicinity of Newark, but had the earl of Manchester's march been swifter, and had the Nottingham forces joined with his own, this might have been prevented.[5] However, letters from Prince Rupert having been intercepted, the Committee learnt that he was 'not of such strength as he thinks it safe to continue where he is.'[6]

During the summer of 1644 all the efforts of Parliament were directed to affairs in Yorkshire, and all the strength of the associated forces was summoned to the north. Newark and Nottingham were left once more to their old antagonism, and the Nottingham garrison fared badly. Thus in June, 1644, 'divers gentlemen in Nottingham well affected to the Parliament' sent intelligence to the Committee of Both Kingdoms of the strength of the enemy's garrison, while they themselves had but few horses left, and could 'neither defend their county nor gain contributions for the necessary maintenance of their garrison' without the aid of the horse then with Lord Denbigh, which for the most part had been 'raised at the charge of particular men.' The Committee therefore, 'being sensible of the great loss like to come speedily on Nottingham for want of horses,' wrote to Lord Denbigh ordering him to dismiss 100 of the Nottingham horse then with him and the others as soon as he could spare them.[7] The governor of Nottingham had other difficulties to meet besides the attacks of the Newark garrison. Although old rivalry between the town and castle was somewhat abated[8] it had given way to a rivalry between the governor and the Committee, and this of necessity gave an added weakness to his plans for defence.[9] In July, 1644, Mr. Millington was sent by the Committee of Both Kingdoms to give the committees both of town and castle and the honest inhabitants of the garrison thanks for 'their undaunted courage and unwearied diligence in the maintenance of the same,' and to 'endeavour to compose all differences between the garrisons of the castle and town, and between the members of the committees.'[10] By November the quarrel between the governor and the committee of Nottingham had come before the Committee of Both

[1] *Mercurius Aulicus*, B.M. Pamphlets, E. 55.
[2] *Cal. S. P. Dom.* 1644, p. 66.
[3] Ibid. pp. 70, 75.
[4] Ibid. p. 75.
[5] Ibid.
[6] Ibid. pp. 77, 78.
[7] Ibid. p. 277.
[8] The townsmen had at last determined to join in their own defence, and 400 were enlisted under 'one Mr. Coates, a minister, an honest and Godly man, and Mr. Mason, an attorney, a great cavalier, but a reverend and silent man who, for an austere knit in his brow and a grave, severe countenance, had the reputation of a wise man.' Mrs. Hutchinson, op. cit. p. 208.
[9] Ibid. pp. 208–14.
[10] *Cal. S. P. Dom.* 1644, p. 368.

Kingdoms for settlement, and by its decision all the affairs of town and castle were to be in the hands of a general committee of which Colonel Hutchinson, Colonel Thornhaugh, the mayor of Nottingham, and others specially named were to be members. Without the consent of the majority in this committee no forces should be sent out, or being sent out recalled, and no works or fortifications should be made in or about the garrison. Especially the committee were requested to take care that money was provided for the garrison, so that it might not suffer from want of pay.[1]

Meanwhile Cromwell's victory at Marston Moor had secured the north, and the parliamentary forces were available elsewhere, but it was not until the end of the year that Fairfax suggested that some of the Scottish horse should be sent from the northern counties to Newark, the only considerable garrison of the enemy and the 'receptacle of all (their) flying forces.'[2] During November Fairfax received orders from the committee 'to straiten the enemy at Newark,'[3] and in December he wrote that he had ordered some regiments to march to Newark, but the place was strong and well manned and provided for some months, and he could not spare enough forces to effect much.[4] By January Newark was not taken, but some of the forces of the counties of Nottingham, Derby, and York, that had been rendering good service in the siege under Sir John Gell, had been withdrawn. The committee, being 'sensible of the loss and danger' this withdrawal entailed on Nottingham, ordered Fairfax to send 1,000 horse out of Yorkshire, and ordered Sir John Gell to send back the 1,000 he had withdrawn.[5] The garrison, however, still held out, and periodically made desperate sallies, but was 'reduced to an exceeding strait for want of provisions.'[6] In March, 1645, Prince Rupert determined to relieve the town, and sent a party of 1,500 horse under Sir Marmaduke Langdale for that purpose.[7] On the way from Leicester to Newark the relief party was attacked by Colonel Rossiter with about 3,000 men, but succeeded in repulsing the enemy, and marching on to Newark, was able to relieve the town.[8]

Once again, therefore, Parliament was obliged to leave Newark to the royalists, and Colonel Rossiter was ordered to march after Sir Marmaduke Langdale, who, when he had relieved the town, had started to meet Prince Maurice in Cheshire, but to leave enough forces before Newark as 'may preserve the country from spoil by the Newark garrison.'[9] A few days after this order was countermanded, and Colonel Rossiter was ordered to take special care of the country round Newark that none of the garrison should 'be suffered to march towards any part of the Eastern Association to disquiet and alarm them.'[10]

The march of the royal forces from Worcester across to Leicester in April, 1645, presumably against the Eastern Association, aroused the fears of Parliament, and early in May an order was sent to the deputy-lieutenants of Nottingham to send 200 horse and 200 foot to join with Lincoln forces 'in case the Newark garrison should attempt to march towards the king.'[11] On

[1] *Cal. S. P. Dom.* 1644–5, p. 111. [2] Ibid. p. 104. [3] Ibid. p. 119.
[4] Ibid. p. 172. [5] Ibid. p. 235.
[6] MS. of a gentleman of the relief party, printed in 1782, quoted in Shilton, *Hist. of Newark*, pp. 81–91.
[7] *Cal. S. P. Dom.* 1644–5, p. 334. [8] MS. above quoted.
[9] *Cal. S. P. Dom.* 1644–5, p. 340. [10] Ibid. p. 355. [11] Ibid. p. 478.

20 May Lord Fairfax wrote to the earl of Leven that 'the Newark forces get all horses they can possibly for a speedy march either towards the king's forces or to raise the siege of Pontefract.'[1] Later in the month a rendezvous of all the Associated Counties was appointed at Nottingham, and 'in case the king should draw out the garrison of Newark,' Colonel Rossiter was ordered to advance with 600 horse of Lincolnshire.[2] The king's success at Leicester, early in June, brought orders to Fairfax to pursue the royal forces, since the king was thought to be 'able to attempt either Nottingham, Derby, or any other garrison.'[3] The decisive victory of Fairfax at Naseby crushed all the royalist hopes. The king's broken forces threw themselves into Newark, now the only strong royalist centre, near which some of the Scotch forces were stationed for the next three months to defend the country round against the garrison.[4]

After the defeat of Goring in the west, in July, Charles advanced across England to Newark, with about 3,000 horse and dragoons, to join with the Newark garrison.[5] In August the Committee of Both Kingdoms ordered Major-General Poyntz to gather all the forces formerly appointed from Staffordshire, Derbyshire, Nottinghamshire, and Lincolnshire, and from the Eastern Association, and taking them under his charge 'take all advantage against the Newark garrison.'[6] Further, he was ordered to follow the king with his Yorkshire horse, while the Committee for War at York was ordered to reinforce him so as to enable him to besiege Newark. This they had neglected, and Poyntz had been forced, for want of horse, to relieve Nottingham, so that Newark was left 'to infest the adjacent parts and to trouble and alarm the quiet' of the north unless horse and dragoons were sent quickly.[7] Throughout September the country round Newark was the scene of numerous skirmishes, but the Association forces were drawing together, and there was great hope 'that the countrymen would come in likewise, with their muskets.' During October news came to London that Newark was blocked up by horse 'as well as for the present it can be.' Major-General Poyntz was in the north with his own and the London horse, Colonel Rossiter on the other side with his horse. The king was in the garrison with 'the two German princes and many gentlemen of note, and not above 700 or 800 horse, and not so many foot as there had lately been: If our brethren of Scotland were there now they might do England and themselves good service, but God will work his own work by what hand he pleases.'[8] In the same month was reported 'a pretty design against Newark; the business well carried had not the enemy too soon gotten the alarm; our men tugged hard for the bridge, slew divers of the enemy, and the next day Sir Thomas Williams was suspected to hold confederacy and dismissed the garrison.'[9] Charles was

[1] *Cal. S.P. Dom.* 1644–5, p. 505. [2] Ibid. pp. 530, 542. [3] Ibid. p. 551. [4] Ibid. p. 622.

[5] News of great disorder 'among the rebels' forces in Yorkshire decided the course of the king's march. The gentlemen of the five northern counties expressed a wonderful alacrity and resolution to engage in the king's service, even more frankly than . . . when he was most prosperous.' Letter from Lord Digby to Prince Rupert. *Cal. S. P. Dom*, 1645–7, p. 70.

[6] Ibid. p. 63. Already letters had been sent to the Committees of Derby, Notts, Stafford, Lincoln, Cambridge, and Rutland, informing them that the royalist garrison was grown to greater strength at Newark by access of force from several other reduced garrisons, and bidding them send what force they could to help in its reduction. Ibid. pp. 35, 44.

[7] Ibid. B.M. Pamphlets, E. 302. *Moderate Intelligencer* and *Mercurius Veredicus*; also *Mercurius Ciricus* and *The Scottish Dove* (Ibid. E. 303). [8] B.M. Pamphlets, E. 307, *The Scottish Dove.*

[9] Ibid. E. 303, *Continuation of Divers Remarkable Passages.*

anxious to get away from Newark to join Montrose,[1] being unwilling, according to his enemies, 'to be blockt up there, and the rather the sickness was in it' and taking advantage of the absence of General Poyntz at the siege of Shelford House, and the withdrawal of many of the Derby and Warwick horse to Chester,[2] marched out secretly with all the supplies the garrison could afford, 'who have so extremely drained themselves to pleasure him that the adjacent countries will now be in great quiet, and Colonel Rossiter be the better spared to pursue him.'[3] The coming of General Leslie with the Scotch forces, to the number of 2,000 horse and 3,000 foot,[4] 'to visit that cage and catch these foul birds,' was finally planned in November, and at this news there came daily out of Newark 'great store of men of quality who have passes and goe home to their houses.' There were those who had 'fled to Newark and received rents from their tenants,' and now, fearing a siege, came out, 'that the provisions within might last longer.'[5] It was not until December[6] that the Scottish forces arrived, and their commanders and the parliamentarian officers held a council of war and agreed to storm the bridge a mile from the town where the enemy kept guard. The attack seems to have been successful and many royalists were killed.[7] On 10 December the Newarkers designed to blow up a bridge over the Dee, and prepared five boats for this purpose, but one caught fire before it reached the bridge, and warned the enemy, so that the rest were stopped.[8] For the next few weeks the Newarkers made desperate sallies but, seemingly, with indifferent success. Thus, on 19 December, about 600 of the garrison attacked the enemy, who caused them to retreat, but pursuing them too eagerly fell into a royalist ambush near the town works and lost about 20 of their men.[9] On another occasion the royalists fared less well. About 200 or 300 made a sally on Colonel Rossiter's quarters, but were compelled to retreat with the loss of many men.[10] By the end of December Skipton Castle had surrendered to Parliament, and 2,000 were sent thence to 'help the business of Newark,'[11] as well as a 'great mortar piece,' which it was hoped would 'doe good execution.'[12] In January also the Committee of Both Kingdoms wrote to the Committee at Nottingham that, all the garrisons in Yorkshire being reduced, horse and foot could be spared for Newark,[13] and the committee of the militia of London was desired to provide 60 dragoons, to be ready at

[1] *Cal. S. P. Dom*, 1645–7, p. 160. [2] B.M. Pamphlets, E. 309, *The Kingdom's Weekly Intelligencer.*

[3] B.M. Pamphlets, E. 304, *The Kingdom's Weekly Post.* During Colonel Rossiter's absence in pursuit of the king, the earl of Warwick was ordered to send Major Gibb and 800 horse of the Association to Newark (*Cal. S. P. Dom.* 1645–7, p. 98). The *Weekly Account* for 8–15 October describes a council of war in Newark, and how the commanders with the king 'made high propositions to the towne for horse, ammunition, arms, etc., and that what was not entirely necessary for the defence of the garrison was to be carried away with his Majesty.' B.M. Pamphlets, E. 304.

[4] Ibid. E. 313, *A Diary or Exact Journal,* 18 Dec. 1645.

[5] Ibid. E. 310, *The Weekly Account,* Nov. 4–11, 1645.

[6] The Scots had been severely censured by Parliament for the delay in their advance to Newark, 'whereby not only the northern parts have lain all the while under an insupportable burden, but also the fairest opportunity . . . for putting an end to our miseries is already slipped out of our hand.' *Cal. S. P. Dom.* 1645–7, p. 256.

[7] B.M. Pamphlets, E. 311, *The Weekly Account,* 26 Nov.–2 Dec. 1645.

[8] Ibid. *Diary or Exact Journal,* 10 Dec. 1645.

[9] Ibid. E. 313, *Diary or Exact Journal,* 19 Dec. 1645.

[10] Ibid. *The Weekly Account,* 16–30 Dec. 1645.

[11] Ibid. E. 314, *The Scottish Dove,* 24 Dec.–1 Jan. 1645–6.

[12] Ibid. E. 313, *The Weekly Account,* 16–30 Dec. 1645.

[13] *Cal. S. P. Dom,* 1645–7, 306.

Goldsmiths' Hall to convoy the arms, clothes, and ammunition to be sent to the Scots army at Newark.[1]

But Newark Castle now protected by two new fortifications, the 'King's Sconce' and the 'Queen's Sconce,' seemed invulnerable, and the county began to weary under the burden of victualling the besieging forces. In January, 1645–6, the inhabitants 'of that part of the county of Nottingham lying on the north side of the Trent' petitioned the Committee of Lords and Commons, complaining of the hardships they suffered at the hands of the Scotch army.[2] A complaint was therefore made to General Leslie, but in February he wrote back to the committee enclosing a letter signed by 47 gentlemen of Nottingham giving 'a good character of the Scotch army.' Though the burden was great, they wrote, 'in this small, barren, and exhausted north part of our country, we cannot but cheerfully acknowledge our great thankfulness for your favour. . . We are sorry that our poverty and weaknesse cannot answer your merits and noblenesse.' Parliament ordered £15,000 *per mensem* for the maintenance of the forces before Newark, and the general ordered that the least wrong or violence done by his soldiers to any whatsoever in persons or goods should merit death.[3] Throughout the disasters of February and March, 1646, Newark still held out under Bellasis, but already before the end of March Montreuil had been sent with a message to the Scots promising that the king would come to the Scotch army on assurance of security in conscience and honour and would surrender Newark into their hands. On 28 March the besiegers summoned the garrison to surrender, stating that Parliament had 16,000 horse and foot before the town, 'soldiers of experience, united and in health and courage.' Bellasis replied, knowing nothing of Charles's overtures to the Scots, that he must follow the king's commands, and 'though honour and conscience might permit the delivery of the garrison, yet civility would retard it, lest His Majesty's Act of Grace should be frustrated.'[4] However, at the end of April, Charles left Oxford, and advancing to Southwell delivered himself into the hands of the Scots. And 'immediately upon his coming General Leven had some treaty with His Majesty about the surrender of Newark'; not to the Scots themselves, but, to 'remove all jealousy,' to the Parliament.[5] The result was the characteristic order sent by Charles to Lord Bellasis, who much against his own will and that of his garrison, although by now the plague was raging in the town, was forced to surrender on 6 May. By the articles of surrender the garrison with all its ordnance and arms was to be delivered over to Parliament, and Colonel Hutchinson with his regiment was appointed to receive the town and the arms, and to quarter in it.[6] Lord Bellasis and his officers were allowed to march out either to one of the royal garrisons not besieged, or to their own houses; the soldiers were allowed to 'make peace with Parliament,' or go beyond the seas.[7] After the surrender of Newark the active participation of the county in the Civil War was practically over. Nottingham town and castle 'was continued a garrison for some time,'[8] until in August, 1647, when

[1] *Cal. S. P. Dom*, 1645–7, 326.
[2] *Hist. MSS. Com. Rep.* vi, 93.
[3] *Two letters from Lieut.-Gen. David Lesley.*
[4] Rushworth, *Hist. Coll.* pt. iv, vol. v, 250-2.
[5] Ibid. p. 269.
[6] Mrs. Hutchinson, op. cit. p. 291.
[7] See Articles given in full in Rushworth, *Hist. Coll.* pt. iv, vol. i, 269.
[8] Mrs. Hutchinson, op. cit. p. 297.

