



(95) 2

THE
N A T U R A L H I S T O R Y
A N D
A N T I Q U I T I E S
O F
N O R T H U M B E R L A N D :

And of so much of the County of

D U R H A M

As lies between the Rivers Tyne and Tweed;

COMMONLY CALLED,

N O R T H B I S H O P R I C K .

I N T W O V O L U M E S .

B Y J O H N W A L L I S , A . M .

V O L . I .

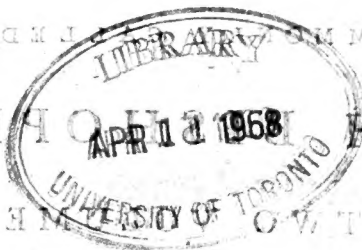
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MDCCLXIX.

THE
NATURAL HISTORY
AND
ANTHROPOLOGY
OF
NORTHUMBERLAND:

And of so much of the County of
DURHAM
As lies between the Rivers Tyne and Tweed;



NORTHUMBERLAND
IN TWO VOLUMES.

JOHN WELLS, A.M.
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LONDON:
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DEDICATION

H I S G R A C E,
H U G H,
DUKE of NORTHUMBERLAND,
BARON OF WARKWORTH, OF WARKWORTH-
CASTLE, KNIGHT OF THE MOST NOBLE
ORDER OF THE GARTER, AND LORD LIEU-
TENANT OF THE COUNTY OF NORTHUM-
BERLAND, &c.

Your Grace's

May it please your Grace,

I Do not pretend by this dedication to give a portrait of your Grace's many noble and endearing qualities, because they are confessed by an universal suffrage to be above all panegyric; envy itself being dumb, and lost in admiration, on the mention only of the name of the DUKE of NORTHUMBERLAND: all I mean by it is, to give this public testimony of my obligations to your Grace.

DEDICATION.

That your Grace may long live to be a support and ornament to letters; to be a pattern of steady loyalty, legislative wisdom, and to give dignity and lustre to the honours you possess: and that the house of PERCY (great and illustrious name!) may, to the latest period of time, have a representative like your Grace, worthy and great in himself, and, after the example of our most gracious Sovereign, King GEORGE III, be as much superior to other men in every virtue, as in external grandeur and pre-eminence, is the sincere and ardent wish of

Your Grace's

ever devoted,

most humble, and

obedient Servant,

JOHN WALLIS.

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P R E F A C E.

THE

P R E F A C E.

BRITAIN is indebted for the origin of science to antient Rome, as Rome was to Greece. Their soaring *Eagle* carried not only victory, but the elegant and useful arts, wherever she had her airy. It was the custom of those sovereigns of the world to polish and instruct, as well as subdue, nations. In *Britain*, no part had their company more or longer, than *Northumberland*. Here they had their cities, their castles, and their towns. Here they had their *Collegia*, their companies, or trades. To the naked and warlike natives they were patrons and protectors, taught them both to cloathe their bodies, and adorn their minds; learned them husbandry, civil polity, architecture, and the polite and useful arts. Thus accomplished and improved the *Romans* left them.

In the *Saxon* and *Norman* ages, piety and learning met with zealous patrons, and bountiful rewards. Churches were built, colleges founded, and both plentifully endowed. Princes and nobles, prelates, ladies, and gentlemen, contended, in a holy emulation, which should contribute most amply and liberally to their support.

Propitious also to the culture of the human mind have been these later ages, both at home and abroad. Under the auspices of Princes, of Nobles, of Prelates, and the principal gentry of *Europe*, societies have been formed for promoting natural knowledge, and the study of antiquity, to the great emolument and honour of their respective states and kingdoms.

In such an enlightened age as this, to send abroad the Natural History and Antiquities of a County, is an arduous work. How well I have succeeded, must be left to the decision of able and competent judges, possessed of the happy spirit of urbanity and good nature. It is now upwards of twenty years since I first turned my thoughts to the study of Natural History, rather than for amusement, than from any design of casting my observations under an historical form for public view; rocks and dales, woods, heaths, hills, and mountains, the shores of rivulets and the ocean being my company in the hours of leisure and relaxation, after leaving that august and venerable, and truly charming and delightful seat of learning, the university of *Oxford*, wherein upwards of seven years of my earliest days were spent.

In my searches after *Fossils*, I have met with some hitherto supposed by eminent and learned Lithologists not to be of *British*, but of transmarine origin.

In my *Botanic* searches, I met with some curious plants on our northern Alps, acknowledged by the indefatigable and accurate *Dillenius* not to have been seen by him any where in *England*. Of these, and other curious and useful plants, I have given short descriptions, and have added the synonyms of the most eminent and ingenious authors. Those that would choose to see them under a systematic distribution, I refer them to the elegant systems of *Haller (a)*, and *Van Royen (b)*, and of the celebrated *Linnaeus*.

I have also given short descriptions and synonyms of the most curious *Birds* observed with us, and of the *Insects*, &c. with no other embellishments than those of nature and truth.

Antiquities had a share of my attention at the same time. The works of the *British* Druids, their cespitious and rocky thrones, temples, and sepultures, attracted my observation; their rude grandeur greatly raising my curiosity.

Northumberland being *Roman* ground, and receiving my first breath in one of their *Castra (c)*, I was led by a sort of enthusiasm to an enquiry and search after their towns, their cities, and

(a) *Alb. Halleri enumeratio stirpium indigenarum Helvetiae*, 2 vol. fol. Fig. elegantiss. Gotting. 1742.

(b) *Adriani van Royen floræ Leidenfis prodromus*, 8vo. Lugd. Bat. 1740.

(c) *Alione*, or *Whitley-Castle*.

temples, their baths, their altars, their *Tumuli*, their military ways, and other remains of their splendour and magnificence; which will admit of a thousand views and reviews, and still give pleasure to such as have a gust for any thing *Roman*; every year almost presenting new discoveries of the wisdom, contrivance, ingenuity, and elegance of that respectable people; Many of those things which have already come under public notice, I have set in a new light; and such as have not, appear in their order under all the advantages they are entitled to. On making the great military road between *Newcastle* and *Carlisle*, many foundations of *Roman* towns and forts have been turned up for the sake of the stones, many valuable sculptures and inscriptions either destroyed or so effaced by the injudicious and undiscerning labourers, that not a *Roman* feature appears; others have been carried off, and by the death of their first patrons have fallen into less curious hands, who have cast them away as *Nugæ* or trifles beneath notice. The incurious hands hath not even spared that majestic monument of *Roman* opulence and grandeur, The *Picts* Wall, one of their greatest works, equally the wonder and admiration of the learned *Briton* and the inquisitive stranger. That work which withstood the shock of ages, was superior to the rage of storms and tempests, the glory, the pride of *Northumberland*, erected in part at the supplication and importunate tears of *Britons*, now deploras its ruin by the incurious in *Northumberland*, by *Britons*.

Many of the *Romana* exhibited in this work, were never before described; some of them of silver, sculptures, and in relief. Not a few afford excellent precepts to present and future times. They bring before us, as in perspective, *Roman* wisdom, *Roman* piety, *Roman* loyalty, *Roman* gratitude, *Roman* generosity and hospitality, *Roman* courage and magnanimity, as well under the pressures, as under the exaltations of life.

The *Saxonica* and *Monastica* are as curious and instructive as the *Romana*. Those ages, enlightened by the bright sunshine of Christianity, and for the reception of which the *Roman* manners and politure prepared the way, afford examples of an illustrious piety and a heavenly temper, such as ought to excite our reverence and veneration; the amiable graces of humility, meekness, brotherly kindness, self-resignation, and an indifference to the pleasures, the gaieties, the honours of life, appear often to a degree that is astonishing, only to be copied by those god-like souls who aspire after a happy immortality.

I have spoken of the *Religious* houses with the greatest impartiality and fairness; described their foundations, their patrons, and their chief revenues, so far as they could be known; given an account of their several prelates, and other learned persons that adorned them.

THE PREFACE.

Bishop *Tanner* has placed three religious houses amongst us, of whose situation we have no clear account from any good authority. These are *Paegnalaech* or *Womalet*, where Bishop *Tuda* was buried, *Warmington*, and *Nesham* (*d*). We have a maritime place called *Nesham*, near *South Blyth*, but there are no evidences of a monastic foundation at it, either from any ruins, from tradition, or from any written memorial. *Paegnalaech* or *Womalet*, and *Warmington*, are no where to be found with us by the utmost scrutiny. The sagacious editor of *Bede*, Dr. *Smith*, confesses it to be beyond his penetration and learning to tell where *Paegnalaech* might be, unless *Pinchanbeale*, or *Finchale*, near *Durham*, might be it; a monastery famous in the *Saxon* times, as attested by the synods held at it, so early as the eighth century (*e*).

The manuscript of that great antiquary, Bishop *Nicholson*, intitled, *A Description of the antient kingdom of Northumberland*, said to be in the library of the Dean and Chapter of *Carlisle* (*f*), might probably have given some light herein; but unhappily for the Republic of Letters, there is no manuscript of his Lordship's in that library, except one, relating to his

(*d*) Notit. Monast. fol. p. 189, 394.

(*e*) See Dr. *Smith*'s Note on *Paegnalaech* in *Bede*'s *Eccles. History*, p. 136.

(*f*) Bp. *Gibson*'s Preface to *Camden*'s *Britannia*.

own diocese, being only a compendious ecclesiastical view of it, in a parochial method; which I looked over by the favour of the present worthy Librarian, Mr. *Wilson*, a Prebendary in that church*.

All the records taken out of *Religious* houses on the north side of *Trent*, at their dissolution, were lodged in *St. Mary's Tower* at *York*. Transcripts from them were made by Mr. *Dodsworth*, which were presented by *Thomas Lord Fairfax* to the *Bodleian* library. They are the substance of what the learned transcriber calls his *Monasticon Boreale* in the manuscripts. In 1644, that repository was blown up by the besiegers of the city. A worthy person, Mr. *Thompson*, had the courage and resolution, at the peril of his life, to search the rubbish for the records, and was so happy as to retrieve as many, as Mr. *Drake* calls, A noble magazine of antiquity. Mr. *Torr* took the pains to put the fair ones into order, marking the places they belonged to alphabetically in a register. They are now in the minster-library at *York*, but there are no muniments among them relating to the *Northumberland-monasteries* (g).

A learned prelate and antiquary acquaints us, that some materials were collected by one of the family of the *Claverings* of

* Since made DEAN.

(g) As I am assured by Mr. *Drake*.
See his *Antiquities of York*.

Calleley for a history of *Northumberland* (b); but I do not find that any thing was done farther than a GENEALOGY of the family, properly attested by records and inquisitions *post mortem*, drawn up by Sir *William Dugdale*, Norroy, king at arms, at the expence of Sir *John Clavering*, Kt. living in 1617, with whom it ends (i).

The late *John Warburton*, Esq; *Somerset*-herald, made large collections, respecting this county. They are now in the possession of his Grace the Duke of *Northumberland*; of which I have had the perusal by his Grace's favour.

I have illustrated the baronial honours, tenures, and feudal property, not from vague and uncertain testimony, but from authorities of the highest pre-eminence in the kingdom; from the *Rotuli Annales* returned into the Exchequer by the sheriffs, and that grand record, the *Testa de Nevill*; from *Rymer's Fœdera*, from the acts of the legislature, and from the decisions of the most eminent antiquaries and civilians; from royal charters, family-records and monumental inscriptions.

(b) Bishop *Gibson's* Preface to *Camden's* *Britannia*.

(i) Sub Titulo,

Claveringianæ familix antiquissimæ et nobilissimæ in *Essexia* et *Northumbria* florentis stemma. Ex archivis regiis, vetustis registris, aliisque venerandæ antiquitatis monumentis, deductum et delineatum. Per *Guilhelmum Dugdale*, regem armorum, cognomento *Norroy*.

A

GENERAL INTRODUCTORY DESCRIPTION

O F

N O R T H U M B E R L A N D, &c.

With some HISTORICAL ANECDOTES.

THE County of *Northumberland* is of a triangular form, bounded by the *German Ocean* to the east, the river *Tweed* to the north, *Cumberland* and *Scotland* to the west, the river *Tyne* and the bishoprick of *Durham* to the south. Its length between the *Tyne* and *Tweed*, from *Newcastle* to *Berwick*, is sixty-two measured miles and three quarters. Its breadth from *Tyne-mouth* to *Temon-bridge*, beyond *Glenwelt*, is forty-seven, measured. Under the *Saxon* heptarchy it was part of a large kingdom, founded in the year 547, by *Ida*, a most accomplished prince; containing all the country between the two seas north of the *Humber* to the *Frith* of *Edenburgh* in *Scotland*. Hence it has its name. Sometimes it was divided into two, *Deira* and *Bernicia*. *Deira*, i. e. *Ferarum Habita-culum*, extended from the *Ostium* of the *Humber* to the river *Tyne*; *Bernicia*, from the *Tyne* to *Edenburgh-Frith* (a). By civil dissensions, and the frequent alarms and deprædations of the *Danes*, it was constrained to submit to the superior power of *Egbert*, King;

(a) *Hol. Chron.* vol. i. edit. opt. 1586. p. 59.

Lel. Itin. vol. vii. ed. ii. p. 64.

Tyrel's Hist. of Engl. vol. i. p. 34. 45. 1534

of the *West-Saxons*, Reg. 28. 828. It was reduced to a province or earldom by *Edred*, a magnanimous Christian prince, who made *Osfulph* the first earl or governor (*b*). Those that preceded *Osfulph*, were some of them tributary, and others independent kings, mostly *Danish* (*c*). *Alfred the Great* divided it into shires or counties, viz. *Everwickshire*, *Richmondshire*, *Coplande*, since the bishoprick of *Durham*, *Westmerlonde*, *Northumberlonde*, *Cumberlonde* (*d*). The government of *Northumberland* by *Earls* terminated soon after the *Norman* conquest, and in the person of *Robert Mowbray* (*e*). After that æra, it had its *Viccomes*, or high sheriff, and was distinguished by baronies, except when it was in the hands of the bishop of *Durham* (*f*), and those baronies by six wards, viz.

<i>Tyne-dale,</i>	<i>Bambrough,</i>
<i>Coquet-dale,</i>	<i>Morpeth,</i>
<i>Glen-dale,</i>	<i>Castle-Ward.</i>

(*e*) *Rapin's Hist. of Engl.* 8vo. vol. i. p. 383.

(*c*) See a chronological series of the *Northumberland* Kings in *Tyrrel's Hist. of England*; *Drake's Antiq. of York*; and in *Latin*, at the end of the learned *Dr. Hicks's Thesaurus Linguar. Septentr.*

(*d*) *Spelman, Vita Alfredi.*

(*e*) *Roberto de Mulbraio* capto, cessavit comitatus administrari a comitibus; et ex tunc in manu regum, scil. *Gul. Magni*, *Wulielmi junioris*, et *Henrici* mansit. *Lol. Itin.* vol. vii. p. 65. *Monast. Angl.* vol. i. p. 41.

(*f*) *Scutagium de Northumberland.* Quod ideo redditur in j summa, quia comitatus fuit in manu episcopi *Dunelmensis* a quo receptum fuit scutagium. Ideo non potuit distingui per baronias.

When the county of *Northumberland* came into the hands of the bishop of *Durham*, it could not be distinguished by baronies and districts, as it had been wont before: But the bishop became immediate tenant to the king, of the whole county. And therefore he himself answered escuage for the county in one sum.

Mag. Rot. 6 R. Ric. I, Rot. 10. a. cited in *Madox's Hist. of the Excheq.*

The number of boroughs and villas in each ward, and in the liberties of the dutchy of *Lancaster*, *Reeds-dale*, *Hexham*, and *Tynemouth-shire*, and their antient state, will be best understood by a curious record in the Appendix, No. 1. which exhibits a view of their contributive shares towards the expences of the two county-members, *Adomar de Valence*, Earl of *Pembroke*, and Sir *Ralph de Eure*, of *Kirkley*, for their attendance in parliament, 5 K. *Richard II.*

The high sberiff levied by writ the wages of parliament-men. The first writs extant bear date, 28, 29, 32, of K. *Edward I*; and the first statute, 12 K. *Richard II.* At the same time that knights of the shire were allowed four shillings a day, burgeses were allowed two shillings, at least, also their travelling-charges to and from parliament. in the reign of K. *Edward IV.* By a statute, 6 K. *Henry VIII*, they lost their wages if they returned home without leave from the house (g).

The high sberiff of *Northumberland*, for the defence of the borders, was entrusted with great power, and extraordinary privileges. He received the issues and profits of his sberiffrick to his own use, with all other debts, fines, and amerciaments, within the county, and all emoluments accruing from alienations, intrusions, wards, marriages, reliefs, &c. In 1549, 3 K. *Edward VI.* it was enacted, that he should be accountable for his office, as others in the exchequer.

In the parliament summoned to meet, 1 November, 7 K. *Richard II.* 1383, an application was made by the nobility and gentry for a part of the public levies to be assigned them for guarding

(g). Statutes at Large, An. 6 Hen. VIII.

the borders against the incursions of the *Scots*, who were answered, that they had a sufficient recompence by the tenure of their lands, given them for that particular service (*b*).

It was enacted in the parliament, called in October, 9 K. *Richard* II, 1385, that all possessors of lands on the marches beyond the river *Tyne*, whether lords or others, should reside upon them, except such as the king should think fit to dispense with (*i*).

Northumberland hath given the title of *Duke* and *Earl* to many noble personages. It gave the title of *Duke* to *John Dudley* (*k*), and the title of *Earl* and *Duke* to *Charles Fitzroy* (*l*), and of *Earl* for a small space to *John Nevill* Lord *Montacute*. It hath given the title of *Earl* to no less than *thirteen* of the noble family of *Percy*. The present *Earl* was created *Duke* of *Northumberland*, 6 K. *George* III, October 3d, 1766.

Northumberland is in the diocese of *Durham*, whose prelates are princes palatine, having temporal as well as spiritual jurisdiction, being stiled in antient pleadings, *Palatii Comites*, Earls of the Palace, as to their temporals; and are said to hold episcopal state, as to spirituals (*p*).

(*b*) *Walsingham*. *Collier's Eccles. Hist.* vol. i. p. 582.

(*i*) *Statutes at Large*. An. Ric. II.

(*k*) *Hol. Chron.* vol. ii. p. 975. 1009. 1007.

(*l*) *Mag. Britannia*.

(*p*) *Madox's Baron. Angl.* p. 150, 151.

The liberties of the county palatine of *Durham* were ascertained by parliament, 11 K. *Henry VI*, on a complaint being made in a petition to the house of lords by bishop *Langley*, of certain commissioners sitting and making enquiry at *Horton-Pool* in his county palatine; after many learned pleadings used by the attorney general, Sir *William Earl*, Knt. to prove, that his lordship ought to have no county palatine, or liberties royal (q).

In parliament-time, the bishops of *Durham* and *Carlisle* were excused their attendance, on sending *procuratores sufficientes*, sufficient proxies, as by their place they were to have a vigilant eye to the defence of the borders; and in the writ for the parliament to meet at *Westminster* under K. *Edward II*, they were expressly inhibited to be present otherwise than by proxies, worthy, says the record, of being representatives in that great council of the nation (r).

The bishop of *Durham* had a suffragan, or an episcopal coadjutor, 28 K. *Henry VIII*, 1536, whose see was at *Berwick upon Tweed* (s).

This bishoprick is rated in the king's books at 1821 *l.* 15. 5 *d.* and before the reformation was rated in the Pope's books at 2025 *l.* and paid for the pall 2000 *l.* (t). Every clergyman on admission into a benefice, paid one year's profits to the Pope, under

(q) Sir *Robert Cotton's* Abridgm. of Records.

(r) *Seldon's* Baronage of *Engl.* &c. 8vo. *Lond.* 1642.

(s) *Rym. Fœd.* tom. xiv. p. 560.

Acta Regia, vol. iii. 8vo. p. 307.

(t) *Godwin de Prefulibus Angliæ.*

the name of *Annates*, abolished by an act of parliament, 24 K. Henry VIII, 1532; which, with the tenths, were granted by another act to the king, 1534 (u).

When a subsidy of 50,000*l.* was granted by the parliament to carry on the war with *France*, 43 K. Edward III, 1369, March 28th, to be levied on every parish at 22*s.* 3*d.* the number of parishes rated in *Northumberland* were sixty, and sixty-one in the county of *Durham*.

In *Northumberland* there are five deaneries, and one archdeaconry. The deaneries are

<i>Alnwick,</i>	<i>Morpeth,</i>
<i>Bambrough,</i>	and
<i>Corbridge,</i>	<i>Newcastle.</i>

The present number of parochial churches and chapels in them, the extra-parochial and peculiars, their patronage, and the appropriations, will appear with precision and accuracy under the following view. But I must first premise, that the lord high chancellor nominates to all preferments in the gift of the crown, valued at 20*l.* *per annum*, or under, in the king's books; and the record of parliament, which recognizes his lordship's right, 4 K. Edward III, particularly mentions the end for which the grant was given by the crown, viz. to enable him to provide for the clerks in chancery, and other courts, who in those days were persons in holy orders; and accordingly the direction even in the record is, that he should give such benefices to the king's

(u) Statutes at Large, An. 27 R. Hen. VIII.

clerks in the chancery, exchequer, and both benches, and not to others; the chancellors themselves being generally ecclesiastical persons. I shall take no notice of their annual value, being variable and uncertain, rarely understood by any but their possessors.

	DEAN.	PATRON.	APPROPRIAT.
Simonburn, R.	C.		
Bellingham, Ch.			
Falstone, Ch.			
Felton, V.	A.		Pr. of Brinkburn.
Brinkburn, V. annex.			
Framlington, Ch.			
Bolham, V.	M.	The Crown.	Pr. of Tynemouth.
Heddon on the Wall, V.	N.		Pr. of Blanchland.
Knarefdale, R.	C.		
Lesbury, V.	A.		Pr. of Alnwick.
Long Horsley, V.	A.		Pr. of Brinkburn.
Shilbottle, V.	A.		Pr. of Tynemouth.
Stamfordham, V.	C.		Pr. of Hexham.
Ryal, Ch.			
Archdeaconry, with			
Howick, R. annex.			
Allenton, and	A.		Pr. of Halystone.
Halystone, V.			
Alnwick, C.	D.		Pr. of Alnwick.
Chillingham, V.	A.		Pr. of Alnwick.
Eglingham, V.	A.		Pr. of Tynemouth.
Haltwiesel, V.	C.		Pr. of Tynemouth.
Beltingham, Ch.			

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	DEAN.	PATRON.	APPROPRIAT.
Hartburn, V.	M.		Pr. of Tynemouth.
Nether Witton, Ch.		Bp. of Durham.	
Kirk Whelpington, V.	M.		Pr. of Newminster.
Stannington, V.	M.		Pr. of Newminster.
Woodhorn, V.	M.		Pr. of Tynemouth.
Widdrington, Ch.			
Newbiggen, Ch.			
Horton, Ch.			
Wooler, V.	B.		Pr. of Alnwick.
Mitford, V.	M.		Pr. of Laner-Coast.
Bedlington, V.			
Berwick upon Tweed, V.			
Bywell, St. Peter, V.			
Whittonfal, Ch.			
Cornhill, and			
Brankston, V. annex.			
Ellingham, V.			
Holy Island, V.			
Kyley, C.	Pec.	Dean & Chapter	
Lowick, Ch.		of	
Long Edlingham, V.		Durham.	
Bolton, Ch.			
Meldon, C.			
Norham, V.			
Tweedmouth, V.			
Ancroft, Ch.			
Walls-End, C.			

	DEAN.	PATRON.	APPROPRIAT.
Newcastle: St. Nich. V.	D.		
Gosforth, Ch.			
.St. Thomas's, Ch.			
.Cramlington, Ch.			
St. John's, C.			
St. Andrew's, C.		Newc.	
All Saints, C.			
St. Ann's, Ch.		Bp. of Carlisle.	See of Carlisle.
Rothbruy, R.	A.		
Newburn, V.	N.		
Warkworth, V.	A.		
Corbridge, V.			
Halton, Ch.	D.	Dean and Ch. of	See of Carlisle.
Whittingham, V.		Carlisle.	
Embleton, V.	A.		
Rock, Ch.			
Rennington, Ch.		Merton Coll.	Merton College.
Pont-Eland, V.	N.	Oxford.	
Long Benton, V.	N.	Baliol Coll. Oxf.	Baliol College.
Bothall, and Shipwash, R. annex. Hebburn, Ch.	M. D.	of Portland.	
Chatton, V.	B.		Pr. of Alnwick.
Dorrington, Ch.			Elfdon,

xxii INTRODUCTORY DESCRIPTION OF

	DEAN.	PATRON,	APPROPRIAT.
Elfdon, R.	M.	D. of Northum-	
Ilderton, R. and	A.	berland.	
Alnham, V. annex.			Pr. of Alnwick.
Long Houghton, V.	A.		Pr. of Alnwick.
Tynemouth, V.	N.	D. of Northumb.	Pr. of Tynemouth.
Earfden, Ch.		one turn, and Sir	
Blyth, Ch.		Fr. Delaval, kt. two	
Morpeth, R.	D.	Earl of Carlisle.	
Ulgham, Ch.			
Hexham, C.			
Whitley, Ch.			
Allen-dale, V.	Pec. Y.		Pr. of Hexham.
Ninebanks, Ch.			
Chollerton, V.	C.		
Chipchace, Ch.		Sir Walter Blacket,	
Birtley, Ch.		Bart.	
St. Johnley, C.	Pec. Y.		
Bingfield, Ch.			
St. Ofwald, Ch.			
Warden, V.	C.		Pr. of Hexham.
Newbrough, Ch.			
Hayden, Ch.			
Kirk-Harle, V.	M.	Sir W. Lorrain, bart.	Pr. of Blanchland.
Thockrington, Ch.		Extra- Paroch.	
Kirk-Heaton, Ch.	Pec. Y.		

Ald-

DEAN. PATRON. APPROPRIAT.

Aldfton, V.	C.	Greenwich-Hosp.	
Bambrough, C.	D.		Pr. of Nostill.
Bednel, Ch.		Lord Crew's Trustees.	
Blanchland, C.	Extra- Paroc.		
Shotley, V.	C.		
Ford, R.	B.	Sir Francis Delaval, Knight of the Bath.	
Lambley, C.	Extra- Paroc.	Sir L. Allgood, Knt.	
Whalton, R.	M.	Ralph Bates, Esq;	
Ingram, R.	A.	Ralph Ogle, Esq;	
Kirk Newton, V.	B.	Strother Kerr, Esq;	} Pr. of Kirkham.
Carham, C.	B.	Anth. Compton, Esq;	
Whitfield, R.	C.	William Ord, Esq;	
Bywell, St. And- rew, V.	C.	Will. Fenwick, Esq;	Pr. of Blanchland.
Slealy, C.	C.		
Corfenfide, V.	M.	— Tweddel, Esq; and Mrs. Davidfon.	Pr. of Halyftone.
Kirk-Haugh, R.	C.	— Richardson, Esq;	
Ovingham, C.	C.	Tho. Cha. Bigge, Esq;	Pr. of Hexham.
Belford, C.	B.	Abraham Dixon, Esq;	Pr. of Nostill.

For most of the *Vicarages* we are indebted to the statute made by the parliament at *Westminster*, summoned 12 Nov. 14 K. *Richard* II; 1390, empowering the bishop of every diocese on the taking a licence out of chancery for the appropriation of any church, to make some provision by Money, arising from the profits of it,
for

for the perpetual maintenance of a minister or vicar (v); religious communities enjoying before that time the whole profits to themselves of an appropriation given them, one of their own body doing the parish-duty.

By an act of parliament made, 9 K. Henry V, 1421, every third benefice in the presentation of the bishops or monasteries was to be conferred on some scholar of *Oxford* or *Cambridge*, for the encouragement of learning (w).

What might antiently be the number of inhabitants in *Northumberland*, cannot be determined with precision. No light can be had from the famous survey of K. William I, the most decisive record in the kingdom; neither this county, or the counties of *Westmorland*, or *Cumberland*, being included in it; nor had we the use of parochial registers till the reign of K. Edward VI*, many of which have since perished. But it is supposed that, at present, they may be about one hundred-thousand, of which seventeen-thousand appeared on the constables lists fit to bear arms, exclusive of *Newcastle*.

The soil of *Northumberland* is various. On the borders of rivers, and on the sea-coast, it is remarkably fertile, abounding with rich meadows, pastures, and delightful corn-fields. To the north-west, and south-west, it is very mountainous; and to the west full of heaths, fens, and lakes; but some of those heaths, abounding with mines of rich ore and coal, and others being

(v) Statutes at Large, An. 14 R. Ric. II.

(w) Statutes at Large, An. 9 R. Hen. V.

* As affirmed by the celebrated *Oxford-Antiquary*, *The. Herne*.

very improveable, and capable of culture, and the mountains feeding vast multitudes of sheep, render *Northumberland* a very opulent county. Our wool brings home to us the wealth of the remotest kingdoms, and our lead and coal give us the treasures of our neighbours both at home and abroad. There is hardly a gentleman, but who has all the necessaries and conveniences of life on his own estate. The barrenest hills, and the lakes and rivers, contribute to his health and delight, by giving him exercise, and furnishing his table with plenty both of fish and fowl. It is, indeed, very naked of timber in most places, except on the banks of rivers, and some pleasant and fertile spots, and by gentlemen's seats, with great judgment reared and preserved, for pleasure, shade, and shelter.

Some of those seats are good old castles, built upon rising hills and eminences, not so much for shew as defence, to have a better prospect of an approaching enemy, such as before the *Union* were the *Scots*, and a sort of thieves, called, *Moss-Troopers*, whose custom it was to pillage the country, and to retire into the western and northern wastes, and other inaccessible places in *Tyne-dale*, *Reeds-dale*, *Glendale*, and *Gilfland*, on the borders (*x*); from whom it was hard for any one to get his goods again, unless he applied to a master-thief with a fee in his hand, which they called, *Saussey-Money* (*y*). After the union, these and other irregularities were wisely suppressed.

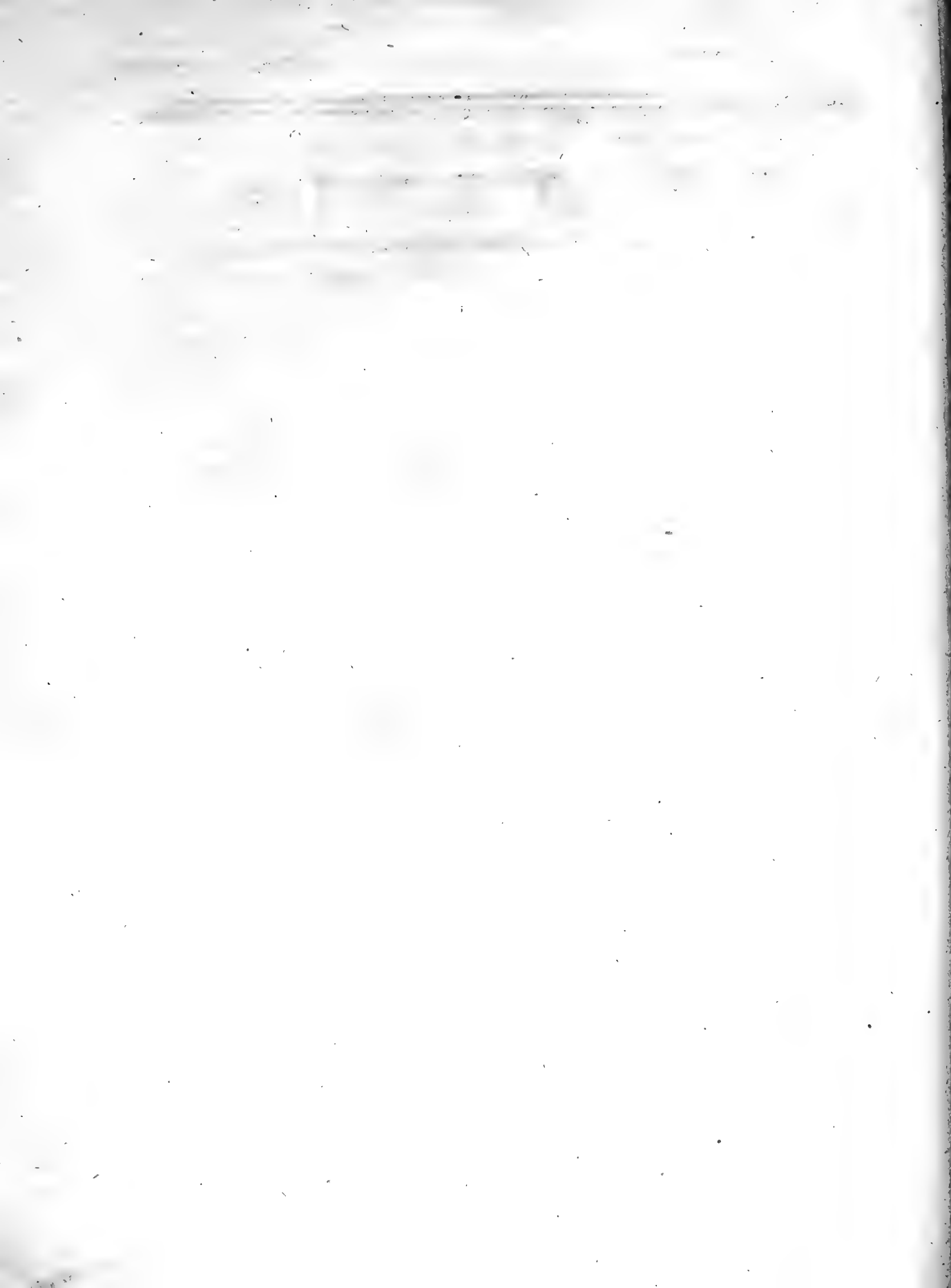
As before that glorious period, the two bordering, and now sister-nations, displayed great heroism in the defence of their

(*x*) *Bernard Gilpin's* Life by Dr. *Geo. Carleton*, Bishop of *Chichester*, inter collectanea *Batesiana*, 4to. 1628. His Life by *William Gilpin*, 8vo. 1753.

(*y*) *Grey's* Chorographia, in. ex collectan. *Oxfordiana*, 4to. vol. iii.

respective liberties, so at present there subsists as eminent a
 friendship and harmony between them; conferring on each
 other all sorts of good offices, the one frequently making
 alliances by marriage with the other. And certainly, it is
 a very singular blessing and advantage to us of this kingdom,
 and especially to us of this county, to be united to so very an-
 tient, and in many respects, to such a brave people. For amongst
 them we find a numerous, antient, and polite NOBILITY. Their
 GENTRY are men of great humanity, sagacity, and honour; well
 instructed in letters; commonly polished and improved by their
 travels; and their conversation agreeable to all their neigh-
 bours. As for their COMMONS, they are a very laborious,
 hardy, and industrious people; fitted for the hazard of the seas,
 and capable to struggle with the greatest difficulties by land,
 They have a natural prowess and gallantry for war; they are
 brisk in the field, and healthy in the camp; they are men of sa-
 gacity in council; they are prudent and considerate in conduct;
 they are brave and gay when they enter upon action, and infe-
 rior to no nation in the world when they are to execute any bold
 and daring enterprize. To have such a people to supply our navies
 with experienced mariners; to have such a nation to fill our
 troops, and increase our armies; to be united to such a king-
 dom, so gallant and capable to fight our battles; this is adding
 a visible strength and support to our glorious crown and mo-
 narch; this is giving undeniable security to our civil state and
 government. By this we escape all those evils, and sad calami-
 ties, which must attend an island governed by two independent
 sovereigns. If we look back into our antient histories, we there
 read a dreadful account of the former cruel and unnatural wars;
 the barbarous treatment one nation shewed the other, the burn-
 ings and desolations that often happened; and the frequent in-
roads

roads that were made upon this and other bordering counties: if we but view the many murders, outrages, and continual robberies almost daily committed; and observe how in former ages the kingdom of *France* was almost always strictly leagued with the *Scotch* Kings: if we but consider, how conveniently that kingdom lies for the incendiaries of *Europe* to form all their bloody designs against us, how continually we were exposed, what hazards we run, when a *Scotch* independent Sovereign had a distinct power, and could at pleasure open those sluices, which should let in a deluge of miseries upon us: upon all these accounts, we have a great deal of reason to bless the divine preventing grace in removing those evils, and placing them at the greatest possible distance from us. Great is the cause we have to bless the day, when we began to wear the name and character of GREAT BRITONS. We of this COUNTY have shared largely in the blessings of that day, which I cannot help celebrating; and may it long be celebrated in the *British* annals, and the latest records of time! We have had opportunities of looking more inquisitively into our rich and wealthy mines, and have drawn forth in greater quantities those useful and hidden treasures, wherewith the divine providence hath, in a distinguishing manner, enriched this mountainous part of our *British* isle. We have had opportunities of augmenting our trade, of improving our barren lands, of making public and private roads, and of doing many other laudable and good things, of which I shall take notice in the course of this work.



C O N T E N T S

OF THE

F I R S T V O L U M E.

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T H E

THE
N A T U R A L H I S T O R Y
O F
N O R T H U M B E R L A N D, &c.

CHAPTER I.

OF THE HEAVENS AND THE AIR.

EXTRAORDINARY appearances in the heavens naturally excite our attention. In February, 1737, between the hours of three and four in the afternoon, we had an *Annular Eclipse* of the *Sun*, which was acknowledged by the learned to be the most entertaining spectacle they had ever seen in the heavens.

This phenomenon was seen at *Long Framlington*, at *Alnwick*, and *Berwick*. It continued between four and five minutes at this last place. Its duration at *Alnwick* was not measured. At *Long Framlington*, the *Annulus* was observed to be very small on the upper part by Mr. *Long* of that place, and its continuance 40 or 41 half seconds, measured by a *Pendulum* 9, 81 inches long. This was its southern boundary. The eclipse was not annular at *Morpeth* and *Newcastle*. The body of the moon appeared almost entirely on that of the sun at *Morpeth*, and to the naked eye the disk of the sun seemed to be almost round. There wanted about 40 degrees of the limb of the sun to appear, in order to form an *Annulus* at *Newcastle*, according to the observation of *Isaac Thompson, Esq.*

The northern boundary of the *Annulus* was beyond *Inverness* in *Scotland*, but how far could not be precisely determined. Very accurate observations were made of it by many curious persons in that kingdom *; and particularly by the famous mathematician, *Colin Mac Laurin*, of *Edinburgh*, who gave an account of it to the Royal Society †. They all had in view, as well as the philosophical observers with us, the ascertaining the motions of the moon on Sir *Isaac Newton's* theory upon which a good deal of the doctrine of the longitude depends. Sir *Isaac's* calculation, with respect to the beginning of the eclipse, was observed to be pretty exact, but with regard to its central appearance not so accurate.

The air was cold both in *Scotland* and *Northumberland*, at the time the observations were made, and there was a little thin snow and ice towards evening, about four o'clock.

A *Lunar Annulus*, or a ring or circle about the moon, of a vast circumference, was seen by myself and family at *Simonburn*, 31 Oct. 1762, at 8 o'clock at night; bright and luminous on its first appearance, then changing to a beautiful azure; and, at length, after half an hour's display of its splendor, sunk gradually into deeper shades, till it entirely vanished. The *Area* between it and the moon was magnificently spacious, a deep blue, the horizon clear, the night frosty. The night following, November 1st. there was an eclipse of the moon, which began at 17 minutes past 7 o'clock, and ended at 5 minutes past 10. A great death followed among men and horses by a yellow fever.

* The Lords *Abardour*, and *Hopton*; the Lord chief Baron *Clerk*; Mr. *Bayne*, professor of the municipal law; Mr. *Short*, Mr. *Fullerton*, of *Fullerton*, near *Air*; Sir *Thomas Wallace*, at his seat near *Lockryan*, in *Galloway*.

† Ph. Tr. N^o 447.

At the same place, 19th March, 1763, half an hour past 8 o'clock at night, we were entertained with the sight of a *Lunar Iris*; the extremities of the arch east and south, the moon to the south-west, affording a good light, but few stars appearing. At 9 o'clock it vanished, when innumerable stars arose in view, and enlightened the horizon. We had boisterous winds, frost and snow, for several days after it; the night of the 21st dreadfully tempestuous, and that of the 24th and the two days following remarkably severe by a fall of snow, and a keen frost.

There is no better proof of the salubrity of the air with us, than the long life of the inhabitants; some living to eighty, some ninety, and some an hundred years. The last vicar but one of *Hartburn*, the Revd. Mr. *Laton Eden*, brother to Sir *John Eden*, Bart. was 51 years vicar of that parish, and lived to the age of 90. He was interred within the rails of the chancel of his own church, under a flat stone, Dec. 6th, 1735. A clergyman, now living, has been incumbent of a parish forty-eight years, after the possession of another above eight, and had a curacy and a college-fellowship before that, is healthy and agil, and capable of going thro' all the duties of his function, or the cares and fatigues of life, with the youngest man*. *Ann Telford*, a poor woman of *Haughton*, near *Humshaugh*, could see to thread a needle at the age of 103, and died at 105, in December, 1759. In the village of *Wark* upon *North Tyne*, I have sometimes asked the age of a man and his wife, and the reply made by each of them has been, "above fourscore, "Sir!" A case not unfrequent among the common people in that village and neighbourhood; which is attributed to the frigidity and purity of the air, whereby their solids are braced, and perspi-

* See an extraordinary account of the age of a clergyman, near *Alnwick*, in *Fuller's Worthies*, in a letter to that author from *Thomas Atkin*, Esq; son to a chief magistrate of the city of *London*, p. 308-9.

ration not promoted to excess by labour and exercise. Add to this, the hardy way of living of the poorer sort; their bread being made of barley and peas, and their chief subsistence milk and cheese, curds and whey, and potatoes, seldom eating butcher's meat, and but rarely having any malt-liquor in their families; their dwellings often consisting of two rooms with earthen floors, and unsealed; the one occupied by themselves, and the other, perhaps, by their cattle; the air in blowing weather entering in at the chinks and crevices, and making the faces of young children, and even the aged, look as rosy as apples in autumn; the children going in the coldest day in winter without shoes and stockings, often not from necessity, but choice: all which strengthens their bodies, preserves their constitutions sound, and gives them a floridness of countenance, to be seen only in such as are used to so good an air.

Here is, generally, such a serenity of air and fine weather in autumn, that it is a kind of second summer; many flowers blowing vigorous and strong, with as much beauty as in the spring.

For two or three years past, indeed, the air has been of unequal temperature throughout the seasons; the spring sharp and severe; the summer for a day or two excessive hot, succeeded on a sudden by chilling colds, and showers of hail; the autumn as variable as the summer months. A few days followed by others tempestuous and rainy, scarce admitting the harvest to be got in, especially near the dreary moors and wastes; the winter frosty for a night or two, and then unexpectedly followed by a thaw, and often by heavy rains. This inconstancy of the weather, sudden heats and sudden colds, has very bad effects on animal bodies, checks the motion and elasticity of the fluids, casts the sanguine into fevers, the weak and the feeble valetudinary into the hypo',
many

many of the able industrious poor into agues and fluxes, though not mortal, yet bringing them under the fear, and almost under the sight of, a grave. The poor cattle are also sensible of it, cows especially; whose milk becomes coagulated, thick, and viscid; a watery, stringy humour falling from their nostrils; their cheeks swelled, the pain forcing tears from their eyes in heavy drops. But be it remembered, that this is the state of the air only for a few years past, and not peculiar to this county.