the Parliament, submissive to the army, 'was by the General restored to their seats', the garrison was reduced only to the castle guard. The works at the town and the bridges were also slighted, and since all but two of the companies of the governor's regiment were disbanded, he gave the command, 'not worthy of himself or his brother,' to his kinsman Captain Poulton.[1] But with the new danger rising from the king's intrigues with the Scots early in 1648 Colonel Hutchinson was again commissioned to garrison the castle.[2] An attempt by Colonel Gilbert Byron to win over the governor to betray the castle failed, but Byron managed to gather about 500 horse from Nottinghamshire and Lincolnshire, and with these marched to join the royalist party in the north. They were met and defeated by Colonel Rossiter, and Colonel Byron himself was carried prisoner to Belvoir Castle.[3] In April Cromwell was at Nottingham on his way into Lancashire, and when he left, Colonel Thornhaugh and the Nottinghamshire horse marched with him and fought bravely at Preston, where the colonel was killed.[4] With the renewal of royalist activity on the alliance of Charles II with the Scots, a regiment of horse was commissioned from the county to go to Cromwell into Scotland.[5] With the entry of Charles into England early in 1651 it seemed probable that he would gather his forces in the north. Thus in March the Council of State sent notice to the Militia Commissioners for Nottinghamshire that Major-General Harrison was sent into those parts with some forces and with directions 'to give order to such horse, foot, and dragoons of the Militia of the county as he should find necessary.'[6] In April a further command came that 'considering the state of affairs in the country, and the designs of the enemy in those parts,' the troop of horse in arms in the county should be kept on foot fourteen days longer, 'so as to be ready to prevent any insurrections or other distempers.'[7] But Charles 'chose another way and went to Worcester,' and in May, 1651, the castle of Nottingham was ordered to be demolished,[8] and the two companies of foot then in the castle were to march to Major-General Harrison.[9] The Council of State wrote in June to Major Poulton, governor of the castle, that they left it to him to see the demolition effectually done within 14 days, so that the castle and all outworks and fortifications should be altogether demolished before 10 November.[10] A few days later they wrote ordering that to prevent the great quantity of brass and iron, ordnance and arms in the castle from being embezzled, it should be sent by water to Hull and thence to the Tower of London.[11] They were not sent by October of that year 'for want of money, as is alleged,' and the council ordered that the needful sums of money should 'be imprested to Mr. Collin, late master gunner, on account,' and a bill of exchange for the amount should be drawn upon the council at six days' sight.[12] During the next few years the royalist faction in the county seems to have been entirely subdued even when royalist hopes were rising in 1655, and in 1656 Whalley, who was major-general of the

[1] Mrs. Hutchinson, op. cit. p. 306.
[2] Ibid. p. 308. [3] Ibid. p. 312-3. [4] Ibid. p. 317-24.
[5] Mrs. Hutchinson, op. cit. 355. [6] *Cal. S. P. Dom*, 1651, p. 97. [7] Ibid. p. 132.
[8] Mrs. Hutchinson, op. cit. p. 357; this was by her husband's influence, since he was convinced that Cromwell and the army were 'carrying on designs of private ambition,' and 'he would not that what he had preserved for the liberty of his country should be a curb upon them.'
[9] *Cal. S. P. Dom.* 1651, pp. 187-8. [10] Ibid. p. 242.
[11] Ibid. p. 245. [12] Ibid. p. 481.

district, boasted that under his own stern rule one might 'ride all over Nottinghamshire and not see a beggar or wandering rogue.'[1]

In the meantime, after the surrender of Newark, various delinquents of the county made their submission, and compounded for their estates under the articles of surrender. Among these were Henry Bellasis, son of the governor, Sir Richard Byron, Lord Chaworth, Lord Lexington (formerly Robert Sutton), Sir Thomas Williamson, late sheriff, Sir Christopher Athar, and Thomas Harrington.[2] They admitted their complicity in gathering forces for the garrison, and in collecting subsidies for service against Parliament. The inhabitants of Newark in general also compounded in June, 1646, but because 'the plague raged very much there' they could not personally attend to prosecute their suit.[3] Lady Lexington also certified that by reason of the plague she could not go to Newark in person nor send her servants there to ascertain the value of her husband's estates.[4] John Nicholson, alderman of Newark, excused himself from appearing to compound since he must remain in Newark 'to assist in its government during the pestilence.'[5] Gervase Lee begged mitigation of his assessment in 1647, stating that he was captain of a train band, and being aged and infirm was forced into Newark by the sheriff.[6] In October, 1650, the county committee for Nottinghamshire informed the Committee for Compounding that from the March sequestrations in the county they had advanced £1,293 14*s.* 1*d.*, 'a large sum considering the ruinous state of this county, long the seat of the war, so that many estates were untenantable.'[7] They also stated that through the power of the enemy and the indigency of the country the late Committee for Sequestration received not one-fortieth of the sequestrations, and had to borrow money to carry on the parliamentary service; and when Newark was reduced most of the sequestrations were discharged.[8] In December, 1659, the County Commissioners for Derbyshire reported to the Committee for Sequestration concerning commotions in these parts, and that one of their number with his troop had gone into Nottinghamshire to appease distempers there.[9] Edward Heming reported from Nottingham that he had spent fourteen days in the county, and 'had done what he could,' but 'the commissioners here have been disturbed by papers set on the forts, intimating that it would be good service to knock us on the head, so that I can get none to act.'[10]

Already Monk had entered England, and had been well received as he passed through the county on his way to London.[11] His coming was followed by a cry for a free Parliament, resulting in the final dissolution of the Rump in March, 1660. And 'some time before the writs for the new elections came, the town of Nottingham, as almost all the rest of the island, began to grow mad, and to declare themselves so in their desires of the king.'[12] The townsmen, now that they no longer needed protection, quarrelled with the soldiers quartered there, until at length permission came from Monk to 'let loose the fury of the regiment on the town,' but by Colonel Hutchinson's

[1] Gardiner, *Hist. of Commonwealth and Protectorate*, iii, 242.
[2] *Cal. of Com. for Compounding*, and *Cal. of Com. for Adv. of Money*.
[3] *Cal. of Com. for Compounding*, 1,335.
[4] Ibid. 1,336. [5] Ibid. 1,371. [6] *Cal. of Com. for. Adv. of Money*, 538.
[7] *Cal. of Com. for Compounding*, i, 342–3. [8] Ibid. [9] Ibid. p. 771.
[10] Ibid. [11] Bailey, *Annals of Nott.* iii, 865.
[12] Mrs. Hutchinson, op. cit. p. 399.

intervention the order was countermanded. Counted as the deliverer of the town, Colonel Hutchinson was therefore chosen as one of its representatives in the new Parliament. The other member elected was Mr. Arthur Stanhope, also a 'Parliament man.'[1] But the elections generally went in favour of the king's party, and when in May, 1660, Charles was welcomed back, the gentry of Nottinghamshire sent an address of 'laudation and congratulation to the king on his restoration.'[2] Of the four Nottinghamshire men who had sat as judges in the High Court of Commission held on Charles I,[3] Ireton was dead; Whalley had refused to obey the proclamation for surrender, and was excluded from the Act of Indemnity and forced to flee to America for his life;[4] Millington abjectly 'confessed himself guilty every way,' and his death sentence was commuted to imprisonment for life;[5] Hutchinson pleaded that his share in the king's execution had been the result of 'the inexperience of his age and the defect of his judgment, and not the malice of his heart,' and by the connivance of his friends was included in the Act of Amnesty or Oblivion.[6]

Although Nottinghamshire, like the rest of England, had accepted Charles so gladly, before three years were over it was engaged with the rest of the north of England with the Yorkshire plot.[7] In October, 1663, Colonel Hutchinson was in consequence apprehended with his papers and writings and conveyed to the Tower 'for treasonable designs and practices.'[8] He stated that he had been at his own house twelve months without stirring except to pay the benevolence; that he had never heard of the rising in the north till he came to Newark, nor was asked to concur in it; that he had not heard of a secret council to manage public disturbances; that he did not keep a horse, saddle, nor arms, except birding pieces allowed his sons by Lord Newcastle; that none of his children had had any correspondence about any public design.[9] He was, however, confined to the Tower, whence he wrote in March, 1664, to Secretary Bennett, complaining that he had been close prisoner twenty weeks without accusation, and begging a copy of the warrant of his commitment, which Sir John Robinson refused him.[10] This was allowed him, but he still seems to have suffered much ill usage at the hands of Sir John Robinson.[11] Finally in May, 1664, he was transferred to Sandown Castle, in Kent, where he died of fever four months later.[12] In August, 1663, when 'one hundred of the chief designers' of the Yorkshire plot had been seized, one Thomas Calton, of Leicester, was examined, and stated that his master, Captain Lockier, had said that 'Thomas Palmer, of Nottingham, would raise a troop of horse, and they would meet at Nottingham on October 12.'[13] After the renewal of the plot in October, 1663, and the seizure of conspirators, Sir Thomas Gower wrote to Secretary Bennett in October, 1664, that a certain schoolmaster of Newcastle, for whom search

[1] Mrs. Hutchinson, op. cit. p. 399.
[2] *Cal. S.P. Dom.* 1660, i, 5.
[3] Nalson, *Trial of Charles I*, p. 21.
[4] Noble, *Lives of the Regicides*, 328.
[5] Ibid. 82–4.
[6] Mrs. Hutchinson, op. cit. pp. 403–8.
[7] See Sir Thomas Gower's papers concerning the 'intended rising in England.' The design of the conspirators is here said to be to fall on Whitehall, seize the dukes of York and Albemarle, the head treasurer and the Lord Chancellor, and to take several towns. S.P. Dom. Chas. II, lxxxi, 77.
[8] *Cal. S.P. Dom.* 1663–4, p. 314.
[9] Ibid. p. 329.
[10] Ibid. p. 526.
[11] S.P. Dom. Chas. II, xcv, 103.
[12] For account of imprisonment and death, see Mrs. Hutchinson, op. cit.
[13] *Cal. S.P. Dom.* 1663–4, p. 663.

was now being made, had spoken of 'great assistance for the plot from the county of Nottinghamshire, also of great preparations in the middle of England, and of a great number of persons of quality engaged.'[1] In the following March a certain Philip Wild was examined concerning his knowledge of the plot. It was proved that he knew that Lockier would raise 500 men at Nottingham, that he 'often spoke of the plot, offered press money to enlist persons, and said there would soon be an alteration.' The prisoner's defence was that he remembered nothing of this, but that 'his head was once hurt and a piece of his skull taken out, that his brain was somewhat distempered, and that he had been drinking.'[2] He was therefore pardoned in June, 1665, since the 'jury were satisfied that he was drunk when he tried to enlist soldiers, and that he is distracted on the changes of the moon.'[3] Plots such as this were naturally the result of a strong anti-Papist element in the county, and the strength of the feeling in Nottingham itself seems to be proved by the joy with which the proclamation against Papists was received in the town in March, 1673. 'It was received with so much joy that bells and bonfires rang and flamed as they never did since the restoration. The Fanatics contended with the Conformists who should show most zeal in expressing their joy for his Majesty's great grace.'[4]

It was, indeed, the ecclesiastical policy of the later Stuarts that gave colour to the political events of their reigns, since it alienated both Cavalier and Roundhead, 'Conformist' and 'Fanatic.' Hence Nottinghamshire was ready with the rest of England to welcome the Prince of Orange as it had welcomed Charles Stuart.[5] On 24 November, 1688, William Cavendish, duke of Devonshire, wrote to the earl of Derby concerning the supporters of the Prince of Orange in the Midland shires, that there were now at Nottingham, Lord Cholmondeley, Sir Scrope How, Sir William Russell, Mr. Charleton, Mr. Harvey, Mr. Hartop, Mr. Palmer and others. That morning before Lord Delamere left a public declaration was made by his supporters in the Nottingham market-place, 'where there was a great concourse of people,' to stand by the Prince of Orange with their lives and fortunes.[6] Four days later the duke wrote from Mansfield to the Yorkshire supporters, that since the prince needed a considerable addition of horse the Yorkshire horse, numbering 240, should join with the contingents from Nottinghamshire and Northamptonshire, and march together to him a thousand strong. 'For we shall march to-morrow from hence (i.e. Mansfield) to Nottingham about 300, and I am assured to have near 100 more sent me in there.'[7] A similar account of the part played by the county comes in a contemporary record of William's progress through England :—'Que les my lords de Devonshire de Derby Lumley et plusieurs autres avoi't assemblé de la

[1] *Cal. S.P. Dom.* 1664–5, p. 32. This is rather different from what was reported in July, 1663, that 'no considerable men' would join the rebels. Ibid. 1663–4, p. 216.

[2] Ibid. 1664–5, pp. 262–3. [3] Ibid. pp. 263, 449.

[4] Ibid. 1672–3, p. 49.

[5] Early in November, 1688, Lord Delamere 'having a mind to try the disposition of the populace, on a sudden ordered the trumpets to sound to arms, giving out that the king's forces were within four miles of Nottingham.' Immediately both horse and foot were in readiness, 'some appeared with firelocks, some with swords, some with other weapons, even pitchforks not excepted,' and 'My Lord Delamere and his party were well pleased with the readiness of the people to give their assistance.' Sutton, *Nott. Date Book.*

[6] *Hist. MSS. Com. Rep.* ix, 460*b*. This meeting was according to an arrangement made by Lord Danby (Ibid. *Rep.* xi, pt. vii, 30).

[7] Ibid. *Rep.* ix, 460*b*.

cavallerié composée des Gentilshom'es du pays une partie à York et l'autre à Nottingham qu'ils alloi't marcher aussez vers Glocester pour se joindre à n're armée.'[1] On 4 December Princess Anne came to Nottingham, whither she had arrived 'safe out of their hands by your lordship's (the bishop of London) prudent conduct.' As a result of her presence the duke of Devonshire wrote that 'great numbers came in every day,' and on 8 December he wrote further that the forces gathered at Nottingham then numbered 1,500 horse and two companies of foot.[2] The flight of James three days later avoided recourse to arms, and by the Declaration of Right William and Mary became legal sovereigns. The lord-lieutenant of Nottinghamshire reported in June, 1689, how well the county was affected to the king,[3] and it remained loyal to him throughout his reign, having little part in Jacobite plots.

With the death of Anne and the beginning of the Hanoverian Dynasty the aggressive policy of the Whigs roused the High Tory party into action, and resulted in the Jacobite plot of 1715. As a result Lord Newcastle, lord-lieutenant of Nottinghamshire, wrote to the deputy-lieutenants in September, 1715, that they must have 'immediate care to regulate the militia of the county,' for since 'the Pretender is resolved to try his fate at last by flinging himself into the hands of his friends either here or in Scotland it is absolutely necessary that the militia of Nottingham should be rendered useful as soon as possible, it being a passage into Scotland, and so capable of doing great service.' Account was to be taken of the number of men, both horse and foot, that the county was lawfully bound to furnish, and the horse especially were to be in readiness.[4] 'The county cannot be disobliged if upon this extraordinary occasion where our religion and liberty are so nearly concerned their safety be considered more than their ease.'[5] The deputy-lieutenants wrote back in October that good progress had been made, but 'fixing the horses of the Peers, especially such as were not rated formerly . . . ought to be judged by the Council.' They reported a need of arms, and stated that all the officers of the horse and foot were 'entirely unacquainted to discipline their men,' so that it would be well if some person were sent to instruct them.[6] Another letter from the deputy-lieutenants stated that the inhabitants of Nottingham and Worksop had offered to arm themselves at their own charge and 'gather together with other hearty friends of the government, to be commanded by such officer or officers as shall be agreed upon to command them.' This offer they thought it 'very proper to countenance . . . at this critical juncture.' They also suggested that a regiment of regulars should be sent to Nottingham, since the Trent was seldom fordable at that season of the year, and the few bridges over it might easily be broken down, so that 'should any insurrection be in these parts it would be difficult to get any troops over the river to suppress them.[7] The lord-lieutenant approved of the proposed association, and

[1] *Hist. MSS. Com. Rep.* 227*a*

[2] Ibid. xi, pt. vii, 27.

[3] *Cal. S.P. Dom.* 1689–90, p. 137.

[4] In accordance with the Act of March, 1659, for settling the militia, the landowners of Nottinghamshire were bound to furnish 'one troope horse furnished with sufficient furniture as saddle, bridle, brest plate, and crupper,' mounted with 'such a rider on him as the commissioners shall approve of, sufficiently armed with sword, pistolls, with holsters, carbine, backe, brest and head piece.' The trooper was to have 2*s*. a day 'for soe many days as hee shalbe absent from his dwelling and calling by occasion of muster or exercise.' Add. MS. 34,769, fol. 58.

[5] Add. MS. 33,060, fol. 34.

[6] Ibid. fol. 38.

[7] Ibid. fol. 40.

declared himself willing to do all in his power to encourage his countrymen 'to distinguish themselves upon this extraordinary occasion that it may appear to the world that the county of Nottingham still have that regard for their religion and liberty which was so remarkable in their ancestors.' He had spoken to the duke of Marlborough concerning half-pay officers to instruct the militia, but they could only be removed from their present stations if the town would bear their travelling expenses.[1] In November he wrote his satisfaction to hear of 'the good appearance their horse militia made at the review, which was beyond expectation.' The arms they needed should be sent as soon as possible, except bayonets and swords; they should have been sent sooner but for 'the great scarcity of arms and the great call there is for them.'[2] However, 'on receiving the glorious news of the entire defeat of the northern rebels' at Preston on 11 November, and at Sheriffmuir two days later, the musters were delayed for some days in hope that the peers' horses would then be ready and the others more complete in their mounting and arms. At Mansfield many honest men had entered into 'a particular association for a troop of horse.' At Southwell many of the 'good men thereabouts' were drawn into the association, but some were seized on suspicion of being disaffected. The volunteer companies at Nottingham and Worksop had received their commissions and would soon muster, and the deputy-lieutenants were hopeful of bringing 'the same good design . . . to some perfection' before they left Newark.[3] But in spite of the loyalty of the county to the Hanoverian house a spirit of Jacobitism lingered in Nottingham. Thus Mr. Alderman Hawksley, who was mayor of Nottingham in 1715, 'gave an entertainment to a party of his political friends, when probably from a state of inebriety . . . he went down on his bare knees before the company, and from a large silver tankard . . . drank—"Success to the House of Stuart." He was accordingly committed by a brother magistrate, and while in prison was visited by vast numbers of his brother Jacobites, more especially those of the higher classes in society, for many miles round.'[4] Again in 1745, when the Young Pretender reached Derby, Nottinghamshire shared in the general panic, but there seem to be few or no details as to preparations made in the county for defence or as to any movement in favour of the Jacobite cause.

The reorganization of the militia in 1757, and the attempt to raise it by ballot, met with much opposition in Nottinghamshire.[5] At Mansfield, on 5 September, a mob of about 500 persons broke into the room where the ballot was to be taken, took all the papers by force, and after carrying them

[1] Add. MS. 33,060, fol. 42; and *Hist. MSS. Com. Rep.* xi, pt. vii, 126.

[2] Add. MS. 33,060, fol. 54. A bill for 'Tropheys' for the county gives the full complement of arms and equipment for the militia: '2 Blew damask standards imbroidered with His Grace the Duke of Newcastle's coat of arms in silver fringe, £13; 18 Halberts 11*s.* per piece, £9 18*s.*; 2 Standards staffes with Belts and Springs, £3; 2 Tassells, £3; 2 Red Leather cases lined, 12*s.*; for a box to pack them in, 5*s.*; 6 colors and makeing, £10; 6 color staffs with gilt heads, £2 8*s.*; 6 pr. of blew color tassells and strings, £3 6*s.*; for painting of 6 colors, £12; 12 Drummes, £12; painting 12 Drummes, £9; 5 cases to pack them in, £1 3*s.* 10*d.*; for Bayes to line case for colors, 4*s.*; carriage to the carryer, 2*s.* 6*d.*; 50 carabines at 25*s.* per piece, £62 10*s.*; 50 carabine Belts at 6*s.* per piece, £15; 50 Buckets and Straps, £3 15*s.*; for 3 chests for the carabines, £1 4*s.*; 44 long muskets at 22*s.*, £48 8*s.*; 100 muskets at 22*s.*, £110; 106 muskets at 18*s.*, £95 8*s.*; 250 Bionets at 2*s.* 6*d.*, £31 5*s.*; 210 Swords at 5*s.*, £52 10*s.*; 10 large chests at 11*s.*, £5 10*s.*; for 3 boxes for Swords and Bionets, £1 2*s.*' (Ibid. fol. 77). Mr. Round points out that these figures imply a regiment of six companies each with a 'colour,' three sergeants armed with halberts, and two drummers.

[3] Add. MS. 33,060, fol. 61.

[4] Sutton, op. cit. p. 15.

[5] The number demanded from the county was 480. *Gent. Mag.* 1757, p. 301.

in triumph through the streets, finally burned them.[1] In 1759, when there was a threatened descent of the French on England, another attempt was made to mobilize the Nottinghamshire militia, but so keen was the feeling of the county against the ballot system that many of the local gentry refused commissions and preferred to pay a fine instead.[2] From this date until 1775 Nottinghamshire seems to have paid heavy levies in default of raising militia, but in August of that year, at a meeting held by the deputy-lieutenants at the Swan Inn, Mansfield, all disputes were adjusted and the number of men settled as follows:—Nottingham town, 80; Bassetlaw hundred, 123; Broxton, 93; Thurgarton, 70; Rushcliffe, 34; Bingham, 37; Newark, 46.[3] The regiment was entitled the 'Forty-second or Nottinghamshire Regiment of Militia,' and consisted of a grenadier and a light infantry company and the six ordinary companies with their three sergeants and two drummers each. On 20 May, 1776, they assembled for twenty-eight days' training in Nottingham, and a parade-ground was formed on the north of the town.[4] In 1778, when England was involved in the American War and France had united with America, the militia of each county was called upon to undertake home defence. Inducements were held out to recruits for the Nottinghamshire militia, 'good English ordinary of roast beef and plum pudding, and a ticket for the play at night and a handsome bounty.' Moreover they were to be quartered 'in the delightful and plentiful town of Kingston upon Hull, where excellent ale is sold at only threepence the full quart, fish of the best quality at one penny per pound, and shambles meat at a lower rate than in most towns of the kingdom.'[5] In June the militia, now reduced to 320 privates, since so many men had volunteered for the line into the 45th,[6] left Nottingham for Hull in two divisions; the first the grenadier company with three others under the command of Lord George Sutton, the second the light infantry with the other three companies under Major Cartwright.[7] At Hull the militia gave good proof of their fitness by their ready defence of the town against an intended attack by the French in November, 1778.[8] In June, 1779, they were ordered into camp on Southsea Common near Portsmouth; in December the camp was broken up, and they went into winter quarters at Gosport.[9] From 1780 until disembodied in 1783 the numbers of the militia remained about the same, the privates of the eight companies numbering about 370: drummers, 16; corporals, 21; sergeants, 21; surgeon, 1; quartermaster, 1; chaplain, 1; ensigns, 5; lieutenants, 10; captains, 5; lieutenant-colonel, 1; colonel, 1.[10]

[1] Sutton, *Nott. Date Book*, p. 42; *Gent. Mag.* 1757, p. 430. 'Lord Robert S(a)v(i)le was near being stifled by the mob, but by civility and kind entreaty he at last prevailed on them to let him have a little air that he might recover himself. Several of the mob collar'd Sir George S(avile) and threatened to strike him; in short, none of the gentlemen who were present escaped without receiving marks of their resentment. The cause of these outrages is said to be this: at the time when recruits were raising in that county for Col. N.'s regiment the men who were inlisted were promised that not one of them should be sent abroad, since which it is said that all or most of these men . . . have been sent abroad and many of them killed by the enemy.'

[2] Ibid. 1759, p. 304. The number demanded was again 480, but the return *nil*. See Add. MSS. 33,060, ff. 144–6.

[3] Sutton, op. cit. p. 112. In 1774 £40 had been levied on Nottingham town as fine of £5 per man for the twenty-eight men that should have been furnished in the last year. Ibid. p. 103.

[4] On 14 June a ball was given at the castle to celebrate the formation of the regiment. Sutton, op. cit. p. 115.

[5] Ibid. pp. 119–20. [6] See *infra*. [7] Sutton, op. cit. p. 121.

[8] A. E. Lawson Lowe, *Royal Sherwood Foresters*, p. 16. [9] Sutton, op. cit. p. 132.

[10] Muster Rolls, P.R.O.

From 1783 to 1788 the regiment was not assembled for training, but from this date until embodied for coast defence in 1793 it seems to have met annually. In 1797, when the militia was at Hull, since there was great fear of a French attack, the Leicestershire militia was sent to relieve the Nottinghamshire, and the latter was divided into several detachments, which were stationed at Bridlington, Hornsea, and other coast towns.[1]

With the Peace of Amiens in April, 1802, came the disembodiment of the whole of the militia, each non-commissioned officer and private receiving one month's pay as a gratuity. The Militia Act of the same year fixed the number of the Nottinghamshire militia at 564, this including the quota from the county and from Nottingham town and county.[2] By this Act men between eighteen and forty-five were to be raised by ballot or to pay a fine of £10 to be exempt for five years. In the critical years of 1803 and 1804, when France was engaged in vast preparations against England, the Nottingham militia was ordered to the south coast, and the actual strength of the regiment soon reached more than 1,000 of all ranks. Later in the year it was stationed at Margate and then at Ramsgate, detachments being posted about the Isle of Thanet.[3] In 1811 and 1812 the militia was on service in Ireland. In November, 1813, by reason of its good service a detachment of the regiment was ordered to undertake the duties of royal guard for two nights and two days,[4] and in December it was further honoured by royal permission to be styled 'the Royal Sherwood Foresters,'[5] and the present regimental badge was adopted.

With the battle of Waterloo came the end of the period of war, and the consequent disembodiment of the militia. The strength of the Royal Sherwood Foresters was reduced to one colonel, one lieut.-colonel, 1 major, 8 captains, 10 lieutenants, 6 ensigns, 1 adjutant, 1 surgeon, 1 quartermaster, 1 paymaster, 1 sergeant-major, 18 sergeants, 19 corporals, 1 drum major, 10 drummers, and 564 privates.[6] From this date the disembodied regiments were only assembled for training at irregular intervals until the beginning of the Crimean War. In 1854 they were again embodied and encamped at Aldershot in 1855.[7] In the summer of 1856 they were disembodied.[8] The militia at the present day (1906) forms the 4th Battalion of the Royal Sherwood Foresters. As such it did good service in South Africa in 1900 and 1901.[9]

The first battalion of the Royal Sherwood Foresters represents the nucleus of the old 45th Regiment of Foot incorporated with the volunteer forces from Nottinghamshire. In 1779 the nobility, gentry, and clergy of the county met in Nottingham for the purpose of raising a large county subscription 'to be applied for the public service of this kingdom in the present critical state of affairs.' As a result they petitioned the king that some particular regiment might be recruited in the county with the assistance of subscription . . . to be henceforward distinguished by the name of the county.' Their petition was answered by a letter from the Secretary of War

[1] A. E. Lawson Lowe, op. cit. p. 27.
[2] Stat. 42 Geo. III, c. 90, Art. xix.
[3] A. E. Lawson Lowe, op. cit. 31–2. The patriotism of the county was shown both by the number of volunteers for the line, and by the raising of 472 yeomanry cavalry and 3,635 volunteer infantry, besides the ordinary militia.
[4] *Nott. Gaz.* Nov. 1813.
[5] Ibid. Dec. 1813.
[6] Ibid. 1815.
[7] *Nott. Rev.* 1854 and 1855.
[8] Ibid. 1856.
[9] *Army List* (1905).

desiring the nobility and gentry to exercise their personal influence to promote the levy of men in the speediest and most effectual manner, and when 300 men should be raised they should be incorporated with the 45th Regiment of Foot to be thenceforward called the Nottinghamshire Regiment.[1] The remains of the '45th' which had then been returned from service in America numbering less than 100 men, was therefore ordered on recruiting service into Nottinghamshire, an extra bounty of six guineas was paid to each recruit out of the county subscription, and the '45th' became incorporated with the county.[2] Its services in the West Indies, in the attack on Buenos Ayres, and in the Peninsular War, at Roleia, Vimiero, and Talavera, and at Busaco earned for it the title of the 'Old Stubborns' and won Wellington's praise for steadiness and discipline.[3] It also saw service in South Africa from 1899 to 1902, and was at Vlakfontein in 1901.[4]

By statute of 1808 a local militia was established,[5] and in 1809 the various volunteer corps in Nottinghamshire were disbanded, and in most cases the men transferred their services to the local militia in accordance with clause xix of the statute.[6] Their services were at first confined to their own counties, but in 1813 the crown was authorized to accept from the local militia voluntary offers of service out of their counties for under forty days in the year, and limited by the duration of the Act to 25 March 1815.[7] In February, 1814, the men and officers of the Nottinghamshire local militia were assembled for the purpose of extending their services to forty-two days. Those who agreed to do so were not to be called out for training or exercising for the rest of the year.[8] The battle of Waterloo however gave a death blow to the local militia, and in May, 1816, the ballot was suspended, and the office of agent-general for local militia and volunteers was abolished.[9] When the aggressive policy of Napoleon III brought the possibility of a French invasion the national need of a volunteer defence, voiced in a pamphlet of 1846,[10] was slowly realized by the nation at large, and led to the volunteer movement of 1859 and to General Peel's circulars of that year. The volunteers of Nottinghamshire formed into battalions according to the general regulations of 1891 are the 'Robin Hood' or, 1st Nottinghamshire Rifle Volunteers, with their headquarters at Nottingham, and the Nottinghamshire volunteer battalions of the Sherwood Foresters, with the headquarters of their B and C companies at Newark, and of their A company at East Retford. The Southern Nottinghamshire Hussars (Imperial Yeomanry) have their headquarters in Nottingham, and the Sherwood Rangers (Imperial Yeomanry) at East Retford.

Apart from the development of the militia the history of the eighteenth and early nineteenth centuries wrapped itself round the system of party government, and all that party government involved. As early as 1696 bribery and corruption were evident, and the town of Nottingham petitioned that measures might be adopted to abate or remove the evil, that the election of members might be free.[11] Again, in 1699, on the return of Robert

[1] Sutton, op. cit. p. 134. [2] Ibid. p. 135. [3] R. de M. Rudolph, *Hist. of Territorial Regiments.*
[4] Ibid. [5] Stat. 48 Geo. III, c. 111. [6] Ibid.
[7] Stat. 54 Geo. III, c. 19, extended by 56 Geo. III, c. 76.
[8] *Nott. Gaz.* Feb. 1814. [9] Ibid. May, 1816.
[10] Gen. Sir Chas. Napier, *Defence of England by Volunteer Corps and Militia.*
[11] Bailey, *Ann. of Notts.* iii, 1,052.

Sacheverell as member for Nottingham, George Gregory presented a petition to the House complaining of many illegal practices adopted by the successful candidate.[1] In the same year John Raynor, candidate for Newark, petitioned that he himself was the duly chosen burgess, but the mayor and others had used many illegal practices in favour of his rival Sir Francis Molyneux who had been returned.[2] In January, 1700, the House resolved that Sir Francis Molyneux was not duly elected, and the mayor was taken into custody for his conduct at the election.[3] In the same year George Gregory and Robert Sacheverell were again rival candidates for Nottingham. Gregory was returned, and thereupon Sacheverell petitioned that he had been returned by means of many corrupt and illegal practices by the sheriff, the mayor, and many others.[4] At the end of the session Parliament resolved that Gregory was not duly elected, and the return was ordered to be amended.[5] Similar petitions were sent to the House of Commons year after year, but the system of representation was anything but satisfactory.[6] In May, 1783, John Cartwright wrote to the 'gentry, clergy, and freeholders of co. Nottingham who have a vain shadow of representation in Parliament, but more particularly to the rest of the inhabitants who have no representation at all' that something further must be done, the unrepresented must petition as well as the badly represented, so 'to bring the House of Commons back to its ancient purity and dependence on the people.' Such a reform would create no ascendancy of any one political party, 'it would not favour a Shelburne more than a Fox, a Bute more than a Portland.'[7] A petition of the inhabitants of Nottingham not possessed of the necessary qualification of freehold of 40*s*. was accordingly prepared, but seems to have effected little.[8]

In 1812 and 1813, when the question of peace or war with Napoleon played so great a part in the elections, seventy burgesses met at Nottingham Guildhall to draw up a petition in the interests of peace. The speaker of the evening exhibited two loaves 'of war and peace; the first, the big loaf of 1791, and the second, the small loaf of 1813.'[9] But in the minds of many the cause of the distress of those years lay deeper. Thus Major Cartwright wrote: 'I hear you are petitioning about peace in your town. I would to God you would get to work on reform, without which peace is of no value.' No temporary expedient or temporary peace could avail; 'to save the state is to restore the constitution.'[10] The Reform Bill of 1832 accomplished much, but did not satisfy the extremists, whose organ in Nottinghamshire was the *Nottingham Review*. Leading articles in October, 1838, called for universal suffrage, for the sovereignty of the people, asking how long Whigs would act Tories in denying such.[11] In November, 1838, when the Chartist movement was gaining head, a Radical demonstration was made on the borders of Sherwood Forest since the mayor forbade a meeting in the town. A long procession made its way to the meeting-place from the surrounding towns, and in

[1] Bailey, *Ann. of Notts.* iii, 1,055.
[2] Ibid. 1,056.
[3] *Journ. of House of Commons*, Jan. 1700.
[4] Bailey, op. cit. iii, 1,061.
[5] *Journ. of House of Commons*, June, 1700. However Sacheverell's triumph was but short-lived. The return was ordered to be amended on 10 June, Parliament was prorogued on 24 June and never met again.
[6] In 1741 the burgesses and freeholders of Nottingham gave instructions to their representatives to bring forward a Bill for ousting placemen from Parliament; to reduce so dangerous an influence both for now and futurity. Add. MS. 33,060, fol. 219.
[7] *Nott. Journ.* May, 1783.
[8] Ibid.
[9] *Nott. Gaz.* Jan. 1813.
[10] Ibid.
[11] *Nott. Rev.* Oct. 1838.

its ranks were the members of the Female Political Association lately formed in the county.[1] On 12, 13, and 14 August of the next year the Chartists kept their notable 'three days' holiday.' Those of Mansfield united with those of Sutton and the villages round, and marched in procession along a lane outside Mansfield. Special constables were ordered to seize the ring-leaders, and a detachment of the 5th Dragoons was ordered to be in readiness to overwhelm the rebels.[2] They seem, however, to have been perfectly passive, and even the *Nottingham Mercury* confessed that the extreme proceedings taken against them were quite uncalled for.[3] However, the next year, in anticipation of an insurrectionary movement, special measures were taken to secure Nottingham. From 10 to 17 August the mayor was in constant attendance at the police office, troops were under arms every evening, and the Rifle Brigade was in constant readiness. But the year passed by quietly with no attempt at an organized meeting.[4]

The spirit of progress and reform which marked Nottinghamshire in the early nineteenth century has grown strong in its old centres in this early twentieth century. Newark, the royalist centre of the Civil War, still maintains its old-time reputation, and as in 1833 it was the first constituency of Gladstone, then 'the rising hope of the stern and unbending Tories,' so now as ever it represents the Conservative element in the county.