Thunder-Storms are not very frequent. A little before Midsummer, in 1756, we had a very remarkable one; the lightning and explosions dreadful. It entered and demolished all the windows of the New Inn at *Chollerford-Bridge*, upon the banks of *North-Tyne*, except those in the kitchen, overturned a chest of drawers standing against the wall between two beds in a chamber on the first floor, did not touch the fore-part next the windows, but shattered the back-parts, not injuring the beds. The family in the kitchen were under great consternation. Mrs. *Lightfoot*, the landlord's wife, happened to have a child in her arms, with which under her surprize and terror, she fell to the ground, but providentially neither she or the child received the least harm.

We had a very uncommon *Thunder-Shower*, with astonishing flashes of lightning, on Friday afternoon, 18th June, 1760, at *Simonburn*; the air still, serene, and warm, the sky clear, except a black cloud. It continued three quarters of an hour. In that small space, the rivulet of *Simonburn* rose about fourteen feet perpendicular by *Nunwick-bridge*. Diminutive and scanty streamlets assumed in an instant almost the pomp of rivers. Huge rocks rolled in the waves, in company with large roots and trunks of trees, which were scattered on the adjoining meadows, and in a pleasant garden of Sir *Lancelot Allgood's* at *Nunwick*, where the foil, flowers, and various plants, were swept away, and a great deal of
other

other damage done to roads, fields, and hedges, not repaired without a considerable expence.

On Sunday evening, 12th July, 1761, there was another *Thunder-Shower* at *Newcastle* and *Rothbury*, such as had not been within any man's memory at the latter place, where the *Coquet* rose to an amazing height, entered the nursery and garden at *Rothbury-hall*, on an eminence, destroyed several thousand fir-plants, and left many cart loads of stones and pebbles in their room.

By the favour of our hills and mountains, the receptacles of winds, we are preserved from the more frequent visits of this dreadful artillery of the skies, lightning and thunder, which in a mineral country, like this, would otherwise be very common; the winds, which are nothing else but air agitated and put in motion by our all-powerful and wise Creator, drive before them and disperse the nitrous vapours and exhalations, and make a pure and salutary horizon.

The great autumnal storm in 1756, which was so general and fatal in other counties, was in this very boisterous, but did not do any other injury, besides making terrible slaughter, if I may so speak, of large and stately forest-trees in our woods and plantations.

Storms of Hail and Snow are frequent with us. In 1760, Dec. 24, about 6 o'clock in the evening, we had at *Simonburn* a heavy shower of hailstones of a peculiar form, of the size of the tip of a man's little finger, with a flat basis, angular and pointed.

Shrove-Sunday, 21st Feb. 1762, was very snowy and tempestuous; the snow driven into prodigious heaps in several places by a boisterous wind, sharp and piercing, filling our imaginations with fear for the safety of every living creature exposed to its unrelenting rigour.

Monday night, 8th March, 1762, and the next day, were much like that Sunday, both for snow and wind; the vallies and hollows rising to hills of snow among our mountains; and every where else we were presented with snow-prospects till Thursday-night following, when the scene was changed by rain and a high wind, which blowed very loud till morning, but the rain continued till Saturday, and a lowering, hazy sky completed the thaw. These two storms were general through the kingdom, and were fatal both by sea and land; ships and their cargoes, and the brave sailors, superior to all other dangers, perished in the sea, and many unfortunate persons were suddenly cut off.

About fourteen years ago, as the sun was crossing the line, the weather was so stormy and tempestuous, that the sea flowed and ebbed twice at one tide, at *Blyth*; the waves, in their approach to the rocks, magnificently terrible.

*Blight*s, of a pernicious nature, seldom infest this country. The worst that I have observed happened 31st May, 1759, and 1st June, 1760; both in the night. In the morning, the woods, and hedge-rows, and nursery-plants, particularly ashes, appeared in mourning, their young shoots and leaves scorched and shrivelled, and made coal-black by a piercing vapour and keen frosty air, the ground being covered with a hoar-frost in the morning of the first of June. Trees and shrubs of a hardy nature, whose shoots and leaves were better guarded against its virulence, escaped unhurt.

Polyllabical Echoes are generally thought worthy of remark. We have two of these, very curious and uncommon. One is under the bank on the north-side of the river *Coquet*, opposite to a farm-yard by Mr. *Clutterbuck's* summer-house, at *Warkworth*. It will return seven notes from a *German* flute in a still evening. In

a rough unpleasant one, 30th Sept. 1761, it repeated six very distinctly. The arch or pillar of the bridge seems to give it.

The other is at the same village, on an eminence by a small cottage on the same side of the river, opposite to the castle. It repeats the words,——

Arma Virumque cano—— (VIRG.)

very articulately, and six notes from the same instrument. The *locus polysonicus* seems to be the castle, from which it comes in such soft and pleasing harmony, as if the castle was enchanted, and it was the voice of a *Syren*.

C H A P. II.

O F T H E W A T E R S.

VIRGIL seems to attribute the rise of rivers to the *Ocean*, which, according to the *Greek* philosophy of *Thales*, he calls *the Parent of all Things*. He finely imagines a person to enter into the bowels of the earth to satisfy his curiosity, where he sees Nature in her subterraneous palace, on crystal thrones, and surveys fossil-woods, and groves of metal, and lakes and rivers taking their course to their mother-ocean *. But at the same time he observes, that such a research—*est tangere Limina Divum*; which may serve as an admonition not to be too inquisitive into natural causes, to explore them with modesty—*cum fas est*—when it may be done without presumption, and then imploring the divine blessing. He makes his *Aristæus* not to enter upon his subterraneous adventure without divine permission and authority. And, at length, he represents him in an act of religious adoration.

“ Oceano libemus—————precatur

“ Oceanum patrem rerum.” †

Discordant are the opinions of modern adventurers in this enquiry concerning the source of rivers and fountains; one, with the great *Mantuan*, his countryman, a *Florentine*, of noted sagacity and penetration, ascribes it to the sea by secret subterraneous

* *Virg. Geo. l. 4. v. 365, &c.*

† *Ibid. v. 381—2.*

currents *; another to subterraneous reservoirs †; some to rain and snow ‡; others to the Vapours of the sea, rain, and snow. This last system is most generally received, on the evidence of the great Dr. *Halley*, Mr. *Ray*, and Dr. *Plott* †.

The consideration of the difficulties attending both this and the other systems, undoubtedly led the learned *Stukeley* to speak of this subject with the piety and modesty of the divine *Mantuan*. He speaks of it, when he has the healing fountain of *Buxton* before him, as a secret still impenetrable by any human genius.

“ I observe, says he, that the whole country hereabouts is a rock of good lime-stone, which is the minera of the water’s heat and virtue; but how that comes to be calcined; by what refined chymistry of nature sulphur and steel is mixed with it; by what means it acquires and conserves with so much constancy this equable and mighty focus, together with the reason of fountains in general: I profess, in my sentiments, is one of the great arcana in philosophy hitherto inscrutable ||.”

I do not think that any one county in this island can boast of finer rivers and brooks than this. The *Tyne*, the *Blyth*, the *Wans-*

* *Gualtieri*; *Reflessioni sopra l’ Origine delle Fontane, descritte in Forma di Lettera, &c. Lucca, 1725, 8vo.*

† *Des Cartes*.

‡ *Valisneri, M. D. di Padua.*

Monf. Pet. Perrault, de l’ Academie Française, Oeuvres de Physique, &c. Amst. 1728. 2 vol. 4to.

Jf. Vossius de Nili et aliorum Fluminum Origine.

Bartholin. de Font. Fluv. Orig. Amst. 12mo: 1697.

‡ *Dr. Halley, Ph. Tr. No. 192.*

Ray’s Wisdom of God on the Creation, 8vo. p. 81.

Dr. Plott, de Orig. Font. &c. 8vo. Oxon. 1685.

|| *Itin. curios.*

beck, the *Coquet*, the *Aln*, and the *Tweed*, enter like sovereigns into the ocean with their tributaries, and all, but the *Coquet*, receive ships into their bosom with great pomp.

Our Lakes or Loughs of principal note are,

Crag	}	Lake.	Sweethope	}	Lake.
Greenley			Belfay		
Little Cow			Prestwick		
Bromley			Harebottle		
Halypike			Newham		
Grunden			Kim-mere		
Shilden					

Crag-Lake, so called from its situation under a range of steep rocks of whin-stone on the north side of the *Roman* wall, opposite to their station of *Little Chesters*, and to the 31st mile-stone on the military road, is half a mile long, and about 400 yards over. It is shallow at the east, and of a great depth at the west end; the bottom of sand and gravel; no reeds or rushes in it, except in the deepest part; a pleasant alpine farm on a slope by its eastern margin, and another at the west end, on a slope likewise, both belonging to *William Lowes*, of *Ridley-Hall*, Esq. In the range of rocks are many irregular perpendicular columns of a surprising height and magnitude, one standing by itself, like a *Druid* pillar, towards the west end. Some seem as if they were ready to fall, and others lie in amazing numbers on the bank below, to the very brink of the lake, beaten down by tempests. Among these are many curious plants. In the clefts, and on the broken sides of the taller columns, are the quicken-tree, the elder-tree, the burnet-rose, and the beautiful rose-bay willow-herb. In the hollows, the dove-coloured falcon with black pointed wings

annually rears up its young, making the rocks and water echo on the approach of danger with a harsh sonorous note, somewhat resembling that of a goose. Between the brink of the rocks, at the top, and the *Roman* wall, is a broad grass-terrace, from which, in looking down the steep, and upon the water, our minds are on a sudden filled with a reverential awe, and we are naturally led to think of our great Creator, especially in a still summer's evening, when the clouds are imaged by the water, representing castles, cities, groves, and forests, and these spired rocks, with their vegetable ornaments, in most wonderful grandeur and magnificence.

Greenley-Lake, so called from its lying at the foot of a fine green slope, is a mile and a half long, and about a quarter of a mile over in the broadest part, towards the middle. The bottom is of white sand and pebbles; the south-west end adorned with the double white, and the yellow, water-lily; an abundance of reeds and rushes by them cross the lake. That beautiful falcon, the bald buzzard, called by our shepherds, the bastard-eagle, breeds annually on the mosses near it. It is partly in view from the terrace above Crag-Lake. A boat was formerly kept in it for the pleasures of angling by its late owner, Sir *Edward Blacket*, of *Hexham*, Baronet.

Little Cow Lake, so called from its smallness and the cows drinking in it, and cooling their limbs among the weeds on its sides in sultry weather, is on the south side of *Greenley-Lake*, to which it is a sort of an appendage; there being a communication between them by a small current at the east end; a ridge of moor parting them, on which is a cottage, affording a view of both. It is a mile north-west from the *Roman* station of *House-steeds*.

Bromley-Lake is a mile north-east from the same station; and at the west end of the ridge of rocks at *Shewing-sheels*, by the *Roman wall*. It is a noble piece of water. It is a mile long, and half a mile broad; not a weed or a rush in it, except a few at the west end; the bottom of white sand and pebbles. On a slope at the south-east end is a ridge of rocks, in which is a natural stone-grotto, the roof of one entire stone, rising obliquely to the horizon, eighteen feet long, terminating in a point from a broad base; giving a full view of the lake, formed like a basin, with sloping banks. It is on the estate of *William Lowes*, of *Ridley-Hall*, Esq; and in the manor of *Sir Edward Blacket*, of *West Matfen*, Bart. as are the three lakes before described.

Halypike-Lake is two miles east from *Bromley*, and a mile north from *Shewing-sheels*. It is small, the bottom of sand and pebbles; the west end of a great depth, abounding with rushes, and the two water-lilies, the double white and yellow; the two galeated or hooded purple loose-strifes in a bog beyond them. It is on the estate and in the manor of *Sir Lancelot Allgood*, of *Nunwick*, Knt.

Grunden-Lake, so called from its situation on a low ground, den, or valley, (our northern people calling ground, *Grund*) is a mile south-east from the *Roman station* of *House-steeds*, and in view from it. It is long and narrow, stretching east and west about a mile; the bottom of white sand; of a great depth at the west, and shallow at the east, end.

Shilden-Lake, corruptly for *Sheel-den Lake*, i. e. the lake near the sheels or house by the den or valley of *South Tyne*, is near *Corbridge*, in sight from the thirteen mile-stone on the military road by the *Roman wall*, from which it is about a mile. It is about
half

half the size of *Bromley-lake*; the bottom muddy; very pleasant in summer.

Sweethope-Lake is about a quarter of a mile east from great *Waneyhouse-Crag*, near *Tone*. It is small and narrow; the bottom stony; a large marsh at the west end, which is over-flowed in winter. At the east end is a corn-mill which it supplies with water. It had a neat boat for the diversion of angling, which is now lying as a wreck on its banks; the boat-house also in ruins at the north-east end.

Belfay-lake is of about the size and shape of *Grunden-lake*, in a field by the road on the east side of the village.

Prestwick-Carr is near a hamlet of the same name by *Pont-Eland*. In summer it covers about ten acres of ground, but much more in winter. In a very dry summer it had so little water, that a great many roots of trees were visible, and in some the marks of the ax were easy to be distinguished.

Harebottle-Lake is about a mile west from the castle of *Harebottle*; formerly an alpine garrison, as its name imports, from the *Saxon Hare*, the station of the army. It is a small lake.

Newham-Lake, so called from its situation near a small village of that name, i. e. the lake by the *New Hamlet*, is near *Bambrough-castle*. It is a pretty large lake.

Kim-mere, i. e. the *Mere* or lake, by the *Kemb* or fort, of which there are the remains of one or two near it (*Mere* being a corruption of the *Latin Mare*, and *Kemb* a word used by the *Scotch* and *English* borderers to signify a strong-hold, designed for defence, and for drubbing and *kembing* an enemy, as they phrase it) is a

short mile south from *Eglingham*. It is a small, but pretty area of water; an abundance of that fragrant shrub, the *Sweet Gaul* or *Dutch Myrtle* on its banks. These lakes are all well stored with pike and perch, and some of them with dace and roach; the largest perch in *Crag-lake*.

Our *sanative* and *consecrated* springs are numerous. The spring of highest medical fame at present, and most frequented, is one between *Learmoth* and *Cornhill*. It is commonly called,

Cornhill-Well. It is of a ferruginous taste, not unpleasant. The sides and bottom are coated with yellow ochre, the martial earth, the *Residuum* or rust of iron. It is a powerful absorbent and solvent, as appears by the tinctures it gives with the following drugs. With powder of galls, an astringent, it yields a deep purple; with syrup of violets, a grass-green; with oil of tartar *per Deliquium*, or with spirit of sal ammoniac, volatile alcalies, a milk-white. Spirit of nitre, an acid saline liquor, makes no change in it. Experience has proved it excellent for curing inveterate, stubborn scurvies, and the gravel. A cold bath is erected near it, at the expence of *Henry Collingwood*, of *Cornhill*, Esq; neat, and cased with lead, filled and emptied by turning a cock. It is in a fine healthy country, by the rich and fertile haugh or vale of *Wark*, and the beautiful salmon-streams of the

Tweed, the fairest *Caledonian Flood* *.

At *Tweed-mouth*, is a sacred spring nearly allied to it in virtue, and of late much resorted to for the same complaints. It is called our *Lady's well*, being dedicated to *St. Mary*.

* *Brown's Piscat. Eclog. p. 98.*

A mile and a half east from *Rothbury*, by the turnpike-road to *Alnwick*, is a spring called, *Dibden-well*. It has a strong current; a yellow martial earth so copious by its adit, as to be taken up by handfulls. By it is a stone-bath. It is much used for feculent scorbutic eruptions, both by bathing, and drinking it with *Epsom* salt. It is a very cold spring in the hottest day in summer, of an irony taste.

There is another near the *West-Hall*, at *Belford*, dedicated to *St. Stephen*; used for the gravel, with *Castile-Soap*, and has been found an efficacious remedy.

At *Fleetham*, near *Bambrough*, is a spring much commended as a pectoral, and for obstructions. It was thought by a late eminent physician at *Berwick*, *Dr. Forster*, to have the flavour of the *Pyrmont-water*, and to have its virtues in an inferior degree.

In the Duke of *Northumberland's* park, at *Alnwick*, called *Huln-park*, is a spring found by trial to be of the same nature with the *Tunbridge-waters*.

On the brow of the hill at *Allen-dale* town, is a chalybeate spring; the *Terra Martialis*, or ochereous *Residuum*, copious upon the herbage by it.

At *Newbrough*, near *Hexham*, is a spring of the same kind; sacred, and dedicated to *St. Mary*.

There is another at *Jesmout*, near *Newcastle*; sacred also, and of the same dedication, walled round with stone; a saffron-yellow ochre appearing on the sides, and a blue vitrioline sediment at the bottom. It is a plentiful spring. It is made to fall into a stone-bath, a little below it. In the monastic times it was much
fre-

frequented by pilgrims. It is said then to have had as many steps down to it, as there are articles in the creed.

Below the garden of *William Swinburn*, of *Long Witton*, Esq; on the margin of the *Wansbeck*, to the north-east, is a winding path through a wood of fine young oaks, leading to three sacred medical fountains, called *Thurston-Wells*. They issue out of the bottom of a high ridge of rocks of coarse rag-stone. The western one is the largest and neatest; so full of yellow-ochre, both at the bottom, and by the adit, that it may be taken up with one's hand; under it a vitrioline sediment of a bluish grey. It has been found of great service in the cure of sore eyes, of obstructions, of the scurvy, and agues.

Under the brow of a hill at *East Unthbank*, on the banks of *South Tyne*, is a medical spring of similar virtues; the martial earth, both brown and yellow, copious on the stones and herbage by it. Experience, the best test of the nature of any spring, has proved it to be an excellent remedy for pectoral complaints; giving appetite, and promoting perspiration; also good for joint-tumours, and for agues; curing an ague, even when the famous Analeptic, the *Cortex Peruviana*, has failed. A well like this, and those at *Thurston*, a specific for agues, is described by *Dr. Scipio de Moulins* at *Canterbury* *.

We have a spring at *Acton*, near *Blanchland*, little inferior in medical virtues to the *Unthbank*-spring, especially as a pectoral, in removing obstructions, and restoring appetite.

Among the lead-mines, at *Allen-Heads*, is a medical spring, used with success for scorbutic fæculencies and the gravel. It

* Ph. Tr. No. 312.

is of an atramentous taste, owing to an alkaline cretaceous earth.

At the village of *Halywell*, near *Seaton-Delaval*, in a field called the *Park*, is a spring of similar qualities, and would undoubtedly be as efficaceous in the same complaints, but it is not put to any medical use that I hear of. It is of a strong atramentous taste, and turns to a deep purple with galls. It is dedicated to *St. Mary*, and is called the *Haly-Well*; from which the village takes its name.

In the stone-pavement of the rivulet, on the north-side, next the village, is a vitrioline spring, very perceivable in a dry summer, rising in perpendicular bubbles; a yellow ochre, or martial earth, plentiful on the pavement by it. It is of an irony taste.

There is another of the same kind a little higher up the rivulet, by a slate-quarry. They are both known to the neighbourhood, but not used. They give a purple with galls.

Besides these chalibeate vitrioline springs, we have others, which, from their remarkable charge of sulphur and fœtid taste, are called *Sulphur-Springs*.

By the rivulet of *Wark*, in *Tynedale*, near *Rose's Bower*, is a spring so impregnated with sulphur, that the scent of it is perceivable above two hundred yards in hot drougthy weather. A blue sediment is then at the bottom, which being rubbed on one's fingers makes them of the same colour. The sides are tinged with an ochreous yellow. The stones and herbage, washed by its current, are of a silvery hue. With an infusion of galls it turns to a deep purple, and with fyrup of violets to a faint green. It is unaffected with oil of tartar *per deliquium*, and with sal ammoniac.

It

It is much used for agues, the gravel, and other obstructions, for which it is found by experience to be effectual. It is under the brow of a hill, the sides and cover at top of unwrought freestone; of a triangular figure; shaded above with nut-bushes, and other brushwood, through which is a cart-road; the current to the north-east, into the rivulet of *Wark*, within a stone's cast, musical with its murmurs on the stone-pavement, and through broken rocks; the opposite banks, covered with wood, musical likewise in a summer's evening with the cooing of turtles: the Villa of *Rose's Bower* hard by, and in sight from it, on the brink of lofty precipices; a small streamlet having a fall from one of them into a large hollow, whose steep and rocky sides being shaded with various kinds of trees, the ash, birch, tall elms, and the quicken-tree, the white-thorn, and the verdent ivy, make it look like a bower, of difficult access; increasing in beauty by the sight of the rivulet of *Wark* falling from another rock just above, between a hanging bank of brushwood, and broken crags and cliffs, imaged by the water; the receptacle or basin of water under it of a considerable depth.

A quarter of a mile above the romantic ruin of *Staward le Peel*, on the edge of the river *Allen*, is a sulphur-spring, dedicated to *St. Mary*, called the *Haly-Well*. It is in the *Sinus* of a sloping freestone-rock, wherein are lodged large pellets of sulphur; the aperture and sides tinged by it with a silvery colour. It is of a nauseous foetid taste and smell. Being so near the *Allen*, the floods often encroach upon it, and force it to change its situation in the rock, breaking out again in some other aperture. The situation is extremely pleasant; a bank of tall oaks and other forest-trees on both sides of the river; an upright stone-pillar by it, fit to rest a book on; the river within

a few yards forming a cascade, called *Cyprus-Linn*; under it a large and deep basin.

On the western slope of a mountain, near *Knarefdale-Hall*, is a sulphur-spring, called *Snape-Well*. It is of a foetid taste, and so cold in the hottest day of summer, that to the touch it seems like ice. It is much used for chronical disorders, and the scurvy. It is a plentiful spring. By it is a stone-bath.

We have some springs which, from their remarkable charge of *Allum*, are called *Allum-Springs*.

Under the brow of the hill, about a mile north from *Simonburn*, is an *Allum-spring*, called *Conchilton-Well*. With powder of galls it turns black, as the blackest ink, and a grass-green with syrup of violets. It undergoes no change with oil of tartar *per deliquium*, or with spirit of sal ammoniac. It tastes strong of allum, is rough like it in the mouth, attended with a bitterness. It is used for agues and sore eyes, for which it is much commended. It is overflow'd by a small streamlet after great rains; and seems originally to have been the outburst of a coal-mine,—*Fons per accidens*. It was first observed and used by a poor man, from whom it has its name.

At *Swallowship*, near *Hexham*, is an *Allum-spring*, formerly of great note, but now neglected. To feeble and languid constitutions, oppressed with scorbutic fæculencies and obstructions, it has been known to give powerful and speedy relief. The widow of the late Reverend Mr. *Robley*, of *Simonburn*, was reduced to great weakness by scorbutic tumours in her legs, for which she drank the sulphur-waters at *Wardrew*, in *Cumberland*, without effect; but drinking those of this spring, she assured me, she was perfectly

fectly cured: and also affirmed, that a poor man, deprived of the use of his legs by the scurvy, and forced to walk with crutches, was cured at the same time, after having tried other means without success.

These are the chief sanative springs we have. It is an extraordinary providence, that in this cold northern region, where scorbutic disorders are so frequent, that we have so many such springs for our relief.

It is the caution of an eminent physician to forbear the use of spirit of vitriol, *Spiritus Nitri dulcis*, and such like acids, as a diuretic, in drinking mineral waters, unless in some hot inflammatory cases, to alter and diminish their force. To recover their strength when thus weakened, he recommends the infusion of an alcali-salt, such as volatile salt of hartshorn, or of sal ammoniac, or fixed salt of tartar, or of wormwood, which will restore their virtue and medical power. The use of *Lacticia*, or any kind of milk, he thinks so far from being injurious in the course of drinking them, that he prescribed milk to be given to puny stomachs in an evening with good effect*.

The learned naturalist, *Francesco Redi*, of *Arezzo*, in *Italy*, disapproves of low spirited persons drinking freely of them, for fear of injury from the mineral *Fæces*, which make sad work in the fluids of hypocondriacs †.

There are some sacred fountains with us of no reputed medical virtue, yet are held in a considerable degree of esteem and veneration, for their being antiently appointed to religious uses. There is one at

* *Frederick Stare*, M. D. Ph. Tr. No. 337.

† *Opere de Francesco Redi*, 4to. Florent. 1724.

Wall-Town, near the *Roman* station of *Caerworrán*, where *Paulinus* is said to have baptized King *Egbert*, and some thousands of his subjects. It has been walled round with freestone; some of the stones, neatly hewn, still lying by it. There is another at

Halystone, a place of early note on the first introduction of christianity amongst us; *Paulinus* being said to have baptized 3000 souls at it. This well is a beautiful basin of water, rising at the east end in bubbles perpendicular to the horizon, with fine green sand. The bottom is variegated with it and white sand. It is walled round with freestone, hewn-work, two or three courses still standing, shaded with trees and shrubs. It belonged to a priory of *Nuns*.

In a hanging wood, on the south side of the brook at *Simonburn*, is a well dedicated to

St. Mungo, or *St. Kentigern*, Bishop of *Glasgow*, whose life was written by *Joseline*, a monk of *Furness*, in *Lancashire*, which is in the *British* Museum among the Books of Sir *John Cotton*.

Among the sea-rocks, on the north side of the church at *Newbiggen*, is a sacred fresh-water spring, called, *St. Mary's* well, over which the tide flows.

The springs dedicated to the honour of *St. Mary*, are numerous. There is one at *Huln-abbey*, near *Alnwick*, and another at *Tillmouth*.

The practice of consecrating springs is very ancient. Sometimes they were consecrated for a living memorial of extraordinary mercies received from heaven, in the patriarchal ages; sometimes for a testimony of important *Fœdera*, compacts or covenants, entered into among men; and sometimes for their healing

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ing virtue. *Hagar*, the mother of *Ishmael*, addressing herself to God by a fountain in her distress, and being visited by an angel, and receiving consolation, she called it, *Beer-la-hai-roi*, that is, *the well of him that liveth and seeth me*, to perpetuate the memory of his providential care over her *. *Abraham* entering into a league or covenant with *Abimeleck*, mutually strengthened and confirmed with an oath by a fountain, he called it *Beer-sheba*, i. e. *the well of the oath*, and by this well he planted a grove, and called there on the name of the Lord, the everlasting God †.

The Roman festival *Juturnalia* was instituted in honour of a fannative fountain, called, *Juturna*, a *juvando*, near the river *Nimicus* ‡.

Many springs and rivers were consecrated by the Romans for their religious rites, for their lustrations at funerals and sacrifices, and before they entered their *Sacraria*, or temples. Of this kind was their *Fons Blandusie* †, and their *Flumen Clitumni* ||. And of this kind, probably, is their well here at their station of *Carraw-brough*, called,

The Roman well. It is between two sloping fields, on the west side of the station, just under it, to the south of their famous wall, about 400 or 500 yards from the 25th mile-stone on the military road; square, and faced with freestone, of hewn-work;

* Gen. v. xvii. 7, 13, 14.

† — xxi. v. 27, &c.

‡ *Nympha Decus Fluviorum, Animo gratissima nostra.* VIRG. ÆN. I. xii. v. 205.

Queen of the fountains and streams, and far above

The race of Latian nymphs in Juno's love.

PITT.

‡ Hor. Od. 13. l. 13.

|| Virg. Geo. 2. v. 146.

and has either had a dome over it, or been walled round; the stones now lying about it, nearly covered with water from the conduit's being stopt, and demolished by the carelessness or ignorance of a plowman, as I am informed; it is full up to the brim, and overflowing, in the hottest summer; and by that man's indiscretion, he that would satisfy his curiosity to see it, must risque the wetting his feet, especially in winter, or in a rainy season.

Our *Northumberland-Saxons*, in their Pagan unconverted state, had their consecrated lakes and rivers. Such was *Haly-pike* lake; and such was the river *Wan's-beck*, a contraction of *Woden's-beck*, from *Woden*, the *Saxon* Deity.

Springs remarkable for their lapidescent quality, converting plants into stone, and assuming their image and figure, are not very plentiful with us. At *Bedlington*, is one called, *Spinner's* well.

On the north side of the brook at *Simonburn*, below the school-house, is a water which has this property, attended with this singular circumstance, that its terrene salts make a change in some plants, and not in others, though growing in a group together, *Mosses* and *Liverworts* becoming stony, and *Primroses* and *Geraniums* holding up their heads, and retaining their native form and hue. The reason assigned for this phenomenon by a learned naturalist is this: the former being destitute of congenial salt, readily admit into their pores adventitious ones; the other being already furnished with it, will admit of no heterogeneous accession*.

In *Honeyclugh*, near *Chesterwood*, below a small cataract, there are two rocks in a manner formed of incrustations by the continual

* Dr. Plot's *Staffordshire*.

dripping of a petrifying water; the incrustations of various colours, with small hollows and arches of fretwork and petrified moss. They are two of the most beautiful groups of petrifications that I have observed any where with us.

Cateracts, or *Water-falls*, present themselves in many places among our mountains and hills, in great magnificence and beauty. The rivulet of *Chetlup*, near the high mountain *Reed-squire*, has a fall of seventy feet. It is called *Chetlup-Spout*.

The *Coquet*, a mile below *Rothbury*, by a corn-mill and a slate-quarry, had formerly a great fall, but has been lowered to favour the ascent of the salmon up the stream. A few yards lower down, that fine river is confined between two rocks, and may be stept over with great ease, entering them with musical sympathy from little slopes and precipices. Its contracted current is here called

The *Thrum*. It is in length about sixty yards; in breadth one yard, where narrowest, and there four yards deep, when the river is low, and the summer dry and fine. The mountain-torrents or floods have pierced the rocks, of ordinary freestone, into numerous holes, some of them resembling little furnaces or caldrons.

Near the mountain of *Little-Cheviot*, three miles north-west from *Ingram*, is a cateract, called,

Linhope-Linn; also *Roughting-Linn*, from its noise in its fall after great rains; the word *roughting* being also used by the borderers, on hearing the lowing and bellowing of cattle. It is nearly perpendicular, forty-seven feet and a half, from a rock of brown whin, spotted with green; the basin seven feet over, and in depth

fifteen feet, measured by a line and plummet, in September, 1761; the weather fine, and the water low. It is a trout-stream, pretty sizeable trouts being taken in it above the fall. It was the custom of the late Colonel Moor, of *Halystone*, to put them into such places, obscure alpine rivulets and lakes.

A mile to the north of *Bellingham*, is a cataract, called,

Hareshaw-Linn. The fall is about thirty feet. The precipices below rise to an amazing and frightful height, in a semilunar form, of the arenaceous laminated kind; the *Sorbus aucuparia*, the oak, and other trees, fastening their roots in them; the ivy, capillary, and crustaceous plants, variegating their sides. By the brook, and in the middle of it, are rocks fallen from them of a vast magnitude, upon whose tops are *Vaccinia nigra*, *Fragaria*, and the *Burnet* rose, and other plants. In the eastern precipice, by the water-fall, is a semicircular stone-grotto, with a stone-seat in it, the canopy over it large, but from the nature of the rock too dangerous to be frequented for pleasure, the loose parting stones being objects of horror.

At *Tecket*, near *Simonburn*, is a water-fall between two dreadful precipices, which seem every moment as if they would tumble down. Above it, the water runs on a natural stone-pavement for a considerable space; and at a small distance from it, on a rising ground, pleasantly facing the south sun, is a natural stone-grotto, with a stone-seat in it; and at one corner a cavity, resembling a stone-cupboard. The roof, or canopy, is one solid rock of a vast magnitude, of the coarse rag or millstone-grit, resting with its north end in the ground. So many uncommon objects presenting themselves to our view, render this a very romantic spot, fill our minds alternately with wonder and amazement,
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and are monuments of the tremendous power of that Being who formed them, pointing out to us obedience, and an humble dependence upon him.

Below the water-fall, opposite to *Tecket*, the brook enters a subterraneous cavity under a great rock. It keeps its secret course for a mile and a half, and then rises in perpendicular bubbles, in a field near *Nunwick* Mill, after supplying which with its strong and clear stream, it falls into *North Tyne*. After heavy rains, and great snows, the greatest part of it is carried off in a strong and rapid current past *Tecket*, between two hanging banks of wood, where, by various falls from broken rocks, it forms a most romantic and beautiful scene.

C H A P. III.

O F E A R T H S.

W HETHER Earth or Water contribute most to the growth of vegetables, has been a question much debated by physiologists. Antient sages have fancied water to be the mother to earth itself. Those great moderns, Mr. *Boyle* and the Lord *Bacon*, have taken not a little pains to elucidate her maternal right; but the learned Dr. *Woodward* has, by several curious experiments, evinced, That water has no claim to a priority in natural productions; that they are rather coadjutors; that in all water there is a terrestrial matter fit for vegetation, in lesser or greater proportions*. Some plants are more vigorous, and their flowers more vivid and glowing, and some trees of a bolder stem, and of a more glossy and luxuriant leaf, which have but a little earth and moisture; others require a greater store of both; and we see a variety of different sorts, both annual and perennial, the root, foliage, and the flowers, receiving their growth and beauty from the *pabulum* they find in the same spot of ground, and from the ambient air and dews; but by the most vigilant attention we cannot distinguish the terrene salts and juices closely approaching their several roots. If we take away the earth from about them, and put in fresh, we see them thrive with great luxuriance and beauty, though of a different genus, and containing different salts in their composition. It is therefore with great probability imagined, that the contextures of their

* Thoughts and Experiments on Vegetation, by Dr. *Woodward*, Ph. Tr. No. 253.

lovely forms, from the first germinating of the seed, however minute and invisible to our eyes, are the natural limbeckes, wherein the terrene salts, water, air, rain, and dew, are digested in several varieties.

Many families of plants, both herbaceous and arboreſcent, are vigorous and healthy in the chinks and crevices, and ſummits of rocks and precipices, with little viſible earth to ſuſtain them; and many of the marine tribes on teſtaceous bodies, both fed with the nutriment they find in ſuch ſituations. Their feeds, roots, ſtems and leaves, are the proper ſtrainers to generate their fluids, and to concrete them into their ſeveral ſalts, to which the external compreſſing air in the ſeveral changes of ſummer, autumn and winter, are auxiliars till they come to maturity. The native fluid and ſap in trees hardens into timber, and its annual revolutions are prettily diſplayed in circles. Its original principles are earth, water, and air, fermented into peculiar ſalts by more curious ſtrainers, and by more ſubtil menſtruums than art hath hitherto diſcovered.

Huſbandry and planting have of late years roſe to a conſiderable degree of perfection in ſome parts with us. Our vale-earths are ſo naturally rich, that by a moderate labour they anſwer our moſt ſanguine expectations. I cannot but lament the ſteril aſpect of many thouſand acres in the weſt, and north-weſt, and of ſome tracts alſo in the midland and maritime parts, all capable, by diviſion and incloſure, of the ornaments of tillage or planting. The bringing them thus under cultivation, inſtead of being oppreſſive to the poor, as alleged by the inconfiderate, would raiſe them from indigence and poverty, to competent and eaſy circumſtances. The very planting of large portions of heaths and hills, and the making roads of pleaſure or carriage to them,
would

would find employment for a multitude of poor, whose families would otherwise be starving by the precarious dependence on the milch of dwarf-cows, horses, and sheep, lean and hunger-starved, ranging in swarms on the wastes. Let the rocky hills of *Brisley* near *Alnwick*, of *Rothley*, of *Camboe*, and the grounds about *Wallington*, be testimonies of the felicity and smiles of the poor employed in planting them, and making roads; comfortably fed and clothed! Let the divided commons of *Hexhamshire*, of *Schilden*, of *Simonburn*, and several wastes by the military road, be remembered, and paralleled with the common and township of *Wark* upon *North Tyne* *, for instance, and with the large one above *Bellingham*, and its neighbouring townships. In the former, agriculture exalts her head; the plowmen, jolly, rosy, and robust; some of them in as happy a state as the famed *Coritius*, described by the excellent *Mantuan* in his system of husbandry †. In the latter are all the marks of beggary and want, meagre faces, empty cupboards, whole families of both sexes, and of all ages, taking their weekly, monthly, and quarterly circuits, and levying contributions by alms on their happier neighbours; multitudes of them wandering, not from inclination, but called abroad by hunger and pinching necessity.

This is the real state of our improved and unimproved commons. Who that loves his country, and is moved at the prospect of so much wretchedness; who that prefers plenty to poverty, pleasure to distress, a society to a desert, would not give his voice for a general inclosure and distinction of this vague property, and rescue it from so much wretchedness? We should presently see a sort of new creation, new towns, a new people, busy and industrious, well clothed, well fed, enough for the culture of rural

* Since divided.

† Virg. Geo.

and domestic arts, and enough for national service; an accession of wealth and felicity to the subject, and of power, opulence, and greatness to the sovereign. The accomplishing this glorious work will, I hope, be the care of those, whose province and interest it is to consider the national good, to diffuse and distribute public and private blessings, to promote population, and an increase to his Majesty of industrious, loyal, and faithful subjects.

We cannot stand excused, if we deny to our country those improvements, which it demands from its natural advantages. It is open to the sea. The shores, at certain seasons, are covered with the sea-wreck; many of our creeks with sea-shells. Many of our fields and commons abound with limestone; and not a few with excellent cretaceous earths or marles.

The *Sea-Wreck*, for a light soil, designed for barley, or oats, is a rich manure for two or three crops, giving an extraordinary increase.

Sea-Shells, for all kinds of soil, but a sandy one, are a good and permanent manure. The antient practice was to burn them*, but they are found by experience to produce better crops of corn without it. The corn is fair and well-bodied. The herbage is thick, short, sweet and fine, mixed with daisies and flowers, recreating both the tenant and the passenger with their fragrant odours.

The *Calx viva*, or limestone, affords a valuable manure. Strong lands manured with it, bring, for two or three seasons, fair and beautiful crops of corn, especially wheat, barley, and peas; and then converted to grafs, produce a short, sweet, and lovely

* Ray's Select Remains, Itin. iii. p. 245.

fort, mixed with daifies, and yellow, crimson, and white perennial clovers, eat up to the very roots by the sheep and cattle. Our limestone earths, a natural loam, may be distinguished from all others in the spring by their herbage, enamelled and tissued with a variety of odoriferous and fanative plants, the primrose, cowslip, and oxlip, daifies, and violets, clovers, and all the self-heals, both carmine, purple, and white, giving a delicate flavour to the mutton fed with it, a fine grain and texture, and colour, beautifully marbled with fat and lean, affording rich gravies, and by nice and curious palates preferred to venison. Our dairies by such herbage have a preference to all others; the butter as yellow as gold, and of a fragrant sweetness; the milk light, and free from gross juices, and of a pleasant taste.

It is surprising, that turnep-husbandry should be so much in fashion, which spoils the dairy, and the shambles, sends such gross-flavoured milk, cream, and butter, beef and mutton, to our tables. It is well enough for a *Succedaneum* in the cold winter-months, or in unfavourable summers for grass, but to give it so much of our care and attention, to the neglect of other cultures, the cherishing of natural herbage, can be nothing but the effect of avarice or sloth.

Cretaceous earths or *Marles* are of admirable use in husbandry, in the culture of all kinds of lands, designed either for grass or corn. We have them of various colours, and of various degrees of strength and goodness, in several places.

A reddish-brown marle is in a considerable quantity at *Ilberton*, near *Rodham*. It is of a firm and close texture, unctuous in handling, slightly colouring the fingers, and slowly diffusible in water, It melts in the mouth, and has no disagreeable taste; pure, and
free

free from grittiness. Dry, and scraped, it shews a glossy polite surface. It effervesces with *Aqua fortis*. In the fire it acquires a brighter colour. It is a good manure for light hungry lands.

An ashen blue marle, with a slight admixture of a pale yellow, is at *Chillingham*, but not plentifully. It is heavy, of a compact texture, and unctuous to the touch. It makes an easy solution in water, and is of a sweet astringent taste, free from grittiness. Depurated, and worked into a paste, it is ductile, and has a glossy beautiful surface on being cut through with a knife. Applied to the busts of coins and sygnets, it takes them off easily, and shews their beauties and defects with extraordinary exactness. It effervesces with *Aqua fortis*. In the fire it acquires a considerable hardness, and a duller colour, with a slight cast of a reddish-brown. It is a good manure for light, poor grounds. It is used in taking grease out of boards and woollens.

In a great marle-pit at *Etall*, by the road to *Ford*, on the left hand, is a stratum of dusky reddish-brown marle. It is heavy, and shattery, on being cut through with a spade; unctuous to the touch, but does not colour the fingers; melts slowly in the mouth, and seems between the teeth like hard soap, pure, and free from grittiness; slowly diffusible in water. Depurated, and worked into a paste, it cuts through with a glossy surface. It does not effervesce with *Aqua fortis*. It crackles in the fire, and acquires a great hardness and a dull red.

In the same pit is a stratum of friable greenish-yellow marle. It makes a quick solution in water, and sends up a great number of bubbles. Dry, it powders the fingers. It effervesces with *Aqua fortis*. In the fire it acquires an orange-colour, and a more

shattery texture. Great quantities of it, and of the former, have been digged for a manure.

A friable ash-coloured marle, with a slight admixture of yellow, is on the common adjoining to a farm, called, the *Stone-House*, by the road-side, near *Shitlington-Hall*, in *Tynedale*. It is in a stratum of a considerable thickness. It is heavy, and moderately friable; falls in shattery pieces on being cut with a spade; colours the hands, and is freely diffusible in water. Depurated, it works pleasantly into a paste, not viscid or tenaceous. Smoothed with a knife, and cast into a slow fire, it acquires a pale whitish-red colour, and a fine skin, equalling some of the *Roman*, unglazed, figuline vessels that I have seen fragments of at their stations of *Condercum* and *Corcester*. It is well worth the trial for the better sort of pottery, as it is to be had in sufficient quantities. It does not effervesce with *Aqua fortis*. It would be a good manure, but is put to no use at present that I know of.

On the edge of the brook above *Tecket*, in the grounds belonging to the small hamlet of *Overton*, is a friable whitish-yellow marle. It is harsh to the touch, colours the hands, diffuses freely in water, and sends up many bubbles. It does not effervesce with *Aqua fortis*. In the fire it acquires a great hardness, and a duller colour. It is used to give hearth-stones and chimney-pieces a stone-colour. To the inclosed commons now under culture, it might seem to be no contemptible manure; but, I suppose, the great plenty of lime is the occasion of its neglect.

Just under the hill before the farm-house at *West-wood*, near *Hexham*, is a friable white marle. It was only lately discovered in making a cut for a fence. It is in a kind of bog; the stratum three yards thick; great numbers of shells of the small fresh water

water turbo, or whilk, immerfed in it. It is unctuous, and cuts through with a fhining furface; colours the hands; diffufes in water freely, and is very gritty. Dry, it is powdery and rough. It effervesces with *aqua fortis*. In the fire it acquires a confiderable hardnefs, and a duller colour. It is little ufed as a manure, for the fame reafon, probably, that the former is not; lime being had in great plenty in the neighbourhood.

A friable grey marle, with the fame kind of fhells, is in a large boggy area by a farm, called *Sunnylaws*, near *Wark*, in *Glen-dale*; the stratum of a confiderable thicknefs. It is heavy, unctuous, and ftains the hands; diffufes freely in water, with a hissing noife, and burfts into a fine powder, with hardly any grittinefs. Dry, it is powdery, and crumbles between the fingers. It makes a violent effervescence with *aqua fortis*. In the fire it crackles a little, and acquires a more brittle texture, and a bluish-grey colour. It is ufed as a manure, and is accounted excellent. It has not been long difcovered.

There is a variety of it at *Grindon*, near *Norham*, with the fame kind of fhells.

I am informed by my worthy friend, *Henry Collingwood*, of *Cornhill*, Efq; that he has alfo a variety of it with thefe fhells on his eftate at that place.

A brownifh-red ftony marle is in confiderable quantities at *Ilderton*. It is heavy, and with fome difficulty diffufible in water. It breaks slowly in the mouth with fome gritty particles, of a harfh and naufeous tafte. Depurated, and worked into a pafte, it cuts through with a glossy furface. It effervesces with *aqua fortis*. In the fire it crackles and burfts, and acquires a great hardnefs, and a dull red colour.

These are the natural advantages and encouragements for husbandry with us. The present state of it, improved soils, and method of culture, shall be our next consideration.

The vale between *Aldston-Moor* and *Newcastle* upon *Tyne*, is a very rich natural soil, well wooded, watered by the *Tyne*, and a variety of musical streamlets, turns greatly to the profit of the husbandman, grows remarkably fine wheat, and such luxuriant, sweet, and fattening grass, that an ox, fed at *Bywell*, and killed at *Corbridge*, 1756, weighed, when cut in quarters, 112 stone. The manure chiefly used in this vale is limestone, burnt in large kilns, generally built of stone.

About *Newcastle*, a cold and hungry clay prevails, yet every field appears by culture like a garden, plentifully manured with dungs, some native, and vast quantities extraneous, brought at an easy expence from *London*, by way of ballast in the coal-ships.

The sea-coast is chiefly a strong clay, manured about *Whitley* with lime; to be had no where else between the *Tyne* and *Coquet*, east of the post-road.

Many of the farmers between *Hartley-Pans* and the *Coquet* procure limestone in small floops from *Sunderland* in the bishoprick of *Durham*; with which, and the sea-wreck laid in heaps and rotted, they have good crops of all sorts of grain.

From the *Coquet* to the *Tweed*, the ground is annually laden with valuable grain, peas, beans, barley and wheat, and with such feeding grass, that some of the largest and fattest oxen are fold there, which are commonly fold to the butchers of *North-Shields*, for the ships in the coal-trade, and to the contractors of
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the navy. The chief manure is limestone, had in great plenty in several quarries.

The banks of the river *Tweed* in *Norhamshire*, and about *Wark* and *Carham*, are a fine fertile loam; the manures chiefly lime and marles.

Glen-dale is mostly a light, arenaceous brown earth, improved with dungs and lime; the crops rye, barley, peas, and wheat.

The vales of *Whitingham*, *Wallington*, and *North Tyne*, are a good soil, argillaceous in general, but in some places a brown loam and gravel, especially in the low shadowy meadows, by running streams.

After this representation of the state of husbandry, of the improved soils, and method of culture amongst us, I shall now take notice of our earths which are of use in other arts.

The white soap-earth, or *Steatites*, the *Parætonium* of Authors (*a*), is found in small veins on *Calleley-hill*. It is of a beautiful white, of a close texture, and glossy surface, when cut, feeling soft and unctuous to the fingers, but not colouring them; breaks freely; melts in the mouth into a substance like cream, and in water is diffusible, making a slight ebullition; ductile and tough under moisture. It does not effervesce with *aqua fortis*. In the fire it crackles and bursts, acquires a moderate hardness and a duller colour. It was one of the native colours used by the antients in

(*a*) *Steatites quæ Parætonium antiquorum*. Da Costa, Nat. Hist. Foss. p. 35. N^o. 13. Woodw. Cat. Foss. c. 2. 13.

Argilla albissima ponderosa tenax. Quæ *Parætonium* Authorum. Hill. Hist. Foss. p. 17. No. 1.

Parætonium vel Parætonion. Plin. Hist. Nat. l. 33. c. 5. et l. 35. c. 6.

painting in *Fresco*, for which they held it in great esteem. It is supposed not to have been in any plenty with them, as they are said to have adulterated it with the Cimolia. They had it from *Cirene*, from the island of *Crete*, and from *Parætonium* in *Ægypt*; from which two last places it obtained the name of *Cretan Earth*, and *Parætonium*. It is only used at *Calleley* in whitening hearth-stones and chimney-pieces.

The purple and white soap-earth, the *Steatites vera* (*b*), is found in veins on the same hill, by the road-side. It is white, with streaks of different degrees of purple. It is of a fine, close, and equal texture, and glossy surface; soft and unctuous in handling, not colouring the fingers; not melting in the mouth, nor diffusible in water. Cut through in the vein, it breaks into irregular pieces. It does not effervesce with *Aqua fortis*. In the fire it acquires a considerable hardness. From its resemblance to hard soap, it has its name of soap-earth; and the name of *Steatites*, from *στέαρ*, suet, from its likeness to the fat of animals. The ancients called it *Cimolia*, from the island *Cimolus*, now called *Argentire*, where it is found in great abundance.

There is a variety of it at the same place of a beautiful peach-blossom colour.

(*b*) *Steatites vera*. Da Costa. *Hist. Foss.* p. 36. No. 14.

Argilla indurata albo-purpurea lævis, Steatites recentiorum, Cimolea purpurascens antiquorum. Hill. *Hist. Foss.* p. 22. No. 11.

Cimolea ad purpuram vergens. Plin. *Hist. Nat.* l. 35. c. 17.

Ollaris fibris acerosis friabilibus incarnatus; soapy-rock Cornubensibus. Gronov. *Ind. Supell. Lapid.* p. 12.

Terra Cimolia alia ad purpureum vergens, ex Britannia et Ilva sub nomine boli candidi et carnei. Mercat. *Met. Vat.* p. 23.

These stony faponaceous earths being somewhat of a talcy constitution, are classed by *Linneus*, and others, among talcy fossils; but the justly celebrated *Da Costa*, and *Dr. Hill*, have referred them to the class of clays, as having on trial all the properties of an indurated clay.

It is said this beautiful species of clays enters into the composition of the porcelain made at *Worcester*; of the art of making which, and the true substances used for that purpose by the *Chinese*, we have an excellent and curious account by *Monfieur de Reaumer (c)*.

On the shores of our alpine brooks and rivers we often find a species of this fossil so remarkably lapidescent, and so elegantly variegated, as to carry the appearance of a marble. It is called by some of our common people *Clay-marble*. It is the *Morochtus* of authors (*d*); of which I have met with several varieties.

1st. Of a sky-colour, elegantly clouded with a light and deep red, with an arborefcnt delineation like the trunk of a tree, and a figure somewhat like a bird at the top of it, in the attitude of taking wing. From the shore of the brook at *Goston*.

2^{dly}. Of a grey and red colour, in lighter and deeper shades, with bluish-black spots and *Dentrite*, and the figure of an animal, resembling a pig, in the attitude of swimming.

(c) Hist. et Mem. de l'Acad. Roy. des Sciences pour 1727.

(d) Morochtus. In Germania, et Anglia, reperitur. Charlet. Foss. p. 30. n. 14.

Steatites tertia. Da Costa. Hist. Foss. p. 40. n. 16.

Morochtus, Schmeerstein Germ. Bruckm. Magn. Dei in Loc. subter. Vol. I. p. 84, and 87.

Morettum album rectius Porcellana nativa. Bruckm. Epist. Cent. ii. Ep. 100. p. 1244. n. 10. et seq.

3^{dly}, Of

3dly. Of a bluish-black, variegated with red and white.

4thly. Of an ashen colour, with two different shades of purple, and arborescent *friae* or *dendritæ* of a dark purple.

5thly. Of a fky colour and carmine, with deep purple *friae*. These four from the shore of the brook below *Simonburn-castle*. The last is not unfrequent on the shore of *North Tyne*, by the *Strother-house*, below *Chipchace-mill*.

Another species of this fossil, the *Melitites* of the Antients (*e*) is sometimes found on the same shores. The ground-colour is a fair pale yellow. I met with the following varieties of it.

1st. Of a light straw-colour, with beautiful purple veins.

2dly. Of a straw-colour, variegated with red, and elegantly punctated with black. Both these from the shore of the brook at *Goston*.

3dly. Yellow, with a mixture of red, diffused in clouds, and zones or circles of red, edged with yellow, resembling little flowers, of the size of a sixpence; not superficial, but pervading the whole substance. From the same shore.

Beautiful varieties of it are also not unfrequent on the shore of *North Tyne* below *Chipchace-mill*, and on the shore of the brook below *Simonburn-castle*, especially after floods.

Rubbed on a stone with water, all the kinds yield a milky, sweet solution, like cream; from which property the *Melitites* has

(*e*) *Steatites indurata Melitites dicta*. Da Costa. Hist. Foss. p. 41. n. 17.

Argilla indurata albo-flavesccens lævis, quæ *Melitites Antiquorum*, Hill. Hist. Foss. p. 24. n. 14.

its name, from $\mu\epsilon\lambda\iota$, *Honey*. Drawn on a board, they make a white line. They do not effervesce with *Aqua fortis*. Under proper management, they are capable of a fine polish. Drinking-cups, and other things, were formerly made of them abroad, in the *Margraviate of Bayruth*, polished after a curious manner, but the art is said to be now near lost. They are used in making the finest *Porcelain*, for which they are excellently well qualified; the talc in them being proof against fire, and preventing a perfect vitrification.

Mineral Agaric, or *Lac Lunæ*, a fine loose friable earth or chalk, the *Seleneusia* of the *Antients* (*b*), is found plentifully in the perpendicular and horizontal fissures of a freestone-quarry on the west side of *Hall-Barns*, near *Simonburn*. It lies in the form of a farinaceous powder, on thin, sparry plates. It is of a bright white colour. It is extremely soft in handling, colours the fingers, melts freely in the mouth without the least grittiness. In water it makes an ebullition, and gives it a milky colour. It makes a violent effervescence with *Aqua fortis*. It was valued among the antients as an astringent, and used in hæmorrhages. They used it also as a cosmetic, to cleanse the skin, and deface wrinkles. *Scilly* affords the finest, from which they had it. The *Germans* are said to have used it with success *externally*, in drying all kinds of ulcers; and *internally*, in all diseases proceeding from the acids; in hæmorrhages, and pestilential or malignant fevers. It is commended as an excellent absorbent.

(*f*) *Creta fungosa abissinica, Agaricus mineralis, et Lac Lunæ dicta. Da Costa. Hist. Foss. p. 30. n. 6.*

Stenomarga. Agricol. 378.

Terra Seleneusia. Matth. 1392.

Lac Lunæ. Plot's Oxfordshire, c. 3. p. 60.

Woodw. Meth. of Foss. p. 4. n. 20.

———— *Cat. A. a. 62. Cat. 1. a. 49, et Cat. 1. a. 28, et 29.*

At a place called *Black Sheel-Bog*, near a coal-work, two miles south from *Haltwiesel*, is an argillaceous pale yellow earth, mixed with white, and spangled with flat talcy particles. It is unctuous in handling, slightly colours the fingers, and is easily broken. In the mouth it is gritty, and of a nauseous taste, which goes off with a kind of sweetness. In a glass of water it bursts into a powder, and stains it with a bright yellow. Depurated, and worked into a paste, it is of the same colour, and of great tenacity. It does not effervesce with *Aqua fortis*. In the fire it acquires a stony hardness, and a light red colour, variegated with white, looking like a marble. The floors of the *Roman* ovens at their station of *Caerworrán* seem to have been made with it. It is used by skinners and glovers in dressing and colouring their leather; for which use it is carried in great quantities so far as *Westmorland*.

There is a vein of the same kind by the brick clay-pit near the *Highb-Sheels* on *Hexham*-common; many loads of which are carried to *Newcastle* for the use of the same trades. It is a species of Fuller's earth.

At *West Thurston*, near *Felton*, is an argillaceous earth of an ash-colour. It is of a dense compact texture, unctuous to the touch, melts slowly on the tongue, with a little grittiness; breaks and moulders in water with difficulty. Depurated and worked into a paste, it assumes a milk-white colour, and cuts through with a glossy surface, and on being smoothed with a knife, has a fine skin when dry. It does not effervesce with *Aqua fortis*. In the fire it acquires a dull white colour. It is used at the glass-houses in *Newcastle* for making furnaces, or vessels, that will bear an intense fire; for which use it is not inferior to any in *Britain*, in
the

the opinion of Dr. *Woodward* (*g*), and only rivalled by the *Sturbridge-clay*. It has been worked for many years, and still holds its reputation. The mine is about twenty fathom deep; the clay-vein three feet thick, under a variety of strata, one of coal; it is lett, worked, and sold by the ton; yielding 3 l. per ton.

On *Acome-Fell*, near *Hexham*, is a brown argillaceous earth, with a yellowish cast. It is harsh to the touch, tough, and ductile. Thrown into water, it makes an ebullition, with a slight noise, and after some time moulders to a powder, a little gritty. It effervesces with *Aqua fortis*. In the fire it acquires a dull reddish-brown. It was lately used in making a fine black earthen ware, by a person well skilled in the figuline art from *Staffordshire*.

The *Rubrica molliuscula*, the softer reddle (*b*), is not unfrequent. It is heavy and of a compact texture, unctuous, and staining the fingers; harsh to the taste, and somewhat gritty. It is diffusible in water, and gives it a deep claret colour. Depurated, and worked into a paste, it cuts through with a glossy surface. It does not effervesce with *Aqua fortis*. In the fire it acquires no change of colour. It is the soft clay iron-ore of Dr. *Woodward* (*l*). The miners call it the *Mother of the Mine*. Others call it *Smit*, from their marking their sheep with it. It is used by pain-

(*g*) Cat. of Foss.

(*b*) Argilla saturate rubra unctuosissima. Da Costa. Hist. Foss. p. 5. No. 3.

Marga ponderosa rubra mollis, quæ rubrica fabrilis Authorum. Hill. Hist. Foss. p. 47, No. 5.

Rubrica fabrilis. Merret. Pin. Rer. Nat. Brit. p. 218.

Charlet. de Foss. p. 219. No. 3.

(*i*) Woodw. Meth. of Foss. p. 2. No. 6.

----- Cat. A. 95, et 96.

ters, and makes a red little inferior to the *Indian* red earth. This here described was taken out of the cavity of a large free-stone.

An indurated deep red ochre, the *Rubrica duriuscula*, the harder reddle, or red chalk of authors (*k*), is dug among the sea-rocks at *Bednel*. It is heavy, of a firm, compact, and even texture; of a smooth surface, and somewhat unctuous; stains the hands extremely much; melts freely in the mouth, of an astringent taste, pure, and free from grittiness; makes no ebullition in water, and with difficulty diffuses or moulders to pieces in it. It does not effervesce with *Aqua fortis*. In the fire it acquires an additional hardness, and a darker colour.

It is highly valued by painters and other artificers for its fine colour. It is said to make excellent crayons, but not to mix with oil fit for painting. In medicine, it is of great use among the *Germans*. They use it for the same intentions as the *Hematites*, in all kinds of fluxes, as hæmorrhages, dysenteries, &c. with success. It is said to have been the chief ingredient in the famous powder of *Dr. Lehman*, physician to the Elector of *Saxony*.

A friable, heavy, florid red ochre is dug among the same rocks, It is of a friable uneven texture; of a rough and dusty surface; crumbles easily between the fingers, and stains them very much. It melts freely in the mouth, of an astringent taste, and gritty. In water it makes an ebullition with a hissing noise, and instantly

(*k*) *Creta rubra*. Da Costa. Nat. Hist. Foss. p. 86. No. 1.

Rubrica duriuscula. Woodw. Meth. of Foss. p. 3. No. 10.

Catal. of Foss. 1. a. 39, et 40.

Rubrica fabrilis. Merret. Pin. p. 218. Charlet. de Foss. p. 219. No. 3. Dale's Pharm. p. 23. No. 5.

Marga ochracea rubra, *Rubrica fabrilis* vulgo. Linn. Syff. Nat. p. 204. No. 2.

Ochra argillacea indurata rubra, quæ *Creta rubra* Authorum. Hill. Hist. Foss. p. 62. No. 12.

moulders

moulders into a fine soft powder. It does not effervesce with *Aqua fortis*. In the fire it crackles a little, and acquires a considerable additional hardness, and a paler colour. It is much used in painting.

A fine black clay-ochre, with a bluish-cast (1), is in a scar at the east end of the rectory-den at *Simonburn*. It is near the top, in a vein of about seven inches thick, under a stratum of limestone, and above another of grey and yellowish-white sand. Towards the middle are large heavy masses of friable freestone, and under them large flags. Many of the freestone masses lie scattered at the foot of this great steep, tumbled down by storms and frosts, shattered and broken, shewing numerous impressions of the bark of resinous trees, of a tawney black colour. Many of the flags are deeply channelled by the dripping of the water; others smooth and thick, of a great size, not unfrequently two or three yards long, and as many broad; large pieces of sulphur in them as big as walnuts. This and the sand lie among them promiscuously. The ochre with the least pressure between the fingers breaks into thin flakes or lamellæ, of a smooth glossy surface, unctuous to the touch, and slightly staining the hands. It adheres to the tongue, melts freely in the mouth, of an insipid taste, with very little grittiness. In water it makes a slight ebullition, separates into small tabular pieces, and moulders by degrees into a fine powder, and gives it a bluish-black colour. Depurated, and worked into a paste, it cuts through with a glossy surface. Dry, it retains its colour, and drawn on paper or a board marks a line of the same tinge. It does not effervesce

(1) *Ochra nigra argillacea*. Da Costa. Nat. Hist. Foss. p. 89. No. 1.

Ochra nigricans argillacea. Charlet. de Foss. p. 219. No. 4.

Humus nigra pictoria, *Atramentum scissile*. Waller. Minerol. Spec. 4.

Argilla nigrescens friabilis levis. Hill. Hist. Foss. p. 34. No. 1.

with

with *Aqua fortis*. In the fire it acquires a considerable hardness, and a bright bluish-grey colour.

The *Welsh*, in *Merionethshire*, call it *Nod dŷ*, which in their language signifies a black mark. They find it near the top of *Cay Avon*, a high hill near the village of *Dynafmondhwy*, in that county, and is on record in an old *British* proverb for being one of the three remarkable things of that place. They use it in marking their sheep. They prepare it by pounding it in a mortar, and moistening it with water, and then making it into balls.

It is very much used in painting by the *Germans* and *Saxons*. The former are said to find it at *Dietfurterriet*, in the territory of *Pappenheim*. They prepare it by carefully washing away the impure parts, and make it up into sticks or rolls like *Indian ink*. The latter call it, *Schiefer Schwartz*, and prepare it in like manner.

In our northern counties it is commonly known by the name of *Collow* or *Killow*; by which name it is called by *Dr. Woodward* and *Dr. Merret (m)*.

A light, friable, gold coloured ochre, the ochre of *Theophrastus (p)*, is found in concreted nodules among the *Geodes* and loose iron-stone on the edge of the brook at *Simonburn*, and other places in *Tynedale*, not unfrequently. It is of a lax texture, and of a dusty surface when broken, colouring the fingers with a bright gold yellow, extremely light and fine, like an impalpable or farinaceous powder. It adheres firmly to the tongue, melts freely

(m) *Killoia molliuscula*. The softer killow. *Woodw. Meth. of Foss.* p. 2. No. 5. et *Cat. C. a. 26.* et 27. *Merret. Pin.* p. 218.

(n) *Ochra aurei Coloris*. *Da Costa. Nat. Hist. Foss.* p. 99. No. 8.

Ochra levis aurea friabilis, quæ *Ochra Theophrasti*. *Hill. Hist. Foss.* p. 52. *Woodw. Cat. C. a. 3.*

in the mouth, pure, soft, and entirely free from grittiness. In water it raises an ebullition with many bubbles, and a loud hissing noise, but does not readily break and moulder in it to a powder. It does not effervesce with *Aqua fortis*. In the fire it acquires a little additional hardness, and an elegant florid red colour. Dr. *Hill* informs us, that he tried it as a paint, both native as a yellow, and burnt as a red, and found it exceed all the ochres the painters use in both these states.

A light, friable, deep yellow ochre, the *Ochre Attic* of the *Antients* (*o*), is also found in concreted nodules with the former. It is of a loose plated texture, of a dusty surface, colours the hands, and remarkably light and shattery, of a bright deep yellow, like that which saffron gives to water, sometimes lightly spotted with red. It adheres to the tongue, melts easily in the mouth, pure; and free from grittiness. In water it makes a great ebullition, but does not readily moulder away in it. It does not effervesce with *Aqua fortis*. In the fire it burns to a dusky red, without any hardness.

A heavy, friable yellow ochre (*p*) is frequently turned out in detached pieces by the floods on the south side of the brook at *Simonburn*, with the geodes, and other stones and gravel. It is of a fine strong yellow when moist, and of a dusty dead yellow when dry; heavy, and of a close texture, soft to the touch, and colouring the hands; adheres firmly to the tongue, melts slowly in the mouth, without grittiness; moulders or separates slowly

(*o*) *Ocra crocei coloris*. Da Costa. Hist. Foss. p. 98. No. 7.

Ocra crocea laminata levis, quæ ochra Attica Dioscoridis. Hill. Hist. Foss. p. 35. No. 5.

(*p*) *Ocra ponderosa flava friabilis*. Hill. Hist. Foss. p. 54. No. 6.

Ocra Anglica. Merret. Pin. p. 218. Charlet. de Foss. p. 219. No. 5.

Woodw. Cat. A. a. 76. 77. et Cat. 1. a. 29.

Ocra rufo-flava. Da Costa. Hist. Foss. p. 100. No. 9.

in water. It effervesces with *Aqua fortis*. In the fire it acquires a fine deep red, with very little additional hardness.

It is inferior in quality to the light ochres, but is greatly used in painting. It is the yellow ochre of the shops.

A friable, clayey yellow ochre (*q*) is in a scar by the brook at *Birch-Crook*, near *Shitlington-hall*, in *Tynedale*, in a thick stratum, above another of black clay. Moist, it is of a dull dusky yellow, moderately heavy, and shattery on being cut through with a spade; soft in handling, and tenaceous; melts in the mouth with a little grittiness; raises a small ebullition in water, with a hissing noise, mouldering or breaking slowly to a powder. Depurated, and worked into a paste, it is of a clear strong yellow. It does not effervesce with *Aqua fortis*. In the fire it acquires a pale red, and a considerable hardness. It is used in painting.

A light, friable, saffron-coloured ochre (*r*) is frequent about the adits of many of our coal-mines, and chalybeat springs. By the two springs at *Dibden*, near *Rothbury*, it is in great abundance; half a foot, or a foot thick in some places, by the ditch-sides, made to carry off the water. We have it also plentifully on the strand of the rivulet by the coal-work at *Simonburn*, and in a small rill at *Brunton-hall*, near *Chollerford-bridge*, coating the stones, and other things in its way. It is of a light dusty surface, and extremely lax and shattery, soft to the touch, stains the hands, and melts freely in the mouth. In water it raises an ebullition, with a hissing noise, but does not break easily to a powder. It does not effervesce with *Aqua fortis*. In the fire it acquires a fair red. It is found in different degrees of purity.

(*q*) *Ochra argillacea fordide flavescens*. Hill. Hist. Foss. p. 55. No. 9.

(*r*) *Ochra levissima flava friabilis*. Hill. Hist. Foss. p. 52. No. 3.

A light, friable, deep brown ochre is found in the fissures of a limestone-quarry at *Bladon*, near *Belford*, in considerable quantities. It is of a very lax texture, of a dusty irregular surface, soft to the touch, and stains the hands; adheres firmly to the tongue, melts slowly in the mouth, of an astringent taste, with very little grittiness. In water it moulders and breaks slowly. Dry, it shews some few spangles of micæ. It does not effervesce with *Aqua fortis*. In the fire it acquires a deep reddish-brown colour, with no additional hardness. It is a fine species of *umbre* (*s*).

(*s*) *Ochra fusca*, *Terra Umbria dicta*. *Da Costa*. *Hist. Foss.* p. 101. No. 1.

Terra sive Creta Umbria. *Charlet. de Foss.* p. 219. No. 7.

Woodw. Meth. Foss. p. 4. No. 18. et *Cat. 1. a.* 25, et 26.

Ochra pallide fusca lævis, quæ *Umbria Pictorum*. *Hill. Hist. Foss.* p. 63. No. 1.

Terra subfusci coloris, quæ a *Pictoribus* vocatur *Terra d'Ombra*. *Mercat. Met. Vat.* p. 23.

Humus nigro-brunea, *Umbra Auctorum*, *Creta Umbria*. *Waller. Minerol. Spec.* 3.

C H A P. IV.

O F S A N D.

A Great part of the Sand with us is very little regarded, and little used, except in masonry, though we have great varieties of it, and some not inferior to the valuable *Tarso* of the *Venetians*, with which they make their fine glass. This is our mountain or rag-sand. I will not stand to dispute, whether it is adventitious or natural, originated there. But I will declare what I have found true by experience. I had an inclination a few years ago to examine the inferior strata of one of our northern hills, the better to judge of the structure and phenomena of the earth, and for other reasons. This hill was lofty, conical, and rocky to the very surface, the south exposure covered with wood, hazel, and oak. I first cleared it of the wood, then began digging at the top downwards with a mattock and a spade. The space marked out for the experiment might contain about eleven yards in length, and six in breadth. The earth and stones, as they rose, I cast down the southern steep, disrobed of its flourishing timber and shrubs. The first stratum, for about two feet, was a fine brown, loamy earth, wherein were seated an abundance of coarse, hard pebbles, of the blue kind, commonly used in paving, so thick, as if a flood had cast them there; the next course, for the same depth, consisted of masses of red freestone, lying in light sand, in great confusion, and in great quantities, pretty large, of all shapes, some of them splitting into excellent flags. These were succeeded by some of a vast magnitude, which I was forced to split with wedges. Under them was a bed of water-gravel, as good as any upon the shores

shores of our rivers, and below it a bed of fine *Tarso*, or mountain-sand, white, angular, and diaphanous, about a yard in thickness. On clearing it away, an amazing heap of other great stones appeared in view, in all positions, some round, some spherical, one or two of these last nearly in a perpendicular attitude, of a vast size, dreadful to look upon, seeming to threaten immediate destruction as I stood near them. They rested on a bed of water-gravel, under which was a bed of *Tarso*, like the former. I digged no farther, my curiosity being satisfied, believing that I should have found the like strata of stone, gravel and sand, to any depth. The dissection of this hill is a demonstration of a deluge or inundation of waters, and confirms the opinion of *Herodotus*; and other observing and valuable writers, that such a variety of strata of earth, of stone, of water-gravel, and of sharp rag-sand, in such different ranges and dispositions, can be attributed to nothing but a flood, the lighter bodies being uppermost, and the heavier below them, by their own density and gravity. I found no land, river, or sea-shells of any kind, not so much as the molds of any. To try the fertility of the earth and sand, separated from the grosser bodies of huge stone, and large gravel, I converted the southern declivity of this hill, now become pendent and sloping, to a garden, walled the back and sides of the cavity, and the semicircular foot or bottom of the slope, with the stones. It proved very fertile, growing peas, beans, various plants and flowers, and from the warmth of the exposure, would undoubtedly have brought grapes to a tolerable perfection. It is sheltered to the north by its own lofty summit, to the east and west by towering oaks, and to the south by another shady hill extending in the same manner east and west, and between both is a fine trout-stream, crossed by a bridge in sight of one arch, with a vale also in sight through which it glides, adorned on each side with banks of oak, and other forest-trees,

whose shade with the morning and evening-sun upon the waters, afford a very beautiful landscape. The fertility of the soil must be attributed to the deciduous leaves of the trees, and to the salts in the stony, arenaceous, and virgin-earths. I was about two winters, and as many summers, in seasonable weather, in the midst of very ill health, in digging this hill, and bringing it into the form described; and did not at first expect to meet with such irrefragable testimonies of a deluge, and least of all, this valuable sand. The crystalline rag stone of our mountains, heaths, and lakes, seem to be an aggregate of it.

On the shore of *Halypike-lake*, is a large area of rag-sand, the granules or pebbles small, no bigger than coarse *Smiris*, white, transparent, mostly angular, except some few that may be blunted by attrition, and the agitation of the waters. In the lake, and on the heath round it, is an abundance of rag-stone, composed of the like crystalline sand or pebbles, glittering and shining, which are separated by being exposed to severe tempests, and by collision in the tumultuous billows of the lake. I have tried it in polishing marble, for which it is excellent, giving them a surface expeditiously. Farmers use it in giving an edge to their scithes.

There is a sand upon the shore of *Coquet-island* more bright and glittering than this, like such as is found about the *Scilly-islands*; being silvery, micaceous spangles of *Talc*, washed by the tides off large strata of talcy stone, very plentiful upon the shore between *Warkworth* and *Aln-mouth*, not always visible for heaps of sand, but often in view after high tides and storms.

Sea-sand, in many other countries, is greatly valued for mellowing stiff clay-ground, but in our's it is rarely minded, though the sea-coast is generally a clay from *Tyne-mouth* to *Berwick*. Pro-
vidence

vidence seems to have ordered it so, to incite our industry. Every tide, at certain seasons, casts up vast heaps of nitrous sands, and a great variety of shells, which seem to invite us to remove them, to fertilize our stubborn soils in our fields and gardens with their prolific salts. In that part of the coast, where there is no limestone, the neglect is inexcusable, and we cannot escape the charge of indolence, especially as the expence is easy, and it lies at our very doors in several places. Drifted sand is sterile, and of no use, the salts being evaporated, or washed away with the rains. But such sand as is turned up by the tides after sea-storms, mixed with shells, would richly reward our labour. This sea-manure has been practised in the north of *Scotland* with great success for barley and oats, the seed producing some seventeen, and some eighteen fold, as has been attested by a curious and observing Scotchman, of excellent sense and veracity (*a*).

Our gardens might be greatly enriched with *River-sand*, being the lightest and richest of the meadow-soils, washed away with the floods, but few persons are at the pains of using it.

Ordinary sands, of various colours, we have in great quantities, but they are of no use that I know of, except in masonry, and in making garden-walks.

(*a*) Sir Geo. Mackenzey, Ph. Tr.

C H A P. V.
O F S T O N E S.

IT hath been observed, that the Fossilist is the subject of pleafantry with the witty and the gay,—

Rident vicini glebas et faxa moventem. Hor. Epist. l. i. 14.

But this is only done in an hour of joy, and not in the moments of sober thought and reflection. All, but the stupid and inconsiderate, admire the useful and beautiful productions of nature, and confess the divine Wisdom to be as conspicuous in the structure and configuration of minerals and common stones, as in the ruby or the opal. Both more particularly strike the fossilist, whose attention is more immediately engaged than other men's. The subterraneous treasures appear before him in all their lovely variety, and their several beautiful orders; he beholds them with wonder, and considers them as incontestible evidences of a Divinity, and irrefragable confutations of atheism. Every pebbly shore, every quarry, as well as every field and grove, is to him as a temple, for praise and adoration.

Of *Free-stone*, valued for its common use, we have a great abundance; both in strata and loose masses, solid, and laminated.

The whitest I have seen in strata is at *Chapel-houses*, by *Benwell-hill*, composed of fine whitish-brown sand, and numerous silvery spangles of talc; is facil and condescending to the chissel, and
hardens

hardens in the air. The quarry is large, and of a great depth. Mafons are continually almost at work in it, hewing blocks of it, of all fizes, for fale.

A better fort, but not fo white, is in a quarry by a small stream, about two hundred yards east from the village of *Denwick*, near *Alnwick*; confifting of small whitish-brown sand, and filvery *mice*; of a close, compact texture, foft when taken out, and hardens in the air, works into any form with the greateft eafe. It is ufed for chimney-picces, and other ornamental stone-works. This quarry is troubled with water, and has a roof of rubble and earth about three yards thick, which makes the working very expenfive.

In a quarry at *Stony-path*, a mile weft from *Alnwick*, near a wood, called the *Stocking*, is a whitish-brown free-ftone, with *mice*, of a fine grit, and eafier got, but lefs conformable and pleafant under the chiffel.

At *Berlin*, near *Warkworth*, is a free-ftone of an excellent quality for building, fome of it nearly equal to the *Portland-ftone* for colour and duration, of which large quantities have been lately wrought for rebuilding that magnificent fabric, the caftle of *Alnwick*, by his Grace the Duke of *Northumberland*, and much of it carried off fouthward by export, for building a nobleman's feat near *London*, as I am informed. The roof has about eight feet of rubble and earth in fome parts.

By the fea, near *Howick*, is a free-ftone reckoned very good for building. It is of a more coarfe grit than the *Berlin-ftone*, and of a lefs bright colour. It is ufed for ftone-fteps, pavements, and other ftone-works, bearing the weather well. The feat and
fine

fine stables of Sir *Harry Grey*, of *Howick*, are built with it. The church of his Villa of *Howick* was also repaired with it by his late father, of his own name, after a handsome manner; an act of pious generosity that will ever reflect honour upon his memory.

There is a quarry of the same kind by the sea at *Bednel*.

At *Bladon*, near *Belford*, is a whitish-brown free-stone, with glittering talcy particles, very good and lasting for ornamental works. The genteel seat of *Abraham Dixon*, Esq; of *Belford-Hall*, is built with it.

By *Glanton-pike*, a hill so called from its piked top, and the neighbouring villa of *Glanton*, near *Whittingham*, i. e. the town by the *glen* or valley, corruptly *Glanton*, is an excellent free-stone, of a brighter colour, and of a firm and close grit, many spangles of *micæ* in it, much used in ornamental works. The antient seat of *Edward Rodham*, of *Rodham*, Esq; was lately rebuilt with it.

At *Etall* is a good free-stone, but of a duller colour, with which the handsome seat of *William Carr*, Esq; is built.

At *Camboe*, near *Wallington*, is a free-stone of a fine grit, and of a bright whitish-brown colour, with splendid particles of talc, accounted excellent for chimney-pieces, columns, and other ornamental works. It has been much used in the genteel seat of Sir *Walter Calverley Blacket*, Bart. at *Wallington*.

A very good free-stone is at *Belsay*; of a close grit; of a dull whitish-brown colour, with silvery spangles of talc. It is used for columns and chimney-pieces; for which uses some pieces were lately wrought for the handsome seat of the Revd. Dr. *New-*

ton Ogle, at Kirkley. The feat of Sir *John Lambert Middleton, Bart.* at *Belfay*, seems to have been built with it.

By *North Gosforth*, near *Newcastle*, and at *Acomb*, near *Bywell*, is a whitish-brown free-stone, with glittering micæ, commended for ornamental stone-works; the *Acomb-stone* of the brightest colour, and closest grit, with which the handsome feat of *William Fenwick, Esq;* of *Bywell*, is built. With the other, the fine feat of *Charles Brandling, Esq;* of *South Gosforth*, is built, both designed by *Paine*; as was *Belford-Hall*.

By the sea, near *Seaton Delaval*, so called from the town or villa by the sea, and the local name of its antient baronial possessors, the *Delavals*, is a free-stone accounted excellent both for colour and duration, of a whitish-brown, with splendid micaceous particles. That grand structure, the feat of Sir *Francis Blake Delaval*, Knight of the *Bath*, of *Seaton Delaval*, was built with it; designed by Sir *John Vanbrough*.

On the north side of a small stream, called *Spital-burn*, from its course by an antient hospital or elemofinary, near *Newbiggen* by the sea, is a free-stone of a dull whitish-brown colour, of a coarse grit, with silvery micæ; of great mechanical use, both for building grind-stones, and fire-stones for the glass-houses; the stratum, in parts, now worked, about eight feet, the roof at the highest about ten feet, chiefly a red clay; near the eastern point very little roof, the stratum twelve feet. There is a stratum of the same stone on the south side of the burn, six feet thick; the roof about as much.

By a streamlet called the *Den-Burn*, on the east side, near *Ashington*, is a free-stone of the same grit and colour, worked for the same uses; the stratum of a great thickness; the roof about

twelve feet. The river *Wansbeck* glides past it in a full and beautiful stream; on the south side of which is another quarry of the same kind, not worked on account of the weight of the roof. From the *Spital* and *Ashington* quarries many thousand grindstones have been exported.

In the brook at *Simonburn*, between *Tecket* and the rectory-den, are vast rocks of free-stone; fallen from a range of steep cliffs above, used much in that neighbourhood for tomb-stones; of a whitish-brown colour; of a close fine grit, with shining talcy particles; small *Neuclei* or kernels in part of it, with casts of reeds, and barks of trees. Their tops are coated over with a stratum of adventitious earth, the decidua of leaves, moss and herbage, rotted to a mellow compost, giving nourishment to a variety of plants; *Vaccinia nigra*, *Ericæ*, and the *Sorbus aucuparia*, flourishing with great vigour, and mosses of a beautiful green fringing their sides, unhurt by torrents and tempestuous winds.

On *Broad-pool* common, near *Simonburn*, is a range of steep free-stone rocks, with a north exposure, called *Raven's-ugh*, i. e. the *Raven's-Crag*, from its being the solitary and secure retreat of that bird by its high situation, and scraggy projections. It is mostly in horizontal strata, with some large perpendicular fissures, as is usual in precipices. It is of a whitish-brown colour, with silvery particles of talc, and of different degrees of fineness; part of it making excellent grind-stones; the greatest part highly esteemed for pavements, stone-steps, columns, and ornamented Ashler-works. It holds its colour and form under the rigour of the severest seasons. The handsome seat of Sir *Lancelot Allgood*, of *Nunwich*, Knt. is built with it, designed by Mr. *Garret*.

At the west end of the crag is a spring, under a scraggy cover of natural arch-work, the sides in summer shaded with dwarf
stone-

stone-ferns, the adit stoned with that wholesome and agreeable fallad, the water-cress.

Near this spring are the ruins of huge rocks, beaten down by storms. One is fifteen feet long, eighteen feet and fifteen inches broad, and above six feet thick; the black *Mane Ufnea*, or rock-hair, on the back part of it. Another, by the violence of the fall, has started from it, and rests with one end at the bottom.

At a small distance eastward, is a third of a more remarkable size, one solid mass, twenty-seven feet, ten inches long, eight feet broad, and twelve feet thick; *Vaccinia nigra*, and *Ericæ*, on the top.

By the village of *Fenwick*, near *Kiley* at *Ancroft*, and *Norham*, near *Berwick*, is a free-stone of a pale red colour. With the *Fenwick-stone*, the priory of *Holy Island* seems to have been built; and with the *Norham-stone*, the castle of *Norham*.

On *White-side* bank, near *Wooler*, is a free-stone of a light purple; of a close grit, with some talcy spangles; the stratum three feet, and the roof six feet, thick.

I might mention some other quarry-free-stones, but these are of principal note for mechanic uses.

The whitest and most beautiful free-stone found in detached or loose masses, is on the estate of *William Swinburn*, Esq; at *Long Witton*, near the village, composed of a bright white sand, and silvery micæ, laced with sparry veins, which render it less condescensive to the chissel. It is used for chimney-pieces, and other ornamental stone-works.

At *Shilden*, near *Corbridge*, are digged up large masses of free-stone, of a coarse grit, with talcey spangles, of a whitish-brown colour, accounted excellent for grind-stones, gate-posts, and other œcomenical uses.

Quarries of rag-stone, fit for mill-stones, are scarce. The best for that use are on the west side of *Blalack-burn*, above a bridge of one arch, near *Wyden-Eles*; the stratum nine feet thick, under it a coarse slate, and above it nine feet of rubbish. The master-quarrier for every pair of mill-stones pays to the proprietor *l. 10 s.* They are conveyed for their goodness into remote parts of *Scotland*.

Near a lake or lough in *Coenwood-forest*, three miles east from *Knarefdale*, is another mill-stone quarry, of good esteem; the strata appearing at the very surface.

On *Bewick-common* is a mill-stone-quarry of good note; also one near *Harbottle*; and another near *Rothbury-east-mill*.

Above the water-fall at *Tecket*, near *Simonburn*, are huge detached masses of rag, of the true mill-stone grit, but not used. The top of one rock has been cut into a mill-stone form, but deserted for its hardness.

Nodules of fine rag, commonly called moor-stone, lie scattered in great plenty on the brow of *Calleley-Hill*; in frequent use with countrymen for whet-stones to give an edge to their scithes.

Masses of coarse rag, composed of arenaceous and talcy granules, and quartz-pebbles, from the size of a pea to a nutmeg and a walnut, lie dispersed on *Fourstone-hill*, near *Hexham*. The garden-walls of the *Eremitic-convent* at *Hexham* were built with this kind of stone.

Large

Large masses of fine rag, fit for building, are common in many places. Our ancestors have chosen to build their fortresses and strong holds, and the *Romans* their *castra*, with it, as best enduring the rage of time and the weather. The castles of *Bambrough*, *Dunstonbrough*, and *Prudhow*, are built with it; the mortar of *Bambrough*-castle composed of lime, sand, and sea-shells, chiefly the small white *Turbo*, not the least decayed in the course of so many ages.

Laminated free-stone, of a good quality for flags and flates, is plentiful. At *High Moralee*, on the edge of *Gofton*-burn, near *Wark*, in *Tynedale*, and at *Bromebope*, in *Reedfdale*, is a slate of a purple colour, of a fine smooth surface, thick set with glittering flakes of micæ.

At *Low Moralee*, by *Gofton*-burn, are good grey flags and flates; some strata of both curiously figured; of which hereafter.

At *Bay-Bridge*, in *Hexhamshire*, and at *Birtley*, near *Chipchace*, and at *Black Heddon*, also at *Bolham*, is an excellent brown slate. They have the valuable properties of hardness and lightness, not easily pervaded by water in the most rainy seasons, or parting into shivers under the severity of tempests and frosts.

There is also a brown slate of good note at the bottom of two remarkable cliffs of free-stone by *Haltwesel*-burn, near *Lee's Hall*, at a small distance from the military road. The cliffs project into the rivulet east and west; the streams winding under them in pleasant murmurs; their broken sides shaded with brushwood of various kinds; near them a chalybeat spring.

There is a very good brown slate at *Great Whittington*, *Acome*, *Buteland*, *Halywell*, *Rothbury-East-Mill*, *Halystone-Fell*, *Barrow*, *Folbury*,

bury, Etall, and at Stony-path, near Alnwick. Their surfaces are all, more or less, set with splendid talcy particles, which pass the fire without losing their lustre, at the same time that the slate crackles and bursts into shivers, or loses its natural colour.

In the grounds at *Overton, near Simonburn, on the estate of Sir Ralph Milbank, of Hannaby, in Yorkshire, Bart.* is a slate of a bright lead-colour, their surfaces extremely smooth and shining with silvery flakes of talc, the laminæ distinguished at the edges by alternate deep blue, and ochreous yellow veins; the stratum fourteen inches and a half thick, faced with an irony, rusty-coloured stone, which, on being struck with a hammer, falls off like wooden laths. Above and under the slate is a large flag, each from four to six inches thick, dipping to the south, and rising to the north; some of the bottom-flags of an irregular and uneven surface, as if bulged and bruised with the weight of the incumbent roof. The roof is in some places eighteen, and in others twenty-four, feet. The flags are used for tomb-stones, and look very handsome under cover, but are too tender to bear the weather. They may be had of a very large size. Both the flags and slates are impatient of the fire and frosts. In the fire they crackle, and burst with a loud noise like the report of a pistol, owing to their sulphurs. Under the severity of frosts and tempests, they separate into thin leaves or plates, and moulder away. If the slates had hardness equal to their lightness and beauty, they would be the most valuable of any in the kingdom for covering houses. There are some few, indeed, in the same quarry of another nature and colour, of a hardy ferruginous constitution, and of a rusty hue, not altering by the torture of fire, or by heavy rains, and piercing frosts. These are used by the country people in the neighbourhood in the structure of their flew-ovens.