[1] *Nott. Rev.* Nov. 1838.
[2] Ibid. Aug. 1839.
[3] *Nott. Mercury*, Aug. 1839.
[4] Bailey, op. cit. iv, 415.

FORESTRY

THE central and western parts of Nottinghamshire were thickly wooded from the earliest times. The place-name terminal 'field'—always spelt 'feld' in old English—meaning a place where trees have been felled, or as we now say a clearing, is to be found exclusively in the western half of the shire, as in Ashfield, Balkfield, Basingfield, Eastfield, Farnsfield, Haggonsfield, Highfield, and Mansfield.

This well-wooded portion of Nottinghamshire became a great hunting district or forest for the early Norman kings. The Domesday Survey seldom makes any reference to a forest, but the Nottinghamshire portion of the Great Survey shows that a considerable number of the places within the woodland district were *terra regis*, so that the amount of royal demesne made its conversion by the Conqueror or his immediate successor into a large forest a comparatively easy matter.[1]

It is, perhaps, scarcely necessary to say that the term forest did not originally, either in its etymological or customary signification, imply a wood, but rather a great waste reserved for royal hunting purposes, and necessarily including certain woods and underwoods as coverts for the deer and other game. The forest of Nottingham or Sherwood, though including various open tracts of country, was far more thickly and generally wooded than many of the old forests, and afforded a notable contrast to the forest of the High Peak in the adjoining county of Derby, where the proportion of woodland was very small.[2]

In early days this great tract of country, which then embraced at least a fourth of the whole county, was known in various documents as the forest of Nottingham,[3] but the equivalent term of Sherwood[4] soon became the more usual expression. The first exact notice of this forest occurs in the year 1154, when William Peverel the younger answered to the forest pleas. He controlled the forest and held the profits under the crown. On the forfeiture of the Peverel estates, early in the reign of Henry II, the forest lapsed to the king, and was for some time administered by the successive sheriffs of the joint counties of Nottingham and Derby.

In the lifetime of Richard I the forest of Sherwood was held by his brother John, earl of Morton. The earl, by charter, granted to Ralph FitzStephen and Maud de Caux his wife, all liberties and custody of the forest of Sherwood, including permission to hunt hare, fox, cat, and squirrel with dogs and hounds;[5] all windfallen wood; the valuable inner bark or bast of the lime trees; a skep out of every cartload of salt passing through the forest, and half a skep from a half load; the after pannage (*retro-pannagium*) for pigs; all pleas of unlawed dogs; together with all goods and chattels belonging to thieves or 'brybours,'[6] taken by them within the forest.

The same charter sanctioned the holding of a park at Lexington (Laxton)[7] by Ralph and Maud, wherein they might hunt deer as they pleased without molestation, and also granted them seventy acres of assart or inclosure at Lexington and Gedling free of view of the forest ministers.[8]

This definite mention of robbers and thieves in Sherwood Forest in the time of Richard I, which has not, we believe, been previously cited, causes a short digression to be made from the dry sequence of historic facts. The very name of Sherwood at once brings to the mind the early tales

[1] Royal hunting grounds (*silva regis*) as distinct from the king's lands or royal demesnes (*terra regis*) probably existed here long before the Conquest. Cox, *Royal Forests of England*, 4.

[2] *V. C. H. Derb.* 397–413.

[3] Anct. Forest Proc. Chan. No. 3, A.D. 1218; No. 24, A.D. 1232.

[4] The earlier form was almost invariably *Shirewode* or *Shirwode;* the name probably came from a considerable length of the forest bound being also the bound between the two shires of Derby and Nottingham.

[5] There were roedeer in Sherwood Forest, but they were probably never numerous, and died out at a comparatively early date. There was a single presentment for killing a roebuck at the eyre of 15 Edw. I. Sherwood was so intersected with roads and by-roads, included so many fairly populous places within its limits or on its fringes, and was so destitute of great heights, ravines, or gorges, that it could at no time be compared with such wild districts as the Peak Forest, or certain parts of the royal forests of Lancashire and Yorkshire. As Sir Robert Plumpton held a bovate of land in Sherwood, called Wolfhunt land, as late as 1433, by the service of scaring the wolves by winding a horn, it has sometimes been supposed that wolves remained in Sherwood as late as the reign of Henry VI. But such a surmise is altogether untenable; the survival or repetition of an old manorial service proves nothing.

[6] *Bribour* was a mid-English term for a robber or pickpocket.

[7] Laxton was outside the forest when the bounds were lessened by the forest charter of Henry III.

[8] Exch. K. R. Acct. Forests, $\frac{535}{1}$, 6, 7. This is a paper book of 152 pages, written in English, *temp.* James I. It is a sort of directory of proceedings as to the laws and customs of Sherwood Forest. It contains the charter of the forest of Henry III, and various local charters and regulations, with the bounds and metes of the different hays of the king and of the abbot of Rufford, the chapters of the 'regard' *temp.* Edw. III, together with the oaths of the forest ministers, as well as highly interesting definitions of the courts and customs of the forest.

of Robin Hood, with Little John, Friar Tuck, Will Scarlet, and his other lawless associates, and more particularly their various delightful adventures with the sheriff of Nottingham, and with purse-proud travellers. Outlaw and robber that he was, the whole garland of Robin Hood ballads, from the earliest to the latest, always represents him as an advocate of humane though levelling principles, and a protector of the oppressed.

> From wealthy abbots' chests and churches' abundant store
> What oftentimes he took he shared among the poor ;
> No lordly bishop came in lusty Robin's way,
> To him, before he went, but for his pass must pay ;
> The widows in distress he graciously relieved
> And remedied the wrongs of many a virgin grieved.[1]

So dear were the stories of Robin Hood to our forefathers, that in the earliest days of English printing a sheaf of ballads was issued from the press of Wynken de Worde, at the end of the fifteenth century, under the title 'A Lytell Geste of Robyn Hode.' No earlier mention of this character has been found than that contained in the 'Vision of Piers Ploughman,' written about 1377, wherein the character of Sloth is introduced saying :—

> I can noughte perfitly my paternoster, as the prest it syngeth ;
> But I can rymes of Robyn hood and Randolf erle of Chestre.

The references to this ballad hero are not infrequent in the following century. The most interesting of these is a petition to Parliament of the year 1439, complaining that one Piers Venables of Derbyshire rescued a prisoner, 'and after that tyme the same Piers, havynge no liflode ne sufficeante of goodes, gaderied and assembled unto him many misdoers . . . . and in manere of insurrection, weinte into the wodes in that countrie, like as it hadde be Robyn Hode and his meyne.'[2]

The popularity of the ballads of Robin Hood, which mainly associate him with Sherwood Forest, long before the age of printing, can be abundantly testified. It is difficult to believe that the gallant outlaw and the leading men of the earlier ballads were mere characters of fiction. Some have supposed that he was one of the proscribed followers of Simon de Montfort ;[3] Scott, in his inimitable *Ivanhoe*, has followed others who assign the time of Richard I to the hero, when, as we have seen, there were certainly robbers in this forest ; whilst a third, the least possible but perhaps the most plausible theory, is that Robin Hood was an adherent of the earl of Lancaster in the ill-fated insurrection of 1322.[4] The identity of Robin Hood with a pretended earl of Huntington, who died in 1274, has no kind of substantial basis, and is a mere fond imagining of comparatively late date.[5]

The attempts to turn Robin Hood into a mere mythical hero—an ingenious German even considering that Hood is but a corruption of Woden—find no favour at the hands of the American scholar who has devoted so much pains and learning to his edition of the ballads of the great forest outlaw.[6] At the same time there are doubtless mythical elements in the traditions ; a genuine character became the centre round which certain old popular legends and tales accumulated. Randle, earl of Chester, with whom Langland associates the name of Robin Hood, did not lose his identity as a real nobleman who flourished in the reigns of Richard I, John, and early in the time of Henry III, because the common folk made half-fictitious rhymes about him.[7]

Robin Hood, like the third Randle, earl of Chester, was, it may be safely assumed, a real individual. Possibly Sir Walter Scott was right in regarding him as a Saxon holding out against the Norman conquerors so late as the end of the twelfth century.[8] At any rate the time of Richard I is the best authenticated period for the hero's existence. It is the time assigned to him by Major in his history of Great Britain, which appeared in 1521, wherein he gives a brief but vivid account of Robin and his lieutenant,[9] about whose deeds he states that all Britain rang with songs. This date

[1] Drayton, *Polyolbion*, song xxvi.

[2] Parl. R. v, 116.

[3] *Lond. and West. Review* (1840), xxxiii, 424.

[4] This is Hunter's theory in *The Ballad-Hero, Robin Hood* (1854). Mr. Hunter's arguments are based on finding the name Robin Hood as a porter of Nottingham Castle, *temp.* Edward II, but the name was of common occurrence.

[5] Dr. Stukeley in his *Paleographia Britanniae*, invented for him a most elaborate pedigree as a descendant of Judith, countess of Huntington, the Conqueror's niece ; it is given in Throsby's *Thoroton*, ii, 165.

[6] *English and Scotch Popular Ballads*, 5 vols., edited by F. J. Child. The Robin Hood section is in vol. iii (1888), pp. 39–237.

[7] Mr. Sidney Lee has a learned article in the *Dict. Nat. Biog.*, wherein he strongly argues in favour of Robin Hood being a 'mythical forest elf.'

[8] This is also the view accepted by Thierry in his *Norman Conquest.* A correspondent of *Notes and Queries* (Ser. 7) ix, 226 suggested that Robertus Hod, who killed one Ralf in the abbot of Cencester's garden in the days of King John, and was in consequence outlawed, was identical with Robin Hood ; but this is highly improbable.

[9] 'Robertus Hudus et Parvus Joannes latrones famatissimi.'

has been followed by Grafton, Stow, and Camden. Had these men actually flourished in Sherwood at a later date, in the thirteenth century, or in the fourteenth century, there could scarcely fail to be definite references to their marauding habits in the presentments at the forest pleas held at Nottingham, of which full particulars are extant.

It was near the close of Maud de Caux's tenure of the office of keeper of this forest that the great storm of the winter of 1222 occurred, when England was swept from end to end with winds of extraordinary vehemence. Trees were everywhere overthrown in such vast numbers that the old forest customs, whereby windfallen boughs, or rootfallen trees, were the perquisites of forest ministers were suspended, and special writs were issued by the crown to the authorities throughout England directing the sale of all such timber with a return of the proceeds. These special instructions were forwarded *inter alia*, to the (1) verderers and foresters of the forest of Sherwood, (2) to the verderers and forester of the enclosures or hays of Sherwood (de haiis de Shirewood), (3) to Maud de Caux, widow, keeper of the forest of Sherwood and of Clay, and (4) to Philip Marc, keeper of the hays of Sherwood.[1] The hays or parks within a forest usually had a separate set of ministers; the two chief hays at this period were those of Clipston and Bestwood.[2] Maud de Caux obtaining in 1222 the title of keeper of Sherwood and Clay was a survival of the time when the districts placed under the then rigid forest laws had been much extended by Henry II and John, including in Nottinghamshire a considerable part of the Clay[3] division in the north-east of the county, as well as the northern part of Hatfield or Heathfield, above Warsop. In 1215 John, by one of the articles of Magna Charta, was compelled to agree to the disafforesting of all the great tracts put under forest law during his reign, and in 1217 the child-king, Henry III, was made to issue in return for certain grants, the Charter of the Forest, whereby good men and true were to view forests in every shire, and all that had been added since the coronation of Henry II was to be disafforested.

We are not aware that there is any perambulation of this forest extant of earlier date than 1232, but in that year the Clay and Hatfield districts were declared outside the forest, and the true bounds set forth in definite fashion.[4] This perambulation is identical in its main lines with one taken in the year 1300, though the phraseology is not quite so clear. In both cases the perambulation, or setting forth of the bounds, began at the king's ford (Conyngeswath), which was a ford over the stream of Rainworth Water between Edwinstowe and Wellow at the north-east corner of the forest, proceeding thence in both directions.

The perambulation of 17 June, 1300, was made in the presence of the forester and verderers and of the attorney of the justice of the forests, on the oath of Sir Gervais Clifton, Sir John Leeke, and six other knights and four serjeants.[5] They declared that the lord king's forest of Sherwood begins at the ford of Conyngeswath, along the road which leads as far as the town of Wellow towards Nottingham, so that the close of the town of Wellow is outside the forest, and so by the road which goes between Wellow and Nottingham to a certain parcel of wood called Littlehawe; and so ascending by a certain way towards the west between the said wood and the wood of the abbot of Rufford, which is called Brown, and extends so far as Rainworthford; and thence turning aside by a certain road towards the east between the aforesaid wood of Littlehaw and the wood of Blidworth as far as the aforesaid great road, which leads from Wellow towards Nottingham as far as Bakestanehowe on that same great road; and so by the same road as far as the place where the rivulet of Dover Beck crosses the aforesaid road; and thence as the aforesaid rivulet of Dover Beck descends into the water which is called the Trent; and so along the same water of the Trent to Nottingham bridge.

The aforesaid perambulation also begins in the same county of Nottingham at the aforesaid ford of Conyngeswath, ascending towards the west by the water which is called Meden as far as the town which is called Warsop, and from that town ascending by the same water as far as Pleasley Park; and thence ascending by the same water as far as Haytrebridge; and thence turning aside along the high road of Nottingham as far as the bridge of Milneford, and thence ascending as far as Mameshead; and thence between the fields of Hardwick and Kirkby and the moor Kirkby as far as the corner which is called Nonneker; and thence through the assart of Ywayn le Breton as far as Tarlesty; and thence as far as Stolegate; and thence along the high road as far as beneath

[1] Pat. 7 Hen. III, m. 6. As to the instructions of this period, *De Cableicio*, i.e. the cablish or windfallen timber, on the Patent and Close Rolls, see Cox, *Royal Forests*, 6, 7.

[2] Beskwood was the old form of spelling, and generally maintained until the beginning of last century.

[3] Called Clay from the nature of the soil, which differed from the usually sandy soil of Sherwood.

[4] Exch. Misc. Bk., No. 76. This is a small parchment book of thirteenth-century date, consisting of 115 folios, lettered on back 'Sherwood Forest Perambulation and other Proceedings,' Hen. III—Edw. III. It opens with a transcript of the Charter of the Forest; this is followed by perambulations of Sherwood, 16 Hen. III and 28 Edw. I.

[5] There are three early MSS. of this perambulation at the Record Office, For. Proc. (Ancient) Chancery, No. 102, m. 10; ibid. No. 44, and in Misc. Bk. 76, just cited. This English version is taken from Turner, *Pleas of the Forest* (Selden Soc.) 118, 119.

the old castle of Annesley; and from the same castle along the high road as far as the town of Linby; and thence through the middle of the town of Linby as far as the mill of the same town on the water of the Leen; and from thence descending by the same water as far as the town of Lenton; and thence as that water was anciently wont to run as far as the water which is called the Trent, and so descending by the same water of the Trent as far as Nottingham bridge aforesaid[1].

These bounds, which were exactly maintained until Sherwood began to be broken up at the close of the sixteenth century, embraced a district of country about twenty miles long by eight broad, and containing some 100,000 acres, or about a fifth of the whole shire.[2]

Reverting to the chief ruler of this forest, Maud de Caux died in 1223, and as the office by the charter of the earl of Morton had been made hereditary, she was succeeded as chief forester-of-fee by her son, John de Birkin. In 1231 this hereditary office came to Robert de Everingham, in right of his wife Isabel, daughter and heiress of Thomas de Birkin. Adam de Everingham was chief forester at the beginning of the reign of Edward I, and he was succeeded by his son Robert. Soon after his accession, Robert de Everingham incurred the king's displeasure, and the office was claimed by the crown as forfeited.[3]

It is clear from the Close Rolls of 1286 that the offence which brought about the downfall of the last hereditary keeper of Sherwood Forest was the grievous abuse of his position as guardian of the king's deer. In November of that year the crown interfered to release from Nottingham gaol Robert de Everingham, John de Everingham, and nine others, who were there imprisoned for venison trespass in Sherwood; bail was accepted from twelve sureties, who were bound to produce the offenders at the next eyre.[4]

After the disgrace of Robert de Everingham, the position of chief forester or keeper (*custos*) of Sherwood was granted by the crown to various persons of high position as a mark of royal favour. It was a post not only of dignity, but of privilege and emolument.

The forest pleas for Sherwood were held at Nottingham in July, 1251, before Geoffrey Langley, forest justice, when the duties as well as the privileges of Robert de Everingham as keeper were defined. It was then reported that there were within the forest three keepings, namely, the first between the streams of the Leen and Dover Beck, the second the High Forest, and the third Rumewood. The chief keeper was bound to have a sworn chief servant, who was to go through all the forest at his own cost, to attach transgressors, and to present them before the verderers at the attachment courts. In the first keeping the chief keeper was to find a riding forester with a servant, two foot foresters, two verderers, and two agisters; in this keeping were three parks or hays, namely, Bestwood, Linby, and Welby. In the second keeping there were to be two riding foresters with their servants, two foot-foresters, two verderers, and two agisters; the hays of Birkland, with Bilhagh and Clipston, were in this keeping, and to them pertained two other verderers as well as two agisters. The third keeping of Rumewood had a foot-forester, two verderers, and two agisters; and also two woodwards, one for Carburton, and one for Budby. It was also declared that Robert de Everingham ought to provide a servant, bearing his bow,[5] to gather cheminage or wayleave through the forest.[6]

There are certain particulars extant with regard to the forest pleas of Sherwood which were held in 1267. Several hundred vert offenders were brought before the court. The heaviest presentment under this head was that against the abbot of Rufford for having felled 483 oaks for building purposes since the last eyre; the abbot was, however, able to plead successfully a charter of Henry II in justification of his action.[7]

A striking illustration of the occasionally rebellious conduct of the forest tenants of Sherwood against the officials who guarded the king's game occurred in 1276. On 3 July John de Lasceles, steward (*senescallus*) of the forest, caught two men, Robert Martham and Robert Afferton, with bows and

[1] Edward I broke the Forest Charter in several cases throughout the kingdom under legal quibbles, but as a rule the bounds as settled in his father's time were maintained. In 1281 the king ordered an inquisition relative to the Sherwood perambulation, with the result that the bounds of 16 Hen. III were held good; save that the wood of Rumewood and the townships of Carburton, Budby, and half the townships of Thoresby and Skegby and the townships of Sutton in Ashfield and Bulwell, with certain other parts, were to be held forest, as being part of the whole demesne of the crown, and therefore, wrongly disafforested *temp.* Hen. III. (For. Proc. Chan. No. 72.) There are also somewhat contradictory memoranda attached to some versions of the ancient 1300 perambulation, wherefrom it would appear that the king's wood of Wellow and the archbishop's wood of Littlehagh were again afforested. At the beginning of the seventeenth century the following townships were declared 'ould demesne not geldable':—Arnold, Bulwell (half), Carburton, Clipston, Darlton, Linby, Mansfield, Mansfield Woodhouse, Roynton, Skegby, and Sutton in Ashfield. Exch. K. R. Accts. $\frac{534}{20}$, f. 66.

[2] See perambulation of Sherwood 30 Hen. VIII., Fourteenth Rep. of Woods and Forests (1793) App. ii.

[3] See the two Sherwood Forest Chartularies already cited, *passim*.

[4] Close, 14 Edw. I, m 1.

[5] This was the officer who was afterwards termed the Bow-bearer or Ranger.

[6] Exch. K. R. Accts. $\frac{535}{1}$, pp. 7, 8.

[7] Exch. Misc. Bk. lxxvi.

arrows, and took them to Blidworth, intending to keep them till the morrow, when doubtless they were to be delivered to the sheriff at Nottingham Castle. But during the night twenty men, armed with swords and bows and arrows, broke open the doors of the place where they were confined, released the prisoners, and severely beat one Gilbert, a young servant of the steward. Then the men proceeded to the residence of the steward, insulted him, and broke his doors and windows. When an inquest was held by the verderers, regarders, and other ministers of the forest, it was found that two or three of the marauders had fled into Yorkshire, and one was dead, but sixteen names are set forth.[1]

The next forest pleas of Sherwood were held at Nottingham on 1 January, 1287, before Sir William de Vescy, Thomas de Normanville, and Richard de Creping, justices in eyre of the lord king.[2] The verderers were six in number, namely, Richard de Fort, William de Colwick, John de Annesley, Henry de Tinsley, William de Bevercotes, and Ralph clerk of Mansfield. Robert de Everingham was the forester-of-fee, and under him were eight sworn foresters.

Sir William de Vescy and his fellow justices, finding that the king had sustained many losses since the last eyre held by Robert de Neville and others, arising in many instances from the general assize of the forest not being sufficiently observed, laid down certain special injunctions to the following effect :—

> That all verderers, in accordance with the charter of the forest, were to assemble every forty days to hold attachments for vert and venison and small pleas.
>
> That they were to present a single roll of vert and venison to the justices in eyre, and not each one a separate roll for his own bailiwick.
>
> That anyone dwelling in the forest found felling a green oak be attached for the next attachment court, there to find pledges till the next eyre, and to pay the price to the verderers ; a second offence to be dealt with in like manner ; but for a third offence to be imprisoned at Nottingham, and there kept till he be delivered by the king or justice of the forest.
>
> That anyone dwelling outside the forest committing any trespass against the vert, his body is to be committed to prison till he be delivered by the king or justice ; for a third offence he is also to lose his horses and cart, or his oxen and wagon, or their price, and that price is to be paid at the next attachment to the verderers for the king's use.
>
> That those dwelling in the forest caught cutting saplings, branches, or drywood from oaks or hazels, or thorns, or limes, or alders, or hollies, or such-like trees, without warrant, are to be attached by two good pledges to come to the next attachment court, there to be amerced for the king ; but if it be for a sapling which is of greater price than 4*d.* or any higher sum, to be attached until the next eyre.
>
> That escapes of beasts of the plough into the forest be pleaded in attachments, and amends taken for the use of the king.
>
> That no man carry bows or arrows in the forest outside the king's highway save a sworn forester, and on the king's highway only in accordance with the assize of the forest.
>
> That no man save a sworn forester or other sworn officer attach anyone in the future.
>
> That any dweller outside the forest agisting his animals therein is to have such animals taken before the verderers and the price paid, and to make answer before the justices in eyre.
>
> That the great burden of so many regarders is no longer to be endured, but that in this forest the number be limited to twelve.
>
> And that those taken by night or in the fence month[3] within the forest be dealt with as before.

The very large number of 350 head of deer (both red and fallow) had died of murrain in the one year preceding the holding of this eyre, and were entered on the venison presentments. In another year ten harts, three hinds, sixty-one bucks, and twelve deer had perished from disease.

The Attachment, or Forty-day Court as it was sometimes called from the period at which it was summoned, was held by the verderers with much regularity in Sherwood for a long time after the pronouncement of the forest justices at Nottingham in 1287. These courts were held at four different centres, namely at Edwinstowe, Mansfield, Linby, and Calverton, on successive days of the same week. There are a large number of the Sherwood Attachment Court Rolls at the Public Record Office, from Edward I to Henry IV, with a few of later date.[4] The Attachment Roll of 1292–3, which is in an imperfect state, gives lists of the presentments for vert offences and the fines imposed. A green oak was usually valued at 6*d.*, and a dry or leafless oak at 4*d.* ; a sapling

[1] Exch. Misc. Bk. lxxvi, f. 55*b*.

[2] For. Proc. Tr. of Rec. No. 27.

[3] The fence month (*mensis vetitus*) of the forest lasted from fifteen days before Midsummer Day to fifteen days after ; it was the special time when the deer required quiet and protection just after fawning. Cheminage of a special character was often levied during the month. See Cox, *Royal Forests*, 59–61.

[4] Exch. K. R. Accts. Forests, $\frac{1}{15}\frac{3}{4}$ (20–21 Edw. I), $\frac{1}{17}\frac{3}{4}$ (3 Edw. III), John de Crumbwell, keeper ; $\frac{1}{20}\frac{3}{4}$ to $\frac{1}{2}\frac{3}{5}$ (20 to 40 Edw. III), Ralph de Neville, keeper ; one each of John de Neville (41–42 Edw. III) and John atte Lee (42–3 Edw. III) ; $\frac{1}{6}\frac{3}{5}$ to $\frac{1}{16}\frac{3}{5}$ (42–3 Edw. III to 4–5 Ric. II), William Latimer ; $\frac{1}{18}\frac{3}{5}$ (5–6 Ric. II), Walter de Neville ; and $\frac{1}{21}\frac{3}{5}$ (1–5 Hen. IV), Ralph earl of Westmoreland. As to attachment and swainmote courts and their powers, see Cox, *Royal Forests*, 13–16.

(*blectrum*) varied from 1*d.* to 3*d.*, and a stubb or dry trunk of a pollarded tree at 2*d.* The roll for 1317 shows that twenty-two attachment courts were held that year, namely six each at Mansfield and Edwinstowe, and five each at Linby and Calverton. Amongst those presented in 1318 were Nicholas de Nottingham, rector of Clipston, and Robert de Kirkby, rector of Kirkby in Ashfield. In 1330, each of the four courts was held eight times. The full number of nine courts at each centre was held in 1347; on some rolls it is clear that the court was not entered when there were no presentments. The roll for this year, as well as some others, shows a higher rate of fines (such as 12*d.* and 6*d.* for vert offences) at Mansfield than at the other courts; this difference may have been brought about through the necessity of being more particular to guard the wood where the population was greater. The thirty-six courts of this year brought in value fines to the amount of £6 14*s.* 1*d.* The roll for 1401–2 shows that eight courts were held that year at Calverton, six at Mansfield, five at Edwinstowe, and two at Linby.

These attachment courts took cognizance of beasts trespassing as well as of vert offences; thus in 1330 there were cases of 1*d.* fines for the straying of cow or stirk, of 3*d.* for five sheep, and of 8*d.* for twenty-six sheep. In 1430 foals were agisted in Clipston Park at 6*d.* each, cows from 6*d.* to 10*d.*, and calves at 3*d.*[1]

In April, 1309, the sheriff of Nottingham was ordered to assemble all the regarders and foresters of Sherwood to make regard or survey therein before the coming of the justices of the forest, and to cause regarders to be elected in the place of those who were dead or infirm, so that there be twelve in number. The foresters were to swear that they would lead these twelve knights throughout their whole bailiwicks to view all the trespasses, and to set out the same in writing under the headings that were forwarded. These twelve headings deal with all purprestures old and new, assarts, wastes, eyries of hawks and falcons, forges and mines, honey, those who had bows and arrows and greyhounds, etc., in accordance with the usual 'charter of the regard.' The phrase as to the coming of the justices was a mere form; it was repeated in the summons for the regard of Sherwood in 1312, although in neither case was the regard followed by an eyre or forest pleas.[2]

Sherwood from early days was a treasury for kingly gifts both of wood and venison. The royal grants of timber from this forest were frequent throughout the reign of Henry III. In 1227–8 four oaks were given to William Avenel, who is described in the grant as waiting on the king of Scotland; two to the leper hospital of Chesterfield; six to the priory of Blyth; six to the canons of Newark; and three to the priory of Thurgarton.[3] Such gifts to religious houses often specify that the trees were for works then in progress of their churches or conventual buildings. Occasionally the gifts from this forest consisted of ready-trimmed timber. Thus, in 1228, the king sent twenty tie-beams (*copulas*) from Sherwood to the church of the distant priory of Wormgay, Norfolk;[4] and in 1229 forty rafters (*chevrones*) to the abbot and canons of Croxton.[5] A single oak was also sent in the latter year into Norfolk, to one Richard de St. John, chaplain of Henry de Burgh; the bailiff was directed to fell one as near as possible to the Trent, as it had to reach Norfolk by water carriage.[6] In the same year another single oak was granted to the prior of Blyth to make a door for his hall.[7] William Bardulf in 1231 had a grant from Sherwood of twenty tree trunks suitable for timber (*fusta ad maeremium inde faciendum*).[8]

Henry III also dealt generously with the deer of Sherwood Forest, his gifts being chiefly from the fallow deer. In 1229 the king gave two does to Beatrice, wife of Walter de Evermuth, constable of Lincoln Castle; ten does and a brocket to John, constable of Chester, to be placed in his park of Dunyton; ten does and two bucks to Hugh Despencer towards stocking his park at Loughborough; and twenty does and two bucks for the bishop of Carlisle's park at Melbourne.[9] In 1230–1, twenty-five more does and seven bucks were sent to Despencer's park at Loughborough, and the bishop of Lincoln received twelve does and three bucks towards the stocking of his park at Stow.[10]

The royal gifts of deer from different parts of Sherwood from 1231 to 1234 included three does to Robert de Lexinton; three bucks and four does to the earl of Huntingdon; five bucks and twenty does to the bishop of Carlisle for his park at Melbourne; three bucks to the dean of St. Martin's, London; six bucks to Walter de Evermuth; two bucks and eight does to Hugh Despencer; a buck to John son of Geoffrey; two harts to John de Stuteville; two bucks to Robert de Hareston; seven bucks to the bishop of Carlisle; five bucks to William of York; three bucks to William Bardulf; five bucks and a hart to William de Albini, and ten bucks to the bishop of Lincoln.[11]

[1] Exch. K.R. Accts. $\frac{185}{24}$.
[2] As to the Regard, see Cox, *Royal Forests*, p. 11.
[3] Close, 12 Hen. III, m. 14.
[4] Ibid. m. 9.
[5] Ibid. 13 Hen. III, m. 4.
[6] Ibid. 14 Hen. III, m. 20.
[7] Ibid.
[8] Ibid. 15 Hen. III, m. 7.
[9] Ibid. 13 Hen. III, m. 4, 1; 14 Hen. III, m. 22.
[10] Ibid. 14 Hen. III, m. 8; 15 Hen. III, m. 4, 1.
[11] Ibid. 16 Hen. III, m. 18, 19, 14, 6, 3, 2; 17 Hen. III, m. 11, 7, 3; 18 Hen. III, m. 15, 11, 9, 6.

During a like period the gifts of wood from Sherwood included five oaks to Gilbert Spigurnel, for making a mill; five oaks and thirty tie-beams to Simon, chaplain of Hugh de Burgh; thirty oaks to the prior and monks of Lenton, suitable for timber for the works of their church; twenty oaks to Brian de Insula; five lime trees (*teilz*) to the Franciscan friars of Nottingham, for making their stalls; thirty oaks to William de Kirkham, dean of St. Martin's, London, for timber for the works of his chancel at Elm; forty rafters to brother Robert de Dyva; ten oaks to Robert Lupus, and fifteen oaks to William de Albini for making rafters.[1] Numerous examples could also be given of the gifts of Edward I from this forest.