Free-stone is frequently found curiously figured, both in detached masses and in strata, of which the following are the most remarkable that have fallen in my way to collect.

A whitish-brown mass, in the form of half an *Ionic* column, twelve inches long, and twenty-three inches over, with numerous digitated figures on the surface in relief, in a quincunx order, of about three quarters of an inch in length, and half an inch in diameter at the base, gradually tapering to a rounded point; the under side scraggy and uneven; some of the scraggs struck off to make it portable. From a quarry in *Rothbury-forest*, near *Simon-side*.

A piece of a small flag with a curious representation of a plant in relief, with a bold stem and branched; the branches *dactyliformes*.

Another piece with four finger-like shoots from one root, in bold relief likewise. These are formed by the insinuation of water and sand between the lamina. A marble rubbed down to a smooth surface on a wet stone, and taken hastily off, will shew arbuscular figures of its own grit, sometimes like a forest, in relief.

Part of a flag, channelled, with elegant wavy striæ at the bottom of the channels, uniformly fulcated in the middle, through the whole length. One of these striæ takes a doubling course of twenty inches, beautifully serpentine.

These three from a free-stone quarry on the edge of the brook at *Simonburn*, below the school-house.

A large

A large, thick, brown slate, with broad, transverse, parallel channels, the intermediate spaces tumid or swelling in half rounds, very beautiful. From a slate quarry on the top of the wood at *Con-sheels*, near *Wark*, in *Tynedale*.

In the slate-quarry at *Low Moralee*, are three courses of a dark brown slate, thick set with arenaceous cylinders of a light brown, of the size of a goose-quill.

In the same quarry is a course of light grey slate, with numerous irregular blotches of black, of various sizes.

There is also in the same quarry a course of a large, brown flag with thin lamina on the surface, resembling the waves of the sea, very beautiful.

Nodules of reddish-brown free-stone, with true *Stalagmitæ*, or crustated bodies, including one another, like cups, are frequent on the shore of the brook below *Simonburn-castle*.

On the shore of the river *Coquet*, below *Welden-mill*, I gathered a nodule of whitish-brown free-stone with many longitudinal parallel lines of a dark brown, like the veins or crusts of pebbles. It is formed, like them, by incrustation.

Whet-stones, for the finer tools, are rare. There is an approved sort, of a dark greyish-blue colour, found on the strand of the brook by *Setlingstones*, above *Newbrough*, near an old deserted lead-mine. These are of so fine a grit, that they will give an excellent edge to a razor. There are rocks of a plated stone on the edge of the brook, out of which these are washed by the floods, but a long search may be made before a good one can be picked out ;

out; the largest not above twelve inches long, and six inches broad. Mechanics are very fond of them.

On the edge of the brook at *Swinburn*-castle, above the mill, is a plated rock, of a light greyish-blue colour, and exceeding fine texture, from which I have had whetstones that give a very good edge to penknives. They are also scarce. Small masses are sometimes found lying on the pavement of the brook below the mill, turned out by floods; the longest not above fourteen inches, and five or six inches broad. There is a variety of it of a softer texture; very much used in that neighbourhood within doors for giving a white stone-colour to chimney-pieces and hearths.

In the grounds of a farm, called *Black-Carts*, near a gate leading to *Newbrough*, from the military road, is a laminated stone of a light grey, and also of a dark blue colour, of great use to shoemakers in giving an edge to their knives, for cutting leather. It is also used in writing-schools for pencils, for the *Irish* slate, drawing a white line freely. That at *Swinburn* is frequently put to the same use.

Quarry-marble, or marble found in strata, is not uncommon. A fine sort was lately discovered on the estate of Sir *John Lambert Middleton*, of *Belfay*, Bart. by a farm, called the *Park-House*. It is of a grey colour, with streaks of black, thick set with that large, scarce, and beautiful coralloid, the *Alcyonium* of Mr. *Edward Lhwyd*, said by Sir *Hans Sloane* to be a native of the *American* seas, (a), of a whitish-brown colour, lying in all directions (b). It is of a fine texture, and great brightness, rightly polished. It rises in large blocks, ten or eleven feet long, five or six feet

(a) Ph. Tr. No. 257.

(b) Marmor coralliticum, durius, cinereo nigrescens. *Hill. Hist. Foss.* 472. No. 1.

broad, and two feet thick. It is used, at present, only for lime, but when its value is better known, it is likely it will be preserved for such ornamental mechanic uses, as it deserves; being only discovered early in the year 1766.

Near *Dilston* is a dark blue marble, shaded with brown, resembling Jasper, taking an elegant politure. There is a table of it at *Corbridge* cut and polished by the owner, Mr. *Lumley*, an ingenious stone-cutter, from *London*.

By the village of *Corbridge* is a light blue marble, thinly set with small *Entrochoi*, which being white make a pretty variegation. There are tomb-stones of it at *Halton*, and a mural one erected over Dr. *Rotheram*, a dissenting minister, in the church at *Hexham*. This has a brown shade. It is bordered with a molding of black marble from a quarry at *Frosterley*, near *Wolfsingham*, in the bishoprick of *Durham*, thick set with white coralloid *Fungitæ*, in all directions (*c*); rendering it very desirable for chimney-pieces, slabs, and tables, frequently polished and sold for that use by the *Corbridge*-artist, whose workmanship these sepulchral marbles were, enduring the weather tolerably well, but losing their lustre, and doing the marblist little credit, when long exposed.

At *Chefburn-Grange*, near *Stamfordham*, is a marble of the same colour, prettily variegated also with white *Entrochoi*, admitting a neat politure. There is a mural sepulchral stone of it by the south end of the altar-table in *Newburn-church*, erected to the memory of Mr. *Longridge*, of *Wallbottle*.

(*c*) Marmor nigrum coraliis refertum. *Da Costa*. Hist. Foss. p. 232. No. 73.

In *Callege-park*, near *Alnwick*, is a blue marble with the same variegations, conforming with difficulty to the chissel, yet taking a tolerable polish. It rises in blocks of four, five, and six feet in length, of different thickness, from nine to sixteen inches.

On *Long Houghton-moor*, about a mile north-west from *Ratsburgh*, and near a mile from *Denwick*, is a dark blue marble, easily worked into any form, and of a pleasant politure. It is raised in masses of seven or eight feet long, and generally about nine inches thick.

About a mile from *Witton*, near *Rothbury*, is a light blue marble, of a fine texture, and capable of a neat politure. There is a mural sepulchral stone of it in the chancel of *Rothbury* church, over the remains of *Dr. Thomlinson*, rector of that parish, the polishing part poorly performed, smooth and even, but of no lustre.

At *Fair-show*, near *Nunwick*, is a blue marble, thick set with madreporé-coralloids, composed of a bright white opaque spar of the size of a goose-quill, the ends in their *Cuticle*, or rough coats, looking like the subterraneous vermicular vagrants, rising in succession, and in crowds to make their exit. Polished, they shew their interior texture, many of them radiated from the centre, with annular circles; the marble appearing with them very neat and handsome. Some part of the road above *Fair-show* is paved with it; several fragments now lying upon the surface (*d*).

(*d*) Marmor subcæruleum. *Da C. Sta.* Hist. Foss. 198. No. 17.

Marmor subcæruleum splendidum, durius, quod Marmor Numidicum antiquorum. *Hill.* Hist. Foss. p. 465. No. 1.

Pierre bleue, Blacuwe stein. *Boccone* Recherches et Observat. Nat. Lett. 13. p. 124.

These marbles are used for lime, as well as the *Belfay-marble*, whereby some of them are become scarce, particularly the fine sort at *Dilston*, and the *Callege-park marble*.

From our *River*, and *Sea Shores*, I have been furnished with the following *Marmorites*, or small masses and nodules of marble.

1. A marmorite of a chocolate colour, with a fine golden shade, regularly set with many columns of coralloids of the same kind with those in the *Belfay-marble*. They all lie parallel to the surface, and look like an assemblage of *Auricula* pips in their natural colours, giving the stone an extraordinary beauty. From the shore of the brook at *Simonburn*, below the school-house. Turbinate and bivalve sea-shells are frequently found immersed in it; of which hereafter.

2. A marmorite of a deep red colour, with coralloids of a bright red, of the size of a sixpenny stick of sealing wax, in a perpendicular order, parallel to the surface. From the shore of the brook at *Goston*.

3. A marmorite of a reddish-brown colour, with coralloids of a bright and beautiful orange-yellow, of the size of a large goose-quill; the tubes filled in the center with a bright white spar, like small points or specks, adding much to its beauty.

4. A reddish-brown marmorite with small coralloids of a bright white, filled with a substance of the same colour with the stone.

These two from the shore of the brook near *Nunwick*.

A greyish-brown marmorite, thick set with coralloids of a bright grey, of the size of a goose-quill, with a white annular circle, and a white apex in the centre. From the shore of the
brook

brook at *Simonburn*. We have this kind with coralloids of a bright white; also bright white with a blush of red (*e*). Turbinated and other marine shells are frequent in it.

6. A black marmorite with coralloids of a yellowish-white colour. It is of an oblong shape, of about a foot in length, and half a foot broad. From the same shore (*f*).

7. A grey marmorite shaded with an orange-yellow, and thick set with small coralloids of a pearl colour, and transparent; numbers of them in relief upon the surface, resembling worms, as if alive and crawling. It is the *Marmor junceum* of Dr. *Woodward* (*g*). From the shore of the brook near *Simonburn-castle*. It is also frequent on our other shores, and on the sea-strand; of a considerable size, sometimes large enough for small tables, chimney-pieces, and other ornamental works.

8. A marmorite of a deep purple colour, with coralloids of the same kind, of a bright and beautiful orange-yellow, of the size of a crow-quill. From the shore of *North Tyne*, below *Chipchace-mill*, by the *Strother-house*.

9. A marmorite composed of numerous fragments of sea-shells, in so confused an order as not to be distinguished, forming a most beautiful variegation, in parts resembling flowers; the brims of a fine chocolate colour, the eyes of a bright orange.

(*e*) *Marmoroides cinereus coralliis refertus*. *Da Costa*. Hist. Foss. p. 247. *Woodward*. Cat. Foss. k. 17.

(*f*) *Marmoroides niger coralliis refertus*. *Da Costa*. Hist. Foss. p. 244. *Woodward*. Cat. A. e. 27, 28, 29.

(*g*) *Marmoroides fusco-cinereus coralliis refertus*. *Da Costa*. Hist. Foss. p. 248. *Woodward*. Cat. A. e. 22.

It is the *Blumenstein*, i. e. the *Flower-stone*, of the *Germans* (*b*). From the shore of the brook below *Simonburn-castle*. I found a variety of it on the same shore, which I broke, and took out a small thick *Conch-shell*, and a small *Turbo*, entire, in their natural colours, white, with a tinge of red.

10. A greyish-black Marmorite with numerous fragments of white turbinated shells, the edges of some, and the *Volute* of others conspicuous, forming an elegant variegation. From the *Ostium* of *Gofton-burn*, near *Wark*, in *Tynedale*.

11. A reddish-brown marmorite, with numerous minute fragments of sea-shells, of a bright orange-yellow, forming a large and beautiful figure, like a wreath; small pieces of entrochi thinly scattered on the surface, of a bright white colour. The wreath, or laureated figure, goes through the whole stone, fair and conspicuous on both sides. From the shore of a streamlet on the north-side of *Simonburn-castle*.

12. A greyish-brown marmorite, thick set with small entrochi, of a bright white, lying in various directions, the sides of some, and the ends of others appearing, forming a most pleasing variegation; from the shore of the brook below *Simonburn-castle*, where at this time is a very large mass of it among a heap of stones on the south-side of the ford (*i*).

13. A marmorite of a chocolate-ground, with small zones or circles of a light and deep green, very beautiful. From the same shore.

(*b*) *Bruckman*. *Epist. Itin. Cen. ii. Epist. 26. p. 246. No. 29. Da Costa. Hist. Foss. p. 238.*

(*i*) *Marmor fusco-cinereum entrochis refertum. Da Costa. 235, 236. Woodward. Cat. A. x. b. 61.*

14. A marmorite of an olive-green ground, spotted and variegated with a florid and deep red. It is a beautiful stone. From the shore of *North Tyne*, by the *Strother-house*, near *Chipchace-mill*.

15. A marmorite composed of pebbles, of various sizes, and of various colours, brown, red, purple, and cinereous with purple *striae*, forming a beautiful variegation; held together by a reddish-brown cement. In its native state in the earth it has an investient crust. From the shore of the brook below *Goston*, where it is not unfrequent. I have a variety of it composed of smaller pebbles, brown, red, and yellow, from the shore of the brook below *Nunwick-garden*, large enough for a small table.

16. An alabastrine marmorite, composed of flat plates, laid evenly and closely upon one another, approaching to parallelepiped figures, of a yellowish-white, bright and pellucid. It is of a shattery texture in the mass, easily breaking into pieces of different sizes; some of the larger pieces elegantly striated lengthways, like the molding of a cornice. From the limestone-quarry at *Fourstones*, where it is frequent. It was the *Marmor Phengites* of the *Antients* (*k*), who had it from *Cappadocia*. They used it much in their public buildings. The famous Temple of *Fortune*, which had not a single window, was built with it, and was perfectly light from its bright transparence, in which consists its beauty. In works that do not require strength, it is very fine and ornamental, taking an excellent polish.

17. A marmorite of a fibrous texture, with beautiful veins, and radiated circles, of a flesh-colour; some of the circles varie-

(*k*) *Alabastrites lucidissima*, frustulosa, albido-flavesceus: quæ marmor phengites antiquorum. *Hill. Hist. Foss.* p. 490. No. 2.

Marmor phengites Plin. 2. p. 752. *Cæsalpin.* p. 95. *De Boot*, 490, & 520.

gated with a purplish-red, under a thin *cuticula*, or crust of the same colour, part of which is taken off by politure to shew its elegant structure and beauty, the variegated circles very much resembling small flowers. From the shore of the brook below *Simonburn-castle*.

18. A marmorite composed of fine capillary filaments, lying in various directions, some of them forming beautiful *dendrite*, or arbuscular figures, of a fan-like shape, of two different degrees of purple, with a slight tinge of orange and carmine; capable of an excellent polish. From the shore of the brook at *Goston*, near *Wark*, in *Tynedale*.

19. A marmorite of the same structure, of a grey colour, of two different degrees; the *striae* forming a large radiated figure at one end, resembling the *rising Sun*. From the shore of the brook at *Simonburn*, near the school-house.

We have a variety of it with transverse semicircular fillets, of a light grey, on a dark grey ground. It is more frequent without these elegant figures, yet very beautiful, the ends of the filaments forming a curious reticular work; its general colour grey, lighter or deeper, and sometimes of both these colours, in clouds and variegations.

20. A marmorite formed of a congeries of astroite coralloids, of a button-like shape, of a greyish-black colour, with black masses. From the shore of *North Tyne*, opposite to *Kirk-field*, near *Wark*, in *Tynedale*.

These marmoreous *Fibrariae* all ferment violently with acids. They are of a marine origin, and are commonly found entombed

tomed in stone, with madrepores, fungitæ, entrochoi, and testaceous bodies.

21. A marmorite composed of large coralloid *pori*, with fine, thin, longitudinal plates, in a stellate order, from the axis to the circumference, intersected by numerous transverse septa or diaphragms; the ends of the columns concave; a prominent star in the center, with a small apex or point; three quarters of an inch in diameter; the interior colour a dark brown, and a yellowish-white, in a beautiful variegation; looking after politure like an assemblage of auricula-pips, appearing on all sides of the mass in a distinct and elegant disposition. It is a foot long, and half a foot thick. It was turned up by the spade in trenching Sir *Lancelot Allgood's* garden at *Nunwick*, near the brook. It is sometimes found, but rarely, on the sea-shore, by *Ross-Links*, near *Belford*, from which I had a small mass worn and smoothed by the tides. It is the great *Lithostrotion* of *De Boot* and *Wormius* (*l*), and the *Alcynonium* of that eminent lithogist, Mr. *Edward Lbwyd*, keeper of the *Ashmolean* museum (*m*). It takes an excellent polish. Mr. *Lbwyd* found some of it in *Wales*, but he does not tell us where, incorporated in limestone, not exceeding six, nine, or twelve inches in diameter, preferable, in his opinion, to the *Florentine* marble. He has published a neat print of two pieces, one polished perpendicularly, and the other horizontally (*n*). The ingenious and curious naturalist Mr. *John Beaumont*, of *Stoney-Easton*, under *Mendip-hills*, in *Somersetshire*, who proposed obliging the world with a natural history of that county, if he had

(*l*) Lapidis astroitidis five stellaris primum genus. *De Boot*. de Gemm. et Lapid. I. II. *Worm.* Museum.

(*m*) Ph. Tr. No. 252.

(*n*) Ibid.

met with due encouragement, presented Sir *Hans Sloane* with some pieces as fine, found on those hills. It is accounted one of the most elegant coralloid *pori* in the world.

22. A marmorite composed of *lesser coralloid pori*; the stars variegated with a light and dark grey, with white apices; the mashes white. From the shore of the brook at *Simonburn*. It is the *lesser Lithoftrotion* of authors (*o*).

Of this lesser species we have a great variety with respect to colours.

1st. With grey stars, variegated with black; the mashes of a bright white, undulated at the edges; the columns of the size of a common writing quill. From the same shore.

2^{dly}. Of a dark brown, variegated with black. From the shore of the brook below *Nunwick*.

3^{dly}. With deep red stars, encircled with a light grey, with numerous minute red spots, on a grey ground, forming a most beautiful variegation. From the shore of the brook at *Goston*.

4^{thly}. Of a deep red; a reticular work of small chrystals on part of the surface. From the shore of *North Tyne*, below *Chollerford-bridge*.

5^{thly}. Of a florid red, very fine. From the same shore. It is frequently found of a pale red on the shore of *Warks-burn*, above *Crook-bank* in *Tynedale*.

(*o*) *Lithoftrotion*, sive *basaltes minimus striatus et stellatus*. *Lhwyd's Lithoph. Britann. Ichnogr. Epist. 5. Tab. 23.*

Marmoroides columnaris stellatus, *Lithoftrotion dictus*. *Da Costa. Hist. Foss. p. 246. No. 11.*

6^{thly}.

6thly. Purple, variegated with an orange-yellow. From the shore of the brook at *Goston*.

7thly. Of a bright scarlet; the masses like fine lace-work; the heads of the coralloids resembling in their compartments the scarlet tubercles of the cup-moss. From the shore of the brook below *Simonburn-castle*.

These all have reticular ridges, and prominent stellar striæ in their perfect state, before they are worn and smoothed by the currents; and the red kinds commonly have a congeries of small crystals on some part of the surface. Those that have their tubes filled with a red substance, and are tinged with the same colour, have sometimes an investient, stellate crust, very beautiful. Such incrustations are not unfrequent on rubble-stones, in which small masses of coralloid *pori* are sometimes included, very fine. Nodules of free-stone are sometimes found on the same shores composed of columns, and have small apices in the center of the masses, but have no stars.

Coralloid-marmorites, both with large and with small, concave stars, variegated with a light and dark grey, are frequent on the shore of the brook at *Simonburn*, above the bridge, turned out of the banks of blue clay, which abound with marine remains. Those with large stars are sometimes found with their columns in relief on the under side; of which I have a very fine specimen, in its argillaceous livery. They are both capable of an excellent polish, and may be had in large masses.

Marble has spar for its basis, and ferments with acids. Calcined, it is said to yield a *Phosphorus*, which being held one minute in the light, becomes luminous when removed into a dark place. It is not fusible *per se*.

A variety of the coralloid species, with deep *pori*, composed of arenaceous granules, and small crystals, incapable of a politure, when rubbed down, is not uncommon on the eastern shore of *North Tyne*, by its *Ostium*; and also on the shore of *South-Tyne*, but more rarely; the *pori* of the latter often extending near the whole length of the columns, glittering with corpuscles, or spangles, of crystal.

These astroite coralloid *Pori* are formed so much like a *Honeycomb*, that they have obtained the name of *Honeycomb-stones*.

Single columns of madreporo-coralloids, both cylindric, and branched, of various sizes, are not unfrequent in the clay-banks by the brook at *Simonburn*, above the bridge, on the north side.

Of the former species, I met with a remarkable variety; grey, of a solid and firm texture, striated lengthways, a little inflected and compressed, with a broad furrow, towards the extremity, with white arbuscular striæ on a grey ground from the center to the circumference. It is an inch long, and as much round, the compressed end broken off.

Also of the other I met with one as remarkable; tuberculated at the ends, with *Tubera* on the surface, and numerous minute *pori*, forming an elegant reticular work of a bright white on a black ground; the tubes filled with an indurated argillaceous earth, of a greyish-black; transverse alternate striæ of black and white from its edges to the circumference. It is found of different sizes, from a quarter of an inch to half an inch in diameter, and an inch or more in length, filled with indurated clay-earths of different tinges. It is so tender in the strata, that I have never been able to take it out with the branches entire, yet, when it has been exposed to the air, grows as hard as a marble.

Arbus-

Arbufcular columns are fometimes found entire in the Lamina of fattery limestone on the fhore of the brook below *Simonburn-castle*; from which I had a fmall mafs with fome very fair.

Of the coralloid, called, *Mycetetes*, from its being compofed of fine thin *Lamellæ* like the gills of mushrooms, we have an elegant fpecies of a conoid fhape, with tranfverfe ftriæ from the center to the circumference, forming a figure like the SUN. It is a beautiful object, white, fometimes with a tinge of red. It takes a high polifh, and fometimes by including in the middle, part of the dark-coloured ftone it is found immerfed in, it forms a figure on the other fide like that opake body the MOON, very ftriking to the beholder, expecting no fuch thing as a lunar representation on the reverfe of a folar one. It is found from fix inches and a half to three inches and a half in circumference at the thickeft end, and from five inches and a half to two inches and a half in length, in a black calcarious ftone on the fhore of the brook at *Simonburn*.

We have a variety of it of a compressed form, with tranfverfe, undulated wrinkles, and a deep furrow on each fide lengthways; two radiated figures at the ends, refembling two SUNS in miniature, the glory in light grey circles, on a dark grey ground. It is two inches and a half round at the thickeft end, two inches at the fmaller, and an inch and a half long. It feems to be two *Fungitæ* united together, there appearing by the help of a magnifier a kind of a flaw between them, not difcernible by the naked eye. I had it from the bottom of the fame river.

A *Mycetetes* with a large kind of *Plexus* or net-work in the center, with white *ftriæ* on a pearl-coloured ground extending from it to the circumference, is fometimes found in limestone in the quarry at *Chefeburn-grange*, near *Stamfordham*, from which

I had

I had it. It is composed of fine spar, and takes a neat polish. It is of a conoid shape, and a little incurvated; three inches and a half round at the thickest end, two inches at the smaller, and an inch and a half long; the small end holding part of the stone, of a yellowish-grey. It is sometimes found double that length, in that quarry, tumid in the middle, and gradually tapering at each end.

On the shore of *South Tyne*, near *Allerwash*, in a calcarious stone, I found a group of them, lying horizontally, of a yellowish white.

I have also a fine one from the shore of the river *Tweed*, near *Cornhill*, found loose, of a reddish-white.

Of this kind, I met with two remarkable varieties; one of a conoid shape, with an arbuscular delineation in the center, of a bright white, on an ash-coloured ground; another of a flat form, marked with the capital letters *I R* in the center, of a bright white, on a deep purple ground; both struck out of a calcarious stone on the shore of the brook at *Simonburn*.

It is sometimes found in stone on the same shore with white striæ, on a ground of two different degrees of purple.

On the sea shore by *Rofs-links*, near *Belford*, and on the shore near *Widdrington*, a yellowish-white *mycetetes* is frequent in small masses of the *marmor junceum*, and other stones.

Innumerable quantities of a grey *mycetetes* are in the clay-banks by the brook of *Simonburn*. In my searches for them, I have observed them frequently lying in great order, appearing as if jointed, till I have been undeceived by taking them out,
and

and found them single, in a linear position. The floods often turn them out of their argillaceous *nidus's*, and smooth their surfaces, when their transverse and longitudinal *frie* are seen to great perfection.

Their most usual shape is conoid, but we sometimes find them of an irregular shape, and scyphiform, or cuped, like the cup-mushroom, with fine *frie* in alternate ridges and furrows, from a protuberated center in the cup to the circumference, and also length-ways. I have one of these of an inch and a half in diameter, an inch and three quarters long, and four inches round; found in the bottom of the same brook, with a small conoid cuped *mycetetes*, with the same kind of *frie* in the cup, and other larger *frie* round it.

We have them also in stone on the same shore of a *button-like* shape, with an obtuse reflected *apex* underneath, of various colours; of a light and deep ash-colour; of a pearl-colour, with a beautiful blush of red; of a deep purple and white. They take an excellent polish. It is not uncommon to find this and the conoid species entombed in large loose masses of a greyish-black hard stone, in company with the grey and white undulated *lithostrotion*, *entrochoi*, and *bivalve* shells, great and small, in a most amazing confusion.

All the coralloid class are of a marine origin, the marmoreous casts of sea-coralloids, composed of longitudinal and transverse *lamellæ*, so thin, as to form the beautiful radiated figures described. Sections of them cut through both ways give a good view of their interior structure. They calcine to a white lime.

Of the figured stones, called *Belemnitæ*, or thunderbolts, the *Trochitæ*, *Entrochoi*, *Asteriæ*, or star-stones, composed of talc and spar,

spar, with an admixture of sulphur, we have a great abundance. The largest and fairest I have seen are in the strata of clay above the bridge of *Simonburn*; where they lie in all directions, soft and fragil, not enduring to be touched but with the greatest gentleness, yet, when exposed to the air, acquiring the hardness of a marble, and capable of a politure. Their exterior colour, when washed and freed from the clay, is grey, or a yellowish-white. Sometimes they have an elegant indented incrustation, and sometimes an incrustation with minute protuberated points, of a greyish-black; both the indentings and points numerous. They are silvery and glittering when broke. Some of them exhibit a curious phenomenon by politure, the grit of one appearing very white, and that of another of a dark lead colour, inclining to black, owing to metalline admixtures. The radiated heads of others being taken down by politure, they exhibit beautiful clouds of grey and white, owing to the same cause. In the fire they crackle and burst, shewing their glossy foliaceous texture. Rubbed hard upon a stone they smell like burnt horn. Their *striae*, from the center to the circumference, are formed to hold their joints together like futures. Their central *tubuli* or perforations are filled with various matter, as hard as their own substance, and of different colours, taking their interior figure and circular channels.

The *Belemnites* are of all sizes, from less than an inch to ten inches; some of them cylindric; others compressed, with a longitudinal furrow on one or both sides; some with small tubercles; and others with their joints a little raised. They are rarely found conic, and those not exceeding two inches in length.

The *Entrochoi* are from less than half an inch to six inches, but it is with difficulty they can be had entire of so great a length; the

the intermediate ones most beautiful; some with their joints elegantly ferrated, forming wavy lines, with a punctated surface; some with *Appendiculae*, or radiated studs and branches; some with oval, and others with round hollows on their sides, like cups, as if they were the sockets of branches; some like screws, and therefore called screw-stones; some of those finer and thinner edged, and others blunter and rounder, with fewer circles.

The *Asterie*, or star-stones, are from less than half an inch to two inches in length. Some of them are perfect *Intaglia*, and may serve for seals. They have not all the like number of angles, nor are all the angles acute. Some of the stellar cavities are filled with a black, and others with a red substance, which on a white ground look very beautiful. Some of them have a single order of rays, and others a double one, encircling the stars; the latter order generally higher, and more raised next the brim. Some of them have elegant red wavy lines running through their white substance.

That beautiful species of *Asteria* which forms a stellar figure like the *Pentiphyllum* flower, full-blown, found at *Leppington*, near *Malton*, and at *Bugthorp*, at the foot of the wolds in *Yorkshire* (*p*), is not found with us.

The *Asteropodium* of Mr. *Edward Lhwyd* (*q*), and others (*r*) is frequent in clay, with the former. It is seemingly but half formed, yet perfect and beautiful in the other half, having two flattish sides with a narrow ridge, the joints falling between each other. It is constantly found of the same figure.

(*p*) Ph. Tr. No. 112.

(*q*) *Lithophilaceum Britannicum*.

(*r*) *Hill. Hist. Foss. p. 654.*

All these bodies are frequent both in stone and loose on the shores of our alpine rivulets, and in marble or limestone quarries. They are also plentiful on many parts of the sea-shore, particularly among the rocks at *Holy Island*, where they are called by the general name of *St. Cuthbert's Beads*, and are so called by Mr. Ray (s). We find them frequently immersed in nodules of iron-ore, with fair specimens of bivalve shells, on the shore of the brook, and in the clay-bank at *Simonburn*; also single ones so filled with the ore, that they seem only thin jointed cases, crusts, or coverings to it. We sometimes find them in masses of red iron-stone on the shore of the brook at *Goston*, of a blood-red throughout, in vast numbers. On the sea-shore at *Druridge*, near *Widdrington*, I have found them in a red stone, of a beautiful white, with wavy red lines running through their plated substance, both *entrochoi* and *asteriæ*, the stellar cavities of the latter, red. I have also found the cavity of the *belemnite* red, with a white circle, on a grey ground, in a red stone on the shore of the brook below *Simonburn-castle*. They are found both in stone and clay in such innumerable quantities, and with such numerous dislocations and bruises, in company with other marine bodies, that it is both entertaining and astonishing to see them. Lithologists of great name differ in their opinions concerning their origin. The famous Dr. Lister (t), and Mr. Beaumont of *Stoney Easton*, in *Somersetshire* (u), refer them to the mineral kingdom. The learned keeper of the *Ashmolean Museum*, *Edward Lbrwyd* (v), and the three curious foreigners, *Augustin Scilla* (w), *Gualtieri* (x),

(s) Philosophical Letters, p. 113.

(t) Ph. Tr. No. 100.

(u) Ph. Tr. No. 129, No. 150.

(v) Lithophil. Britann.

(w) *A. Scilla* de corporibus marinis lapidescentibus quæ defossa reperiuntur, 4to. cum fig. Romæ. 1752.(x) *Nic. Gualtieri* Index Test. &c. fol. cum Tab. elegant. Florent. 1742.

and *Klein* (y), refer them to the animal; reckoning them animal remains, the spines of the *echinus*, or appendages of the *sea-stars*.

The belemnite being calcined, is said to produce the same effects with the celebrated original phosphorus of *Bologna* (z).

Spar is found with us in great quantities; some white, of an irregular roundish shape, and mammillated; the mammillæ of different magnitudes; others in the form of icicles, white, with purple zones; also of a light straw-colour, small at the root, swelling in the middle, and tapering to a point, with small irregular tubera, and fistulous. I have a fine specimen of the mammillated and first icicle sort, from the shore of the river *Coquet*, above *Thropton*; and two of the last icicle-species from a quarry at *Bebside*, by the river *Blyth*, both of the same length, five inches. I have had one from the same quarry above a foot long, of the same colour, and tubulous. There are at this time many short ones under the arch of the bridge at *Wark*, in *Tynedale*, snow-white.

We have some spar with single, and some with compound crusts. I have a fine specimen of the latter sort from the shore of the brook at *Simonburn*; the surface thick set with irregular tubera, which being rubbed down by politure shew a beautiful wavy process, with concentric zones or circles, and in one of

(y) *J. Tb. Kleinii* Descript. Tubulorum marinarum, 4to. cum Fig. *Gedani*. 1731. Per-illustri *Hans Sloane*, Baronetto, inscript.

(z) *Du Fay's* Lecture on the *Phosphorus* at the Meeting of the Royal Academy of Sciences at *Paris*, in the Year 1730.

———— Account of several new Sorts of *Phosphorus*, published in the Year 1733.

them, at one corner, a figure like a shrub, of a yellowish-white.

I have a brown piece from *Walker* colliery, near *Newcastle*, with many cruffs, the surface villose or nappy like velvet, glossy and shining when held up to the light.

That sort called *Osteocolla*, from *ὄστέον*, *Os*, and *κόλλα*, *Gluten*, is often lying on the shore of the brook at *Simonburn*, after floods. It is so like an osseous substance, that it is often taken for the bone of some animal by those that do not know it. It is in reputation for fractures and broken bones, powdered and taken inwardly in milk, bread, an electuary, or in the common diet, till the cure is compleated; being said to expedite exfoliation, and to generate a strong and firm callus (*a*).

Spar is solvent by acid *Menstrua*.

We have *Pseudo-Crystal* from the lead mines at *Allen-Heads* of various figures and colours.

1. *Cubic*, which shews all the colours of the *Rainbow*.
2. Of the same form, with a yellowish tinge, owing to *Lead*. We have it also *tessellated*.
3. *Rhomboidal*, of a beautiful purple, owing to *Iron*. We have it also with *Tessellæ*.
4. *Multangular*, and pointed, of a sea-green, owing to *Copper*.
5. *Six sided* or hexogonal crystal, with large and beautiful pyramids, of a diamond lustre.

(*a*) Ph. Tr. No. 453.

We find it also, in the same mines, in the form of incrustations, with various angular protuberances and efflorescences, of a dazzling splendor.

Pseudo-Crystal does not effervesce with *Aqua fortis*. It is solvent by fire, and is used in fluxing metals.

Crystal, of an hexangular shape, is sometimes found under the gravelly surface, and in the fissures of the rocks, at *Dunstonbrough-castle*. It is mentioned by the learned editor of *Camden*, who compares it to the *Bristol-stones* (b). I am informed that the late *Thomas Proctor*, of *Rock*, Esq; sent some for trial on the wheel to *Edinburgh*, which proved not inferior to those stones for hardness and lustre. Hence they obtained the name of *Dunstonbrough diamonds*, but they are so rarely found, that the late *Dr. Tovey*, vicar of *Embleton*, on letting his tithes jokingly said, "That he reserved only to himself the tythe of the diamonds."

No solvent has been hitherto found for *Crystal*.

Small opaque and pellucid crystalline nodules are not unfrequent on our fresh water and sea strands, from which I have had the following varieties.

1st. Of an oblong figure, and flattish on one side, with an admixture of a pale yellow, and a deep red, in spots and clouds. From the sea-strand near *Alnmouth*.

2^{dly}. Of a roundish figure, grey, with an admixture of a deep red, diffused in clouds, emulating the moss-like figures in the *Mocha-stone*. From the shore of the brook below the bridge at *Simonburn*.

(b) *Bishop Gibson*.

3dly. Of a flat shape on one side, and roundish on the other, of a bluish-grey. From the shore of *North Tyne*, near *Park-End*. These are opake.

4thly. Of an oblong, flat shape, of a pearl colour, with white reticular veins, like those we see in the leaves of some vegetables. From the shore of the brook near *Nunwick*.

5thly. Of an ovated shape, and of the same colour. From the shore of the *Tweed*. On receiving a beam of light, it refracts it most beautifully, like the *Island-crystal* of authors.

They are all of a smooth surface, and capable of a neat polish. They are commonly taken by inaccurate observers for sparry nodules.

Of *Pebble-Crystal* (c) we have some very fine, on the shores of the *Coquet* and *Tweed*; from the size of a pea, to that of a large walnut, and sometimes larger, of an unequal and irregular surface, usually roundish or flattish, pellucid as water, and capable of a high polish. I have one, from the shore of the *Tweed*, three inches long, two inches and a half in diameter, and about an inch and a half thick. I have others, from the same shore, of all the intermediate sizes between that and a large garden-pea. It is never found with figured concretions.

Of the *sarda*, or *carnelian*, we have the *red* (d), the *yellow* (e), and the *white* (f), on the same shore. We have the *red* from half

(c) *Petridium chrySTALLinum*, pellucidum, decolor varium. *Hill. Hist. Foss.* p. 563. No. 1.

(d) *Sarda rubescens*. Id. p. 458. No. 1.

(e) *Sarda flavescens*. Id. p. 460. No. 2.

(f) *Sarda albescens*. Id. p. 461. No. 3.

an inch to two inches in diameter, both of an oblong, flattish, roundish, and mammillated shape, but most usually roundish, like a pebble; of a fine texture; of all the degrees of red, from a deep blood colour to that of a light florid red. We have a variety of it with veins of a pale red, and others with white veins, lighter and darker, like those of *agates*, disposed in irregular concentric circles, or in small and very beautiful round ones. We have also a variety of it with an admixture of a pearl-colour, the red appearing diffused in the form of clouds. It is very much used and valued with us for seals, taking a good polish, and parting easily from the wax.

We have the *yellow* carnelian from less than half an inch to near three inches in diameter, both of a flat and roundish form, like a pebble; but most commonly roundish, and of a pretty smooth surface; of an exceeding fine texture, somewhat more pellucid than the red, and capable of a high polish. We have it of all the degrees of yellow, from the pale *lemon* to a *deep* yellow; sometimes uniform throughout, but oftner with clouds of red, forming a beautiful flame-colour. We have a variety of it with veins, paler and deeper, and sometimes whitish, disposed in irregular concentric lines or circles.

We have the *white* carnelian, from an inch to three or four inches in diameter, both of a roundish, flattish, and oblong shape, commonly of an irregular and rough surface. It is not of a pure clear white, but a pearl-colour, white, with a tinge of blue. We have a variety of it on the shore of the *Coquet*, with parallel lines or veins, bluish and white, very beautiful. We have also a variety of it with an admixture of blue, diffused in spots and clouds, with irregular concentric veins, and with zones or circles, bluish and white. I found one of these in an islet in the
the

the *Tweed*, called the *Shingles*, opposite to *Norham-castle*. It is of an irregular rugged shape, five inches long, three inches in diameter, and two inches thick; very heavy. It is capable of an elegant polish. I have another of an hemispherical shape, with veins, wavy, in beautiful meanders; from the sea-shore, by *Druridge*, near *Widdrington*. It is two inches and a quarter long, and two inches in diameter; ponderous. The jewellers generally use those that are simple-coloured, and prefer them before these elegant varieties with veins. They cut out the zones or eyes, and set them in rings.

The green gem, with a slight admixture of a brassy yellow, the *chrysolite* of modern times, and the *topaz* of the antients (*g*), is sometimes found on the shore of the *Coquet*; from which I have a fine one, of an oval shape, a little flattened on one side, somewhat larger than a nutmeg, with a natural polish; opaque, and of little esteem with jewellers, though in its perfect state of great beauty.

We have not the true *chrysolite* of the antients, so called from its elegant gold-yellow, the *topaz* of the moderns (*b*). The *Scotch* dealers in gems carry on a large trade with what they call *Topazes* from the *Highlands*, which, when put to trial on the wheel, are found only to be crystals, tinged by metalline particles. Most of the topazes used for seals and rings are of this kind.

The gem, called the *Amber-Hyacinth*, from its being tinged with red, and a large admixture of an amber-yellow (*i*), is sometimes

(*g*) Chrysolithus; qui topazius antiquorum. *Hist. Hist. Foss.* 598.

(*b*) Topazius; qui chrysolithus antiquorum. *Id.* 599.

(*i*) Hyacinthus. *Id.* p. 593.

found, but rarely, on the shore of the *Coquet*, above *Rothbury*, in the crystalliform state; from which I have a fine one, of a pebble-like figure, with many pyramids of three quarters of an inch in length, rising from a base of purple crystal, their tops hid from the eye by an irregular sinuose crust of the same colour; their exterior sides and angles conspicuous, and semipellucid; affording a pleasing sight between two such covers at top and bottom.

Of *Calculi* or pebbles, of a crusted structure, capable of a fine polish, we have the following sorts; the edges of the crusts forming the elegant and beautiful figures we call veins.

1. A pebble with purple and white crusts; the purple of two different degrees, a lighter and deeper; some of the crusts so broken at one end, as to shew the manner of its formation. It is an inch and a half long, and an inch in diameter. From the shore of the *Tweed*.

2. A mixt red and yellow pebble, with blue, carmine, and pearl-coloured crusts; an inch and a half long, and an inch in diameter. From the shore of the *Bow-mont*, so called from its arcuated or bending course under the mountains.

3. A pebble with crusts of a flesh-colour, and white; the white central crust broken so as to shew the manner of its formation. From the same shore.

4. A pebble of a deep brown, with crusts of a light brown, white, and a pearl-colour; two inches long, and an inch and a half broad; ponderous. From the shore of the *Coquet*, above *Rothbury*.

5. A pebble with crusts of a deep amber-colour, and a bright white; an inch and a half long, and an inch and a quarter broad. From the shore of the *Tweed*.

There are many others on the same shores, where the curious lithologist might meet with much entertainment after great floods. They have all exterior coats in their perfect state, like those of flints, which are very scarce with us.

There is a fine collection of *Tweed*-pebbles in the possession of my worthy friend, *Henry Collingwood*, of *Cornhill*, Esq; many fine Carnelians among them. There is also a neat collection of *Bowmont*-pebbles in the possession of Mrs. *Selby*, of *Paoston*.

Of *Agates* we have the following kinds and varieties.

1. An agate-*lithostrotion*, composed of crystalline columns, the ends forming a wavy reticular work, a light yellow in the center; encircled with black; the masses white; large, and ponderous. From the shore of *North Tyne*, by the islet near *Chipchace*-mill.

2. An agate-*lithostrotion*, composed of large astroite studs, of a button-like shape, of a corneous, flinty texture, yellow, edged with white; having much the appearance after politure of the great *coralloid*-*lithostrotion*. From the shore of the river *Tyne*, below *Hexham*.

The celebrated Dr. *Hill* judiciously observes, that fossil corals are sometimes so fated with crystalline matter, that they are con-creted into mere agates (*k*).

3. An agate of a strong and deep red, variegated with a florid red, a pale blue, green, and yellow of different degrees, in beau-

(*k*) *Hill*. Hist. Foss. p. 642.

tiful spots; the florid red looking like drops of blood, with its ferum about it. This was found on the shore of *North Tyne*, by the islet near *Chipchace* mill. It is of an irregular shape, ponderous, and seems to be broken off a larger mass. It is the *Hemachates* or blood-stone of the ancients (1). I have a beautiful variety of it, with an admixture of brown, and white veins, from the shore of the *Tyne*, near *Corbridge*; and another from the *Coquet*, above *Rothbury*; the florid red spots numerous and elegant. We have it also on the shores of the *Tweed*, and *Bowmont*, and the neighbouring hills. I have seen some fine ones found in those parts; cut and polished, in the possession of Mrs. *Selby*, of *Passon*.

4. A whitish agate, with flesh-coloured veins, spotted and variegated with a bright gold-yellow, a light and deep purple, and green. It is a beautiful species of the *Hemachates*. From the shore of *North Tyne*, below *Chollerford*-bridge.

5. An agate of various colours, a light and deep green, a deep red, a purple, white, and a bright gold-yellow, cast into compartments, edged with purple and a gold-yellow, in a most elegant manner; the white diffused in the form of veins; presenting to our view such a beautiful contrast of colouring, as can only be equalled by the embroidery and brocade-attire of some of the vegetable and insect-tribes. It is so excessive hard, that it was the labour of two men for two days to give it a tolerable smooth surface on a grind-stone, and to give it a politure afterwards with *Smiris* on a lead-mold, it took me up near a week. It is a species of the *hemachates*. It was found in the bottom of the brook by the bridge at *Simonburn*, near a bank abounding with iron-stone.

6. An agate of a strong deep red, with large spots of a bright pea-green. It is of a fine close texture; of an irregular figure,

(1) *Achates sanguineus variegatus*. Id. p. 482—3. No. 2.

and seems to be broken off a larger mass; very heavy. It is also a species of the *hemachates*. From the shore of the brook below *Simonburn* castle.

7. An agate of a flesh-colour, with numerous spots of a beautiful red, like that of the finest carnelian; cordiform. It is the *Sardicates* or carnelian agate of the ancients (*m*). It is small, and has some flight flaws, which this kind is very much subject to. From the shore of the brook at *Simonburn*.

8. An agate of a middle-red colour, variegated with spots of a bright yellow; of a flat shape. It is the *Coral*-agate of the ancients (*n*). The variegation is always in the form of spots of a fair beautiful yellow, on a red ground, of a middle colour, between a deep and a pale red. From the shore of the river *Coquet*, above *Rothbury*.

9. An agate of a deep yellow, hardly to be distinguished at a yard's distance, in its rough state, from the finer yellow wax. It is of a firm and compact texture, and capable of an elegant polish. It is the *Cerachates*, or wax-coloured agate of the ancients (*o*). From the shore of the river *Tweed*. I have had it also from the shore of *North Tyne*. I have a large and elegant species of it from the same shore, below *Chollerford*-bridge, of a pale yellow ground, clouded with its natural colour, a strong yellow.

Grey agates, both with and without concentric veins, are found on the shores of the *Tweed* and *Bowmont*, and the neigh-

(*m*) *Achates carneus punctatus et nebulosus*: *Sardachates antiquorum*: *Hill. Hist. Foss.* p. 483. No. 3.

(*n*) *Corallo-achates antiquorum*. *Id.* p. 484. N. 4.

(*o*) *Achates flavescens*: *Cerachates antiquorum*. *Id.* p. 485. No. 1.

bouring hills. I have picked up some, large and fine, by the road-sides on a rainy day, being then most easily distinguished from other stones. I have seen some cut into seals, very handsome, in the possession of Mrs. *Selby*, of *Paoston*.

We have a grey agate, with large blotches of a florid red, in great plenty in the hilly grounds on the west side of *Carham*, by the *Tweed*, many of them turned up by the spade in hedge-bottoms, and others washed down by torrents to the shore of that river. There is a variety of it streaked with red and white, resembling at a distance a piece of bacon. There is another variety mottled with white, on a grey ground. These are all subject to flaws.

Agates yield no *Phosphorus*.

Jaspers of an uniform structure, with no separate concretions, are not unfrequent; of which I have the following sorts.

1. A deep green jasper, elegantly variegated with a gold-yellow (*p*). It is of a roundish shape on one side, and flattish on the other; of a firm and compact texture, and a polite surface, three inches in diameter. It is a most beautiful stone. From the shore of *North Tyne*, by the *Strother*-house, below *Chipchace*-mill.

2. A jasper of a pea-green colour, variegated with a light yellow. It is of a flattish shape, and of a flinty texture.

3. A jasper of an olive-green colour, with *dendritæ* or arbuscular delineations of a bluish-black, very beautiful.

4. A blue jasper, variegated with a light and deep yellow.

(*p*) *Jaspis durissima viridi-flaves cens. Nephriticus subflava authorum. Hill. Hist. Foss. p. 578. No. 5.*

5. A blue jasper, variegated with a yellowish-green, in beautiful streaks and blotches.

6. A black jasper, elegantly variegated with brown. These five from the shore of *North Tyne*, below *Chollerford*-bridge.

7. A black jasper, variegated with a pale yellow, with some small veins of a light blue. From the shore of *Wark's burn*, in *Tynedale*, near its *osium*.

8. A bluish-black jasper, with flesh-coloured and green veins and clouds; capable of a beautiful polish. From the shore of *North Tyne*. I have also found it on the shore of the brook at *Ovingham*, near its *osium*.

The bluish marbly jasper, and the black marbly jasper, both variegated with white (*q*), are frequent on the same shores. They are always found in loose nodules, and answer all the tests of crystal, though usually taken by inaccurate observers for fragments of marble. They strike fire with steel, do not ferment with acids, and are vitrifiable.

Jaspers yield no *Phosphorus*.

Of *Granites*, formed of concretions of *Quartz* and *mica*, and answering the same tests as *Jaspers*, we have the following kinds and varieties; found in nodules, and loose masses, but never in strata.

(*q*) *Jaspis marmorea, subcærulea, albo variegata.*

Jaspis marmoreus, nigricans, albo variegatus. *Hill. Hist. Foss. p. 590. No. 17. p. 591. No. 18.*

1. A white granite, thinly spotted with large black spots or flakes of micæ, and some of a splendid silver-colour (*r*). The concretions, though large and glossy; adhere firmly and strongly together, and form a stone of great hardness, capable of a high polish. From the shore of *North Tyne*. In *Cornwall* and *Devonshire* it is called *Moor-stone*, where it is found in large strata, and used in the ornamental parts of buildings. It has also been worked into very beautiful tables.

2. A granite of a dusky ashen-white ground, with numerous, irregular, black spots; the concretions small and fine, consisting of an opaque, tabulated quartz, and micæ; the latter of a deep black; both glossy; forming a beautiful variegation (*s*). From the shore of the brook below *Simonburn-castle*. An abundance of this kind of granite is said to be found in the ancient temples and other buildings of *Ægypt*, *Asia*, and *Italy*; distinguished by modern travellers, by the name of the *grey Granite*. It is the *Arabian granite* of *Dr. Woodward* (*t*), and the *Granitello* of the *Italians*.

3. A granite of a red ground, of different degrees, spotted with white, yellow, purple, and black (*u*); the concretions strongly com-

(*r*) *Granita albissima micis magnis nigris argenteisque notata. Da Costa. Hist. Foss. p. 273. No. 2.*

Moor-stone. Woodward. Cat. G. e. 3.

Granita alba, durissima, nigro variegata; quæ incolis cornubiensium Moor-stone. Hill. Hist. Foss. 498. No. 1.

(*s*) *Granita albescens micis parvis nigris frequenter maculata, Italis Granitello dicta. Da Costa. Hist. Foss. p. 274. No. 3.*

(*t*) *Granite from Arabia. Woodw. Cat. 1. γ. 6. & Cat. 1.-δ. 3. Cat. A. Θ. d. 38.*

(*u*) *Granita rubescens, granita orientalis rubra dicta. Da Costa. Hist. Foss. p. 276. No. 6.*

compacted together, consisting of an opaque and pellucid crystalline quartz, and micæ; the latter usually black. From the shore of *North Tyne*. This species is the *Marmor Thebaicum*, and *Syenites*, of the antients, who had it from the *Upper Ægypt* (w); where are vast quarries of it still to be seen (x). We have some varieties of it.

1st. A dark red, spotted with green, and black. There is a vast mass of this species lying in the river *Aln*, below the bridge at *Alnwick*. Part of it has been worked for a mill-stone by some unskilful artificers, who finding it after much sweat to be a harder kind of stone than they were acquainted with, deserted it, with no small surprize at their mistake.

2^{dly}. A granite of a florid red ground, with pearl-coloured or bluish-grey spots; the concretions large; no micæ in it; capable of a good polish. From the shore of the brook below *Simonburn-castle*.

3^{dly}. A granite of a pale red ground, variegated with yellow and green spots. From the same shore. These are beautiful varieties.

We have also a granite of a gold-yellow ground, with grey and green spots, in an elegant variegation. This, and the other

Woodward. Cat. Foss. 1. p. 5. and Cat. 1. d. 3.

——— *Method of Foss. p. 11. No. 41.*

Granita rubra durissima, nigro et albo variegata; quæ pyropæcilos antiquorum; Syenites Plinii, et granita orientalis recentiorum. Hill. Hist. Foss. p. 499. No. 2.

(w) About a mile S. E. from the ruins of *Syene*, near the cataracts of the *Nyle*, on the borders of *Æthiopia*. *Pocock's Descript. of the East. Vol. 1. p. 117.*

(x) *Ib. Ph. Lucas's Voyage au Levant. Tom. 3. p. 154, & 162.*

kinds,

kinds, are sometimes found with flaws or cracks, and often worn and rounded into the form of pebbles. Few of our alpine shores are without them, more or less. I have had the gold-yellow kind with grey and green spots, very elegant, from the sea-strand, near *Warkworth*.

The *Ægyptians* were the first who built with granite. Their famous obelisks were made of it (*y*). The pillars in their no less famous labyrinth were also of it (*z*). Besides the local antient names of *Syenites* and *Marmor Thebaicum*, it was also called *Pyropæcilon*, from its being spotted, as it were, with a fire-colour, or its red ground. Some, in Pliny's days, called it *Pfaronium*, from its spots and variegations (*a*).

Granite yields no Phosphorus.

Of *Phorphyry*, a finer kind of granite, with its spots more neatly disposed, we have some small fragments or nodules, broken off larger masses, worn and rounded into the form of pebbles, by the currents of water.

Phorphyry, of a glowing purple ground, with angular pale red and white spots, is very scarce. I met with a very small, but beautiful fragment of it on the shore of *North Tyne*, below *Chollerford-bridge*. It takes an exquisite polish. It is the *Leucostictos* of the antients (*b*); so called from its spots and variegations.

They

(*y*) *Trabes ex eo fecere reges quodam certamine, obeliscos vocatos, solis numini sacratos.* *Plin.* l. 36. c. 8.

(*z*) *Columnis reliquis e Syenite.*—*Id.* l. 36. c. 13.

(*a*) *Thebaicum, quem Pyropæcilon appellavimus: aliqui Pfaronium vocant.* *Plin. Hist. Nat.* l. 36. c. 22.

(*b*) *Porphyrites seu leucostictos, vel, quorundam criticorum opinione, Leptosephos Plinii.* (*Hist. Nat.* l. 36. c. 7.) *Da Costa. Hist. Foss.* p. 283. No. 1.

They had it from *Upper Ægypt* and *Ethiopia*, where there are vast strata of it, as well as granite. It is remarked by Dr. *Pocock*, the late learned Bishop of *Meath*, that travellers do not rightly distinguish between these two elegant bodies. They frequently call *Granite*, porphyry (*c*). The *Ægyptians* had the honour of first working it, as well as granite, many centuries before the *Grecian* or *Roman* times. They made columns, statues, and vases of it, of such exquisite workmanship and elegance, as were the astonishment of the later ages; such as the *Grecian* and *Roman* artists were unwilling, though not unable, to perform. The admired *Roman* lithologist, *Pliny* informs us, that *Pollio*, the *Roman* vice-roy, under *Claudius Cæsar*, brought statues of it to *Rome*, but that no body at *Rome* was so fond of it, as to follow his example (*d*). It is remarkable, that *Suetonius* is the only one of the *Classic*-authors who mentions it (*e*). Its excessive hardness made them neglect it, and prefer marble before it, of which they had a great variety, of wonderful beauty. All the works in porphyry, now known, were performed by *Ægyptian* artists, by the powers of genius, and with the same patience and unremitting industry, as the *Northern* nations polished their *Druid* beads, or magic gems, into spheres, spheroid, and orbicular forms.

Green porphyry, with large angular white spots, is more frequent. The white concretions have a slight tinge of green; some in oblong squares, and others in the form of *Entrochoi*, so like

Porphyrites purpureus durissimus, maculis pallidioribus et albescentibus variegatus, qui porphyrites antiquorum. *Hist. Hist. Foss.* p. 494. No. 1.

(*c*) Description of the East, Vol. 1. p. 112.

(*d*) Statuas ex eo *Claudius Cæsari* procurator ejus in urbem ex *Ægypto* advexit *Vitrasius Pollio*, non admodum probata novitate. Nemo certe postea imitatus est. *Hist. Nat.* 1. 37. c. 7.

(*e*) L. 5. c. 50. speaking of the place of *Nero's* sepulture.

them

them as to be taken by some people for marine remains; consisting of an opaque, tabulated, glossy quartz, the *Feld-Spath* of the *German* authors, which always affects angular figures, approaching oblong squares, cubes, and parallelepipeds, in its crystallization, both in porphyry and granite. I have a beautiful nodule of it from the shore of *North Tyne*, and others from the shore of the brook at *Simonburn*. It is capable of an elegant polish; the ground-colour of a deep grass-green. It is the *Ophites* of the *Antients* (f). They had it from the *Upper Egypt*, near the city of *Memphis*, from which they also called it *Memphites* (g). It had its first name from its imaginary virtues against the bites of serpents, and from the resemblance of its spots to those on the skins of some of these reptiles. Small *Tessellæ* of mosaic pavements have been found of it in the ruins of *Italy*, but no vases, statues, and other works of value, either *Grecian* or *Roman*. The blocks of it now found in the ruins of *Egypt*, are not of any great size, from whence it is thought, that the strata of it were not considerable for extent and depth.

Stones composed of small pebbles, and answering the tests of crystal, are sometimes found on the shore of *North Tyne*; from which I had the two following sorts.

1st. Of a dark brown ground, thick set with pebbles or concretions of a bright and deep red, a bluish-white, black, a pale yellow, and a yellowish-green, forming a beautiful variegation.

(f) *Phorphyrites saturatè viridis maculis magnis oblongo-quadratis ex viridi albertibus notatus, s. Ophites niger antiquorum. Da Costa. Hist. Foss. 287. No. 2.*

(g) *Plin. Hist. Nat. l. 36. c. 7.*
Serpentino Antico, Italice.

2dly. Of a yellowish-white ground, thick set with concretions of different degrees of red, and a reddish-brown, from the size of a pin's head to that of a pea, in a distinct and beautiful disposition.

These curious and beautiful stones owe their colours to metalline admixtures and tinges.

C H A P. VI.

OF FOSSIL-SHELLS, AND OTHER ANIMAL AND
VEGETABLE EXUVIÆ.

BOTH *Litorales* and *Pelegia*, or shore and ocean-shells, are not unfrequently found fossil with us. We have also some of those that are called *anomalous*, from their being found no where but in a fossil-state.

I shall begin with the *Univalves*.

1. The convex umbilicated *Turbo* (*a*). From a bank of blue clay above the bridge at *Simonburn*, where I met with two of them, one of which was so tender that I broke it in taking out, both nearly of the same size, and cinereous.

2. A smaller, of an ochreous red tinge, in a mass of iron-stone of the same colour. From the shore of the brook at *Goston*, near *Wark*, in *Tynedale*.

3. A variety of it, small, smooth, and cinereous; immersed in great numbers, and in various directions, in a small stone from the shore of *North Tyne*, below *Chipchace-mill*.*

(*a*) Testa convexa, vix perfecte conica, subtus profundè umbilicata ad modum trochi telescopii. Linn. Syst. Nat. p. 760. n. 521.

Turba testa umbilicata convexa, anfractibus teretibus striatis: striis crenulatis inequalibus. Foss. Hantoniens. Pl. 1. Fig. 8.

4. An impression of another variety in fine yellow ochre. Found in levelling the area before *Nunwick-hall*.

5. A ventricose *Turbo* with a wide mouth, and an obtuse *Apex* (*b*); in limestone, with impressions of the bark of a resinous tree. From the shore of the brook below *Simonburn-castle*.

6. A small ventricose *Turbo*, with a sharp apex (*c*).

7. A small *Turbo*, with longitudinal *striae*, slightly immersed in an astroite marmorite (*d*). These three from the clay-bank at *Simonburn*.

8. A small *Turbo* or *Murex* with longitudinal *striae*, slightly immersed in a nodule of iron-stone (*e*).

9. The long, slender *Turbo*, with ventricose spires, and a small round mouth, or, the *Needle-shell* (*f*). In the same stone with No. 2, and of the same colour, an ochreous red.

10. A small *Turbinites* (*terebra*) with rounded spires, of a pale red colour. In a marmorite from the shore of the brook at *Goston*.

11. Another, with closer and finer spires, of a bright white. In a stone found at *Allen-Heads*.

(*b*) Foss. Hanton. Pl. 4. Fig. 57.

(*c*) ————— Fig. 61.

(*d*) ————— Fig. 16.

(*e*) ————— Fig. 28.

(*f*) ————— Fig. 49.

Turba terebra, Linn. Syst. Nat. p. 766.

Bonan. Recreat. 3. Tab. 23, 24.

12. The *Turbo* with ventricose spires, called, The *Trumpet-shell*.
(g). These two from the clay-bank at *Simonburn*.

13. A small *Trochus*, with transverse *striae*, and a sharp *Apex* (b).

14. A cast of the larger *Trochus*, with an acuminate *Apex*. In the same stone with the white *Turbinites* (*terebra*) No. 11.

15. A cast of the *Trochus* with an obtuse *Apex*. Taken out of an affroite marmorite, from the shore of the brook at *Simonburn*.

16. The cylindric *Nautilus*, with longitudinal *striae* (i).

17. A *Nautilites*, *Lapis serpentarius*, or *Ammonites*. Found in limestone at *Chipchace*.

Small striated *nautilites*, composed of the *pyrites*, have been found in the coal-mines near *Newcastle*, of which the late Dr. *Cay* had one or two (k).

The recent shell of the cylindric *nautilus* is supposed by *Linneus* to be an inhabitant of the *Baltic* ocean. The wreathed *nautilus*, or *Cornu Ammonis*, is a native of the *Indian* seas. Mariners in their voyages often observe it, who call it the *Sailor*, from its resembling in its motion a ship under sail. It is called *Cornu Ammonis*, from its having a kind of resemblance of the wreathed horns on the heads of the images of *Jupiter Ammon*.

(g) *Morton's* Northamptonshire. Pl. 7. Fig. 18.

(b) ————— Fig. 30.

(i) *Nautilus testa recta subcylindracea apicem versus angustiore*. *Linn. Faun. Suec.* p. 380. n. 1330. *Rumph. Conchyl.*

(k) *Ph. Tr.* No. 250.

Next

Next of the *Bivalves*.

1. A single valve of the little roundish smooth *cocblea* (1). In the same stone with the pale red *turbinites* (*terebra*), No. 10. and of the same colour.

Single valves of small smooth *cocbleæ*, of a dark cinereous colour, are frequent in stone with the great stellar coralloid, and other bodies, on the shores of our alpine brooks. There are some of them in the same stone with the white *turbinites* (*terebra*) No. 11. I have also a group of them in a stone from *Allen-Heads*.

2. The smooth wry-beaked *cocblea*, of the middle size, and roundish (*m*). From the shore of the brook below *Tecket*.

3. A single valve of the longer-bodied *cocblea*, with longitudinal *striæ* as fine as hairs.

4. A single valve of the *cocblea* with longitudinal and transverse *striæ* (*n*). Both these in a small stone from the shore of the brook below *Simonburn-castle*.

5. A single valve of the shorter-bodied *cocblea*, with fine longitudinal and deep transverse *striæ* (*o*). In the same stone with the needle-shell, No. 9. and of the same colour.

6. The *cocblea* with eminent and depressed ridges and furrows; the middle part most elevated and extended, and the ridges most

(1) Morton's Northamptonshire, p. 206. tab. 5. fig. 13.

(*m*) ————— p. 207. tab. 6. fig. 2.

(*n*) *Arca* (*deleta*) *suborbiculata*, *decussatim striata*, *costis longitudinalibus remotioribus acutioribus*, *margine plicato*. Foss. Hanton. p. 39. pl. 7. fig. 97.

(*o*) Rumph. Conchyl. Morton's Northamptonshire, p. 206. tab. 5. fig. 10.

acute.

acute (*p*). In the same stone with the two *Trochus*'s from *Allen-Heads*.

I have it also from the clay-bank above the bridge at *Simonburn*.

In the *ostium* of a streamlet by the *Peas*-meadows, below the smelting-mill at *Allen-heads*, there are numerous casts of it in large masses of an ochreous yellow sand-stone, with which it is almost entirely composed; said to have been drawn up the shaft of a lead-mine. I have also met with casts of it in the same kind of stone on the scar by the brook, and the road, near *Simonburn*-castle, on the south-west side of the ford. I have seen fair impressions of it in the freestone from the shore of the brook below *Tecket*.

7. A slender bodied *cocchlea*, elegantly marked with yellowish-brown linear spots on a white ground, and expanded valves. From the limestone-quarry at *Blake-law*, near *Simonburn*.

8. A fair impression in yellow ochre of the small ribbed *pecten* or scallop (*q*). Found in levelling the area before *Nunwick-hall*.

9. The small, fine ribbed, echinated *pecten*. From the clay-bank above the bridge at *Simonburn*.

10. A fair impression of a single valve of the convex *tellina* with deep transverse furrows, and obtuse ridges, in fine yellow ochre (*r*). Found with the small ribbed *pecten*, No. 8.

(*p*) Plot's Staffordshire. Morton's Northamptonshire, p. 214. tab. 7. Fig. 2.

(*q*) *Cardium* (edule) testa antiquata fulcis xxvi obsolete imbricatis. Linn. Syst. Nat. p. 681. n. 77. Faun Suec. p. 518. n. 2141.

Foss. Hant. p. 39. pl. 8. n. 98. List. Angl. tab. 5. fig. 31.

(*r*) Morton's Northampt. p. 211. tab. 6. fig. 15.

Venus (gallina) testa subcordata, fulcis transversis obtusis, cardinis dente postico minimo. Linn. Syst. Nat. p. 685. n. 96. Foss. Hant. p. 37. pl. 7. fig. 90.

11. A single valve of the small *tellina* with deep furrows, and a crenated margin (*s*). From the clay-bank above the bridge at *Simonburn*.

12. The laminated *tellina* of a longer shape (*t*). From the same bank, in a bed of iron-sliver. I met with many fair specimens of it at different times, after great floods and intense frosts; the smallest an inch long.

13. The small laminated *tellina* of a more depressed shape. In the same stone with the *needle-shell*, No. 9, and of the same colour.

Single valves of the *sea-muscle* are not unfrequent in iron-stone on the shore of the brook at *Goston*. There are two of them in the last mentioned stone.

We have single valves of the great, round, convex *Ostrea*, the *Ostracite* of authors (*u*), plentifully in stone on most of the shores of our alpine brooks, and in many of the limestone-quarries. There are groups of them in large single masses of limestone in the streamlet on the east side of *Simonburn-castle*. They are common in limestone quarries about *Stamfordham*; in the large quarry at *Newton* on the moor, near *Alnwick*; in the quarry at *Blakelaw*, on *Broad-pool-Common*, near *Simonburn*; and in another large one on *Wark-common*, near *Linacres*, in *Tynedale*. In the

(*s*) *Arca (lactea) testis subrhomboidea obsolete decussatim striata, natibus recurvis, margine crenato.* Linn. Syst. Nat. p. 694. n. 143. Foss. Haat. p. 42. pl. 8. fig. 106.

(*t*) *Litt. Ang.* p. 19.

(*u*) *Ostracites maximus conglobatus.* Lh. Lith. Brit. n. 471.

——— *rugosus maximus.* *Litt. Angl.* p. 236.

Plot's Oxfordsh. tab. 4. fig. 19.

Charlet. Foss. p. 31. n. 18.

last mentioned quarry, some of them are of a vast size, tinged with red. Their general colour is cinereous. We never find them with double valves. Sometimes many of them include one another. Groups of them are frequent in stone with *Entrochoi*, and the lithostrotion, on the shore of the brook at *Simonburn*. These are more neat and handsome than any I have observed in quarries; parting easily from the stone with a slight stroke of a hammer. We have them in the clay-bank above the bridge at *Simonburn*, with other shells. There they are so tender and fragile, that it is rare to get one out entire. In the air they acquire a considerable hardness.

Two physicians, Dr. *Home* of *Berwick* upon *Tweed*, and Dr. *Cay* of *Newcastle* upon *Tyne*, used this shell very successfully in nephritic cases, and in curing such as were afflicted with the gravel. They gave it in fine powder, mixed with about a third part of *Flo. Cammomel*. the dose from half a dram to a dram in white wine (x).

14. A single valve of an *Ostrea* of a round convex shape, with a broad furrow down the middle from the *Cardo* to the extremity. From the shore of the brook at *Simonburn*. We have it also in limestone at *Chipchace*.

15. A single valve of an *Ostrea* of a round convex shape, with longitudinal *striae*, protuberated round the extreme margin after a singular manner, forming a kind of frost-work. From the shore of the brook near *Nunwick*.

16. A single valve of a small echinated *Ostrea*, of a round convex shape, with a truncated beak. It has a double series of ob-

(x) Ph. Tr. No. 25.

tuse prickles towards the extreme part of the margin, and others more acute at distances on the shoulders, the beak as if cut off. From the shore of the brook at *Simonburn*.

17. A single valve of a small echinated *Ostrea* of a longer shape, with a truncated beak. The prickles are obtuse, and at irregular distances. From the bank of iron-shiver above the bridge at *Simonburn*.

18. A single valve of a very small, smooth *Ostrea* of a round convex shape, and a truncated beak. From the same bank, where there are considerable numbers of them between the *lamina* of the shiver. They are of a yellowish-white, and always found of the same size and colour, free from blemishes.

These five are varieties of the great, round, convex *Ostrea*.

19. An *oblong Ostrea* with both valves, striated lengthways, with a broad furrow down the middle of the under valve. From a limestone-quarry near *Nunwick*. It is a variety of the common oblong species, and seems to have been bruised in its recent state.

20. A single valve of the *small falcated* or *hooked Ostrea* (*y*). It is striated lengthways; the beak and extremity inflected, or turned inwards, forming a kind of half-round. In iron-stone from the clay-bank above the bridge at *Simonburn*.

21. A single valve of a *large falcated* or *hooked Ostrea*. It has a broad furrow down the middle, and small striæ on each side. It

(*y*) Rondelet. de Pisc. Mort. Northampt. 193. tab. 3. fig. 1.
Ostreum minus falcatum. Lh. Lith. Brit. n. 451.

is a variety of the *Concha anomia*, or *Conchites anomius* of authors (z).

22. A single valve of a *ventricose hooked Ostrea*, *striated lengthways*. It is another variety of the same shell (a). Both these are in a fragment of limestone from the shore of the brook below *Simonburn-castle*. There is a group of them; the inside of one of the latter lying upwards to view.

All these marine shells were found thirty, and some forty miles from the sea, those of our own, and those of the *Mediterranean* and *Indian* seas, found in company together, in the same tomb. To what catastrophe could this be owing, but to the *Mosaic* deluge? For the testaceous inhabitants of so many distant shores and oceans to be thus brought together, and to have the same alpine sepulture with those of our own shores and seas, could be owing to nothing less; and are irrefragable testimonies against every system tending to support a partial or topical deluge; those systems generally doing more honour to their authors ingenuity, than to their cause; experience being the best test, and superior to all their arguments, how artfully so ever they are contrived, and under whatever *Circean* charms they appear to delude the understanding, to lessen the authority of a history unimpeached by Pagan antiquity; the sage *Greek* giving it his applause (b), and the wife *Roman*, though a satyrist, doing it no discredit (c).

(z) Plot's Oxfordsh. tab. 4. fig. 18.

Conchites anomius rugosus. List. Angl. p. 238.

Gryphites latiusculus longiroster. Lh. Lith. Brit. n. 473.

(a) *Gryphites ventricosior*. Id. n. 495. 497.

(b) *Longinus*.

(c) *Quidam fortiti metuentem Sabbata Patrem,
Judaicum ediscunt, et servant, ac metuunt jus,
Tradidit arcano quodcunque volumine Moses.*

Juv. Sat. 14.

I have

I have not observed any fossil-remains of *crustaceous* and *other* fishes with us.

These following of *land-animals* have been found.

1. The horns of a *red deer*, entire, with part of the skull. It was found about twenty-five years ago in the middle of a free-stone-rock near the iron-work at *Bebside*, then belonging to Mr. *Thomlinson*. It was demolished by his workmen, except one *Antler*, now in the possession of Mrs. *Fielding* of *Bebside-hall*.

2. An Antler of a *roe-deer*. This was found three yards deep in marle at the west-boat-farm, near *Hexham*, under the mount before the house. It is in my custody.

3. The skeleton of an animal of an uncommon magnitude, said in *Camden* to be *Human*, but more generally believed to be the remains of some larger kind of quadruped, sacrificed at the altar of *Hercules* by a *Syrian* legion in *Roman* pay; turned out of the earth by the torrent of the streamlet *Cor*, at their station of *Colchester*, or *Corbow*, some time before the year 1695. The thigh-bone is said to be near two yards long, the skull and teeth proportionably large, and the whole animal reckoned seven yards in length, before it was broken and disfigured by the incurious finders. The form of the skull, and other bones, which distinguish a man from other animals, undoubtedly determined the learned editor of that valuable work to call it *human*; otherwise from his known prudence, we may believe he never would have affirmed it, notwithstanding the opinion of the Lord *Derwentwater* in his favour, who saw it. Instances of men of a remarkable tallness often occur in history. Our *British* ancestry, the *Cimbri*, were of a gigantic stature, — *immanea corpora* (d).

(d) *Flo. Hist.* 1. 3. c. 10.

——— Ad *Cimbros* stragemque volabant

Qui nunquam attigerant majora Cadavera corvi.

Juv. Sat. 8.

Agricola——

Grandiaque effossis mirabitur ossa sepulchris.

VIRG. GEO. I. V. 493.

The *Teutonic* king, *Theutobochus*, subdued by *Marius*, the *Roman* general, was so tall, that he out-topped the trophies, the *Spolia* of the field, carried on the points of spears, elevated,—*insigne spectaculum* (e). There have been instances, well attested, of human remains being found of the extraordinary length of seventeen feet. A friend of mine, on whose veracity I can rely, saw a woman at *Amsterdam*, in *Holland*, who to her shoulders was ten feet. What discredits the account of the *Corbridge*-skeleton most in the *Britannia*, is the opinion of the learned and curious Dr. *Todd*, prebendary of *Carlisle*, who, by the desire of Dr. *Halley*, took particular pains to inform him concerning it in a letter, bearing date 17th *February*, 1710-11. He assures us, that it might as well have been calculated at 200 or 300 yards, as seven; the ribs, shank-bones, and teeth, lying at a great distance from each other, and many of them no longer than the bones of ordinary oxen; the latter so numerous, that a bushel of them might be gathered in an hour. He gives it as his belief, that they are the remains of oxen, or other large quadrupeds, sacrificed to *Hercules*, laid after the *Roman* manner under the pavements and foundations of their fortresses (f).

Vege-

(e) Barbararum rex ipse *Theutobocus* insigne spectaculum fuit: quod in hoc operitatis eximie super trophæa ipsa eminebat. *Flor. Hist.* l. 3. c. 3.

(f) Ph. Tr. No. 330.

See Sir *Hans Sloane's* curious account of the *Dentes exerti*, the tusks of the tuskers of elephants, found under-ground, in his possession; and his remarks on the same in the *Philosophical Transactions*.

Vegetables are more frequently found fossil, than animals. Oaks of a great size, firm and found, have been taken out of a large moss on *Bewick-Moor*, called *King's Moss*, by the road from *Chillingham* to *Alnwick*, near a noted aperture in a freestone-rock, called *Catherine's cave*. In another moss, on *Harup-Moor*, near it, there are roots of trees of an unusual size, standing in some places very thick; some of them found, of a beautiful colour within, like the *Alder*, our *English mahogany*. On most of our other moors, subterrene or fossil trees have been found in the mosses, some very hard, and as black as ebony. The forest of *Allendale*, the forest of *Lowes*, and the forests of *Reedisdale* and *Cheviot*, all afford the like memorials.

Hazel-nuts have also been found fossil, in great quantities. *Robert Hall*, a labourer of *Bewick*, an old man, living *September 3, 1760*, found many in draining a moss on the estate of the late *Dixy Windsor, Esq*; at *Wapperton*, to whom he gave them, who preserved them for the inspection of the curious.

An hazel-bush, with nuts upon it, was found in sinking a coal-pit about seventeen years ago at *Lemington*, near *Newburn*, fifteen fathom deep, in a moss-earth; fair and fresh to look upon, till exposed to the air, when they mouldered away.

Impressions of vegetables, and sometimes entire fruits, and the nervous parts of leaves, are frequently found on the stone-beds of our rivers, and sea-shores, and metallic veins; the fairest

in ancient and modern authors; with an accurate examination of the skeletons, and parts of skeletons, shewn up and down as undeniable arguments of the existence of giants.

Ph. Tr. No. 403, 404. Dr. *Thomas Molyneux's* Essay concerning the bones of giants.

Ph. Tr. No. 261. Count *Ferdinand de Marsigli's* Dissertation in his History of the *Danube*, Tom. 6. upon the skeletons and bones of elephants dug up near and in the *Roman Aggeres*.

in iron-stone; of which I have met with some very curious, both indigenous and exotic.

1. An *acorn*, without the husk, filled with iron-stone, the socket of the stalk conspicuous, also the thickness of the shell by a fracture; the conic point, or small end, in its natural colour. From *Simonburn*, above the bridge.

2. The reticular *nerves*, or *masses*, of a *leaf*, found between the *lamina* of blue clay, several yards below the surface, at the same place.

3. *Polypody*. A fair impression of it in iron-stone. From the iron-mine at *Bebside*.

The late curious Dr. *Jabez Cay*, of *Newcastle upon Tyne*, had several fine impressions of this fern, and of the *Filix florida*, or *Osmund Royal*, from the coal-pits at *Kenton*, and *Newbiggen*, near that town. They were in the nodules of iron-stone, called *Cats-heads*, by our minemen; *Cat-scamps*, at *Whitehaven*, in *Cumberland*; *Ball-mine*, in *Staffordshire*; and *Minera Ferri Pilæformis*, by Dr. *Lister*. Not above one in five or six have ferns in them, which lie in the middle. They split with a slight stroke at the very place, if exposed to the winter's rigour, and shew the vegetable lineaments in their utmost beauty. He had also impressions of ferns in coal-flate from *Brunton* and *Benwell*-colleries (*g*).

4. An *American* fern in relief. From *Bebside*-ironmine. The impression beautiful in the iron-stone (*h*).

(*g*) *Lapis mineræ ferri, pilæformi similis, in cùjus meditullib, unum vel plura filicis folia representantur. Ph. Tr. No. 277.*

(*h*) See Dr. *Hill's* Hist. of Fossils, plate 6th.

Another, the leaves longer, and in somewhat bolder relief. They are frequent in this mine.

5. An elegant reticular impression of the bark of a pine, with the leaves in pairs in each mesh; in iron-stone, from the same mine.

6. Another small reticular work, the meshes filled with a black shining substance, the remains of some resinous plant; in free-stone, from the sea-strand at *Hartley*.

7. Another, the meshes somewhat larger, in a concave nodule of free-stone from the shore of the brook at *Simonburn*. The meshes are filled with the same kind of stone.

8. Another curious reticular work, in rhomboidal hollows, pretty deep, in a ferruginous nodule from *Lee-Hall*, upon *North Tyne*. It is of the same kind with that figured by the learned and ingenious *Da Costa*, F. R. S. in the *Philosophical Transactions* (*i*).

9. Another, in free-stone, the meshes large, and the rhomboidal hollows partly filled with stone, and a glossy black substance, with black wavy striæ between them. The black substance and lines seem to be the remains of a resinous bark, turned in bituminous earth to that colour. From *Simonburn*.

10. Several orders of small polygonal cells, roundish, inclining to oval, a small apex or point in the center, perforated, with undulating lines between them; in free-stone, from the same place. It seems to be the impression of the bark and leaves of

(*i*) Ph. Tr. vol. 5. part 1. for 1757, artic. 28. p. 228.

some resinous tree. The sagaceous *Da Costa* has given a figure of one like it in the Ph. Transact. before cited. The stone is of a fine shape, thin at one edge, and channelled through the middle, like the molding of a cornice.

11. Another, with large oval cells, and the apices oval, in the same kind of stone, and of the same shape, but not channelled through the middle. From the *ostium* of *Shitlington*-brook. They are very frequent, both with channels and without, on the shores of our brooks and rivers. I found one near a coal-work upon *Calleley*-hill, the cells deep and numerous, separated only by thin partitions. I have another from the shore of the river *Coquet*, above *Rothbury*.

12. An elegant reticular work with oblong hollows, evidently the impression of the bark of some tree when the sap was in it, the rugose striæ as fair as if just made. In freestone, from a quarry at *Simonburn*, below the school-house.

13. Another of the same kind, in freestone, from the shore of the brook *Hextold*, at *Hexham*; the hollows deeper, but the fine rough skin obscured by the floods.

14. Two pine-branches, very fair, with impressions of the bark, one of them forked; and a rhomboidal impression of the cortex, of another in relief; in freestone, from the shore of the brook below *Simonburn*-castle.

15. Another pine-branch, with part of the bark, and some of the leaves very fair, of a tawney-black colour; in freestone, from *Goston*; many oval cells on the exterior surface, with central apices.

16. A bending ear of corn, in freestone from *Simonburn*; externally figured like the last, but wrinkled and uneven.

17. A fair impressiion of a *Bamboo*, or great *Indian* reed, in freestone, from the sea-shore at *Hartley*. I have seen one on the same shore, in company with the ingenious *Edward Delaval*, Esq; F. R. S. as big in diameter, as the small part of a man's arm. They are frequent in the freestone-rocks at *Simonburn* with impressiions of the common reed.

C H A P. VII.

OF ORES AND COALS.

AMONG the various productions of this county, the most lucrative, and with the greatest avidity enquired after, are our Lead and Coals, though the road to them be unpleasant and troublesome, dark and intricate, expensive and hazardous:—

Tristes sine SOLE Domus.

VIRG.

The hopes of treasure have incited many to travel it; some have perished in the enterprize; and others have had a golden journey; but these have generally been genius's in the favour of fortune, every way qualified for under-ground adventures, by an intimate acquaintance with mineralogy, founded on experience and observation, and supported by patience and perseverance. To enumerate all my countrymen thus happily successful by those laudable talents and endowments, would take up many pages; suffice it to say, that some of them have been founders of families of a conspicuous and exalted rank.

The antiquity of working them may be carried higher than the *Romans*. They were the objects of *British* commerce before their arrival. *Cæsar* has recorded, that there were metals in the maritime parts of the island, but he adds, not plentifully. He was too great a stranger to it to be acquainted with all its productions;

tions; he but just shewed it to the *Romans*. After its reduction and submission to their victorious legions under *Claudian*, it paid tribute in its richest and most valuable ores; particularly of lead, of which several pigs have been found in different parts with the emperors names upon them (a); and *Pliny* assures us, that the mines were so rich, that by an imperial edict a certain quantity was only to be worked, the veins, in the language of the minemen, appearing at the very day, whilst the mines of lead in their province of *Spain* were few and poor (b). *Tacitus* acquaints us, that our ores, our *metalla*, were the lures of the *Roman* Eagle, and remunerated them for their toils, for their victories (c).

Our iron-mines were as well known to them as those of lead, as appears from an altar discovered at one of their walled towns, *Condercum*, or *Benwell*, inscribed to *Jupiter Dolichenus*, the Deity who presided over this metal, now in the curious library of *Robert Shafto, Esq;*

There is reason to believe, that they had also copper-works. For by their famous military way of *Watling-street*, near a hamlet, called *Ridleys*, belonging to *Thomas Selby, Esq;* of *Bittlesden*, there are conic heaps of copper-*Scorie*, or slag, still remaining. Some of it was lately essayed by an ingenious mineralist of my acquaintance, from which he extracted several grains of fine cop-

(a) *Stuk. Caraus. Vol. 1. p. 176.*

— *Itin. Curios. p. 173.*

Ph. Tr. No. 459. Camd. Britan. Edit. Opt. p. 679.

(b) In *Britannia* summo Terræ Curio adeo largi, ut Lex ultra dicatur, ne plus certo modo fiat. *Plin. Nat. Hist. l. 34. c. 17.*

(c) *Vita Agricolaë.*

per. Stones, charged with this metal, in spots and veins, are often found on the shore of the river *Coquet*, and the alpine brooks of that neighbourhood.

On the west side of *Kimmer-lake*, near *Eglingham*, there has been another copper-work; the vestiges of it very fair in a hillock of flag covered over with grass, of the very same kind as that near *Ridleys*. On the shore of the rivulet of *Bramish*, and on the sides of the hills above *Ingram*, there are large masses of a light brown stone, charged with this metal, in flakes and spots.

The *Saxons* and *Danes* in this country were too much perplexed by wars and intestine and civil broils to have any such works. And even for some time after the conquest by the *Normans*, we find that mines on the northern borders were very rare. There were so few in the reign of King *Edward III.* that the governor of *Berwick upon Tweed*, 1356, was obliged to have minemen from the forest of *Dean*, and the more southern parts, to assist him in retaking the town from the *Scots* (d). Iron-works in the preceding reign, to King *Edward II.* were so scarce, that the *Scots* in a predatory expedition in that year, met with none worth their notice till they came to *Furness*, in *Lancashire*, where they seized all the manufactured iron they could find, and carried it off with eager joy, though so heavy a carriage, and preferred it to all other plunder (e).

The *Romans* were as well acquainted with our pit-coal, as with our ores and metals. In digging up some of the foundations of their walled city, *Magna*, or *Caerworrion*, 1762, coal-cinders, some

(d) Hol. Chron. Vol. II. p. 386.

(e) Id. p. 323.

very large, were turned up, glowed in the fire like other cinders, and not to be known from them when taken out.

The principal lead-works with us are at

Allen-Head,	Shilden,
Coal-Clugh,	Fallowfield.

Allen-Head-mines have been worked for time immemorial. The ore lies in the form of a tree, recumbent. The method of our miners working them, is by sinking a shaft till they come to a vein, and then they make cross-cuts, and with eager pursuit follow the several branches, or strings, as they call them. They had formerly another method, still practised about a mile to the south-east from these, near *Rokehope*, within the liberties of the bishoprick of *Durham*. This was by *flooding*, or *bushing*, as they phrase it; making a large basin or reservoir of water, which being let out by a sluice in a full stream through a cut or opening from a descent, with an irresistible impetuosity sweeps away, on frequent repetitions, all the various substances which compose the roof of the mine, freestone, iron-stone, whin-stone, limestone, spar, and talc, and, at length, the ore itself, with gravel, sand, and other extraneous matter, in gentler currents.

Coal-Clugh-Mine is three miles to the south-west from *Allen-Head*, near the source of the rivulet of *West-Allen*; by a clugh, or boggy hollow, as the name imports, black and hideous to look upon. It is said to be the deepest lead-mine in *England*, 100 fathom, a subterraneous waggon-way, of a mile in length, leading to its *Ostium*.

The

The lead-mine at *Shilden* was very rich till of late years. It now gives employment to several hands, and has two subterranean engines to carry off the water.

The lead-mine at *Fallowfield* was exceedingly rich for many years, till it was drowned. It is called by the miners, the *old man*, who always mention its internal wealth with rapture. It was lately opened, and a fire-engine erected. It gives employment to about eighty men.