The royal warrants of this period for Sherwood venison, or of deer for park-stocking, are fairly frequent. The king kept Easter, 1276, at Lincoln, and orders were issued on 13 March for fifteen Sherwood does to be supplied at that season for royal use, in addition to twelve bucks from Galtres Forest.[2] Adam de Everingham was ordered, in September, 1277, to supply Richard Folyot with two live bucks and ten live does towards stocking his park at Grimeston;[3] and in 1279 eight does and four bucks were supplied to William de Colwick to help to stock his park at Colwick.[4]

Two ecclesiastics were the special recipients of favours from the great Nottingham forest. Edward I was much attached to the two younger sons of Walter Bek, baron of Eversley, Thomas and Anthony. Both were king's clerks, and both eventually obtained high promotion. Thomas, the second son, was consecrated bishop of St. David's in 1280. On Christmas Day of the following year Edward I granted him four live bucks and eight live does towards stocking his park at Pleasley, on the Derbyshire fringe of the forest. On the same day a royal letter was dispatched to the forest justices ordering them not to molest the bishop on account of four bucks taken by him in the previous autumn, when passing through this forest, as the king had sanctioned this action by word of mouth. In 1283 the same bishop was granted twelve good oaks for timber out of these woods. Anthony Bek, the third son, the celebrated bishop of Durham, was a still greater favourite of Edward I. In 1282 twenty good oaks were granted him out of Sherwood for the construction of his house at Somerton, and also four bucks and eight does towards stocking his park at Rothwell. In the following year he received further timber and live deer. The king, as a special mark of his favour, at the time of Anthony's consecration to the bishopric of Durham in 1284, forwarded to the bishop the largest grant out of Sherwood Forest of which there is record, namely ten live bucks and twenty live does.[5]

The custom of making royal warrant grants of timber or venison died out, save for a very few exceptions, with the reign of Edward II. The Close Rolls of that reign yield, however, interesting particulars with regard to the six Sherwood verderers. These officials, who presided at the forest courts, were, as has been stated, responsible to the crown; they were elected by the county court for life, but could be removed by the crown for incapacity, lack of property qualification within the jurisdiction, etc. In 1309 a writ *de viridario eligendo* was addressed to the sheriff of Nottingham ordering the election of a Sherwood verderer in the place of the recently chosen Robert Joste, who was insufficiently qualified. In August, 1311, the sheriff was instructed to see to the election of another verderer in the place of Richard de Byngham, deceased. In November, 1312, an election was ordered to fill the place of Nicholas de Wydmarpole, as he had no lands within the forest limits, nor did he dwell therein. Sampson de Estrebley was removed from the office of verderer of the king in 1313 in consequence of unfitness. In this same year the king removed Peter Foun from his verderership, because he was found to be insufficiently qualified and unfit. The late sheriff had caused Peter to be suddenly elected in the place of Nicholas de Wydmarpole, although Nicholas, as the king subsequently found out, had sufficient lands within the forest and was a useful and fit man for the position. A writ to the sheriff of a like character in 1314 gave longer reasons for the removal of John de Ludham, for it stated that John did not continuously dwell within the county, and was so occupied with the affairs of divers men that he could not attend to his duties as verderer. Nicholas de Wydmarpole was reinstated in 1313, but he did not hold the office long, for he was again removed in the following year, being incapacitated by infirmity; he is described as suffering from such incurable infirmity that 'sometimes he cannot leave his house without great risk to his life, and has remained continuously indoors for four months.' Thomas de Langevillers was removed in 1314 on account of having no lands in the county; Robert de Pirpoint for insufficiency in 1315; John Doylly for age and infirmity in 1318; and John Bilthewater of Edwinstowe and John Annesley for like causes in 1322.[6] Similar writs affecting the Sherwood verderers also occur from time to time throughout the reign of Edward III.

When the Parliament was held at Lincoln at the beginning of the year 1316 great provision of wood was made from Sherwood. The archbishopric of York was then vacant and in the king's hands, and Edward II ordered in January the keeper of the forest to deliver to the sheriff of

[1] Close, 16 Hen. III, m. 14, 12, 11, 3; 17 Hen. III, m. 6; 18 Hen. III, m. 26, 19, 18, 16.
[2] Ibid. 4 Edw I, m. 13.
[3] Ibid. 5 Edw. I, m. 3.
[4] Ibid. 7 Edw. I, m. 4.
[5] Close and Pat. R. Edward I, *passim*.
[6] Close R. *temp*. Edward II, *passim*.

Nottingham fifty leafless oaks from the archbishop's wood of Blidworth, to be used for charcoal and for boards for dressers (*tabulis ad dressoria*); also thirty oaks from the king's woods in the forest near the Trent for firewood for the king's hall, and thirty more for the king's chamber, against the ensuing Parliament. The wood was to be felled by the sheriff, carried to Lincoln, and there delivered to the clerk of the king's scullery.[1]

The owners of woods within a royal forest had no power of felling timber or cutting underwood therein, save under direct warrant. In 1316 Edward II permitted Ralph de Crumbwell to fell and sell, whither he will, twenty acres of his wood of Lambley, within the bounds of Sherwood Forest, in compensation for the losses sustained by him in the king's service in Scotland.[2]

The oaks of Sherwood were always held in good repute when choice timber was required. When Edward II was preparing, at the close of the year 1324, for the expedition into the duchy of Aquitaine, the sheriff of Nottingham was directed to supply nine springalds and a thousand quarels. These springalds were military engines of the catapult kind, constructed to discharge heavy arrows or quarels with iron heads. The sheriff was instructed to prepare the springalds so that some of them should be capable of discharging quarels of the length of three-quarters of a yard and others of five-eights of a yard. The justice of the forest south of the Trent was ordered to suffer the sheriff and his carpenters to have as many oaks and other trees fit for timber out of Sherwood Forest as were deemed necessary for the construction of these engines.[3]

A curious case of forest claims outside the limits arose in 1338. John de Wyne had a pasture called Fulwood, in Pinxton and Normanton, partly in Nottinghamshire and partly in Derbyshire. It was near to the town of Kirkby, and about a mile from the field of Kirkby, which was a mete of the forest. Although well outside the limits according to the perambulation, the deputy of the keeper and other forest ministers, asserting that the pasture was forest, compelled John, by distraints on his cattle, to pay a custom called *wardefet* for the king's use. On John's complaint a commission was appointed in April, 1338, to hold an inquisition. This inquiry showed that the facts were as stated, and Ralph de Nevill (the keeper) and his ministers were ordered not to intermeddle further with the pasture. In the following year, however, further evidence came to light, particularly that of the woodward elected by the township of Hucknell under Huthwaite, to the effect that *wardefet* had in old days been claimed from Fulwood, and a further commission was appointed.

After an interval of nearly fifty years, the forest pleas for Sherwood were again held at Nottingham. They were held in the spring of 1334, before Ralph de Nevill, Richard de Aldborough, and Peter de Middleton.[4] The number of venison presentments at this eyre was 119, which was but a small amount considering the long period since the last court. In several cases there was no definite charge of deer-slaying, or even of being found with dogs or bows, but simply of trespass. Such trespass would be by strangers at night or during the fence month. Some of the transgressors, as was usually the case, were of good position. Such were John lord de Grey, who was found in the Bestwood enclosure with bows and six greyhounds running a herd of hinds (*herdum bissarum*), of which he killed two; and Henry Curson of Breadsall, who killed a hind in Clipston Wood.

The roll of amercements of persons convicted of vert trespass at the attachment courts at more than 4*d*., and who could only be amerced at the eyre, was presented to the justices. This roll embraced about 750 trespasses, varying in value from 6*d*. for honey found in an oak, or for boughs and trunks, to 2*s*. for a single oak. These values had been already paid to the verderers at the time when the attachment court was held, and the additional fines imposed by the justices varied from 1*s*. to 2*s*. In each case the name of two who had been bound over to secure the trespasser's appearance follows the entry of the offence.

It is scarcely surprising to find, after the very long interval since the last eyre, that some of the verderers' rolls of the different attachment courts were missing. Those for 1288, 1289, 1290, and 1291 were not forthcoming. The fines imposed in 1334 upon the defaulting verderers or their heirs amounted to £20 8*s*. 2*d*.

At this eyre the forest ministers were asked upon their oath to state from what person or persons the foresters were wont to receive and have their living. In reply they cited from an inquest held in 1289, shortly after Edward I had removed Robert de Everingham from his bailiwick as hereditary forester, stating his extensive perquisites and privileges. It is interesting to note a particular difference between the privileges there cited and those already named of the time of Richard I. There is no mention of a skep of salt from the salt carts going through the forest, but he had an average of 20*s*. a year on the carriage of millstones. Robert de Everingham, as chief forester, also held ten knights' fees of the king, but he was exonerated from that charge in return for finding foresters at his own cost. It therefore followed, after the keepership was forfeited to the crown, that the foresters were to continue to be paid by whomsoever the crown should appoint as keeper.

[1] Close, 9 Edward II, m. 20.
[2] Ibid. 10 Edward II, m. 18.
[3] Ibid. 18 Edward II, m. 21.
[4] For. Proc. Tr. of Rec. No. 132.

As the forest justices were so seldom on circuit, they seem to have been all the more determined to exact appearances whenever the eyre was held. The whole of the free tenants of the forest were bound to attend the pleas. On the opening day three of them were absent. John Bardolf successfully pleaded that he had not received his letter of summons, but Adam de Everingham was fined 15*s.*, and Joan widow of Ralph de Burton 6*s.* 8*d.*, for their absence. The reeves and four-men of each township within the bounds had also to be present. On the first day William Goodrych and William de Normanton, both of Lenton, were fined collectively 3*s.* 4*d.*, whilst William Router, the reeve of Basford, had to pay 2*s.* Before the eyre was closed the justices issued a series of pardons for both venison and vert offences. Amongst the eighteen pardoned were John le Bret, rector of Annesley, and the vicar of Edwinstowe.

Between the times of holding eyres the crown not infrequently intervened with pardons for venison and vert trespasses. Thus between the eyres of 1287 and 1334 (to cite only two or three Sherwood examples) Edward I pardoned William Simpson, parson of the church of Epperstone, in 1295, of both vert and venison trespass;[1] the abbot of Thornton, in 1305, for felling eight oaks beyond the number granted;[2] and Edward II pardoned John de Sandwyce and others in 1308 for taking two harts and a buck.[3]

There was not a single royal forest wherein various religious houses had not special rights granted them of fuel and other wood, of pannage or agistment, and sometimes of venison. Nor was there hardly any royal forest to be found, within whose bounds one or more monasteries were not established. Sherwood is a striking instance. Surrounded on all sides by the forest stretches were the Cistercian monks of Rufford and the Austin canons of Newstead. On its northern verge were the white canons of Welbeck, the most famous Premonstratensian house in England, and a little further afield the Austin canons of Worksop, the Benedictine monks of Blyth, and the Benedictine nuns of Wallingwell. On its western margin were the Carthusian monks of Beau Vale, and the Austin canons of Felley; on the south-eastern flank were the two other small Austin houses of Thurgarton and Shelford, whilst at the southern extremity was the powerful house of Cluniac monks of Lenton. Every one of these monasteries had certain Sherwood forest privileges, some small and some great, as well as a few other houses situated outside the county bounds. Thus the nuns of Wallingwells might send their wood cart once a week to collect windfallen wood for their hearth and oven, whilst the Rufford monks could have wood for almost any purpose they desired. Or, again, the canons of Felley could turn out their swine at certain seasons to fatten on the acorns and beech mast, whilst the Lenton monks had a right to a tithe of the whole of the venison killed throughout the forest. Besides, too, their definite chartered rights, which had to be substantiated at every recurrence of the forest pleas, our kings were often ready, particularly in the thirteenth and fourteenth centuries, to grant the religious temporary forest grants. To take only a few examples of Edward I's Sherwood forest grants of this description, we find that the king, in 1279, licensed the prior of Newstead to fell and sell 40 acres of his own wood;[4] and in the next year the abbot of Rufford had license to clear out a trench, 40 ft. wide, round his own wood, and make his profits out of the wood and underwood.[5] In 1300 the same king licensed the abbot of Rufford to sell the windfalls (*cabliecium*) of his woods, and in 1304 to fell and sell 40 acres.[6] The prior of Newstead had leave in 1304 to enclose and cultivate 1,800 acres of the forest waste of Linby;[7] and in 1305 the prior of Felley was granted the tithes of all the assarts (clearances) in the hays of Linby, Rumewood, and Wellow, that had been assarted in the king's reign.[8]

It is greatly to the credit of the religious of these monasteries that they were hardly ever presented for any form whatever of venison trespass, though this can by no means be said of their secular brethren, the beneficed clergy of Sherwood and the neighbourhood.[9]

In the reign of Edward IV, and subsequently, various appointments of king's foresters of Sherwood are entered on the patent rolls at a wage of 4*d.* a day. In 1474 John Stanbridge, a yeoman of the king's chambers, was granted for life the office of the custody of the king's lodge of Immeslowe in the north bailiwick and of being one of the foresters there, to hold by himself or deputy agreeable to the master of the game, with wages of 4*d.* a day out of the issues of Mansfield in the forest; but the appointment and wage were not to be taken as a precedent. But later in the same month there was a like life appointment by the crown of a forester in the south bailiwick; he received a similar wage, and in addition to being a forester was also made keeper of the king's deer at Langton Arbour.[10]

[1] Pat. 23 Edw. I, m. 3. [2] Ibid. 33 Edw. I, m. 15. [3] Ibid. 2 Edw. II, pt. ii, m. 25.
[4] Ibid. 7 Edw. I, m. 2. [5] Ibid. 8 Edw. I, m. 6. [6] Ibid. 28 Edw. I, m. 15; 32 Edw. I, m. 5.
[7] Ibid. 32 Edw. I, m. 5. [8] Ibid. 33 Edw. I, m. 6.

[9] So far as the evidence of the Pleas of the Forest is concerned, the monks throughout England were but very rarely poachers, contrary to the usual belief. Probably not a score of cases could be found against them in all the stores of the Public Record Office.

[10] Langton Arbour, in Blidworth parish, is now known as Blidworth Dale.

In 1531 Henry VIII appointed a commission, consisting of the abbot of Welbeck, Sir Richard Sacheverell, Sir Brian Stapleton and Sir John Villers, knights, and John Hersey and Roger Greenhaghe, esquires, to view and certify the number and state of the deer in the forest and park of Sherwood. The returns show that there were at that time 4,280 red deer, and 1,131 fallow deer. The fallow deer were within the parks of Bestwood, Nottingham, Clipston, and Thorney Wood. The red deer ranged throughout the forest, save for 214 in Bestwood Park. In the commissioners' detailed certificate, 'as signed by me John, bishop of Elphyn, commendatory of the abbey of Welbeck,' the red deer were apportioned to the following forest divisions: 'Clypston Shroggys,' 310; 'Billey and Brykkeland,' 223; 'Romewood and Olsland,' 60; 'Farmsfeyld,' 63; 'Blydworth,' 128; 'Calverton,' 146; 'Papilwike,' 73; 'Lymbe Hawis Walke,' 30; 'Simon Woddys Walke,' 90; 'Lyndhurst Walk,' 114; and 'Nomanys Wode,' 148.[1]

A forest session was held at Ollerton on 3 June, 1538. Among the higher officials, Thomas, earl of Rutland, is named as master of the game, and Sir John Byron as keeper of Bestwood Park and forester of Thorney. Eleven other foresters, thirty-five woodwards, fourteen regarders, three verderers, and the constables and 'four-men' of twenty-eight townships are all specified as being in attendance.

The large majority of the constables and 'four-men' of different towns stated on their corporal oath that they 'doth knowe nothing that is to the disturbance of the kyng, his game, or woode within the seid foreste.' Among the exceptions may be quoted the two following presentments from Mansfield:

'Item, the Constable and Fowermen of the townshippe of Mannsefelde sayeth that one Christofer Shutte, Gerves Herdy, and one William Falcherde dothe kepe in their howses moo Fyres than of right they ought to do, wherebye the kynge his woode is destroyed extendyng every yere to three score lodes contrarie the Statute of the Forest.'

'Item, that one Richarde Swynesloo, Thomas Clerke, Christofer Bradeshawe (and five others) dothe staff-hyrde theire sheep of the Kyng his Common the number of twelve score where the Kyng his deare shulde have their peacablie Feadyng.'

The jury of freemen of the town of Nottingham presented the names of four burgesses, each of whom owned a greyhound, but stated that they only kept them for the purpose of hunting hares and foxes in the forest (to which they had a chartered right), and not for the disturbance of the king's game. The justices accepted their plea as to the motive for keeping the greyhounds. They also made two orders affecting the forest wood—firstly, that no hedgebote nor firebote was to be taken without the deliverance of the woodward, nor any housebote without the deliverance of the keeper as well as the woodward; and secondly, that no one was to fell any of his own wood for any intent 'withoute the especiall lycense of the kynge his highness, or the Justice of the Foreste, and that none from hencesforthe do take aine woode for bleaching.'[2]

A return at the Public Record Office that was made in 1538 of all the deer in the king's forests and parks north of the Trent, gives the number of red deer in Sherwood Forest as about 1,000; in Bestwood Park, there were 700 fallow, and 140 red; in Clipston Park, 60 fallow, and 20 red; and in Grynley park, 150 fallow.