There is a lead-mine now working near *Shilden*, reputed rich in ore, discovered by a mere accident, by a countryman's stumbling upon a piece of ore lying at the very day.

There are other veins of ore in that neighbourhood, but not of consequence enough to be particularly mentioned.

There was formerly a lead-mine in *Rothbury-forest*, the ore in small lumps, enclosed in a white talcy stone.

There was also another on the brow of a hill by the brook above *Stonecroft*, near *Satlingstones*; the ore in the same kind of stone, of which I have gathered several specimens, both on the shore and in the bottom of the rivulet.

Another was opened some years ago at *Sharply*, near *Simonburn*, by Sir *Lancelot Allgood*, of *Nunwick*, Knt. the ore good, but not in sufficient quantities to continue working it.

A string, or small vein, was lately discovered in the middle of the villa of *Little Houghton*; the ore lodged in coarse spar, talc, and ordinary marcasite, found near the day; in good esteem,

and worked by the owner, Mr. *Henry Penreth*, merchant in *Newcastle*, for some time, but discontinued after a few trials.

There was lately a boring for lead-ore at *Overton*, near *Simonburn* on the estate of Sir *Ralph Milbank*, of *Hannaby*, Bart. but it was found not to answer the expence of working. I have two specimens of the ore, one of them a small nodule, very ponderous, of that kind which our miners call, *Float-Ore*.

Northumberland-lead-ore yields a moderate share of silver, is soft, ductile, and fuses kindly in the fire. The ingenious Dr. *Woodward* informs us, that there is a lead-ore got at ————— brought to *Newcastle* to be worked, which yields betwixt twenty or thirty ounces of silver *per* ton, which is the richest he knew of in *England* (*f*). The great Mr. *Boyle* acquaints us he has known it observed, that lead-ore, which is poor in its own metal, affords more silver than others; and assures us, that he had some lead-ore, which on trial yielded three parts in four of good lead, and yet in the cuppel scarce yielded an atom of silver (*g*).

From the lead-mines at *Allen-Heads* and *Fallowfield*, I have been furnished with some lead-ores, curious and beautiful, deserving notice.

1. Tessellated lead-ore, ponderous and rich, the tessellæ mostly of a parallelopiped figure, and of a fine natural polish.

2. Globose, multangular lead-ore, with plain sides, in the manner of crystalline spar, but not regular; called by the

(*f*) Cat. of Fossils, Part 2d. p. 84.

(*g*) Ph. Tr. No. 19. p. 339.

miners, *Diced Ore*. I have another specimen, broken, exhibiting a beautiful natural politure.

3. Diced ore rising in several orders from a plate of the common ore.

4. Half lead-ore, and half crystalline spar, of a paralleloiped figure.

5. Tuberos, cavernose lead-ore, with many short arborefcient columns, of unequal lengths, some on a plane, and others on the fides and fteeps, glossy and sparkling. These five from *Allen-Heads*.

6. Lead-ore of various colours, like thofe of the *Iris*, or rainbow, called by the miners, *Peacock's-tail Ore*, from its refembling the colours in the train of that beautiful bird, red, purple, blue, green, and yellow; the laft colour owing to its own metal, the blue and green to copper, the red and purple to iron. This ore may be preferved in all its beauty under a cover, not expofed to the air. Without that caution, it gradually lofes its admired tincts. It is broad-grained, fufes badly in the fire, and yields not fo much lead as ore of the fame texture of an uniform colour. The *flors* of the common ores in fufion frequently exhibit the fame colours, and are preferved fometimes by the refiners for presents to the curious. They call them the *Skimmings* of lead-ore. An ingenious gentlewoman from the fouth, lately here, on having fome presented to her, diverted herfelf in making them into flower-works of various kinds; of which I have fome in frames under glaffes, beautiful imitations of nature, fome of carnations, and others of tulips and ranunculus's, both in little

baskets, and without, of the same materials. The colours are splendid and permanent.

7. Snow-white, arborefcnt lead-ore, like some of the submarine corallines.

8. Another piece, the branches fewer and shorter, and more irregular, the intervals a beautiful frost-work.

9. A cylindric column of white lead-ore, tubulous, three inches long, and two inches in diameter, the surface thick set with arborefcnt shoots, of unequal lengths.

10. White lead-ore composed of several transparent tubes, of unequal lengths, the longest two inches and a half, and blind at the end, in the base three inches over, at the extremity two inches; a small cylindric column, an inch long, affixed by the ends on one side, making a cavernula or hollow underneath, towards the middle, the surface sparkling with pointed studs; the rest, towards the base, also glossy with ramose efflorescences.

11. A column of white lead-ore, tubulous, compressed, and tapering, with a ramose shoot at the extremity, and a longitudinal furrow down the middle on one side; oblique transverse striae on the other side; the surface glossy with short pointed shoots.

12. White lead-ore, with a vein of blue lead-ore running through it, very bright, with a concretion of the same at one end, angular and pointed, like crystalline sparks, the blue emulating the *lapis lazuli* in lustre.

These

These seven, the party-coloured, and white figured ores, are from the mine at *Fallowfield*. The tubulous arborescent kinds, have the appearance of stillaçtitious crystallizations. They are the easiest in fusion of all the lead-ores.

The only iron-work of any eminence with us at present, is at *Bebside*, on the south side of the river *Blyth*, about four miles from the sea-port of that name. The ore is digged out of the hanging banks by the river with great labour and pains, of various colours, and of various degrees of texture and hardness, some as soft as common clay till hardened by the air. The heaviest and richest in metal is mostly of a liver-colour, or a deep brown.

There was some years ago an iron-work at *Lee-Hall*, on the edge of the river of *North Tyne*, near *Bellingham*. The ore is plentiful in the strata of a romantic precipice on the east side of the river; both the liver-coloured crustaceous, and clay-kinds; the first ponderous and rich in metal, some of it of equal weight with malleable iron that has passed the fire. It was under the direction and conduct of Mr. *Wood*, son of Mr. *Wood*, famous for being the projector of the halfpence and farthings for *Ireland* by patent. He made a good deal of bar-iron, but charcoal becoming scarce, he removed to *Lancashire*, where he attempted to make it with pit-coal. This has been attempted by others, but not with that happy success one could wish for. The ingenious mineralists of *Colebrook-Dale*, in *Shropshire*, have the art, from iron-ore and coal, both got in the same dale, to make iron brittle or tough at pleasure. They cast cannon so soft, as to bear turning, like wrought iron.

The famous Mr. *Boyl* observes, that about three tons of iron-stone in some iron-mines will yield one ton of metal. And on the authority of *Matbesius* he informs us, that a little gold is not unfrequently found in iron-ore (*b*).

We have some iron-stone and ore of a peculiar structure, figure, and colour, deserving notice.

1. A ponderous mass, seven inches long, and thirteen inches over, in the thickest part, grey, with fibrous septa of black talc, villose and nappy, like velvet. From the shore of *North Tyne*, below *Chipchace-mill*.

2. Of the shape and size of a carpenter's hand-plane, ponderous. From the shore of the brook below *Simonburn-castle*.

3. Very much resembling a *Bonum Magnum-plumb*, with a short stem or pedicle; one side smooth, the other tuberculose and granulated, irregularly, but very neat. From the shore of the brook at *Simonburn*.

5. Resembling half of a nectarine split in two, of a fine grain or texture, a faint red, with a *Neucleus*, covered with a thin film or skin, tinged with yellow. From the same shore.

5. Like the head of a small iron-bolt, broken off, with an enamel of a copper-colour.

(*b*) Ph. Tr. No. 19.

Of the manner of making iron, see *Museo de Fisica & de Esperienze*, &c. by *Signior Boccone*.

6. Of

6. Of a digitated figure, an inch and three quarters long, two inches and an half over at the base, and two inches over at the extremity; composed of cups or crufts including one another.

7. Another, smaller, an inch and three quarters long. Both these have a thin film or enamel, of a yellow and brown colour, the extremities rounded, obliquely.

8. Another, somewhat curvated, rounded and swelling in the middle by a thick arborescent *Cortex*, the cup at the small end fallen off, and preserved for view.

9. Another, an inch and a half in length, two inches and a quarter over at the base, and two inches at the extremity, the brims of the cups projecting, forming the figure of a screw, the ridges or eminences equidistant, with a cuticula somewhat rough, and where rubbed, appears as if gilt by the golden *Pyrites* or *marcasite*.

10. Another, an inch and three quarters long, two inches over at the base, and an inch over at the extremity, the edges of the cups a little raised, and conspicuous under a thin film, exhibiting a slight view of its configuration and structure. These six from strata of iron-stone on the north side of the brook at *Simonburn*, above the bridge.

There are some others with vegetable delineations, mentioned in another place.

We have at present no *Copper*-works. From the several *marcasites* and *pyritæ* found in the coal-mines at *Plessey*, *Newbiggen*, and other coal-works, large quantities of vitriol or copperas, as it is called

called by the artificers, are made at *Hartley*, and at *Dent's Hole*, near *Newcastle*. The pyritæ are found in strata, in small nodules; the marcasites in perpendicular fissures. They both hold copper, but in so small a proportion that it is not worth working. Sulphur and arsenic is frequently extracted from them. The pyrites is sometimes found solid and unmixed with extraneous matter, both in our lead and coal-works, but chiefly in the former; of various figures, in irregular clusters; orbicular, or in large balls; also tabulated, in regular cubes. I have seen large masses of the first sort from the lead-mines at *Allen-Hands*, and of the latter I have a small specimen from the coal-work at *Chirton*, in the form of cubic pseudo-crystal; two cubes joined together, one of them unfortunately mutilated by a fracture, of a pale yellow colour, glaring and shining like polished steel.

Our coal-works are numerous. The principal, for export, are those at

Pleffey,	Killingworth-moor,
Hartley,	Newbiggen,
Tynemouth-moor,	Wylam,
Chirton,	Byker,
Long Benton,	Walker.

These mines are of various depths. The deepest and of the greatest curiosity is that at

Walker, by the river *Tyne*. It is 100 fathom. The seam of coal is 8 feet, and 5 inches and a half, thick. There are two ventilators worked with a machine by the help of the fire-engine. This machine is also applied to turn a wheel for raising coals, bringing

ing up a corve of 20 pecks, 100 fathom, in the space of a minute, the horses moving in a walk (*k*). Half of this mine belongs to *William Ord*, of *Fenham*, and the other half to *Joseph Reay*, and *William Penreth* of *Newcastle*, Esqrs; held by lease from the corporation of *Newcastle*.

The *Long Benton*-mines have been in high reputation for several years, but are now said to be going off. One of them is on the south side of the village. It is called the *bafon*. It is in depth 72 fathom. The main seam is in thickness about 7 feet. There is another on the west side of the village. It is called, *The Delight*. It is in depth 74 fathom, and 1 yard. The main seam is 7 feet thick.

Killingworth-moor-mine, called also *New Benton*, was lately opened by the proprietors of those of *Long Benton*. It is in depth 70 fathom. The main seam is near 7 feet thick; the several strata of earths and minerals observed in it for 36 fathom, are as follow; 1st. clay, 2^{dly}. a brown gravel; 3^{dly}. a soft pale blue stone; 4^{thly}. a white post, or a very hard chalk-like stone; 5^{thly}. a soft green stone; 6^{thly}. a hard blue stone; 7^{thly}. a white post mixed with whin; 8^{thly}. of metal, or black flaty stone, 4 feet; 9^{thly}. coal, 8 inches thick; 10^{thly}. metal, 6 inches; 11^{thly}. coal, 16 inches. I had this account from the miners on the spot.

Byker-mine, in *Sir Harry Larwson's* liberty, is 70 fathom, and 1 yard in depth. The main seam is 5 feet, 10 inches thick. Within two feet of the roof is a band or load of stone which reduces the coal-seam to 5 feet, 9 inches. It is called, the high main coal-

(i) See the description and drawing of such a machine, &c. by *Keen Fitzgerald*, Esq; in the *Philosoph. Transact.* Part 2. for the year 1758, p. 727.

feam. The chief strata of earths and minerals observed in this mine, are blue metal; white post, 6 fathom; a slaty stone, 5 yards; and next to the coal, an hard white stone-post, 10 fathom, and 1 yard. Seams of coal, of various thickness, lie variously between the strata, not workable. There is another mine hard by, of the same quality with this. There is a dyke in it, called Thistle-pit-dyke, lying north-west and south-east. It is believed to keep a very true course. Many small dykes branch from it, resembling the root of a tree, in different directions.

I have had a sight of the boring-notes of some of the other mines, but they are not suffered to come under the public view, being kept as *Arcana* by the proprietors.

By the best observations of the mine-men, the coal-seams generally rise to the north-west, and dip to the south-east.

There are two sorts of vapour terrible to men concerned in coal-mines; one fulminating, and the other arsenical; the first volatile and active, making the candles burn precipitately, taking fire, and giving an explosion like the blowing up of a citadel with gun-powder, destroying the men, and ruining the works; the other gross and foul, not suffering the candles to burn, in an instant extinguishing both them and the human lamp, killing by its poisonous nature. On the 4th of June, 1761, two overmen, father and son, of the name of *Joblin*, were both killed by the first in one of the mines at *Byker*, and remain there. In the same year, a young man was suffocated by the latter on entering *Newbiggen*-mine, but recovered by being laid on his belly, with his mouth in a fresh hole made in the earth, the usual remedy on such occasions. Against this sort of vapour or damp, as it is called, a large iron-lamp, full of coals, is kept continually burn-
ing

ing in the mine; and to guard against both kinds, a free currency of air is circulated through all the works, entering one, and coming up another.

Two expedients have been tried by the late ingenious Mr. *Carlisle Spedding*, of *Whitehaven*, for the safety of the workmen in coal mines, infested with the fulminating vapour; one is by framing the perpendicular shafts or pits with timber where it is suspected to be, and to place a tube of about two inches square in a small hollow behind it, elevated four yards above the *Ostium* of the mine, to collect the damp air to one side of it, and to convey it out of its precincts; the other is by the use of steel and flints fixed in a small engine with a wheel, which give a glimmering light to the miners; this sort of vapour not firing by sparks, though it does by flame. When it comes out of the top of the tube it is cold as frosty air, yet after it has been imprisoned and confined in a bladder even for near a month, it will take fire at a lighted taper or candle, if gently pressed into it through the orifice of a pipe, and when the candle is withdrawn, will continue burning till it is all spent.

In the grounds at *Benwell*, about a quarter of a mile north from the river *Tyne*, a coal-mine took fire at a workman's candle, negligently placed, and continued burning about 30 years, though at first so small, that a proposal was made to put it out for so low a reward as, 2 s. 6 d. but it was not accepted. It afterwards acquired such force and strength from the kindled sulphurs and bitumens, that it raged with fury, in various directions and depths; sometimes taking its course east and west, and at last to the north, into the grounds of *Fenham*, near a mile from its first appearance, committing great ravages in its way, only conspicuous by its flames and columns of smoak in the night.

The eruptions at *Fenham* were in near twenty places. I have not heard that it cast forth stones of any considerable magnitude. Flowers of sulphur, mixed with sal ammoniac, were found concreted on pieces of alum-stone, slate, and the neighbouring furz, of which a physician of *Newcastle upon Tyne*, Dr. *Hodgson*, gave an account to the Royal Society (*l*), who could discover neither common salt or nitre in the soil or springs about it, the coal-water being all vitrioline, and tinging red with galls, and other neighbouring fountains being destitute of mineral salts. But he observed, that the coal-ways were mended with a sort of slate, composed of coal, alum-stone, and marcasite, cast in heaps and burnt, from which he had often collected both brimstone and sal ammoniac.

Some of the salt ejected by this bitumenous *vulcano* was, upwards of six inches broad. It was first observed and gathered by Dr. *Richard Gilpin*, in whose company Dr. *Hodgson* proved it by an experiment to be sal ammoniac. For colour, some of it was grey, some snow-white, freed from the black *fator* of the coal by the intense heat of the fire.

Factitious, sulphurous air collected from the solution of metal at the time of their effervescence, especially iron, zij of filings being mixed with zij of oil of vitriol, and zviiij of common water, will exhibit the same phænomenon on trial after the same manner as the fulminating damp, and if the flame of the candle is suffered to enter the neck of the bladder, the inclosed air will take fire, and go off like a gun with a great explosion.

Dr. *Brownrigg*, an eminent physician at *Whitehaven*, drew up a history of damps, which was communicated to the Royal So-

(*k*) Ph. Tr. No. 130.

ciety by the late learned and reverend Dr. *Hales*, but dropt his design of finishing it, to the regret of those who are acquainted with his great abilities. He has observed, that the fire-engine seems not yet to have attained to its greatest degree of perfection. He thinks there is reason to hope, that either by increasing the steam, or by augmenting the force, it may be brought to work with much smaller boilers, and with a very moderate expence of fuel; and under such circumstances it may be applied to a vast variety of purposes, and become of much greater use to mankind (1). His late friend, Mr. *Carlisle Spedding*, before-mentioned, an excellent mechanic, was superintendent of five at *Whitehaven*, to which he made many considerable improvements. The same has been done by Mr. *William Brown*, of *Throckley*, in this county, particularly in the engine erected for the coal-mine at *Walker*, already noticed, in great reputation for his skill in mechanics, and his sagacity and prudence in the direction and management of coal-mines.

Those round *Newcastle* were ordered to be fired, 19th King *Charles I.* 1643, by the Marquis of *Newcastle*, General of the King's forces, then in the town, besieged by the *Scots*, whose General, *Lefley*, preserved them by surprizing the boats and vessels (m)..

They had also a narrow escape from being fired by the *Scots* after their defection from the parliament, 1648, under their Leader, *Monroe*, who, on the news of a party of his countrymen rising against him, under the conduct of the Marquis of *Argyle*, spirited up by their ministers, ordered his troops homewards,

(1) Ph. Tr. Vol. 49. Part 2d. for 1756.

(m) *Whitlock's Memorials*, p. 78.

the nearest way over the *Tweed*, in such haste, says *Whitlock*, that they had almost left their plunder behind them, had they not preferred it to life (*n*).

Coals of curiosity for their hardness, colour, and figure, observed in our mines, are as follow.

1. A hard, glossy coal, in large masses, preferable to all others for strength and duration. It is usually called *Splint* by the miners. From the mine, called *The Delight*, at *Long Benton*. There is some of this coal in the mine at *Wylam*, belonging to *John Blacket*, Esq;

2. Coal with a thick enamel of silvery marcasite. From the mines at *Pleffey*, belonging to *Matthew Ridley*, Esq;

3. Coal glowing with all the colours of the rainbow in the most beautiful enamel, much exceeding those observed in lead-ore, and more permanent, if preserved with the same care, under a cover, dry, and from dust. From *Chirton-mine*, and from one at *Inghow*, near *Stamfordham*. That from *Inghow* has the finest tincts, most splendid and rich, as if raised in parts, and in a kind of relief. Some of it has a high natural polish, like a mirror. Some of the common coal in this mine is a glossy black, of a fine politure, and breaks into rhomboid and parallellapid figures.

4. The *Ampelites*, or canal-coal, very fine. From the mines at *Long Benton*, and *Walker*, but in no great quantities. That from *Walker* very much resembles the inflammable fossil, *gagates*, or jet. Snuff-boxes, and other toys, are frequently made of this kind by ingenious artists.

(*n*) *Idem*, p. 331.

C H A P. VIII.

OF TREES AND PLANTS.

IN the *British*, *Roman*, and *Saxon* times, *Northumberland* abounded with forests and groves of oak, and other timber; many villas taking their names from their woody situation; as *Woodrington*, i. e. a town in a wood, encompassed with it, as in a ring; *Woden*, i. e. the extremity or end of the wood; *Dru-ridge*, i. e. a grove of oaks; the oak being called *Dru* by the *Britons*, from its being a sacred tree, their priests or *Druids* performing their idolatrous rites under its shade. The ocean, as if offended with their impiety, has swept away their grove at *Druridge*, the stumps and roots frequently visible in the mud after the retreat of the tides, large and numerous, and sometimes branches and trunks by their sides. *Cheviot* is upon record for its oaks and brushwood, in such abundance, that it was called the Great Wood of *Cheviot*, by way of eminence (a). In the reign of King *Egfrid*, the Christian *Saxon*, *Hexham* was surrounded with thick woods (b). In the reign of K. *Henry VIII*, *Cheviot* was in a manner disrobed of its beautiful verdure; shrubs, and some crooked old trees being only to be seen. *Glen-dale* was much in the same state; as were *Reed's-dale*; the vale of *South Tyne*, from *Hexham* to *Tynemouth*; the country between *Newcastle* and *Morpeth*, and *Bam-*

(a) *Lel. Itin.* Vol. 7. p. 63.(b) *Prior Richard.* Inter x scriptores

broughshire. Between *Morpeth* and *Alnwick* there was a fine shew of wood, and many parks; but little between *Alnwick* and *Berwick* (c).

Under the authority and countenance of the legislature in the reign of K. *Edward VI.* upon the division and enclosure of property, our woods increased, and their owners began to think them worthy of their care and cultivation; all the vale-foils, and many declivities and hills, being naturally inclined to wood. The houses built since that period, shew its plenty, particularly of oak; the planks thick and broad; the beams of a surprizing length and magnitude, two often lying near one another, where one might serve; strength and security being then preferred to order, and the beauty of design.

The *yew* was a favourite tree with our ancestors in the days of *archery*, some of which are still remaining, of a great size; the largest in the church-yard at *Beltingham*. In the cliffs, on the western margin of the *Allen*, they grow naturally, their roots and fibres receiving their nourishment from such light earth as they find between the crevices and broken strata of the rocks; their verdure beautiful by the passing stream.

Hollies seem also to be as natural to our alpine foils, on the banks of rivers. The largest and handsomest I have observed, are on the east-side of *West Allen*, at *Monk*, opposite to *Whitfield-hall*.

Silver-firs grow to an extraordinary size near the hills of *Cheviot*. Before the west front of *Brandon-White House*, there are two very large; one of them judged fit to be a mast for a 20 gun ship;

(c) *Ld. Itin.* Vol. 7. p. 63.

being at the root about seven feet in circumference. A great encouragement this to replant the neighbouring hills and mountains, whose shade and verdure would be one of the greatest beauties of our country, and the timber a fund of wealth!

The *larix*, or *larch-tree*, is one of the most ornamental and valuable trees of our groves and plantations; its form graceful, its timber known from experience to exceed any tree for duration under salt-water, except the cypress (*d.*)

The *Cypress*, the *Cedar of Libanus*, the *Weymouth-Pine*, the *Balm of Gilead-Fir*, the *Spanish chefnut*, and the *Walnut-tree*, thrive very well in the warmer and better soils; some of them near the sea. In the garden of *Ralph William Grey*, of *Backworth*, Esq; there is a *Cypress* about twenty feet in height; also a *Spanish chefnut* and a *walnut-tree* standing together, fit for timber; the latter bearing nuts, and the cypress full of cones, 21st *August*, 1762. There are two *walnut-trees* at *Ashington*, the seat of *George Sandiford Crow*, Esq; of a remarkable size; one six feet, nine inches in the girth, the trunk to four leading branches, nine feet, four inches and a half; the other six feet in the girth, the trunk to two leading branches, six feet four inches and a half. The nuts both here, and at *Backworth*, arrive at no higher perfection than to serve for pickles. This tree does not lose its leading shoots at either place, as it does in the vale of *North Tyne*; which is owing partly to mismanagement, and partly to the soil; the gardeners usually cutting off the tap-roots, and the soil frequently upon an ochreous iron-shiver; both which hinder their thriving, bring on an atrophy and decay; the bark turning scabrous, and the trunk deformed with blotches and scars. In a grove at *Fenham*, the seat

(*d.*) *Wiston's Naval Architecture*, fol. *Amst.* 1671.

of *William Ord*, Esq; the other resinous trees make a fine shew; their bark florid, and their shoots vigorous.

The *Beech* and *English Elm* are cultivated with great success, both for their shade and timber. The former was sacred in the times of Paganism among the northern nations, on which they wrote their laws (*e*).

The *Scotch Elm* grows to a great size; its natural situation by the sides of brooks and rivers, and even in the clefts and precipices, and sometimes on bleak and barren hills, with the ash, being its rival in combating winds and tempests.

The more valuable fruit-trees, as the *Peech*, the *Apricot*, the *Nectarine*, and the *Vine*, have of late been favoured with fire-walls, to forward their vegetation, and to give their fruit that mellowness and flavour, which our northern SUN denies them. In some of the warmer vales they succeed pretty well without that aid, but in most other places they demand it. It must be confessed, that fruit from the fire-walls is preferable to all others, and will admit of no competition, either for taste or beauty; particularly the grape; however assisted by situation, exposure, walls, and glasses.

The *White-Heart Cherry* is a shy bearer on most of our walls; the other kinds, the *Black Heart*, the *May-Duke*, &c. bear in great perfection; the *Morel*, against a north wall, excellent.

No culture has yet been found capable to give the *golden Pippen* its true flavour in this climate, except it is treated like the vine, &c. planted against a fire-wall. The other orchard-trees, both

(*e*) *Ola Rudbeck. Atlanticae. Pars 3. Fol. 1698.*

apples, pears, and plumbs, do, for the most part, extremely well, under proper management and culture, neither defective in flavour nor size; not disdaining to be planted even near the sea, if well sheltered.

Few counties produce a better store of wild plants. I shall only take notice of such as are most remarkable for their beauty, or for their medical and oeconomical uses.

1. The *Bird-Cherry* (*f*). In woods, by waters, plentifully. The flowers are white, in large pendulous clusters, of an agreeable scent; the fruit black, round at first, and afterwards of a cordated figure. Upon very old, tall trees, I have seen the fruit as large as those of the garden black currant. It is of an agreeable taste in its full ripeness, but the birds seldom let it continue on the tree till it is in that state, commonly feeding upon it on its first changing from red to black. The alpine common people are very fond of it.

The *Mountain-Ash*, or the *Quicken-Tree* (*g*). In woods, and about rocks, by waters. The fruit is of a beautiful yellowish-red, in pen-

(*f*) Pseudo-Ligustrum. *Dod. Pempt.* 777. *bené.* Cerasus avium nigra et racemosa. *Ger.* 1322. *emac.* 1504. *Raj. Hist.* 11. 1549. *Syn.* iii. 463. Cerasus racemosa sylvestris fructu non eduli. *C. B. Pin.* 451. *Tourn. Inst.* 626. *Boerb. Ind. A.* 11. 244. Padus Theophrasti. *Dill. Cat. Gieff.* p. 66. Padus Offic. *Dal. Pharm.* p. 309.

Padus glandulis duabus foliorum subjectis. *Royen. lugdb.* p. 267. *Hall. Helv.* p. 357. *Linn. Hort. Cliff.* p. 185. *Flo. Suec.* p. 144. n. 396. *Hag-berry Tree*, vulgo, *Northumbr. et Cumbr.*

(*g*) Ornus. *Dod. Pempt.* p. 834. Ornus. Offic. *Dal. Pharm.* p. 289. Sorbus Sylvestris. *Cam. Epit.* p. 161. *bené.* Ornus seu Fraxinus Sylvestris. *Park. Theatr.* 1419. Sorbus aucuparia. *I. B.* 1. p. 62. *Tourn. Inst.* p. 634. *Boerb. Ind. A.* 11. p. 248. *Raj. Hist.*

pendulous clusters. It was a sacred tree with the *Pagans* of the northern nations, who wrote their laws upon its wood, as well as upon the beech *.

3. The *Elder-Tree* (*b*). In hedges. About *Newbrough*, the two *Wardens*, the *Hermitage*, and *Hexham*, plentifully. The interior bark has been long in reputation for curing burns and scalds; the spring-shoots for a table-pickle; the flowers for a cordial by infusion and distillation; the fruit for making an excellent wine.

4. *Marsh-Elder* (*i*). In moist woods, plentifully. The flowers are white, in large umbels, succeeded by red fruit, glossy and beautiful.

These four trees do not flower with us till the beginning of June. The fruits are ripe in the latter end of autumn.

Hist. II. p. 1457. Syn. iii. p. 452. *Sorbus foliis pinnatis*. Linn. Hort. Cliff. p. 196. Royen. lugdb. p. 272. *Sorbus foliis pinnatis, glabris, fructu minimo*. Hal. Helv. p. 350. *Rawne-Tree*, vulgo, *Nurthumbr. et Cumbr.*

* Ol. Rudbeck. Atlant.

(*b*) *Sambucus*. Dod. Pempt. 845. *Sambucus*. Offic. Dal. Pharm. p. 319. Ger. 1234. emac. 1422. *Sambucus fructu in umbella nigra*. C. B. Pin. p. 456. Tourn. Instit. p. 606. Boerb. Ind. A. II. p. 233. Raj. Syn. iii. p. 461. Martyn. Tourn. ii. p. 230. *Sambucus caule perenni ramofo*. Linn. Hort. Cliff. *Sambucus caule arboreo ramofo, floribus umbellatis*. Royen. lugdb. p. 243. *Sambucus arborea umbellatis floribus*. Hall. Helv. p. 466.

See an account at large of its medical virtues in *Martyn's Tourn.* II. loco supra citata.

(*i*) *Sambucus palustris*. Dod. Pempt. 846. *Sambucus aquatica*. I. B. I. p. 502. Cam. Epit. p. 977. bene, cum Charactere. *Sambucus aquatica flore simplici*. C. B. Pin. p. 564. Raj. Syn. iii. p. 460. *Opulus Ruellii* Tourn. Inst. p. 607. *Opulus* Linn. Hort. Cliff. p. 109. Royen. lugdb. p. 233. Hall. Helv. p. 463.

5. Dwarf-

5. *Dwarf-Elder, Walwort, or Danewort (k)*. On the west side of the church-yard-wall at *Chatton*, by the river *Till*. At *Purloy-Green*, near *Shitlington-hall*, in *Tynedale*, plentifully. In a farm-yard at *Tecket*, sparingly. It flowers in June. The flowers are white, in large umbels; the fruit black. It is diuretic and aperient, used in obstructions of the *Viscera*, dropfies, and jaundices. For inflammations, scalds, burns, and the venomous bite of any animal, it has been used with eminent success. It is said also to assuage the pain of the gout. It has an agreeable smell in an ointment †.

6. The *Euonymus (l)*. At the west end of the rectory-wood at *Simonburn*. At *Capons-clugh*, near *Allerwasb*; also in the *Bush-wood*, on the banks of *South Tyne*, near the same place. The older shoots are four-cornered; the corners or angles brown; the flat sides of a pea-green. The younger shoots are all green, resembling jessamy. The flowers are at the extremity of the branches, of a yellowish-white. The fruit is angular, of a purplish-red, with an ovated seed of a bright orange-yellow. It flowers with us in

(k) *Ebulus*. *Dod. Pempt.* p. 381. *Ebulus*, *Chamæacte. Offic. Dal. Pharm.* p. 319. *Ebulus* sive *Sambucus humilis*. *Ger.* p. 1238. *emac.* p. 1426. *Park. Theatr.* p. 208. *Ebulus* sive *Sambucus herbacea*. *I. B. I.* p. 546. *Sambucus humilis* sive *Ebulus*. *C. B. Pin.* p. 456. *Raj. Hist.* II. 1611. *Syn.* iii. p. 461. *Tourn. Inst.* p. 606. *Martin. Tourn.* II. p. 234. *Sambucus caule herbaceo simplicissimo*. *Linn. Virid. Cliff.* p. 25. *Hort. Cliff.* p. 110. *Royen. lugdb.* p. 243. *Hill. Nat. Hist. Pl.* p. 353. *Sambucus herbacea, floribus umbellatis*. *Hall. Helv.* p. 466.

† For its medical powers, see *Martyn's Tourn.* loco citato.

(l) *Euonymus*. *Dod. Pempt.* p. 783. *bene, sed foliis integris*, *Tab.* p. 1047, *foliis ferratis*. *Cam. Epit.* p. 102. *bene, cum Characterè Gesn.* *Tourn. Instit.* p. 617. *bene. Boerb. Ind. A.* II. p. 237. *Euonymus Theophrasti*. *Ger.* p. 1284. *emac.* p. 1468. *Euonymus, Offic. Dal. Pharm.* p. 321. *Euonymus foliis oblongo-ovatis*. *Linn. Hort. Cliff.* p. 38. *Flo. Suec.* p. 47. n. 138. *Royen.* 436. *Hall. Helv.* p. 423.

June.

June. The fruit is ripe in the latter end of autumn, and does not fall off till towards Christmas. It is the most beautiful of all our winter flowering-shrubs. It is not common.

The *black berry-bearing Alder* (*m*), with white flowers at the *Ale* of the leaves, said to grow in *Thorny-holme*, in *Whinfield-park*, in *Westmorland**, and plentifully in the moist woods and hedges in some of the southern counties, especially about *London*, does not grow with us where I have been.

7. *Upright Juniper* (*n*). Among the bushes and trees on the banks of the *Tyne* near *Ryding*, below *Hexham*. It is sometimes removed into the garden-shrubberies. It grows to no great height with us.

8. *Procumbent alpine Juniper* (*o*). On barren heaths. On *Broad-pool-Common*, near *Simonburn*. It is constantly loaden with fruit, but little regarded with us. In the highlands of *Scotland*, over against

(*m*) *Frangula*. *Dod. Pempt.* p. 784. *Tab.* p. 1046. *Cam. Epit.* p. 978. *Icon bona. Tourn. Inf.* p. 612. *Mart. Tourn.* 1. p. 263. *Alnus nigra baccifera.* *I. B.* 1. p. 506. *C. B. Pin.* 428. *Raj. Hist.* 11. p. 1604. *Frangula, Alnus nigra Offic. Dal. Pharm.* p. 318. *Ramnus inermis floribus monogynis hermaphroditis.* *Linn. Hort. Cliff.* p. 70. *Flo. Succ.* p. 68. n. 194. *Royen. lugdb.* p. 224. *Frangula Ora folii integra. Hall. Helv.* p. 164.

* *Ray. Martyn.* locis citatis.

(*n*) *Juniperus vulgaris celsior arborefcens.* *Cluf.* p. 38. *Juniperus vulgaris arbor.* *C. B. Pin.* p. 488. *Juniperus foliis sessilibus patentibus.* *Royen. lugdb.* p. 89. *Linn. Hort. Cliff.* p. 464. *Flo. Succ.* p. 300. n. 824. *Hall. Helv.* p. 146.

(*o*) *Juniperus.* *Matt.* p. 121. *bene.* *Juniperus, Offic. Ger.* p. 1189. *emac.* p. 1372. *Dal. Pharm.* p. 280. *Juniperus montana. Cæsalp.* l. 9. c. 58. *cum Sexus Observat.* *Juniperus vulgaris.* *I. B.* 11. p. 293. *Raj. Hist.* p. 1411. *Syn.* iii. p. 444. *Juniperus vulgaris fructicosa.* *C. B. Pin.* p. 488. *Tourn. Inf.* p. 388. *Boerb. Ind. A.* 11. p. 108. *Dill. Giff.* p. 59. *Martyn. Tourn.* 11. p. 51. *Juniperus (a. varietas) humilior dumosa. Hall. Helv.* 146.

the

the isle of *Skie*, and in the *Skie-isle*, the natives are said to bathe their children in the infusion of the wood, when the small pox is epidemical, and those who neglect this precaution are observed to die, of which there are several instances*.

9. The *Sweet Briar* or *Eglantine* (*p*). On the edge of the military road by the 12th mile-stone, on the west-side, about forty yards from it. There is a very large bush of it, grateful by its scent to the passenger. I have also observed it growing sparingly on the bank on the north side of the *Coquet*, at *Warkworth*, almost opposite to the church.

10. The *Framboise*, *Hindberry*, or *Raspberry* (*q*). About hedges, and in woods, in stony places, plentifully. On the north side of the brook below *Tecket*, among the moist rocks, it bears as large fruit as any I have seen in gardens, the branches hanging over the rocks, and down to the ground, with their weight; of a most grateful taste, far superior to those that are under culture, and nourished with dungs.

11. DOUBLE white-flowered *Dewberry-Bush* (*r*). In a stony place near the foot of the bank in *Tecket*-wood, by the path leading

* Ph. Tr. No. 312.

(*p*) *Rosa sylvestris foliis odoratis*. *Deod. Pempt.* p. 187. *C. B. Pin.* p. 483. *Rosa foliis odoratis*, *Eglantina dicta*. *I. B.* 11. p. 42. *Rosa Eglantheria*. *Taberm. Icon.* 1087. *Rosa aculeata foliis odoratis subtus rubiginosis*. *Linn. Sp. Pl.* 491. *Rosa foliis subtus rubiginosis et odoratis*. *Hall. Helv.* p. 350.

(*q*) *Rubus Idæus spinosus*. *C. B. Pin.* p. 479. *Tourn. Inst.* p. 614. *Martyn. Tourn.* 11. p. 223. *Rubus Idæus spinosus fructu rubro*. *I. B.* 11. p. 59. *Raj. Hist.* 11. p. 1640. *Syn.* iii. p. 467. *Rubus Idæus*, *Offic. Dal. Pharm.* p. 324. *Rubus caule erecto hispido, foliis ternatis*. *Linn. Flo. Lapp.* n. 204. *Hort. Cliff.* p. 192. *Royen. lugdb.* p. 273. *Rubus foliis ternatis & quinatis, costa plerumque inermi, fructu rubro, villosa*. *Hall. Helv.* p. 344.

(*r*) *Rubus caule aculeato, foliis ternatis, flore albo pleno*.

westward

westward from the rectory-den, at *Simonburn*, to the brook, plentifully. The flowers are large, of a bright white, in a double series. It constantly produces the same flowers, both in its wild state, and under culture. It is a variety of the common *Dew-berry* (*s*). It flowers at the same time, in the latter end of May.

12. The *herbaceous Stone-Bramble* (*t*). Amongst the gravel at the bottom of a high bank about two-hundred yards below the remains of a mill at *West Dibden*, called *Whinetly-mill*, in *Hexhamshire*. The children of the neighbourhood, who gather the berries to eat, call them *wild Cherries*. They are of a beautiful red. It is a scarce plant.

13. The *Cloud-berry*, *Knot-berry*, or *Knout-berry* (*u*). On *Cheviot*, plentifully. The fruit is red, of an insipid taste. It is accounted a good antiscorbutic.

(*s*) *Rubus minor*. *Dod. Pempt.* p. 742. cum Icone. *Rubus minor fructu cæruleo. I. B.* iii. p. 59. *Raj. Hist.* ii. p. 1640. *Syn.* iii. p. 467. *Rubus repens fructu cæfio. C. B.* Pin. p. 470. *Tourn. Inf.* p. 614. *Martyn. Tourn.* ii. p. 223. *Boerb. Ind. A.* ii. p. 60. *Rubus caule aculeato, foliis ternatis. Linn. Hort. Cliff.* p. 192. *Flo. Suec.* p. 49. n. 410. *Royen. lugdb.* p. 273. *Hall. Helv.* p. 344. *Chamæbatus, Offic. Dal. Pharm.* p. 323.

(*t*) *Rubus saxatilis alpinus. Clus. Pannon.* p. 115, 116. cum Icone. *Rubus saxatilis five petræus. Clus. Hist.* p. 117. *Chamærubus saxatilis. C. B. Pin.* p. 479. *Raj. Hist.* i. p. 654. *Syn.* iii. p. 261. *Rubus alpinus humilis. I. B.* ii. p. 61. *Tourn. Inf.* p. 615. *Boerb. Ind. A.* ii. p. 61. *Dill. Giff.* p. 56. *Rupp. Flo. Jen.* p. 115. *Chamærubus, Offic. Dal. Pharm.* p. 323. *Rubus foliis ternatis nudis flagellis reptantibus herbaceis. Linn. Sp. Pl.* p. 494. *Flo. Suec.* p. 149. n. 410. *Rubus caule repente annuo foliis ternatis. Flo. Lappon.* p. 206. *Royen. lugdb.* p. 173. *Hall. Helv.* p. 344.

(*u*) *Chamæmorus, Offic. Ger.* p. 1089. *emac.* p. 1272. *Dal. Pharm.* p. 323. *Raj. Hist.* p. 654. *Syn.* 260. *Chamæmorus Anglica. Park. Theatr.* p. 1014. *Rubus Idæo minori affinis, Chamæmorus. I. B.* ii. p. 62. *Rubus alpinus humilis, Vaccinia Nubis, i. e. Cloud-berries vulgo dictus. Pluk. Almag.* p. 325. *Rubus palustris humilis. Tourn. Inf.* p. 615. *Rubus caule bifolio & unifloro, foliis simplicibus. Linn. Flo. Lapp.* p. 208. t. 5. f. 1. *Hort. Cliff.* p. 192. *Rubus foliis simplicibus, caule unifloro. Flo. Suec.* p. 15. n. 413.

14. LARGE, *Mountain-Strawberry*, with shining-rugose leaves (u). In the bottom of the wood at the *Ostium* of *Goston-burn*, on the north side. On the strand of the brook at *Slaterfield*, by the path to *Simonburn*. The fruit is conic, of the size of a small nutmeg, finer tasted than the garden-kinds. It loves a water-sand and gravel, and a low shady situation. It is a variety of the small, rough, shining-leaved, common strawberry of the woods.

The small *white Strawberry* (x), does not grow with us, but as it may have escaped out of gardens. It grows plentifully on the tops of the brick-garden-walls at the *Half-way* house between *Newcastle* and *Tynemouth*, with no other nourishment than what it receives from the mortar, of lime and sand, between the bricks; of a much finer flavour than when it grows under culture on the ground below.

15. *Berry-bearing Heath*, *Crow-berry*, or *Crake-berry* (y). On moist alpine rocks, and upon heaths. On *Calleley-hill*, plentifully; where the fruit is the largest of any I have seen, of the size of the garden-black currant.

16. *Thyme-leaved*, *Marsh-Wortle-berry*, or *Crane-berry* (z). On small hillocks among the *Sphagnum* in mountainous mosses. On both sides

(u) FRAGRARIA foliis ternatis rugosis glabris, flagellis reptans, fructu rubro conico.

(x) Fragaria minor flagellis reptans, fructu subrotundo dulci & subalbido. Fragaria fructu albo. *Cam. Epit.* p. 766. *γ. Hall. Helv.* p. 343. *Act. Suec.* 1720. p. 97.

(y) Erica baccifera. *Cam. Epit.* p. 77. *Clus. Pannon.* p. 28. Erica baccifera procumbens nigra. *C. B. Pin.* p. 486. *Raj. Hist.* p. 1631. *Syn.* iii. p. 444. Empetrum montanum fructu nigro. *Tourn. Inst.* 579. Empetrum procumbens. *Linn. Hort. Cliff.* p. 470. *Flo. Suec.* p. 303. n. 832. *Royen. lugdb.* p. 206. *Hall. Hel.* p. 162.

(z) Vaccinia palustris. *Dod. Pempt.* p. 770. cum fructu. Oxycoccus palustris foliis parvis acutis serpilli instar, *Menz. Pug.* Oxycoccus sive Vaccinia palustris. *I. B. r.* p.

fides of the *Roman* wall, in the mosses, westward; in great abundance in wet summers. The flower is of a beautiful scarlet, consisting of four long segments, revolute, with eight stamina. The fruit is ripe in autumn, of a florid red, spotted with a deep purple, and on its going off entirely of a deep purple. It is used for tarts, for which it is much valued; of a most grateful taste, cooling and refrigerant.

17. We have the small *deciduous-leaved black Wortle-berry* (*a*), in moist woods, and about shadowy rocks, in great abundance. The fruit is well tasted, but not to be eaten too freely; being a great astringent, and has been known to cause such a constipation of the bowels as has been fatal*. It is a *succedaneum* in the shops to *Myrtle-Berries*, from which it obtained the name of *Myrtillus*.

18. *Procumbent perennial-leaved Wortle-berry* (*b*). About moist alpine-rocks, and in hilly stony places upon heaths. On the ledges

525. *Raj. Hist.* p. 685. *Tourn. Inst.* p. 665. *Vitis Idæa palustris. C. B. Pin.* p. 470. *Raj. Syn.* iii. p. 267. *Öccococcus Rupp. Flo. Jen. Hall. Helv.* p. 413. *Vaccinium ramis filiformibus repentibus, foliis ovatis perennantibus. Linn. Flor. Lappon.* p. 145. *Vaccinium ramis filiformibus, foliis ovatis perennantibus, pedunculis simplicibus stipula duplici. Flo. Succ.* p. 114. n. 315.

(*a*) *Vaccinia nigra. Dod. Pempt.* p. 768. *Myrtillus. Matth.* p. 231. *bene. Cam. Epit.* p. 135. *Myrtillus, Off. Dal. Pharm.* p. 294. *Vitis Idæa foliis oblongis, crenatis, fructu nigricante. C. B. Pin.* 470. *Tourn. Inst.* p. 608. *Vitis Idæa angulosa. I. B. I.* p. 520. *Raj. Hist.* ii. p. 1488. *Syn.* iii. p. 457. *Vaccinium caule angulato, foliis ovatis ferratis deciduis. Linn. Succ.* n. 313. *Vaccinium caule angulato, foliis ferratis annuis. Lapp. n.* 43. *Hort. Cliff.* p. 148. *Royen. lugdb.* p. 239. *Hall. Helv.* p. 415.

* *Bresleriensis, 1722. M. Octobr. a clariff. Hall. citat.*

(*b*) *Vaccinia rubra. Dod. Pempt.* p. 770. *Vitis Idæa rubra. Cam. Epit.* p. 136. *bene. Vitis Idæa semper virens fructu rubro. I. B. I.* p. 522. *Raj. Hist.* p. 488, &c. *Syn.* iii. p. 457. *Vitis Idæa foliis subrotundis non crenatis baccis rubris. C. B. Pin.* p. 470. *Vaccinium foliis perennantibus obverse ovatis. Linn. Hort. Cliff.* p. 148. *Royen. lugdb.* p. 239. *Hall. Helv.* p. 414.

of the rocks by a spring at *Long-crag*, near *Watling-street*, by the road to *Thockrington* from *Gunwarton*. On the moor-edge, by *Diligate-hall*, near *Hexham*, plentifully. The root is creeping and woody. The stalks are slender, and branched, from half a foot to a foot in length. The leaves are like those of *Box*, of a deep glossy green, and alternate. The flowers are on pedicles, in a pendulous cluster at the extremity of the branches, five, six or seven together, according to the strength of the plant. They are monopetalous, of a cylindric campaniform shape, lightly cut, of a bright white, and sometimes of a pale red; the stamina corniculated, the tube revolute. The fruit is red, of a grateful acid taste. The leaves are bitter. Used in the form of tea, they are accounted good against rheums and distillations of the head.

19. *Upright deciduous-leaved Wortle-berry, or great Bill-berry-bush, (c).* In woods, in wet mossy places. In the Duke of *Portland's* wood, called the *East Common*, near *Hexham*. It is from a foot to two feet and a half high; the lower part naked, very much branched at the top. The leaves are of an ovated form, and in the older and more robust plants pretty long, shining, and full of veins. The flowers are on pedicles, one or two together, cylindric, contracted and reflex at the brims, with four or five denticles, lightly cut. They are white, with a blush of purple. They have eight or ten stamina, four of them corniculated, two of them bending inwards, and the other two straight; the tube thick and cylindric. The ovarium is globose, and four

(c) *Vitis Idæa*. 11. *Clus.* Pan. p. 77, 79. *Hist.* p. 61, 62. bene. *Viti Idæa magna*, quibusdam *Myrtillus grandis*. *I. B.* 1. p. 518. *Raj.* *Hist.* p. 1487. *Syn.* iii. p. 457. *Tourn.* *Inst.* p. 608. *Vitis Idæa foliis subrotundis exalbidis*. *C. B.* *Pin.* p. 470. *Vaccinium altissimum, foliis subrotundis exalbidis*. *Rupp.* *Flo. Jen.* p. 39. *Vaccinia Offic. Dal. Pharm.* p. 294. *Vaccinium foliis ovalibus deciduis*. *Linn.* *Flo. Suec.* n. 113. n. 312. *Vaccinium foliis annuis deciduis*. *Flo. Lappon.* n. 142. *Hall.* *Helv.* p. 414.

cornered. The fruit is round and glossy, of a farinaceous-bluish-black. It is esculent, and well tasted. It is full of seeds, in four cells. It flowers in the latter end of May, and sometimes later.

20. The *perennial-leaved Arbutus*, or *Uva Ursi*, with red fruit (*d*). In the Duke of *Portland's* wood, near *Hexham*, plentifully. I never met with it any where else, except at little *Waneyhouse-crag*, where I met with one very fine plant of it in a turf-soil among the rocks. It very much resembles the *ever-green* or *perennial-leaved Wortle-berry* with red fruit. The stalks are longer, and of a more firm texture, part procumbent, and part upright, according to their age and strength, from a foot to two feet in length. The leaves are also longer, gradually expanding to an ovated form. The flowers are in pendulous clusters on the summits of the branches. They are campaniform; the brims reflex and obtuse; the antheræ bicornuous; the fruit round and glossy, of an insipid taste. The calyx is of a purple colour divided into five parts.

21. *Yellow flowered, climbing Honey-suckle* (*e*). In hedges, and thickets. In a hedge by the ford cross *North Tyne* from *Haughton-Strothers* to *Chipchace*. Among the brush-wood in the *Roman foss* by the 12th mile-stone on the military road, near the *Wall-houses*. Its usual height is about six feet. The leaves are of an ovated

(*d*) *Uva Ursi*. Clus. p. 63. Hispan. p. 79. bene. Tab. p. 1080. Tourn. Inst. p. 599. *Arbutus caulibus procumbentibus, foliis integerrimis*. Linn. Flo. Lapp. n. 162. t. 6. f. 3. Flo. Suec. n. 339. Hort. Cliff. p. 163. *Royen*. lugdb. p. 440. *Hall*. Helv. p. 415.

(*e*) *Caprifolium Germanicum*. *Dod*. Pempt. p. 411. *Tourn*. Inst. p. 608. *Periclymenum non perfoliatum Septentrionalium*. *Lob*. p. 603. ex *Dod*. *Periclymenum non perfoliatum Germanicum*. *C. B.* Pin. p. 302. *Lonicera floribus capitatis, terminatricibus floribus omnibus distinctis*. Linn. Hort. Cliff. p. 58. *Royen*. lugdb. p. 237. *Caprifolium floribus racemosis*. *Hall*. Helv. p. 465.

form with obtuse points, of a deep green and glossy. The flowers are in large clusters on the tops of the branches, of a bright and beautiful gold-yellow, sometimes with a blush of red. It has a most grateful fragrance. Hence it is admitted into the shrubberies of the genteeler gardens, and often trained to a head for a place among the low *Frutices* in borders. It is not without its medical virtues. The distilled water of the flowers is commended for inflammations of the eyes. An ointment made of the leaves is used with success in ulcerous tumours of the legs. Against a warm wall, under culture, it holds its leaves in the winter. I found it so in two young plants, in one winter, whilst those in the hedges were deciduous. It flowers in July and August.

22. *Upright alpine Honey-suckle (f)*. In the fissures of steep rocks. On the rocks under the *Roman wall*, on the west side of *Shewing-sheels*, and by *crag-lake*. It is a low *Frutex*, upright, and bushy towards the head. The leaves are rough and hairy, but not serrated. The flowers are white, and succeeded by two oblong red berries, which as they ripen run into one single striated oval berry, containing commonly about eight seeds. It flowers in July.

23. *Woody Night-shade, or Bittler-sweet (g)*. About moist hedges, and way-sides, by waters. In the hedges about *Hexham, Bywell,*
and

(f) *Periclymenum rectum quartum, Clus. Hist. p. 59. bene, cum flore & fructu. Xylosteum alterum. Dod. Pempt. p. 412. ex Clusio. Chamæcerasus alpina fructu rubro gemino duobus punctis notato. C. B. Pin. Tourn. Inst. p. 609. Periclymenum rectum fructu rubro. Raj. Hist. p. 492. singulari majore, Park. Lonicera pedunculis bifloris, foliis ovatis obtusis integris. Linn. Hort. Cliff. p. 58. Caprifolium floribus geminis, foliis oblonge obtusis integerrimis. Hall. Helv. p. 464.*

(g) *Dulcamara. Dod. Pempt. p. 402. Amaradulcis, Ger. p. 279. emac. p. 350. Solanum lignosum, seu Dulcamara. Park. Theatr. p. 350. Raj. Hist. i. p. 672. Syn. iii.*

and *Carbridge*. On the banks of the *Wansbeck*, at *Shipwash*, among the bushes. By the path to the *Bathing-well* at *Cornhill*, plentifully. The flowers are of a beautiful purple, with a yellow tube, in clusters, succeeded by round red berries. It flowers in June and July.

There is a variety of it with *hairy Musk scented leaves (b)*, in the hedges at *Drayton*, and *Crooked Cosham*, under *Port-sea* down, near *Portsmouth*, in *Hampshire*; of which I find no mention in authors.

24. *Herb-paris, True-love, or One-berry (i)*. In moist woods. In *Cottingwood*, near *Morpeth*, where *Dr. Turner* observed it*. At the west end of the rectory-wood at *Simonburn*, plentifully. The root consists of long bulbous fibres, jointed, and creeping, sending forth new plants at distances. The stalk is round, green, and succulent, ten or twelve inches high, naked to within two or three inches of the top, where are four, and sometimes five, ovated liliaceous leaves; nervous, and mucronated, of a pleasant green, in a verticillate order. The flower is of a pale yellow and green, variegated. The ovary is nearly round, and four-cornered. The berry is ripe in the latter end of August, of a glossy

p. 265. *Solanum lignosum, Dulcamara, Offic. Dale Pharm. p. 171. Solanum scandens, seu Dulcamara. C. B. Pin. p. 167. Tourn. Inst. p. 149. Martyn. Tourn. II. p. 277. Solanum caule inerme perenni flexuoso, foliis superioribus hastatis. Linn. Hort. Cliff. p. 60. Flo. Suec. p. 66. n. 189. Royen. lugdb. p. 223. Solanum foliis aliis trifidis, aliis simplicibus. Hall. Helv. p. 507.*

(b) *Solanum maritimum caule inerme perenni flexuoso, foliis subhirsutis moschatis.*

(i) *Herba Paris. Dod. Pempt. p. 444. I. B. iii. p. 613. cum optima Descriptione. Ger. p. 328. emac. p. 61. Park. Theatr. p. 390. Raj. Hist. I. p. 670. Syn. iii. p. 264. Tourn. Inst. p. 233. Martin. Tourn. II. p. 8. Herba Paris, Offic. Dal. Pharm. p. 170. Solanum quadrifolium bacciferum. C. B. Pin. p. 167. Aconitum monococcum, Cordi. Hist. p. 151. b. cum bona Descript. Paris foliis quaternis. Linn. Flo. Lapp. p. 155. Flo. Suec. p. 118. n. 325. Hort. Cliff. p. 153. Royen. lugdb. p. 461. Hall. Helv. p. 412.*

* *Turn. Hist. Pl.*

bluish-

bluish-black, not esculent. The seed is contained in four cells. The calyx consists of four patent mucronated leaves, larger than the flower, which hath eight stamina. It flowers in May and June.

25. *Tuberous Moschatel, or Musk-Wood-Crowfoot (k)*. About moist hedges, and on the borders of woods. On the bank under the hedge, below St. Mungo's well at *Hall Barns*, opposite to the church of *Simonburn*, close by the brook. Under the bushes by the road on the left hand from *Simonburn* to *Tecket*, plentifully. In the hedges about *Hexham*. The root consists of bulbous jointed filaments, sending forth new plants at distances. The radical leaves are ternate and lobated, like those of the white flowered alpine fumitory, and of the same pleasant green colour, on a long pedicle. The stalks are smooth, and slender, about four inches high, with a pair of lobated leaves in the middle, on short pedicles. The flowers form a kind of square head at the top, four in a lateral opposite order, crowned with a fifth, each monopetalous cut into four or five segments, of a yellowish-green colour, smelling faintly of musk. They are succeeded by small greenish berries of a spherical shape. The seeds are disposed on a cornered *Placenta*, seldom more than three coming to maturity. It flowers in April and May.

26. We have the *Arum, Wake-Robin, or Cuckow-pint*, both without and with black spots on its sagittated leaves (*l*), in wood-bottoms, and

(*k*) *Muschatellina foliis fubaricæ bulbosæ*. *I. B.* iii. p. 206. *Raj. Hist.* p. 684. *Syn.* iii. p. 267. *Tourn. Inst.* p. 156. *Vaill.* p. 127. *Ranunculus nemorosus*; *Moschatellina dictus*. *C. B. Pin.* p. 178. *Muschatellina*. *Rupp. Flo. Jen.* p. 40, &c. *Hall. Helv.* p. 412. *Adoxa*. *Linn. Hort. Cliff.* p. 153. *Flo. Suec.* p. 118. n. 326. *Royen. lugdb.* p. 252. *Hill. Nat. Hist. Pl.* p. 410.

(*l*) *Arum*. *Dod. Pempt.* p. 528. *Cord. Hist.* p. 102. bene. *I. B.* 11. p. 783. *Raj. Hist.* p. 1208. *Syn.* iii. p. 266. *Arum, Offic. Dal. Pharm.* p. 256. *Arum vulgare maculatum et*

non

and on moist hedge-banks. It is in great abundance under the bushes in *Chipchace*-island, in a light, mellow, sandy soil, thrown up by floods. The root is said to be deterfive and cosmetic, to deface wrinkles, cleanse the skin, and clear the complexion, prepared by drying and powdering, and made into a paste. We are assured by an eminent naturalist that it was thus prepared and used in *Italy* *; and we are told by another, that it is used by the common people in *France*, in whitening linen †.

27. *Lily of the Vally (m)*. Among the bushes above the scar by the mill at *Nether-warden*, near *Hexham*. The fragrant pendulous flowers are succeeded by round berries of a beautiful orange-red, of the size of a common garden-pea. They mostly drop off before they come to maturity with us, which makes them but seldom observed. A green colour is prepared from the leaves with lime, lasting and beautiful †.

These are the chief of our *Berry-bearing* plants. Next of those that bear *no berries*.

non maculatum. *Park. Theatr.* p. 372. *Arum maculatum*, maculis candidis vel nigris, et non maculatum. *C. B. Pin.* p. 195. *Turn. Inst.* p. 158. *Martyn. Tourn.* i. p. 78. *Hist. Oxon.* iii. p. 542. *Rupp. Flo. Jen.* p. 203. *Arum foliis sagittatis cucullo recto.* *Hall. Helv.* p. 26.

* *Cæsalpin.* 226.

† *Tournf.*

(*m*) *Lilium Convallium.* *Dod. Pempt.* p. 205. *Cam. Epit.* p. 618. *Icon bona.* *Lilium Convallium*, *Offic. Ger.* p. 331. *emac.* 410. *Dal. Pharm.* p. 169. *Raj. Hist.* i. p. 669. *Syn.* iii. p. 264. *Lilium Convallium vulgò.* *I. B.* iii. p. 531. *Hist. Oxon.* iii. p. 539. *Martyn. Tourn.* ii. p. 81. *Lilium Convallium album.* *C. B. Pin.* p. 304. *Tourn. Inst.* p. 77. *Liliago.* *Vaill.* p. 116. *Polygnatum bifolium scapo florifero aphylo.* *Hall. Helv.* p. 286. *Convallaria scapo nudo.* *Linn. Flo. Lapp. n.* 112. *Hort. Cliff.* p. 124. *Sp. Pl.* p. 314. *Hill. Nat. Hist. Pl.* 317.

† Ex foliis cum calce fit pulcher, et durabilis, Color viridis. *Hall. Loco supra citat.*

1. *Bay-leaved, sweet-scented Willow (n)*. In moist hedges and meadows, and about ditch-banks. In the *Roman* fofs between *Shewingsheels* and *Carraw*. In the hedge by a streamlet on the fourth side of their station at *House-steeds*; and many other places by the *Roman* wall, in great abundance. The young shoots in May, after a warm shower, are very fragrant. It is frequently the summer ornament of the pheasant's chimney. The down of the catkin is like cotton, of a beautiful whiteness. Insects terebrate the leaves to deposit their *Ova*. The organ, with which they perform it, is well described by *Malpighius* in his anatomy of plants. We find the same *Cuniculi* on the leaves of the common willow, and on the twigs of the wild rose, and of the oak. Those of the oak are usually called *Oak-apples*, from their globose figure and likeness to a small apple, and *Oak-galls*, from their being tinctorial and giving a black dye. Those of the wild rose are large, of an irregular figure, filimentose, of a greenish-yellow, tinged with red. The twig of a young white thorn in a dwarf-hedge in my garden had the most remarkable gall-tumour of any I have observed; a villose, filiform matter covering it all round, except at the lateral and terminale buds, so like the downy coat of that little animal the *Mole*, that I at first sight fancied it was part of the skin of one, till I raised the bark with a penknife, and found it to be the generative *Nidus* of an insect; the obstructed juices taking that form on the exterior *Cortex* through the pores, the hairs being so many tubes whereby the wounded twig received nourishment from the air and dews; an effort of nature to keep itself from destruction.

(n) *Salix folio laureo five lato glabro odorato. Raj. Hist. p. 1420. Syn. iii. p. 499. Salix foliis ferratis glabris, flosculis pentrandis. Linn. Hort. Cliff. p. 454. Flo. Suec. p. 289. n. 792. Salix foliis ferratis glabris ovatis acutis subsessilibus. Royen. lugdb. p. 83. Salix foliis elliptico lanceolatis utrinque glabris & rigentibus, non auriculatis. Hall. Helv. p. 152.*

2. *Myrtle-leaved sweet Willow, Gaule, or Dutch-Myrtle (o)*. On moist heaths, and about mosses. On the heath between *Haly-stone* and *Harbottle-castle*, in great abundance. On the banks of *Kimmer lake*, near *Eglingham*. At the former place it is in such quantity, that it is like a little grove, perfumes the air at some distance with its odours after a warm shower of rain or the morning and evening-dews. The wood is sweet-scented as well as the bark*. It is used in scenting linen.

3. *Rose-Bay, Willow-Herb (p)*. Among the rocks and bushes under the *Roman wall* on the west side of *Shewing-sheels*, and by *Crag-Lake*. On the banks of *South Tyne*, by *Slaggiford*, in *Knarefdale*, plentifully. The root is woody, thick, and creeping, of a reddish-brown colour. The stalk is from two to three feet high, thick, smooth, lightly furrowed, and branched, of a green colour, tinged with red. The leaves are sessile, or close to the stalk, numerous, long, narrow, and pointed, of a lively green. The flowers are large, on bending pedicles of an inch long in the *Axe* or insertion of the leaves. The *Calyx* is composed of four oblong, pointed, purple segments. The *Corolla* consists of four

(o) *Rhus myrtifolia* BELGICA. *C. B.* Pin. 414.

Gale, frutex odoratus SEPTENTRIONALIUM. *I. B.* 1. 2. 224. *Raj.* Syn. 443. *Myrica foliis lanceolatis, fructu sicco.* *Linn. Flo. Lapp.* 373. *Hort. Cliff.* 445. *Roy. lugdb.* 527.

* *Gaule, a low frutex, sweet in burning.* *Lel. Itin.* Vol. 1. p. 39.

(p) *Chamænerium Gesneri* de *Bry Floril.* t. 42. *benè.* *Lyfimachia Chamænerion dicta latifolia.* *C. B.* Pin. p. 71. *Hist. Oxon.* 11. p. 269. f. 3. t. 2. f. 1. *Lyfimachia speciosa quibusdam ONAGRA dicta, siliquosa.* *I. B.* 11. p. 906. *Raj. Hist.* p. 860. Syn. iii. p. 310. *Epilobium foliis lanceolatis integerrimis.* *Linn. Flo. Lapp.* n. 146. *Hort. Cliff.* p. 145. *Royen. lugdb.* p. 250. *Epilobium floribus difformibus pistillo declinato.* *Flo. Succ.* p. 110. n. 304. *Hill. Nat. Hist. Pl.* p. 399. *Epilobium spicatum, flore, difformi, foliorum nervo eminente, ore leviter ferrata.* *Haël. Helv.* p. 408.

roundish,

roundish, patent leaves, of a bright red. The *stamina* are white, with bright brown *Anthera*. The pistil or style is long and filiform, divided at the summit into four parts and reflex, succeeded by a long cylindrical pod or capsule, with four valves, and as many cells, for the seeds, which are numerous, oblong, and winged with down. It is preferable to all our rock-plants for beauty. It is so hardy, that many of them grow in the lateral chinks of the taller rocks with hardly any visible earth to sustain them. It is introduced into some of our gardens under the name of the *French willow*; but being a great runner, it makes a better figure in its more confined situation among the rocks, than under culture. It flowers in July and August. It is reputed a scarce plant.

4. The *great, hairy, purple Willow-Herb*, or *Loofestriſe (q)*, usually called *Codlings* and *Cream*, from the smell of the leaves, like *Apples and Cream*, is plentiful in ditches and by waters. We have it in great abundance in the ditches, and on the ditch-banks, by the mill at *Barwesford*, on *North Tyne*.

5. The *purple-spiked Willow-Herb*, or *Loofestriſe (r)*. In bogs, and by waters. In a boggy meadow by a streamlet, between two
hang-

(q) *Lyfimachia filiquosa hirsuta magno flore. C. B. Pin. p. 245. Hist. Oxon. ii. p. 27. t. 11. f. 3. Lyfimachia hirsuta majore flore purpureo. I. B. ii. p. 905. Epilobium hirsutum magno flore et specioso. Dill. Giff. p. 131. Chamænerion villosum magno flore purpureo. Tourn. Inst. p. p. 303. Epilobium foliis longis, dentatis, villosis, flore magno. Hall. Helv. p. 410.*

(r) *Pseudo-Lyſimachium purpureum alterum. Dod. Pempt. p. 86. cum Cluſ. Icone. Lyſimachia altera Matth. Cãm. Epit. p. p. 687. bene. Lyſimachia ſpicata purpurea. C. B. Pin. p. 246. Lyſimachia purpurea quibusdam ſpicata. I. B. ii. p. 902. Lyſimachia purpu-*

hanging banks at *Belfay*, near the chapel, plentifully. At the west end of *Halypike-lake*, among the dwarf willows and rushes, sparingly. The root is woody, thick, and divaricated. The stalks are firm, four-cornered, with a blush of red towards the base, very much branched, from a foot and a half to three feet high. There are two, and sometimes three leaves, at a joint, long, narrow, and pointed, of a dusky, green colour. The flowers are hexapetalous, of a strong purple, in verticillate clusters, in the *axæ* of the leaves, in long beautiful spikes. The seeds are yellow, small, oblong, and pointed, in a bilocular capsule.

6. The *lesser spiked Willow-Herb*, or *Loose-strife (s)*. In bogs. At the west end of *Halypike-lake* with the former. On a wet swampy bank on the north side of the river *Aln* at *Denwick*, near *Alnwick*. The stalks are four-cornered, and very much branched, from a foot, to a foot and a half high. The leaves are somewhat broad at the base, and ovated towards the ends, of a smooth lively green. The flowers are in thin spikes, rising from the *axæ* of the leaves, of a bright purplish-red. Under culture it rivals the former for stature, and out-does it for beauty. The branches are numerous. The flowers also become numerous, in verticillate clusters, on very short pedicles, in tall spikes, making a great shew on the larger borders of flowers and shrubs. It is not a common plant.

rea spicata. *Raj.* Hist. p. 1036. *Lythrum foliis oppositis*. *Linn.* Hort. Cliff. p. 178. Flo. Suec. p. 142. n. 393. *Lythrum foliis oblongis acutis, floribus verticillatis*. Flo. Lapp. n. 197. *Salicaria floribus spicatis floribus conjugatis*. *Hall.* Halv. p. 405, 406.

(s) *Lyfimachia minor rubro flore*. *Clus.* Pann. p. 477, 478. *Lyfimachia purpurea minor*. f. ii. ej. Hist. p. 51. 52. *Raj.* Hist. p. 1036. *Lyfimachia purpurea Pannonica*. *I. B.* ii. p. 305. *Lyfimachia rubra non filiquosa*. *C. B. Pin.* *Salicaria trifolia, caule hexagono*. *Tourn.* Inst. 253. β . *Syn. Linn.* Flo. Suec. p. 142. ii. *Hall.* Helv. p. 406. cum descriptione optima.

7. The

7. The *Hooded Willow-Herb* (*t*), is not unfrequent on ditch-banks, and moist shady places, about *Hexham*. The stalks are four-cornered, very much branched, and of a weak texture. The leaves are on pedicles, and crenated. The flowers are two in number in the axæ of the leaves, rising erect with a ventricose tube from the calyx, and galeated, of a bluish-purple. The leaves are of a bitter taste, and have the scent of garlic. It is astringent, and was formerly used for wounds and hæmorrhages, but is now little regarded. It flowers at the same time with the other willow-herbs, in July and August.

8. The *yellow Willow-herb*, or *Loosestrife* (*u*). In shadowy moist meadows, and by waters. By the side of the pond at the south-west end of *Wide-haugh*, near *Dilston*, by the road to *Hexham*, sparingly. On the banks of *North Tyne* at *Low Park-End*, near *Nunwick*, in great abundance. The root is fibrous and creeping, sending forth new plants at distances. The stalk is round, firm, lightly hairy, with a blush of red towards the base, branched at

(*t*) *Judaicæ herbæ alia species. Dod. Pempt. p. 93. bene. Lyfimachia cærulea galericulata seu gratiola cærulea. C. B. Pin. p. 246. Raj. Hist. i. p. 572. Tertianaria aliis Lyfimachia galericulata. I. B. iii. p. 435. Scutellaria palustris repens cærulea. Hist. Oxon. iii. p. 416. Scutellaria, Offic. Dal. Pharm. p. 155. Cassida palustris vulgatiores flore cæruleo. Tourn. Inst. p. 182. Martyn. Tourn. p. 157. Dill. Giff. p. 117. Rupp. Flo. Jen. p. 18. Raj. Syn. iii. p. 244. Scutellaria foliis cordato-lanceolatis crenatis. Linn. Flo. Lapp. p. 239. Hort. Cliff. p. 316. Royen. lugdb. p. 310. Cassida foliis cordatis, longe decrefcentibus, ferratis, floribus gemellis. Hall. Helv. p. 635.*

(*u*) *Lyfimachium legitimum. Dod. Pempt. p. 84. Lyfimachia lutea major. C. B. Pin. p. 245. Lyfimachia lutea. I. B. ii. 901. Raj. Hist. ii. p. 1021. Syn. iii. p. 282. Lyfimachia, Offic. Dal. Pharm. p. 188. Lyfimachia foliis lanceolatis, racemo composito terminatrice. Linn. Virid. Cliff. p. 415. Flo. Suec. n. 166. Royen. lugdb. p. 416. Lyfimachia foliis lanceolatis, corymbo terminatrice. Flo. Lapp. n. 81. Hort. Cliff. p. 30. Lyfimachia foliis ovato lanceolatis, floribus ad summos ramos spicatis. Hall. Helv. p. 635.*

the top, and from two to three feet high. The leaves are sessile, usually three at a joint, *verticillatim*, and two on the branches, oblong, and lancolated, of a pale green, and hairy underneath. The flowers are in clusters on the tops of the branches, of a pale yellow, with a circle of pale red in the bottom of each, in the more robust plants. The seed is disposed on a round placenta. The calyx is deeply divided into five parts. It flowers in June and July. Under culture, in a moist warm border, it grows to between four and five feet high, and makes a gay figure with its large beautiful panicles. The leaves were formerly accounted good for cooling inflammations in wounds, but are now disused.

The *lesser yellow Willow Herb*, or *Loose-strife*, with *globose* flowers in the *Axe* of the leaves, in beautiful spikes (*x*), does not grow with us that I have observed.

9. The *Conyza*, or *Middle Fleabane* (*y*). On ditch-banks, and by waters. On the banks of a rivulet between *Segill* and *Halywell*, in great abundance. In a lane leading to the sea-banks from *Ellington*, near *Blakemore-hall*, sparingly. We have it also on the banks of *Owse-burn*, above the bridge, at *Newcastle*; and in a

(*x*) *Lyfimachia bifolia*, flore globofo lutea. *C. B.* Pin. p. 245. *Lyfimachia* ex alis foliorum thyrsifera. *Linn.* Flo Lapp. n. 82. Hort. Cliff. p. 52. *Lyfimachia* racemis simplicibus lateralibus. *Virid.* Cliff. p. 13. *Royen.* lugdb. p. 416.

(*y*) *Conyza media asperis* flore luteo. *C. B.* Pin. p. 265. *Raj.* Hist. Oxon. iii. p. 113. Syn. iii. p. 174. *Conyza media Matthioli*, flore magno luteo, humidis locis proveniens. *I. B.* ii. p. 1050. *Conyza media*, Offic. *Dal.* Pharm. p. 87. After pratensis autumnalis conyzæ folio. *Tourn.* Inst. p. 492. *Helenium pratense autumnale*, conyzæ foliis caulem amplexantibus. *Vai'l.* Act. 1720. p. 405. *Conyza* foliis lanceolatis acutis, caule annuo, corymbofo. *Linn.* Hort. Cliff. p. 405. *Royen.* lugdb. p. 157. After foliis amplexicaulibus, crispis, subtus incanis, luteo flore radiato. *Hall.* Helv. p. 726, 727.

ditch-

ditch-bottom on the left hand in going up the hill from the *Half-way* house to *Tynemouth*. I do not remember to have seen it any where else with us. The root consists of thick bulbous fibres, sending forth new plants at the joints. The stalks are round, robust, hairy, and glutinous, branched at the top, from two to three feet high. The leaves are of a sagittated form and mucronated, with a plicated undulated margin, very hairy, and glutinous underneath. The flowers are in clusters on the top of the stalk and branches, each on a separate pedicle. They are yellow, and large. The seed is winged with down. The calyx is covered with a short down. It flowers in August and September. It makes a very different appearance in different situations. On the moist bank by the brook near *Halywell*, and in the lane near *Ellington*, the stalks are upright, firm, and robust; the flowers are of a bright gold-yellow, the eye or disk bold and prominent, affording by their numbers a pleasing sight in the harvest-season. On the banks of the *Owfe-burn*, and in the ditch-bottom near the *Half-way* house, above-mentioned, the stalks are procumbent, the flowers of a pale dull yellow, and the disk but lightly raised; owing to their starved situation, in a wet hungry soil. Under culture on a moist border under a wall it grows to four feet high, the flowers numerous, large, bright, and beautiful, in uniform petiolated clusters, all of a height. But this must be remembered, that it is a great runner, and requires being kept within proper bounds.

10. *Great Sea-Aster*, or *Starwort* (z). In salt marshy places. On the strand at the *Ofium* of *Warn-rivulet*, by the ford, near *Budle*.
On

(z) *Tripolium*. *Dod. Pempt.* p. 317. *Tripolium*, *Offic. Dal. Pharm.* p. 87. *Tripolium majus cæruleum. C. B. Pin.* p. 267. *Aster maritimus purpureus Tripolium dictus. Raj. Hist.*

On the banks of *Willington-burn*, near the *Half-way* house, by the *Tynemouth-road*. The root is fibrous. The stalks are round and robust, from two to three feet high, and branched. The leaves are long, smooth, and lanceolated, of a dark green. The flowers are in clusters on the tops of the stalks and branches, on separate pedicles. They are large, of a light purple, and sometimes white, with a yellow disk. It flowers in August and September. Under culture it grows to four feet high, in a moist soil. It is introduced into the borders of some of the better gardens under the name of the *Michaelmas-After*, and the *Michaelmas-Daisie*.

11. We have the *small Sea-After*, or *Starwort (a)*, plentifully by the *Ofium* of *Willington-burn*, near *Howden-pans*. It is usually from a foot to a foot and a half high; in flower at the same time with the former; the flowers more tinged with purple. It holds its distinction of size under culture; and is a pretty plant in its flowering state, in a moist soil. The seed of both these *Asters* is winged with down.

12. *Purple flowered Fox-Glove (b)*. Among the rocks under the *Roman wall* by *Crag-lake*, in great abundance. On *Fourstone-hills*,

Hist. p. 270. *After cæruleus glaber, littoreus, pinguis, Tripolium majus dictus.* Hist. Oxon. iii. p. 121. *After maritimus palustris, cæruleus falcis folio.* Tourn. Inst. p. 483. *After foliis lanceolatis integerrimis glabris, ramis inæquatis, floribus corymbosis.* Linn. Flo. Suec. p. 250. n. 697. *Royen. lugdb. p. 168.*

(a) *Tripolium (majus et) minus.* I. B. ii. p. 1064. *After maritimus cæruleus minor.* Raj. Syn. p. 175.

(b) *Digitalis purpurea.* Dod. Pempt. p. 169. I. B. ii. p. 812. *Raj. Hist. i. p. 767.* Syn. iii. p. 283. *Tourn. Inst. p. 165. Dill. Giff. 145. Rupp. Flo. Jen. p. 199. Martyn. Tourn. p. 1. 227. Digitalis, Offic. Dal. Pharm. p. 195. Digitalis purpurea folio aspero. C. B. Pin. p. 243. Boërb. Ind. A. p. 228. Hist. Oxon. ii. p. 478. Digitalis foliis calycinis ovatis acuminatis. Royen. lugdb. p. 292. Hall. Helv. p. 616.*

and

and among the rocks at *Tecket* plentifully. It is remarkable, that this plant has not yet been observed through the whole county of *Cambridge* *.

13. There is a beautiful VARIETY of it among the rocks at the former place (*c*). It is purple on the outside, and dotted with purple within, on a white ground, like the former; but the extremity of the segment is longer, and more elegantly variegated; and the radical leaves are more deeply crenated. Under culture it constantly holds these two distinctions; and being planted by the side of the other, the difference is obvious to the most common observer in the time of flowering. It is so manifest to our alpine common people where it grows, that they distinguish it by the fine name of the *Ladies Finger*, whilst they express little value for the common one.

14. The *white flowered Fox-Glove* (*d*); has been observed to grow in the hedges by the road under *Blenkensopp*-castle, by the ingenious *Isaac Thompson*, of *Newcastle*, Esq; but I have not seen it. It flowers at the same time with the two former, in June and July.

15. *Nettle-leaved Bell-Flower*, *great Throatwort*, or *Canterbury-Bells* (*e*). About hedges, and on the borders of woods, frequent. It flowers

* *Martyn*. loco supra citato. — Inter venenatas cens. *Boerhaavio*: exteris Officinis ignota est.

(*c*) *Digitalis purpurea petræa*, foliis radicalibus profunlius crenatis, floris extremitate longiore, et frequentioribus maculis insignita.

(*d*) *Digitalis*. ii. *Dod*. *Pempt*. p. 167. *Digitalis flore magno, candido*. *I. B.* iii. p. 813. *Digitalis alba, folio aspero*. *C. B.* *Pin* p. 244.

(*e*) *Cervicaria major*. *Dod*. *Pempt*. p. 164. *Campanula vulgatiore*, Foliis *Urticæ*, vel major et asperior. *C. B.* *Pin*. p. 94. *Campanula major et asperior, folio Urticæ*. *I. B.* ii.

flowers in June and July. Under culture it makes a handsome appearance with its pendulous flowers, white, tinged with purple, in spikes, in a lateral series; often rising to the height of five or six feet, with flowers half-way down. It varies in its colour in the woods, sometimes of a pure white, but it does not hold it under culture.

16. The *lesser Throatwort*, or *Canterbury Bells* (*f*). In limestone-pastures, and on dry hedge-banks. In a field by the lime-kills at *Wall*, near *Chollerford*-bridge. In the wood-banks at *Nether-Wardon*, near *Hexham*. On the banks of the *Tyne*, and in the meadows about *Bywell*. Its usual height is from a foot and a half to two feet. Under culture it rises to three feet high, and sometimes higher. The flowers are of a deep purple, numerous in the axæ of the leaves, and on the tops of the stalks and branches; a single plant sometimes having twenty-nine flowers on the top. It flowers in June and July.

17. *Small, simple-stalked, Mountain Throatwort*, or *Canterbury-Bells*, with very short, oblong leaves (*g*). In *Crag-Cose*, near *Barwesford*. It is a pretty variety of the former. It is a foot high, and sometimes less. It has no radical leaves that I can observe. Those on the stalk are very small, and it is not branched. The flowers stand in an upright cluster on the top, compact and neat. It

p. 805. *Hist. Oxon.* p. 459. *Raj. Syn.* iii. p. 276. *Dill. Giff.* p. 126. *Tourn. Inst.* p. 109. *Rupp. Flo. Jen.* p. 23. *Trachelium*, *Offic. Dal. Pharm.* p. 185. *Campanula foliis asperis, imis cordatis, reliquis longe acuminatis, serratis, calycibus hirtis, ala multiflora. Hall. Helv.* p. 49.

(*f*) *Campanula pratensis, flore conglomerato. C. B. Pin.* p. 94. *Raj. Syn.* p. 277. *Trachelium pratense flore conglomerato. Hist. Oxon.* ii. p. 401. f. 5. *Tab. 4. f. 43. Campanula floribus sessilibus congestis, latioribus foliis infidentibus. Hall. Helv.* p. 492.

(*g*) *Trachelium oblongo folio alpinum. Boccone. t. 98. p. 70.*

flowers

flowers in August. It is an elegant little plant. I never met with it in any other place.

18. The *Giant-Throatwort* (*b*), said to be plentiful about *Shap*, in *Westmorland**, does not grow with us where I have been.

19. *Great white Mullein, High Taper, or Cows-Lungwort* (*i*). On old walls, about houses, and by way-fides. Its usual height is from three to four feet. Under culture it grows to five or six feet. The flowers are in a long spike, of a beautiful pale yellow. It flowers in July and August. A preparation is made of it for inebriating and taking fishes, which shews it is of a deleterious quality.

20. The *great Burnet* (*k*), which was long in reputation as a cordial, and an astringent, but now disregarded, is frequent about hedges, on the borders of woods, and by waters. It

(*b*) *Trachelium majus* Belgarum. *Clus. Hist.* ii. p. 172. *Campanula maxima*, foliis latissimis. *C. B. Pin.* p. 94. *Campanula pulchra* a *Tossano Carolo* missa. *I. B.* ii. p. 807. *Campanula foliis ovato lanceolatis*, caule simplicissimo, floribus secundis sparsis. *Linn. Virid. Cliff.* 17. *Hort. Cliff.* p. 65. *Royen. lugdb.* p. 245.

* Ray's Select Remains. *Itjn.* ii. p. 212.

(*i*) *Verbascum mas latifolium luteum*. *C. B. Pin.* p. 239. *Raj. Hist.* ii. p. 1094. *Syn.* iii. p. 287. *Tourn. Inst.* p. 146. *Verbascum, Tapus barbatus*, *Offic. Dal. Pharm.* p. 189. *Martyn. Tourn.* ii. p. 325. *Verbascum caule simplici floribus sessilibus clavato*, foliis utrinque lanigeris. *Linn. Hort. Cliff.* p. 55. *Verbascum foliis utrinque tomentosis decurrentibus*. *Virid. Cliff.* p. 13. *Royen. lugdb.* p. 421. *Verbascum foliis ovato-acutis utrinque tomentosis*, floribus in spica densissima sessilibus. *Hall. Helv.* p. 507. 508.

(*k*) *Pimpinella f. Sanguisorba major*. *Matth. Diosc.* p. 103. *ben.* *Pimpinella sylvestris f. Sanguisorba major*. *Dod. Pempt.* p. 105. *Pimpinella Sanguisorba major*. *C. B. Pin.* p. 160. *Hist. Oxon.* iii. p. 264. *Pimpinella spica brevi rubra*. *Mor. Umb.* p. 57. qui primus a *Tragofelinis* distinxit. *Sanguisorba spicis ovatis*. *Linn. Hort. Cliff.* p. 39. *Flo. Succ.* p. 46. n. 130. *Pimpinella tetrastemon*, foliis oblonge cordatis, spica brevi. *Hall. Helv.* p. 469.

flowers in June and July. The flowers are in short ovated heads, of a reddish brown; beautiful, beyond expression, when held up to the light under a bright sun.

21. The *lesser Burnet* (1) is plentiful in mountainous pastures, especially in a limestone-soil. It is in great abundance in the pasture at *Long Rigge*, near *Nunwick*, by the road-side. It is used in the spring for cleansing and purifying the blood, either by infusion or decoction, or eaten as a salad. It is a mild and gentle healer of wounds, stops hemorrhages, both internal and external*.

22. *Nutant flowered Geum*, or *purple Mountain-Avens* (m). On the banks and strands of alpine brooks, and on the borders of woods, plentifully. We often find it with a beautiful double flower, of the same colour as the single one, purple on the outside, and a pale red within, but it is only an accidental variety, blowing double not above a season. The seed is plumose, and beautiful in the sun.

(1) *Pimpinella* f. *Sanguisorba minor*. *Matth. diosc.* p. 1034. *ben.* *Sanguisorba minor*. *Tabern.* p. 110. *ben.* *Sideritis secunda* *Column.* *Ecphr.* i. p. 123. 124. cum *Icone optima.* 124. *Pimpinella sanguisorba minor hirsuta.* *C. B.* p. 160. *Hist. Oxon.* iii. p. 263. *Tourn. Inst.* p. 157. *Martyn.* *Tourn.* ii. p. 175. *Sanguisorba minor.* *I. B.* iii. p. 113. *Sanguisorba minor montana hirsuta lævis.* *Rupp. Flo. Jen.* p. 50. *Pimpinella et sanguisorba,* *Offic. Dal. Pharm.* p. 112. *Pimpinella polySTEMON pinnis ovatis, serratis, spica brevi.* *Hall. Helv.* p. 470.

* *Haller. Martyn.* locis supra citatis.

(m) *Caryophyllata alpina nutante flore.* *Clus. Pann.* p. 434. *Icon bona.* *Caryophyllata montana.* i. *Clus. Hist.* p. 103. *Caryophyllata aquatica flore nutante.* *C. B. Pin.* *Caryophyllata aquatica flore rubro striato.* *I. B.* ii. p. 398. *Raj. Syn.* iii. p. 253. *Geum floribus nutantibus, fructu olongo, feminum cauda molli plumosa.* *Linn. Hort. Cliff.* p. 195. *Flo. Suec.* n. 424. *Caryophyllata pinnis frequentioribus, extrema semitrifida, flore connivente, nutante.* *Hall. Helv.* p. 336.