A perambulation of the forest was made on 9 September, 1539, beginning at the castle of Nottingham, and returning to Nottingham.[3]

In 1599, Elizabeth granted the keepership of the forest district of Thorneywood to the north of Nottingham, to John Stanhope, with free leave of hunting, chasing, and killing 'the Queene's wild beastes' without being molested by any forest ministers or others, provided he always provided 100 deer for the use of the queen.[4]

A survey of Sherwood Forest taken in 1609 gave the following estimate of the acreage:—

Inclosures . . .	44,839	Clipston Park . . .	1,583
Woods	9,486	Bestwood Park . . .	3,672
Unenclosed . . .	35,080	Bulwell Park . . .	326
	89,405	Nottingham Park . .	129

There were at that time 21,009 oak trees in Birkland, and 28,900 in Bilhagh, or a total of 49,909; the majority of them were even then past maturity. It may here be mentioned, as showing the rapid diminution that went on from that date, that in 1686 the oaks of Birkland and Bilhagh numbered 37,316, and in 1790 they were reduced to 10,117.[5]

A fragmentary return of presentments, 'by the view and regard' of the forest in 1606, gives a long list of purprestures or encroachments, among which may be mentioned, under Mansfield, 'One by ye Earle of Scarsdale by building a Forge near Randenthorp and turning ye river Naiden out of

[1] Exch. Misc. Bk., lxxvi. There is much variation in different deer estimates of this reign.
[2] Cox, *Royal Forests*, 216–17.
[3] It is set forth at length in Bailey, *Annals* (ii, 405–7).
[4] *Fourteenth Rep. of Woods and Forests* (1793), App. 22.
[5] Ibid. p. 4.

its course it being a bound of ye Forest'; under Oxton, 'one by Wm. Savile, gent., by turningye river Doverbeck out of its antient course'; under Rufford, 'one by Francis Biggs there called the New Inn,' and under Bulwell, 'one by a paper mill in ye tenure of Ralph Smith, gent.'[1]

In 1616 there were 1263 red deer in Sherwood Forest in addition to those in Thorney Wood; whilst an estimate of 1635 made the total 1,367.[2]

There was an unusual long drought in the summer of 1624, which helped to bring about a destructive forest fire of vast extent. On 23 August some ill-slacked charcoal that was being carried away fell upon some ling that at once blazed up, and ere long the conflagration spread with such rapidity that the fire was four miles in length and one and a half in breadth. An eye witness describes a thick mist of smoke over Newark, which was seven or eight miles from the scene of the fire. An army of men, with spades and picks and shovels turned out to try and stop its progress with trenches. Most providentially the wind abated and changed its course just as the fire was approaching the northern end of the great long wood that then stretched from Mansfield to Nottingham.[3]

During the Commonwealth there was much disorder and aggression throughout Sherwood Forest. Many old rights and privileges, particularly if exercised by those who took the king's side, were abrogated, whilst many onslaughts were made both on vert and venison by multitudes of the smaller folk of the adjoining districts. At the Restoration, the king and his council were beset by the claims of those who rightly or wrongly alleged their forestal rights. Charles II on recovering his throne showed much interest in replenishing with game the forest and parks that had been wasted during the Civil War and Commonwealth. A warrant was signed in November, 1661, for the payment of £1,000 to Sir William St. Ravy, for the expenses of transporting red and fallow deer from Germany to help to restock the forests of Sherwood and Windsor.[4] In the following year an order was made, in order to repair the destruction of the deer in Thorney Wood and Sherwood Forest, that no fee deer of any kind were to be taken until further warrant.[5]

Early in 1662, Charles II issued the necessary authority under letters patent to investigate the Sherwood claims to his old and faithful friend William earl of Mansfield and marquis of Newcastle (afterwards known as 'the loyal Duke'), appointing him to act as lord chief justice in eyre. The business was so complicated and required so much legal investigation that William Cavendish presided over this forest court, either in person or by commission, for upwards of twelve years.[6]

The court, which was held at Mansfield, opened on 6 February, 1662–3; repeated adjournments carried on the proceedings up to 1676. The first claim made was that of the archbishop of York, who appeared by proxy in the person of John Rolleston. A long array of ancient chartered privileges, from the days of Richard I onwards, was put in on his grace's behalf, and their force acknowledged by a specially sworn jury. The next in order was Sir George Savile, bart., of Rufford, who also appeared by proxy, claiming the privileges formerly held by the Cistercian Abbey. Other claims were those of Arthur Capel, earl of Essex; George duke of Buckingham, the president of the court; Patrick Viscount Chaworth, Richard Lord Byron (the second lord of that name claiming for Newstead Priory rights), John Lord Clare, the earl and countess of Devonshire, Sir William Dalston, Sir Tamworth Reresby, and Sir Humphrey Molineux.

There were also a vast number of minor claimants, who came from all parts of the forest and its surroundings; these humbler folk appeared in person, or through the attorneys they had clubbed together to pay. Some of them seem to have been unable to resist the attractions of the game, as they made their way through the forest glades. Thomas Cotton, of Edwinstowe, blacksmith, was convicted of shooting a hart whilst journeying to attend the court. He was fined 40s., and had to find a mainpernour or bondsman (in the person of Francis Biggs, innkeeper of Rufford), who entered into a recognizance of £20 for Thomas's good behaviour towards His Majesty's game for the twelvemonth next ensuing.

In 1675 the marquis of Newcastle issued the following warrant :—

> Forasmuch as I am informed there are many disorderly persons dwelling in or neare who have and keep greyhounds, setting dogs, lurchers, gunns, nettes, and other ingins for the destruction of the deer, fowl, fish, hares, rabbits, partridges, peasants, powtes, and other moor game, whereby the game in the forest is much destroyed and disturbed. For the preservation thereof these are to authorise and require the Rt. Honble. John Viscount Rochford, headkeeper and forester of the walk called Blidworth Walk, by all means to inhibit all such persons as shall thus enter the said forest.

The people of Blidworth came out strongly for Charles I, and Charles II, with unusual gratitude, gave them the 'small wode' within their walk. They put, however, too generous an interpretation on the word 'small,' and as this grant also led to poaching it was cancelled.

[1] Exch. K.R. Accts. $\frac{484}{10}$. A damaged paper book, consisting now of seven folios.
[2] Ibid. App. 24. [3] Roy. MS. A. xviii, f. 24.
[4] *Cal. of S.P. Dom.* Chas. II, xliv, 43, 103. [5] Ibid. vol. lvi, 122.
[6] The official story of this last Forest Court is told in detail in a large contemporary MS. book, now in possession of Captain Sherbrooke, R.N. of Oxton Hall, near Blidworth. The contents are of much value and interest, but space can only be found for a few short abstracts and extracts.

One destructive practice occupied much of the attention of this court. Forest officers were paid in kind, and each had an annual 'fee tree'; but as each officer possessed the right, or had acquired the custom, of selecting his own, every year saw the depletion of the finest timber.

The two following documents, one an order, the other an attestation, pertain to this question. 'Ordered that Richard Grammar, woodward of the Blidworth Office, belonging to his grace the archbishop of York, shall have licence to fell and take away one tree in any of his grace's woods in the forest of Sherwood, for his fee tree in the execution of his office.' Lord Byron had to make the following assurance: 'These are to certify whom it may concerne that I had fee tree allowed me out of the Forest of Sherwood every yere whilst I was bowbearer of the saide forest.'

It would be an error altogether inadmissible to suppose that this Sherwood Forest Court, as well as those of earlier date, concerned themselves only with feudal lords and owners. It was also the great and legally organized engine for the protection of the poorer sort in their common rights. In the parish of Blidworth an intense forestal spirit prevailed, even the humblest inhabitant having all kinds of privileges, such as gathering windfallen wood, housebote, haybote, and the keep of so many animals. One great duty of the court was to preserve the privilege of water, a claim of much value in the sandy soil of Sherwood. The wells and sykes were open 'omnibus animalibus, omnibus temporibus anni, omnimodo, porcis, anseribus, capris[1] duntaxat exceptis.' There was a distinction almost ethnological between the true *sylvicola* or forest-dweller and the mere 'purley man'—a distinction not wholly obliterated—that is between him who enjoyed the pleasure and restrictions of Sherwood, and the inferior being whose hard luck it was to be born and pass his life *en pur lieu* in the void and open space around.[2]

To a certain extent the court concerned itself with the system of agriculture known as *brecks*, which was pursued in some of the more fertile spots. Inhabitants of Blidworth, etc., banded together to obtain a lease from some of the forest dignitaries, with the consent of the superior lord, under which farming might be carried on after a fashion inadmissible in the stricter days of forest law. These enclosures called 'brecks,' or portions 'broken up,' were let at small rentals, one reason being the necessity of high and strong hedges, for which haybote was allowed, to prevent incursions of forest animals, restraint of which in their semi-wild condition was very difficult. An illustration lies at hand in a petition conceded and signed by Toby Mathew, archbishop of York. Certain parishioners ask him, as lord of the manor, permission to make a breck of 200 acres. If he will grant the prayer they 'promise, of their thankfulness unto your grace for this yore grete bountie and good favour, they will be redie at your grace's resydynge at Southwell to help with their droghtes to furnish yore provision, by leadynge of wood and lynge as you shall make them hable. And they, and all theires (as otherwise they have), shall prayse and pray God for the long contynewance of yre Grace to the good of hys church and this commonwealth.'

Under the Commonwealth, and subsequently, a large number of Sherwood oaks were felled for the navy; but various grants were made for exceptional purposes during that period and immediately after the Restoration. About 1680, the inhabitants of Edwinstowe petitioned the crown for permission to fell 200 oaks of the value of £200, out of the hays of Birkland and Bilhagh for the repair of their parish church, then in a ruinous condition. The petition was entertained, and on a survey for that purpose it was found that 'although there were standing many thousand trees, few of which there were but what were decaying, and very few useful for the navy.'[3]

It should not be forgotten that the largest and most substantial of the beams used by Sir Christopher Wren in the construction of St. Paul's came from Sherwood Forest. Among the papers at Welbeck Abbey is a letter from the great architect to the steward of the duke of Newcastle, dated 4 April, 1695, referring to 'the noble benefaction' promised by the duke in 1693, and sending the measurements of the 'great Beames' then required. They were to be '47 ft. long, 13 inches and 14 inches at the small end, ... and of growing timber, and as near as can be without sap.'[4]

In 1708 a representative meeting of the gentlemen of the north of the county was held at Rufford, at which a strongly-worded petition was adopted, addressed to the crown, complaining of 'the grievous and almost intolerable burden we labour under by reason of the numerous increase of the red deer in the forest of Sherwood these late years.' They complained that so many of the

[1] The keeping of goats was prohibited throughout the forest, as they were so offensive to the deer.

[2] The purlieus of a forest were, as a rule, those outbounds of a forest which had been disafforested in the time of John or Hen. III; these districts were not under regular forest law, but nevertheless their tenants had to submit without any redress to the ravages of deer and game in general. As a rule, too, the privileges of purlieu men were quite trivial as compared with the forest tenants; consequently their position was generally regarded as most undesirable. Particularly was this the case on the eastern confines of Sherwood Forest. To call a man 'a purley' is yet a term of some opprobrium in the district. Blidworth was forestal, but Farnsfield was purlieu, and a native of the former will still occasionally speak contemptuously of the latter as a 'mere purley,' or 'youre nobbut purley,' though ignorant of its signification.

[3] Cox, *Royal Forests*, 218.

[4] White, *Worksop and Sherwood Forest*, 149–50.

woods had been granted or given away by the queen's predecessors that there was but little harbour left for the deer in the forest, and the deer in consequence were distributed all over the county, eating up the corn and grass; that their tenants had often to watch all night to keep the deer off; that their servants were terrified by several new keepers made by the present deputy-warder, who 'threaten them if so much as they do set a little dog at the deer though in the corn'; that not only had they to watch their cornfields, where the deer often lay nine or ten brace together, but they so destroy private woods as to injure them to the extent of from £10 to £50 a year.

At the same time another petition was addressed to the House of Commons with about 400 signatures, wherein it was stated that the number of red deer in the forest, 'till very lately, had never or seldom exceeded three hundred, which was a great number, considering the barrenness of the soil and the great destruction of the woods, as the forest could maintain.' In the light of other evidence this estimate, used for the sake of strengthening the petitioners' arguments, was probably much below the mark. The petitioners proceeded to state that these deer now numbered more than 900; that they roamed over the country to find sustenance, but more particularly that these depredations were chiefly carried on in 'the division called Hatfield and the whole district of the Clay; and that these parts of the county were outside the forest limits according to the perambulation and inquisition of Edward I.' This petition met with no favour, for it was argued, though incorrectly, that the owners had never before been asked to stint the number of deer, and that it was a request to Parliament to take away the queen's liberty and right without her consent. On a copy of this petition still extant is endorsed :—

> 'Tis no doubt but that if there were no more than fifty deer in the whole forest, and if it should happen that they were on any one particular man's two or three acres of corn or turnips, they would be sure to lessen his crops; yet he bought the land with the encumbrance, and it is past all dispute that the queen has as much right to it as any man has to his own coat.[1]

The forest was no source of profit in Anne's reign. Contrariwise £1,000 a year was granted to maintain the deer and the new park at Clumber, and to hunt with two horsemen, forty couple of hounds, eleven horses, and four grooms. There were four 'forest keepers,' and four 'deputy purlieu rangers'; the winter hay for the deer averaged £100 a year.

In the eighteenth century the open forest area was continuously decreasing, partly by grants in the northern part for parks, but still more by the enclosure acts of the latter part of the century. Between 1789 and 1796 inclusive acts were passed for the enclosure of Arnold Forest, Sutton in Ashfield, Kirkby in Ashfield, and Lenton and Radford, whereby 8,248 acres were brought into cultivation. Earlier in the reign of George III, enclosure acts of Blidworth (1,800 acres), Carlton (220), Epperstone (70), Ollerton (500), and several others of smaller extent had enclosed yet more of the open forest tracts.[2]

In 1793 the Commissioners of Woods and Forests and Land Revenues of the Crown issued their fourteenth report (70 folio pages) which dealt exclusively with Sherwood. They describe it as the only forest remaining under the superintendence of the chief justice in eyre north of Trent, or belonging to the crown in that part of England. The chief officials were the lord-warden, the duke of Newcastle, by letters patent; the bowbearer or ranger, Lord Byron, by the lord-warden; four verderers, elected by the freeholders; and steward, John Gladwin, appointed during pleasure by lord chief justice. There were also nine keepers of nine walks, appointed by the verderers, each receiving a salary of 20*s.* from the lord-warden. Two woodwards were annually sworn for Sutton and Carlton. Each verderer and the steward received an annual fee tree out of the hays of Birkland and Bilhagh. There were no deer in the forest save in Thorney Woods, of which Lord Chesterfield (as hereditary successor to John Stanhope of Elizabeth's days) was keeper; but evidence was given of there having been a great many red deer in Birkland and Bilhagh until about 1770, when they were killed off by the keepers of the dukes of Newcastle and Kingston, assisted by the inhabitants, since which time the forest farms had proved much more valuable, and the wheatfields no longer wanted guarding by horns in the daytime and by fires at night. The four verderers at that time each demanded and obtained a fee buck and a fee doe annually from Lord Chesterfield.

The accounts of particular ancient trees, or of special groups, as at Haywood, near Blidworth, or in the beautiful glades of Birkland and Bilhagh, together with the recording of other forest survivals, will be more appropriately discussed under their respective parishes in the topographical section.

Though there was so much grievous destruction of timber in Sherwood Forest in the

[1] White, *Worksop and Sherwood Forest*, 218–9. Cited chiefly from Bailey, *Annals*.

[2] *General Rep. on Enclosures* (1808). Nottingham had 88 enclosure acts in the first forty years of George III, and was only surpassed in the acreage enclosed by Lincoln, Leicester, and Northampton. According to the *Agricultural Report* of 1794 (App. v) there had been in that century 10,666 acres of private enclosures from the forest and its borders.

seventeenth and following centuries,[1] there were some considerable compensations made in the second half of the last of these centuries.

In the elaborate report on the county of Nottingham issued by the Board of Agriculture in 1794, there is a good deal of information as to the woods and plantations of the shire. It is there stated that a spirit of planting had prevailed throughout much of the old Sherwood district for the last forty years. Though at first fir trees were chiefly planted, it was found that the sandy soil seemed well adapted for almost every kind of forest tree in the sheltered places. The duke of Newcastle had recently planted 1848 acres in Clumber Park. Considerable particulars are given in appendices as to the plantations on the Welbeck and Rufford estates, together with descriptions of the methods adopted.

There was but little wood save hedgerow, and but little recent planting on the level lands of the county that flank the Trent, save occasional ash growing. Thirty-one acres had been planted with ash in 1771-2 on the cliff opposite Washford Ferry, in Flintham; it had been cut in 1791-2 and had been sold standing for £1,300. In another instance six acres of ash that had been planted for seventeen years sold for £70.

In the Clay district 3,664 acres had been planted in comparatively recent enclosures. There was very little timber in the Vale of Belvoir district; but mention is made of Bunny Wood, which contained seventy acres.[2]

In Major Rooke's *Sketch of Sherwood Forest*, printed in 1799, much praise is given to 'the many respectable persons, whose mansions and parks border on the forest, who have made and continue to make large plantations in honour of the splendid victories gained by our gallant admirals.' Such were the twenty-five acres of forest trees and firs planted by Lord Newark, and called Howe Grove, in honour of Earl Howe and his victory, as well as fifteen to the east of Thornley Park, called after Lord St. Vincent, and twelve acres on the north called after Lord Duncan. He also particularly mentions the extensive plantations of the duke of Portland in the neighbourhood of Welbeck; the fine plantations at Rufford by the Hon. R. Lumley Savile; as well as the Howe, Spencer, Nelson, St. Vincent, Warren, and Duncan groves planted by the Hon. F. Montague. Mr. Foljambe, of Osberton, was one of several other Nottinghamshire gentlemen who were busily engaged in tree planting towards the close of the eighteenth century. The marquis of Titchfield had sown upwards of a hundred acres in parts of the old forest, between Mansfield and Nottingham, with acorns.

Though the glories of Sherwood as a royal open forest have long since passed, various noble parks occupy some of its choicest portions. They not only include much of the ancient timber, but several are well stocked with red and fallow deer, which in some instances rightfully claim to be the descendants of those that used to roam at will the forests and glades in mediaeval days.

The present deer parks in Nottingham only number five, all of which are in the old Sherwood Forest district.[3]

Thoresby Park (Earl Manvers), one of the finest in the kingdom, has a circuit of upwards of ten miles and an acreage of 2,000. In 1683 the crown sold 1,270 acres out of the hays of Bilhagh and the White Lodge to be added to his own land to make the park of Thoresby. It is grandly timbered in parts, particularly at the Buck Gate entrance, where there are many noble oaks. The park is also noted for its Spanish chestnuts, and there are large picturesque stretches thickly dotted with old thorns. The fallow deer number about 630 and the red deer 25.

Welbeck (duke of Portland) was the only one of the duke of Newcastle's eight parks that escaped destruction at the time of the great Civil War. It has an acreage of 1640; the timber is chiefly oak. Many of the trees are of great age, the oldest being the Greendale Oak.[4] Two fine oaks, standing one each side of the roadway, are known as the Porters. Of the once celebrated Seven Sisters, which had seven stems growing from a single root, only one stem is now standing. There are about 500 fallow deer, including a herd of white ones, and 150 red deer.

Rufford Park (Lord Savile) extends over 500 acres; it is well wooded, and contains some particularly fine beech trees. The fallow deer number about 350.

Wollaton Park (Lord Middleton) covers 750 acres, and is well wooded with fine clumps of forest trees. Its principal feature is the avenue of limes from the chief lodge to the hall. The fallow deer number about three hundred. This park used to harbour a herd of wild white cattle, of the polled or hornless breed, with black noses and ears. They died out in the first quarter of last century.

Annesley Park (J. P. Chaworth-Musters, esq.) contains about 600 acres, and has a good deal of large timber, though there are many bracken-covered stretches. There are about 200 head of

[1] In Cox's *Magna Britannia*, issued in 1827, reference is made to 'the abominable destruction of the wood made by the connivance or negligence of the woodwards (vol. iv. p. 171).

[2] Robert Low, *General View of Agriculture of the County of Nottingham* (1794), *passim*.

[3] The brief notes on these parks are taken from Whitaker, *Deer Parks of England* (1892); Shirley, *Deer and Deer Parks* (1867); White, *Worksop and Sherwood Forest* (1875), and from personal observation.

[4] The story of this 'Methusaleh of the Forest' was told at length in *Country Life* (30 Dec. 1905) by Dr. Cox.

fallow deer of the small black breed, supposed to be the original wild forest stock. There was a herd of wild white cattle in this park at the time of Charles II.

The two most ancient parks of Sherwood, those of Clipston and Bestwood, are now no more. Clipston, where was the ancient royal lodge visited, as is known, repeatedly by King John and also by the first three Edwards, possessed a park which enclosed an area of 1,583 acres in 1609, and seven miles in compass; it was utterly destroyed in the Civil Wars. It had a pleasant river running through it full of fish, was well stocked with deer, and so abounding in fine trees, 'the tallest in the county,' that their value was estimated at £20,000. When 'the loyal duke' visited Clipston after the Restoration there was not a single tree left standing in the park.[1]

The fate of Bestwood Park, a few miles north of Nottingham, between Papplewick and Arnold, was somewhat similar, though not so severely treated. This 'mighty great park,' as Leland termed it, comprised 3,672 acres, and 'before the troubles was well stocked with red deer,' but when Thoroton wrote in 1677 much of it was ploughed up and divided into closes.[2] The park that now surrounds Bestwood Lodge is of very limited area.

Clumber Park (duke of Newcastle), the largest, and in some respects the most beautiful, of the Nottinghamshire parks, which lies immediately to the north of Thoresby Park, is of comparatively modern date, and used to be known as the New Park. The earl of Clare (afterwards created duke of Newcastle) received the crown licence in 1707 to enclose and impark 3,000 acres at Clumber. Low, writing in 1794, says of this park, then so luxuriant with its new plantation, that 'thirty years ago it was a black heath full of rabbits.' But this only refers to the newly enclosed parts, for he elsewhere states that Clumber Park included the remains of two woods of venerable oaks, known as Clumber Wood and Hardwick Wood.[3] The park now contains above 4,000 acres. By the side of the large lake, cedars, pines, and various other coniferous trees grow to a great size.

The hays of Birkland and Bilhagh, the last remaining portion of the crown lands in Sherwood, were sold to the duke of Portland about 1800, who subsequently parted with them to Earl Manvers. Low, writing in 1794, describes these hays as an 'open wood of large oak, but mostly decayed or stagheaded.'[4]

Newstead Park, formed after the dissolution of the religious houses, was beautifully wooded and well stocked with fallow deer; but it was broken up into farms, and most of this side of the Sherwood district was very much denuded of trees during the concluding period of the Byron régime. Towards the close of the eighteenth century, the Lord Byron of the day cut down the oaks wholesale to the value of £60,000, and the bleak treeless aspect of the surroundings of the abbey in 1814 are mentioned in the memoirs of John Murray. The poet Byron planted some sparse copse-like spinneys such as Poet's Wood; Castle Wood and Abbey Wood are somewhat similar, and consist largely of beech. There are a few conifers (*pinus sylvestris* and larch) on the estate, which appear to have been planted before Colonel Wildman's time. The woods, copses, spinneys, and clumps, when he took over the Newstead estate, were of small extent, and could have been of little value as timber, actual or prospective. Colonel Wildman was an enthusiastic arboriculturist, and did a great deal of planting, but it was not done on economical lines, and was chiefly for aesthetic purposes. The fact of his keeping an enormous stock of rabbits absolutely precluded any rational or scientific system of tree-growing. One wood planted by him north of the Mansfield and Nottingham road was originally very well laid out; but, owing to the fallacies and defects inherent in the old British theories of sylviculture of the past century, it has been so treated as to be of little actual value. The late Mr. Webb planted a very considerable acreage, mainly of conifers. The woods were well designed and laid out; but the technical planting was badly done, and the young trees were not scientifically looked after during their early growth. The ignorance, incompetence, and prejudices of woodmen and so-called foresters frustrated the well-schemed projects and designs of Mr. Webb, whose knowledge in these matters was in advance of the general knowledge and practice in England. A considerable portion of the Newstead estate consists of arable land of the annual value of 5*s*. per acre downwards, much of which should never have been reclaimed from forest for tillage. This was due, here as elsewhere, to the economic conditions preceding the repeal of the Corn Laws.

Sir H. E. and Lady Chermside have of late years given much attention to the systems of forestry in Germany and other countries. Their objective is to reconstitute the existing depleted woodlands by the employment of 'jardinage' and other recognized methods of planting, and to add to them by tree-culture on lands obviously better suited to such a purpose than to cereals or pasture. One of the chief impediments to progress in this direction is found to be the very inefficient British legislation concerning rabbits. The aggregate area of woodland, heath, and rough land on the property is some 1,200 acres.[5]

[1] Collins, *Noble Families of Cavendish* (1752), 42.
[2] Thoroton, *Notts.* 258.
[3] *Gen. View of Agric. of Notts.* 9, 20.
[4] Ibid. 19.
[5] From the information of Sir H. E. Chermside, G.C.M.G., C.B.

Considerable areas were planted in Welbeck Park and its environs, to clothe the landscape, about the year 1726. At that time oak, Spanish chestnut, and beech were used for forming mixed plantations, with, no doubt, firs and larch to act as nurses, as in some instances a few of these are found among the hardwoods. At a later date oak was, probably from the high price of bark and also from the demand of oak timber for ship-building, given the preference, with the view of forming pure oak plantations. Unfortunately there is now a limited demand for bark, and timber must be of excellent quality to find a sale. Even the casual observer will notice the superiority of trees grown in the mixed woods, being more apparent when sufficient beech has been left to shade the oak and chestnut; under such conditions are the long clean stems grown which realize the highest prices. Only in sheltered situations is the oak, when grown in pure forest, found attaining similar dimensions in this neighbourhood. Good oak is grown with coppice on the clay lands, but coppice can only pay in localities where there is a local demand for it.

The tendency to-day is in favour of plantations which will serve as suitable game coverts, and thus a crop which will grow and mature quickly is often in request; consequently firs and larch are more generally planted as a crop than merely as nurses.

The age of the old oaks in Birklands which have at some time been pollarded, from a careful count of the annual layers of growth, places the trees at 387 years of age, and owing to their being pollards decay has set in from the top downwards, and in many cases they are badly affected with the ring and star shake.[1]

There has been steady planting on the Duke of Newcastle's Clumber estates since 1889, averaging about 26 acres a year, exclusive of the renewal of old woodland. This fresh land planting of some 425 acres has chiefly been of a mixed character, larch and Scotch fir being mingled with oak, beech, and sycamore. A certain small amount has been planted with Corsican pine, and another plot with poplars. Six acres of bog land were planted with birch in 1895. A plantation of 24½ acres of mixed larch, Scotch fir, oak, beech, and pine, laid out in 1902, was appropriately named Coronation Plantation. This year (1906) three acres of old woodland at Hardwick Wood Round have been planted with Japanese larch.[2]

During the last thirty years there have been planted on Earl Manvers's property in South Nottinghamshire, 33 acres in the parish of Clipston-on-the-Wolds, and 18½ in the parish of Cotgrave. The planting on the earl's North Nottinghamshire estate, in the like period, has been much more considerable, namely, 194 acres in Edwinstowe, 204 in Budby-cum-Perlethorpe, 30 in Eakring, 26 in Kneesall, and 41 in Kersall. This gives a total on these estates of 646½ acres.[3]

On Lord Savile's Rufford Abbey estates there are now 1,700 acres of woods and plantations, showing an increase of about 700 acres since the beginning of the nineteenth century.[4]

Particulars have been kindly supplied by Mr. Thomas W. Huskinson, F.S.I., land agent of Epperstone, as to the planting on various smaller estates of the county under his agency, which show considerable progress in arboriculture.[5]

[1] From the information of Mr. Mitchie, the Duke of Portland's wood-steward.
[2] From the information of Mr. Arthur V. Elliott, agent of the Duke of Newcastle.
[3] From the information of Mr. R. W. Wordsworth, agent of Earl Manvers.
[4] From the information of Mr. J. A. Bell, agent of Lord Savile.
[5] 'In my agency the following estates in Notts. have extensive woodlands:

The Oxton estate, Captain Sherbrooke, R.N., owner, four miles from Southwell. Old woodlands, 338 acres; oak and ash; ash underwood; thin timber. Plantation last fifty years 54 acres. Total 392 acres, nearly all on the clays.

The Sherwood Lodge estate, Sir Charles Seely, bart., seven miles from Nottingham. Old woodlands, 157 acres; oak, chestnut, beech, and larch; no underwood. Plantation, 365 acres; of this 150 acres only prepared for planting—not yet planted. Total 522 acres, all on sands.

Ossington estate, W. E. Denison, esq., eight miles from Newark. Old woodlands, 214 acres; ash underwood, oak and ash. Plantations, 67 acres. Total 281 acres, all on clays.

Winkburn estate, Colonel Burnell, eight miles from Newark. Old woodlands, 405 acres; well looked after; oak with ash underwood.

Widmerpool estate, Major Robertson, nine miles south of Nottingham, on the wolds. Oak and ash with hazel underwood. Old woodlands, 108 acres. Plantations, 60 acres, mostly larch and spruce for game. Total 168 acres, all on clay.

The other estates in our management in this district all agricultural with only small coppices or shelter plantations.

The estate duties on woodlands appear to me to be a mistake, as it is taxing a growing crop. A tax on timber sales would be more equitable. As it is many people will be taxed for a property in young woods that they never can enjoy.

Planting is generally done with trees transplanted from nurseries. This I consider an expensive method, and doubt whether there is any industrial profit. If planting were to be done on a large scale on the clays I would advocate sowing the seed of oak, ash, and sycamore on the ground reserved for the wood just like a corn crop, and singling out each few years as the seedlings settle

FORESTRY

As to the Wold district of this county, south-east of the forest, on the five estates belonging to Earl Manvers, Lord Belper, and Messrs. Robertson, Warner, and W. P. Paget, in the parishes of Cotgrave, West Leake, Widmerpool, Wysall, and Normanton upon Soar, at least 1,000 acres have been tree-planted in the last thirty years. It is thought that the thinnings of these plantations, after expenses of felling and sale are paid, amount annually to double the rent of a good deal of land in Gotham, Bunny, and some other parishes that have not been planted.[1]

Official statistics are strongly confirmatory of the considerable growth of the wooded area of Nottinghamshire in the last quarter of a century. In 1891 the woods of the county, exclusive of plantations, covered 25,819 acres; and the plantations—that is, those that have been planted during the last fifteen years—covered an additional area of 2,027 acres. The total, therefore, in 1891 was 27,846 acres. A great stride was made between that year and 1888, for in the latter year the total was only 24,254.

The agricultural returns for 1895 give the area of wood, excepting plantations, as 27,269, whilst the area of recent planting brought the full total up to 28,517.

The returns for the last decade, as estimated in June, 1905, show a further gain in Nottinghamshire woodland of nearly 2,000 acres. It is there set forth as coppice 489 acres, plantations 1,404, and other woods 28,540, giving a total under woodland of 30,433 acres.

From all this varied information, Nottinghamshire may be safely placed among the comparatively few counties in which the woodlands have largely increased during the past hundred years. But this increase is almost entirely due (save to a limited extent on the wolds) to what may be termed the luxurious value of forest trees and coverts, that is to say, to the beauty of woodland landscape, and to its assistance in the maintaining of game. The initial difficulty in tree-planting on private property, from a commercial standpoint, is the sinking of capital for such a distant and somewhat problematical return, for most people live in the present. It is, therefore, generally thought by those competent to form an opinion that a commercial return from arboriculture (save in exceptional circumstances) can only be expected, under existing legislation, on suitable crown lands or on those of such corporations as the Ecclesiastical Commissioners.

between themselves which is to be the best tree. I believe this method on a large enough scale would pay a very good profit at the end of the century.

There should be no rating or taxation of woodlands till the crop is felled, when this burden falls on the proper person alone able to bear it.

I advocate very strongly shelter plantations and trees on pasture lands, especially upland pastures as a shelter for stock. I know from experience such pastures will carry stock two or three months longer than more exposed fields in the immediate vicinity.'

[1] From the information of the Hon. F. Strutt, to whom we are otherwise particularly indebted.

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The Victoria history of the county of Nottingham

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