23. *Blue-flowered Columbine* (n) In *Willington-den*, by the path to the village from *Walls-End*, plentifully. In *Dilston* park, near *Hexham*. With its blue flowers the *Jellies* at great tables used antiently to be coloured. They were thus served up at the royal entertainment of the renowned King *Henry V.* on his wedding-day*.

24. *Great tufted Wood-Vetch, with variegated, sweet-scented Flowers* (o). In the rectory-wood by the brook at *Simonburn*; also in the banks of wood on both sides of *Simonburn-castle*, plentifully. It is remarkable for its lively verdure, and numerous clusters of pendulous flowers, elegantly variegated with purple and white; after a warm gentle shower diffusing a most delightful fragrance; by the help of a bush or a tree growing to the height of seven or eight feet. Extremes of rain and shade are equally enemies to its beauty and scent, appearing then to a stranger as a different species, *tetro Odore*, as described by *Plukinet* †, in which state he must have observed it, and not in its perfection. It makes a fine shew under culture, planted against a tree, running up to a great height with its climbers. The seeds, whether rising spon-

(n) *Isopyrum DIOSCORIDIS.* Column. Phyt. p. 1. t. 1. Icon *pulchra.* *Aquilegia.* *Dörsten.* p. 3. b. *bene.* *Aquilegia flore simplici.* *I. B.* iii. p. 484. *Raj.* Hist. p. 706. Syn. iii. p. 273. *Aquilegia sylvestris.* *C. B.* Pin. p. 144. *Tourn.* Inst. p. 428. Hist. *Oxon.* iii. p. 457. *Dill.* Giff. p. 82. *Rupp.* Flo. Jen. p. 131. *Martyn.* Tourn. i. p. 71. *Aquilegia,* *Offic. Dal.* Pharm. p. 180. *Aquilegia.* *Linn.* Hort. Cliff. p. 215. Flo. *Suec.* n. 443. *Royen.* lugdb. p. 182. *Aquilegia foliis rotunde lobatis.* *Hall.* Helv. p. 310.

* *Hol.* Chron. Vol. 2. p. 579.

(o) *Vicia perennis multiflora, majore flore ex cæruleo et albido mixtis.* *Magn.* bot. app. p. 307. *Cracca. sylvatica rotundifolia, floribus ex albo variis.* *Rupp.* Flo. Jen. p. 212. *Vicia spicata multiflora maxima.* *Raj.* Hist. p. 903. Syn. iii. p. 323. *Vicia pedunculis multifloris, stipulis crenatis.* *Royen.* lugdb. p. 365. *Linn.* Flo. Lapp. n. 777. *Vicia foliis ovatis, siliquis, racemosis pendulis.* *Hall.* Helv. p. 599, 600.

† *Pluk.* Phyt. 71. et f. 1.

taneously

taneously about the parent-plant, or carefully sown, constantly produce plants that bear the same beautiful flowers.

25. *Procumbent Wild Liquorice, or Liquorice-Vetch (p)*. On dry banks. In great abundance on the brow of a hill, called *Cockle-hill*, at *Learmouth*, near *Cornhill*. About the old ramparts at *Wark-castle*, on the banks of the *Tweed*, by the road to *Carham*. In the hilly pastures at *Many-laws*, under *Floddon-hill*. In *Warden-banks*, near *Hexham*. The root is thick, woody, and divaricated, of a grateful taste, like that of the shops. The stalk is of a lively green, with a blush of red. The leaves are pinnated, ovated, and shining. The flowers are of a pale greenish-yellow. It flowers in July. The seed is reniform.

26. The annual, climbing, white flowered *Fumitory (q)*, grows plentifully about a large rock above *Tocket-water-fall*; also among the rocks at *Little Waneyhouse-crag*. It flowers in July and August.

(p) *Sylvestre Fænumgræcum*. *Dod. Pempt.* p. 547. cum Icone. *Fænumgræcum sylvestre*, sive *Glycyrrhiza sylvestris quorundum*. *I. B.* ii. p. 330. *Glycyrrhiza sylvestris floribus luteo pallescentibus*. *C. B. Pin.* p. 352. *Glaux vulgaris leguminosa, sive Glycyrrhiza sylvestris*. *Raj. Hist.* i. p. 935. *Astragalus luteus perennis, procumbens vulgaris, s. sylvestris*. *Hist. Oxon.* ii. p. 107. f. 2. t. 9. f. 8. *Tourn. Inst.* p. 416. *Raj. Syn.* iii. p. 326. *Boerb. Ind. A.* p. ii. p. 53. *Glaux vulgaris, Offic. Dal. Pharm.* p. 225. *Astragalus leguminibus lunatis biventricosis, caulibus procumbentibus*. *Linn. Hort. Cliff.* p. 362. *Flo. Suec.* n. 591. *Royen. lugdb.* p. 392. *Astragalus caule ex alis spicato ramofo procumbente, foliis ovalibus*. *Hal. Helv.* p. 565, 566.

(q) *Fumaria foliis tenuissimis, floribus albis, circa Monspelium nascens*. *C. B. Pin.* p. 143. *Fumaria alba latifolia*. *Raj. Syn.* iii. p. 335. *Fumaria filiquis linearibus cirriferis*. *Linn. Sp. Pl.* 701.

27. We have the annual *fair flowered Nettle-Hemp* (*r*), in the corn-fields between *Halystone* and *Harebottle-castle*; also on the banks of *North Tyne*, near *Smale's-mouth*. It flowers in August. The flowers are large, yellow, with a purple lip.

28. *Meadow Clary* (*s*) is not unfrequent on dry banks, and about the ruins of buildings. It is plentiful by the ruin of the old abbey at *Holy Island*; also at *Norham-castle*. It flowers in June and July.

29. *Great wild Basil* (*t*) is in great plenty among the bushes in the *Roman fofs* a little to the east of *Skilden-wall-houfes*, close to the military road. It has a faint aromatic smell, not unpleas-

(*r*) *Cannabis spuria flore majore*. *Rivin.* t. 32. *optime*. *Cannabis spuria angustifolia, variegato flore, polonica*. *Barrel.* Icon. 1158. *Lamium annum procerius, Urticæ foliis, flore luteo amplo, labro purpureo*. *Hist. Oxon.* p. 386. *Cannabis spuria flore specioso luteo*. *Raj.* *Hist.* p. 5611. *Syn.* iii. p. 335. *Cannabina flore magno luteo, labiis purpureis*. *Boerb.* *Hist.* p. 159. *Galeopsis corolla flava, labio inferiori maculato*. *Linn. Lapp.* p. 193.

(*s*) *Horminum pratense foliis serratis*. *C. B. Pin.* p. 238. *Raj. Hist.* p. 544. *Hist. Oxon.* iii. p. 393. *Horminum pratense foliis serratis, flore cæruleo*. *Tourn. Inst.* p. 179. *Martyn. Tourn.* 11. p. 244. *Raj. Syn.* iii. p. 237. *Salvia foliis ovatis inciso-crenatis, verticillis subnudis*. *Linn. Hort. Cliff.* p. 12. *Flo. Suec.* n. 28. *Royen. lugdb.* p. 310. *Salvia foliis ovato-lanceolatis, serratis, verticillis raris & diffitis*. *Hall. Helv.* p. 638.

(*t*) *Clinopodium Origano simile*. *C. B. Pin.* p. 224. *Hist. Oxon.* iii. p. 374. *Tourn. Inst.* p. 195. *Rupp. Flo. Jen.* p. 188. *Boerb. Ind. A.* p. 158. *Clinopodium majus*. *Raj. Hist.* 1. p. 558. *Clinopodium. Offic. Dal. Pharm.* p. 152. *Clinopodium foliis ovatis, capitulis verticillatis*. *Linn. Hort. Cliff.* p. 305. *Flo. Suec.* n. 479. *Royen. lugdb.* p. 313. *Clinopodium verticillis densissimis, diffitis, foliis ex menta, ovatis acuminatis*. *Hall. Helv.* p. 653.

30. *White Horehound (u)*, used for asthmas and pulmonary complaints, grows abundantly on the sea-banks, by the road near *Bambrough-castle*. I have not observed it any where else with us.

31. *Virvain (x)*. By high ways, and about houses. At *Bywell*, plentifully. It is accounted a nervine and cephalic. The *Roman* priesthood wreathed their brows with it at their solemn festivals, and perfumed their altars with its ashes*. It was in no less veneration with the *British* Druids.

32. *Nep or Catmint (y)*. On dry banks, about hedges. In the hedge in the west-lane under the bank of wood at *Nether-Warden*; also in the hedges about *Hexham*, but not very common; in flower in June and July.

33. We

(u) *Marrubium*. *Matth. diosc.* p. 828. *bene*. *Marrubium album*. *I. B.* iii. p. 316. *Raj. Hist.* p. 556. *Syn.* iii. p. 239. *Marrubium album vulgare*. *C. B. Pin.* p. 230. *Hist. Oxon.* iii. p. 376 *Tourn. Inf.* p. 192. *Rupp. Flo. Jen.* p. 187. *Marrubium album prassium*, *Offic. Dal. Pharm.* p. 152. *Marrubium denticuli calycinis fetaceis uncinatis*. *Linn. Hort. Cliff.* p. 312. *Royen. lugdb.* p. 315. *Hall. Helv.* p. 64.

(x) *Verbenaca*. *Matth. diosc.* p. 1052. *pulchre*. *Cam. Epit.* p. 97. *Verbenaca recta*. *Dod. Pempt.* p. 150. *bene*. *Tab.* p. 132. *Communis Verbena et sacra recta*. *Lob. Icon.* p. 534. *Verbena communis flore cæruleo*. *C. B. Pin.* p. 269. *Hist. Oxon.* iii. p. 408. *Tourn. Inf.* p. 200. *Martyn. Tourn.* p. 330. *Boerb. Ind. A.* 187. *Verbena vulgaris*. *I. B.* iii. p. 443. *Raj. Hist.* i. p. 535. *Syn.* iii. p. 236. *Verbena*, *Offic. Dal. Pharm.* p. 148. *Verbena foliis multifido-laciniatis, spicis filiformibus*. *Linn. Hort. Cliff.* p. 11. *Royen. lugdb.* p. 327. *Verbena foliis laciniatis superioribus, tripartitis, spicis angustis longissimis*. *Hall. Helv.* p. 661.

* VIRG. *Æn* xii. v. 119, &c.

(y) *Herba Cattaria*. *Matth.* p. 719. *bene*. *Cam. Epit.* p. 484. *non bene*. *Mentha felina Cattaria*. *Tabern.* p. 348. *bene*. *Mentha Cattaria*. *I. B.* iii. p. 225. *Raj. Hist.* i. p. 548. *cum Descriptione optima*. *Mentha Cattaria vulgaris et major*. *C. B. Pin.* p. 228. *Hist. Oxon.*

33. We have *Wood-Sage* (z), in great abundance about shadowy rocks, and on the borders of woods. It is sometimes gathered and sold by the common herbarists for the true *Scordium*, to which it is accounted no bad *Succedaneum*. It is an uncommon plant in some parts of *England*, especially in *Cambridgeshire*.

34. *English Sea Wormwood* (a). On a projecting, cavernous sea-rock near *Howick*, called *Rumble-Churn*, from the noise of the currents under it. At *Holy Island*, where Dr. *Turner* observed it*. It is commended as a plant of extraordinary virtues, yielding an aromatic oil, a volatile and fixed salt, of great use in hysteric, hypocondriac, and hydropic cases †. Infused in ale, it gives it an aromatic flavour, and is good for the scurvy and dropsy, and for all diseases caused by the coldness of the liver, or want of digestion ‡.

Oxon. iii. p. 414. *Cattaria major vulgaris*. *Tourn. Inst.* p. 202. *Martyn.* *Tourn.* p. 159. *Boerb.* *Ind. A.* p. 174. *Nepeta*, *Mentha Cattaria*, *Offic. Dal. Pharm.* p. 150. *Nepeta floribus interrupte spicatis, pedunculatis.* *Linn. Hort. Cliff.* p. 310. *Flo. Suec.* n. 486. *Royen.* *lugdb.* p. 316. *Cattaria foliis cordatis, petiolatis, verticillis spicatis.* *Hall. Helv.* p. 649.

(z) *Scorodonia.* *Cordi Hist.* p. 91. *Scorodonia f. Salvia agrestis.* *Raj. Hist.* p. 576. *Syn.* iii. p. 247. *Scorodotis f. Scordium foliis Salviæ.* *I. B.* iii. p. 293. *Scordium alterum f. Salvia agrestis.* *C. B. Pin.* 247. *Boerb.* *Ind. A.* p. 183. *Chamædris elatior Salviæ folio, flore ochroleucho.* *Hist. Oxon.* iii. p. 423. *Chamædris fruticosa, sylvestris Melissæ folio.* *Tourn. Inst.* p. 205. *Martyn.* *Tourn.* p. 171. *Teucrium foliis cordatis crenatis petiolatis spicis laxis secundis.* *Linn. Cliff.* p. 301. *Royen.* *lugdb.* p. 306. *Chamædris foliis cordatis, scapis florigeris nudis, spicatis longissimis.* *Hall. Helv.* p. 632.

(a) *Abfinthium marinum album.* *Ger.* p. 940. *emac.* p. 1099. *Raj. Hist.* i. p. 370. *Syn.* iii. p. 188. *Boerb.* *Ind. A.* p. 126. *Abfinthium Seriphium. f. marinum Anglicum.* *Park. Theatr.* p. 102. *Abfinthium Seriphium Belgicum.* *C. B. Pin.* p. 139. *I. B.* iii. p. 178. *Tourn. Inst.* p. 458. *Hist. Oxon.* iii. 9. *Abfinthium Seriphium. Offic. Dal. Pharm.* 99. *Artemisia foliis compositis multifidis tomentosis, ramis floriferis nutantibus.* *Linn. Flo. Suec.* p. 241. n. 671.

* *Hist. Pl.* † *Nat. Hist. of Lancashire,* p. 94. ‡ *Dr. Beal. Ph. Tr. No.* 124.

35. We have the *round-leaved Sea-Scurvy-Grass (b)* plentifully on the east side of *Dunstonbrough*-castle-wall, and among the sea-rocks. It also grows under the bushes with the common *Ground-Ivy* on the bank below *Howick*, near the *Ostium* of the brook, on the south side.

36. *Small bloody SEA-Cranesbill (c)*. On the sea-banks between *Creswell* and *Druridge*, plentifully. The flowers are large, of a deep red, streaked with purple, each on a separate pedicle.

37. *Great bloody Cranesbill (d)*. In mountainous bushy pastures, and by way sides, in stony places. Under the shady rocks at *Low Park-End*, near *Nunwick*. In a hilly pasture at the south-west end of the village of *Walwick*. The flower is very large, purple, with a light tinge of red.

38. *Crow-foot-Cranesbill with white Flowers, elegantly striated with purple (e)*. In a hilly pasture on the north side of the rectory-house at *Simonburn*.

(b) *Cochlearia*. *Dod.* *Pempt.* p. 594. *I. B.* ii. p. 942. *Raj.* *Hist.* i. p. 822. *Syn.* iii. p. 302. *Cochlearia folio subrotundo.* *C. B.* *Pin.* p. 110. *Tourn.* *Inst.* p. 215. *Cochlearia major Batavica* subrotundo foliis. *Hist. Oxon.* ii. p. 308. *Cochlearia Batava* rotundifolia, hortensis. *Dal.* *Pharm.* p. 206. *Cochlearia foliis radicalibus subrotundis, caulinis oblongis sinuatis.* *Linn.* *Flo. Lapp.* n. 256. *Hort. Cliff.* p. 332. *Royen.* *lugdb.* p. 335.

(c) *Geranium maritimum humile pedunculis simplicibus unifloris purpureo rubris, radice crasso repente.*

(d) *Geranium majus s. montanum.* *Gesn.* t. coll. p. 79. *Geranium sanguineum flore maximo.* *C. B.* *Pin.* p. 318. *Tourn.* *Inst.* p. 267. *Martyn.* *Tourn.* i. p. 279. *Hist. Oxon.* ii. p. 515. *Boerh.* *Ind. A.* p. p. 264. *Geranium sanguineum sive Hæmatodes crasso Radice.* *I. B.* iii. p. 478. *Geranium Hæmatodes.* *Raj.* *Hist.* ii. p. 1061. *Syn.* iii. p. 360. *Geranium sanguineum, Offic.* *Dal.* *Pharm.* p. 237. *Geranium pedunculis simplicibus unifloris.* *Linn.* *Hort. Cliff.* p. 343. *Flo. Suec.* n. 571. *Royen.* *lugdb.* p. 350. *Hall.* *Helv.* p. 365.

(e) *Geranium pedunculis bifloris læto-purpureo albis, foliis rugosis semitrilobis latioribus, lobis dentatis, lateralibus bipartitis.*

39. *Crow-foot Cranebill with white Flowers, striated with a florid red (f)*. In the same pasture with the former. I only met with a single plant of each. I removed them to try what effects culture would have upon them. They constantly produced the same flowers. They are beautiful varieties, and are admitted from slips into some of the gardens in the neighbourhood.

40. *Shining Stone Doves-foot Cranebill (g)*. At the east end of the village of *Walwick*, by the military road. It is a pretty plant.

41. *Great Celandine (h)*. Under a hedge by the road-side to *Hexham* from the *West-boat*, near a small spring. It is an excellent remedy for the jaundice, which it has cured when other means have proved ineffectual.

42. *Perennial, yellow, horned Sea-Poppy (i)*. At the west end of *Willington-key*, near *Howden-pans*, plentifully. The root is long, slender,

(f) *Geranium pedunculis bifloris hillari-rubro albis, foliis rugosis semitrilobis latoribus, lobis dentatis, lateralibus bipartitis.*

Ambo, Varietates *Geranii Batrachoidis montani*. *Raj.* Hist. ii. p. 1061. Syn. iii. p. 360. *Dal. Pharm.* p. 237. *I. B.* iii. p. 475. Hist. *Oxon.* ii. p. 514.

(g) *Geranium alterum montanum saxatile rotundifolium. Column.* Echphr. i. p. 138. Icon. 137. optime. *Geranium lucidum saxatile. C. B. Pin.* p. 318. *Raj.* Syn. iii. p. 360. *Geranium saxatile. Raj.* Hist. p. 1060. *Geranium annuum, rotundifolium, montanum, saxatile lucidum. Hist. Oxon.* ii. p. 512. f. 5. t. 15. f. 6.

(h) *Chelidonium majus. Dod. Pempt.* p. 48. Icon. bona. *Chelidonium majus vulgare. C. B. Pin.* p. 144. Hist. *Oxon.* ii. p. 257. *Tourn. Inst.* p. 231. *Martyn. Tourn.* i. p. 183. *Boerb. Ind. A.* p. 305. *Chelidonium majus. Raj.* Hist. i. p. 858. *Chelidonium majus, Offic. Dal. Pharm.* p. 210. *Chelidonia. I. B.* iii. p. p. 482. *Chelidonium pedunculis multifloris. Linn. Hort. Cliff.* p. 201. *Flo. Suec. n.* 430. *Royen. lugdb.* p. 478. *Chelidonium lobis subrotundis. Hall. Helv.* p. 305.

(i) *Papaver cornutum. Matth.* p. 1060. bene. *Papaver corniculatum majus. Dod. Pempt.* p. 448. *Papaver corniculatum luteum. I. B.* iii. p. 398. *C. B. Pin.* p. 171. *Raj.* Hist. i.

slender, and of a yellowish-white. The stalks are round, firm, and branched, from a foot and a half to two feet high. The leaves are large, deeply lacinated, and of a bluish green. The flowers are large, on the tops of the stalks and branches, of a bright and beautiful yellow, as intimated by *Catullus*.

Ore floridulo nitens

Alba parthenice velut

LUTEUMVE PAPAVER.

The calyx is bifoliate. The seed is reniform, disposed in long pods or bilocular capsules, divided in the middle by a thin membrane.

For the effects of this plant taken inwardly, I refer to Mr. *Newton's* account of it in the Philosophical Transactions; very diverting, if he was not imposed on by his *Cornish*-host, and the *Plebeians* from whom he had it, who sometimes put a rustic jest on the inquisitive and curious stranger*. It flowers in June and July.

43. *Sea-Holly*, or *Eryngo (k)*, does not grow with us where I have been.

p. 857. Hist. Oxon. i. p. 273. Papaver corniculatum, Offic. Dal. Pharm. p. 209. Glaucium flore luteo. Tourn. Inst. p. 254. Chelidonium pedunculis unifloris. Linn. Hort. Cliff. p. 205. Royen. lugdb. p. 478.

* *Lowthorp*. Phil. Trans. ii. p. 642.

(k) *Eryngium marinum*. Dod. Pempt. p. 370. Clus. Hist. ii. p. 169. I. B. iii. p. 86. Raj. Hist. p. 384. Syn. iii. p. 222. *Eryngium maritimum*. C. B. Pin. p. 386. Hist. Oxon. iii. p. 165. Tourn. Inst. p. 327. Boerb. Ind. A. p. 134. *Eryngium*, Offic. Dal. Pharm. p. 131. *Eryngium foliis radicalibus subrotundis plicatis spinosis, floribus pedunculatis*. Linn. Hort. Cliff. p. 87. Flo. Suec. n. 220. Hill. Nat. Hist. Pl. p. 319. 320.

44. *Common*

44. *Common Eryngo* (l). Between the *Glass-houses* and *Dent's Hole*, near *Newcastle*. The root is about a foot in length, of the thickness of one's finger. The radical leaves are six or eight inches long, deeply divided, as it were, into so many lobes, serrated at the edges, the denticles ending in very sharp prickles. The stalk is striated, round, tough, and branched, usually two feet high, with alternate amplexicaule leaves like the radical ones, of a bluish-green. The flowers are small, in roundish umbells on the tops of the stalks and branches; each flower consisting of five whitish petals; and each petal, for its security, guarded by a sharp prickle. The root candied with sugar, and dried, is used as a pectoral by decoction. It is a scarce plant in most counties, notwithstanding its name.

45. *Sampire* (m). On the sea-rocks near *Alnmouth*, plentifully. The root is oblong, and of an aromatic taste. The radical leaves are large, divided into numerous oblong, narrow, pointed, and thick segments, of a deep green, succulent, and of a saltish taste. The stalk is ten inches high or more, round, thick, and very much branched. The flowers are yellow, in large umbels. It is used as a table-pickle. The ingenious Mr. *Evelyn* admired it as a salad.

46. *Thrift*, or *Sea-Gilliflower* (n). At *Dunstonbrough-castle*, on the sea-banks, where there are great varieties of it; the most beautiful.

(l) *Eryngium montanum*. *Matth.* p. 679. *Eryngium campestre*. *Dod. Pempt.* p. 730. *Eryngium vulgare*. *Clus. Pann.* p. 668. *C. B. Pin.* p. 386. *I. B.* iii. p. 85. *Raj. Hist.* iii. p. 384. *Syn.* p. 222. *Hist. Oxon.* iii. p. 165. *Tourn. Inst.* p. 327. *Rupp. Flor. Jen.* p. 222. *Boerb. Ind. A.* p. 134. *Dal. Pharm.* p. 132. *Eryngium ramosissimum*, pinnis foliorum alatis, pinnatifide. *Hall. Helv.* p. 415.

(m) *Crithmum marinum*. *Raj. Hist.* i. p. 457. *Syn.* iii. p. 217.

(n) *Armerius montanus tenuifolius major*. *Clus. Hist.* i. p. 287. *Gramen polyanthemum majus*. *Dod. Pempt.* p. 564. *Caryophyllus montanus major flore globofo*. *C. B. Pin.* p.

tiful with bright red flowers, sometimes taken into gardens for edgings. It flowers in August and September.

47. *Orpine*, or *Live-long* (*o*). About hedges, and in pastures. In the second field on the left hand from *Simonburn* to *Nunwick*, plentifully. At *Rodham*, about the hedges, sparingly. The stalks and leaves are succulent, of a bluish-green, frequently with a blush of red; the leaves ferrated; the flowers in a kind of umbel, large, and of a beautiful purple. Its usual height is from a foot to a foot and a half in its wild state, and from two to three feet under culture. It flowers in June and July.

48. *Sharp-pointed-leaved Stone-crop* (*p*). On old walls, and about rocks. On an old wall at *Lipwood*, near *Hayden-bridge*. On the rocks by *Tecket-water-fall*, on the north side. Under culture it has the appearance of a foreign plant, as if it lived under a warmer sun. If it was less frequent, it would certainly be introduced into flower-borders, among the more humble plants,

211. *Limonium majus*, flore globofo. *Hist. Oxon.* iii. p. 600. *Statice. Tourn. Inst.* p. 341. *Statice caule nudo simplicissimo capitato. Lin. Hort. Cliff.* p. 115. *Royen. lugdb.* p. 191.

(*o*) *Telephium floribus purpureis. Lob. Icon.* p. 389. *Telephium vulgare. C. B. Pin.* p. 287. *Raj. Hist.* i. p. 689. *Hist. Oxon.* iii. p. 467. *Anacampseros, vulgo Faba crassa. I. B. iii.* p. 681. *Tourn. Inst.* p. 264. *Boerb. Ind. A. p.* 228. *Raj. Syn.* iii. p. 269. *Telephium, Crassula, Fabaria, Offic. Dal. Pharm.* p. 174. *Sedum foliis planiusculis patentibus ferratis, corymbo terminatrice. Linn. Hort. Cliff.* p. 176. *Flo. Suec. n.* 386. *Royen. lugdb.* p. 456. *Hill. Nat. Hist. Pl.* p. 442. *Sedum foliis ferratis, ellipticis, umbella caulem terminante densissima. Hall. Helv.* p. 394, 395.

(*p*) *Sedum minus. v. Cluf. p.* 1x. *Sempervivum minus. i. Dod.* p. 128, 129. *Aizoo hæmatodes. Lob. Icon.* p. 378. *Sedum minus luteum folio acuto. C. B. Pin.* p. 283. *Hist. Oxon.* iii. p. 471. *Sedum minus flore luteo. I. B. iii.* p. 692. *Sedum minus hæmatodes. Raj. Hist.* p. 691. *Sedum foliis subulatis, oppositis, confertis, adnatis, basi membranacea soluta, umbella racemosa. Linn. Hort. Cliff.* p. 176. *Royen. p.* 456. *Sedum foliis teretibus, in spinulam terminatis, umbella sparso. Hall. Helv.* p. 397.

for

for the oddity of its form, and large beautiful umbels of stellate pale yellow flowers.

49. *Small-acrid Stonecrop, or Wall-Pepper (q)*. On old walls, topped with earth. On the roofs of houses, and about rocks upon heaths, not unfrequent; also upon the sea-banks. The flowers are yellow, and stellate, on the tops of the stalks.

50. There is a VARIETY of it among the rocks on the brink of Crag-lake; hardly to be distinguished but by the cauline leaves in the time of flowering, which then appear in an imbricated sixfold series on the stalks (*r*). These two, planted in pots, in a water-sand and gravel, make a beautiful show with their stellate flowers, of a bright gold-yellow.

51. *Small, inspid, compressed-leaved Stonecrop (s)*. On alpine rocks. On the precipices, on the western borders, by the rivulet of *Irthing* near *Wardrew-spaw*. The leaves are of a pale or whitish-green, not acrid. The flowers are yellow, on the tops of the stalks.

(*q*) Sedi tertium genus, *Fuchf.* p. 36. *ben.* Sempervivum minimum. *Matth.* p. 1119. *Cam. Epit.* p. 856. *ben.* Illecebra f. Sempervivum tertium. *Dod. Pempt.* p. 129. Sempervivum minimum vermiculatum acre. *C. B. Pin.* p. 283. Sedum parvum acre flore luteo. *I. B.* iii. p. 694. *Raj. Hist.* p. 1041. *Hist. Oxon.* iii. p. 471. *Tourn. Inst.* p. 263. Illecebra, *Offic. Dal. Pharm.* p. 175. Sedum foliis oblongis obtusis teretiusculis sessilibus patentibus panicula ramosa. *Linn. Hort. Cliff.* p. 177. *Royen. lugdb.* p. 456. Sedum acre, foliis conicis, confertissimis, floribus in summis alis sessilibus luteis. *Hall. Helv.* p. 396.

(*r*) Sedum foliis subovatis adnato-sessilibus gibbis erectiusculis sexfariam imbricatis. *Linn. Flo. Suec.* p. 141. n. 390.

(*s*) Sedum rupestre repens, foliis compressis. *Dill. Elth.* p. 343. t. 256. f. 333. Sedum foliis subulatis confertis adnatis, basi membranacea soluta, umbella racemosa. *Linn. Hort. Cliff.* p. 176. *Flo. Suec.* p. 141, n. 388. *Royen. lugdb.* p. 456.

52. *Meum*, or *Spignel* (*t*). On a hill by the village of *Thockrington*, on the north side of it; where it is called *Hook-a'*, and the hill *Hook-a'-hill*, by the common people, from the frequent hooking or digging of it up for use. The root pierces deep into the ground, of the thickness of a man's finger, brown on the outside, and white within, with a tuft of fibres of decayed leaves at the crown. The radical leaves are on long pedicles, large, divided into numerous, oblong, capillary segments of a deep green, soft in handling, and pleasant to the eye. The stalks are round, striated, and branched towards the top, with leaves like the radical ones, but smaller, and alternate. The flowers are white, in umbels. The seed is oblong, striated, and of an aromatic smell, when dried. It grows in great abundance upon this hill, but no where else with us that I know of. In the fields about two miles from *Sedberg* by the road to *Orton*, in *Westmorland*, it is said to be in great plenty, where it is called by the common people, *Bald-money*; also at *Longwell*, in *Selvide*, about three miles from *Kendal*, and in several other places in that county*.

53. *Alexanders* (*u*). In gravelly places, and about rocks, near the sea. On a gravelly bank at the *Ostium* of *Willington-burn*, near
Howden-

(*t*) *Meum*. *Dod.* purg. 478. optime. *Rivin.* t. 62. bene. *Raj.* Hist. i. p. 432. *Syn.* iii. p. 207. *Boerb.* Ind. A. p. 49. *Dal.* Pharm. p. 121. *Meum foliis Anethi.* *C. B.* Pin. p. 148. *Tourn.* Inst. p. 312. *Rupp.* Flo. Jen. p. 225. *Meum Athamanticum.* *Morif.* Umbell. p. 4. semen. *F. f. & 79.* 80. *Meum vulgare tenuifolium.* Hist. *Oxon.* iii. p. 270. *Athamanta foliis capillaribus, feminibus glabris striatis.* *Linn.* Hort. Cliff. p. 93. *Upf.* p. 60. *Royen.* lugdb. p. 97. *Meum.* *Hull.* Helv. p. 426.

* *Wilson.* *Syn.* p. 66.

(*u*) *Hippofelinum THEOPHRASTI, vel Smyrniium DIOSCORIDIS.* *C. B.* Pin. 154. *Macerone, quibusdam Smyrniium, femine magno nigro.* *I. B.* iii. p. 126. *Hippofelinum.* *Raj.* Hist.

Howden-pans. On the sea-rocks at *Tynemouth-castle*. The root is moderately large, white, and acrid. The stalk is robust, round, jointed, striated, and branched, three or four feet high. The leaves are pinnated, and ferrated at the edges. The flowers are of a greenish-white, in large umbels. The seed is large, black, and striated. It is a scarce plant. Both the roots, young shoots, and leaves, are used as a fallad in the spring with vinegar and fallad oil; the roots sometimes boiled; very nourishing; good for the scurvy; and, according to *Boerhaave*, for the asthma. It flowers in June and July.

54. *Smallage* (*x*), the leaves of which are like those of *Alexanders*, but not so large, is not unfrequent by slow running waters and springs in shady places. It is an excellent remedy for the dropsy, boiled in small ale. I have known an eminent cure done by it in the south of *England*. The person cured was a young woman of twenty-eight years of age. She was reduced to such weakness that she could not sit up in a chair, and refusing to be tapped, her death was daily expected; when a person of great medical experience accidentally hearing of her case, out of mere humanity recommended the use of this simple remedy, whereby

Hist. i. p. 437. *Smyrniun*. *Tourn. Inst.* p. 316. *Raj. Syn.* iii. p. 208. *Smyrniun majus*. *Mor. Umb.* ii. Hist. *Oxon.* iii. p. 277. *Hippofelinum* & *Smyrniun*, *Offic. Dal. Pharm.* p. 123. *Smyrniun foliis caulinis ternatis, petiolatis, ferratis*. *Linn. Hort. Cliff.* p. 105. *Sp. Pl.* 262.

(*x*) *Apium palustre*. *Cam. Epit.* p. 527. *optime*. *Eleoselinum*. *Dod. Pempt.* p. 695. *Apium palustre* & *Apium officinarum*. *C. B. Pin.* p. 154. *Raj. Hist.* i. p. 447. *Syn.* iii. p. 214. *Tourn. Inst.* p. 305. Hist. *Oxon.* iii. p. 293. *Boerb. Ind. A.* p. 58. *Rupp. Flo. Jen.* p. 229. *Apium* & *Eleoselinum*, *Offic. Dal. Pharm.* p. 126. *Apium foliis caulinis cuneiformibus*. *Linn. Hort. Cliff.* p. 107. *Sp. Pl.* 264. *Reyen.* p. 115. *Hill. Nat. Hist. Pl.* p. 349. *Apium foliis semitrifidis, ora loborum circumferrata*. *Hall. Helv.* p. 427.

in a week's time she found herself better, and in a few weeks more was perfectly recovered, and never, for these twenty years past, had any return of it, continuing in a good state of health; at this time, I believe, alive and well. It flowers in June and July.

55. *Long-leaved Water-Hemlock (y)*. In ditches and by waters. on the banks of *North Tyne* at low *Park-End*, near *Nunwick*, in a bed of water-sand, thrown up by floods, among the bushes. The root is of the thickness of the common hemlock, oblong, white, and fibrated. The stalk is round, striated, and branched, three or four feet high. The leaves are pretty much like those of *Smallage*, but longer, and more deeply divided. The flowers are white, in large umbels. It flowers in July and August. It is of a deleterious quality, and in the spring has been too often gathered and eaten by mistake for *Smallage*, and proved fatal. We have some dreadful accounts of its poisonous effects in authors*. The root is more poisonous than the leaves; and it is remarkable, that though it kills both men and horned cattle, horses eat of it without danger †.

(y) *Sium alterum*. *Dod. Pempt.* 589. *Sium olufatri facie*. *Lob. Icon.* p. 208. *Ger. emac.* p. 256. *Raj. Hist.* p. 450. *Syn.* iii. p. 212. *Sium aquaticum*, foliis multifidis longis et serratis. *Morif. Hist.* iii. p. 283. f. 9. t. 5. f. 4. *Sium aquaticum* foliis rugosis trifidis dentatis. *Mar. Umbellif.* p. 63. t. 5. *Cicuta*. *Linn. Cliff.* p. 100. *Mat. Med.* p. 129. *Royen. lugdb.* p. 109. *Cicuta aquatica*. *Linn. Lapp.* p. 103. *Cicuta (virosa)* umbellis folio oppositis petiolis marginatis obtusis. *Linn. Sp. Pl.* p. 225. *Syst.* p. 960. 1. *Sium pinnis laciniatis*, pinnulis trifidis, nervo non folioso. *Hall. Helv.* p. 436.

* *Wepferi Hist.* *Cicutæ Aquat. toto Libro.* *Boerb. Prælect.* *Dr. Watson. Ph. Tr.* 1748. *Mr. Pulteney. Ph. Tr.* Vol. xlix.

† *Gmelin. Flo. Sibir. Par. i.* p. 203.

56. *Hemlock-Dropwort* (z). In a marshy place, by a spring, in St. *John-lee* bank, near *Hexham*. The root consists of a number of tuberous or knobby fibres, full of a yellowish acrid juice. The stalk is round, striated, and branched. The leaves are large, pinnated, and indented at the edges. The flowers are white, in umbels. It flowers in June and July. It is a deleterious plant, and on its first coming up in the spring has been often gathered and eaten through mistake for the *ferrated-leaved Water-Parasnep* (a) as a salad by incautious people, who have died in less than four hours by its virulent poison, though not immediately perceived; of which there are several instances in the *Philosophical Transactions*, and other literary, periodical works*.

57. The *great Marsh-Valerian* (b), the root of which is used as a nervine, and accounted one of the best of all the nervous simples,

(z) *Oenanthe cicutæ facie*, succo viroso crocante. *Lobel. adv.* p. 326. *Oenanthe cicutæ facie* LOBELLII. *Park. Theatr.* p. 894. *Raj. Hist.* i. p. 441. *Syn.* iii. p. 210. *Oenanthe succo viroso, cicutæ facie*, LOBELII. *I. B.* iii. p. 193. *Hist. Oxon.* iii. p. 288. *Oenanthe Chærophylli foliis.* *C. B. Pin.* p. 162. *Tourn. Inst.* 313. *Boerb. Ind. A.* p. 51. *Oenanthe apii folio maxima, succo viroso, cicutæ facie.* *Mor. Umb.* p. 16. *Oenanthe petroselinii folio, venenosa.* *Dal. Pharm.* p. 123-24. *Oenanthe foliis omnibus multifidis obtusis subæqualibus.* *Linn. Hort. Cliff.* p. 99. *Flo. Suec. n.* 237. *Hill. Nat. Hist. Pl.* p. 340.

(a) *Sium DIOSCORIDIS*, sive *Pastinaca aquatica major.* *Park. Theatr.* p. 1240. *Sium majus latifolium.* *Ger. emac.* p. 256. *Raj. Hist.* i. p. 443. *Hist. Oxon.* iii. p. 282. *Sium aquaticum primum, latifolium majus.* *Mor. Umb.* p. 15. *Sium maximum latifolium.* *I. B.* iii. p. 175. *Sium latifolium.* *C. B. Pin.* p. 154. *Tourn. Inst.* p. 308. *Rupp. Flo. Jen.* p. 230. *Sium Offic.* *Dal. Pharm.* p. 125. *Sium foliis pinnatis, umbella terrinatrice.* *Linn. Hort. Cliff.* p. 98. *Sp. Pl.* p. 251. *Flo. Suec. n.* 235. *Royen. lugdb.* p. 104. *Hall. Helv.* p. 435. *Hill. Nat. Hist. Pl.* p. 337.

* *Ph. Tr. No.* 480. p. 227. and *No.* 114. p. 856.

(b) *Phu. DIOSCORIDIS.* *Column. Phyt.* p. 92, &c. t. 26. *Icon pulchra. Ecphr. ejusd.* i. p. 210. *Valeriana sylvestris.* i. *Clus. Hist.* p. lx. bene. *Dod. Pempt.* p. 349. *purg.* p. 87.

simples, is plentiful by water-courses, about bogs, and in damp woods. It is in great abundance among the bushes by the streamlet on the south side of the road near *Nunwick*-mill; also in the rectory-wood at *Simonburn*. We are told by the learned *Fabius Columna*, that with a dram and a half of the powder of the root (pulled up before it sent forth the stalks) taken in wine, water, milk, or any other proper liquid, he cured not only himself, but others, of the epilepsy, by once or twice taking; to infants, and those of tender years, seized with convulsive fits, he ordered it to be taken in milk, who, by the relation of their friends, were, with God's blessing, perfectly cured*. We are assured by the late *Cambridge*-professor, Mr. *Martyn*, F. R. S. that he had seen it used with great success for the hysteric passion, and for violent paroxysms of the asthma. The method was to boil an ounce of the roots in a pint of water, to let it stand off the fire close covered till it was cold, and then take draughts of it in a glass. He gives a preference to the wood-plants to those that grow in watry places †. The famous *Haller* seems to have a less opinion of its

optime. *Dal. Pharm.* p. 110. *Valeriana sylvestris major. Ger.* p. 917. *emac.* 1075. *Park. Theatr.* 122. *C. B. Pin.* p. 164. *Raj. Hist.* i. p. 388. *Syn.* iii. p. 200. *Hist. Oxon.* iii. p. 101. *Tourn. Inst. Boerb. Ind. A.* p. 74. *Valeriana major sylvestris, foliis latioribus. Mor. Umb.* p. 50. *Valeriana sylvestris magna aquatica. I. B.* iii. p. 209. *Valeriana foliis omnibus pinnatis. Linn. Hort. Cliff.* p. 16. *Flo. Suec. n.* 30. *Royen. lugdb.* p. 234. *Hall. Helv.* p. 662.

* “Addo & hanc proprietatem jamdiu in multis, atque memetipso expertam, ut pulveris
 “radicis plantæ hujus sponte ortæ, extirpatæ antequam caulem edat, cochlearii dimidium
 “cum vino, aqua, lacte, aut alio quovis decenti succo, & ægroti commoditate, & ætate
 “semel sumptum, aut bis, Epilepsia correptos liberet. Hanc exhibendam pueris, & præ-
 “sertim infantibus, hoc morbo facile laborant, quibus lacte propinandum pulverem jussi,
 “amicis dono dedi: qui deinde, Divino prius numine fautore glorificato, pulvere hujus
 “plantæ illis restitutam sanitatem affirmarunt. Hoc & aliis adultis nonnullis.”

Column. Phyt. loco supra citato.

† *Martyn. Tourn.*

virtues.

virtues. He only recommends the use of the leaves, bruised, for fresh wounds †. It flowers in June and July.

58. *Narrow-leaved Mountain-Valerian (c)*. On the borders of *Ramshow-wood*, near the mill, by *Wark-burn*, in *Tynedale*. It is a slender plant, from two to three feet high. The flower is in close, compact umbels, white, with a blush of red. It flowers in June and July. It is not common.

59. *The small Bog Valerian (d)*, and the least *Bog-Valerian (e)*, are frequent in wet mountainous meadows, and about bogs. They differ only in sex, and in the size, and commonly in the colour, of the flowers; the first producing female-flowers, small, of a

† *Hall. Helv.*

(c) *Phu minus. Cam. Epit. p. 22. eximie pro angustiori. Valeriana sylvestris major montana. C. B. Pin. p. 164. Raj. Syn. iii. p. 200. Hist. Oxon. iii. p. 101. Valeriana secunda foliis angustioribus. Mor. Umbell. p. 50. Valeriana foliis agustioribus. Rivin. t. 2. Valeriana sylvestris foliis angustioribus. Vaill. Mem. p. 252.——Linn. Lapp. n. 236. huc magis pertinent. Hall. Helv. p. 661.*

(d) *α. Femina: cum rudimentis organorum marium.*

Valeriana palustris minor, elatior, flosculis minoribus. Hist. Oxon. iii. p. 101. Valeriana palustris inodora, parum laciniata. C. B. Prodr. p. 86. Valeriana sylvestris seu palustris minor altera. Raj. Cat. Angl. p. 299. cum descriptione, Syn. iii. p. 200. Valeriana aquatica minor, flore minore. Raj. Hist. p. 389. Vaill. p. 252.

(e) *β. Mas. cum sexu feminino imperfectiori.*

Phu minimum. Matth. p. 41. Phu minimum seu Valeriana montana palustris. Cam. Epit. p. 23. optime. Valeriana minima. Dod. purg. p. 88. bene. Pempt. p. 350. Phu minus, Valeriana minor. Tabern. p. 165. bene. Valeriana sylvestris ii. minor. Clus. p. lv. Valeriana minor pratensis seu aquatica. I. B. iii. p. 211. Valeriana palustris minor. C. B. Hist. Oxon. iii. p. 101. Vaill. p. 252. pro diversa. Dill. Giff. p. 47. cum sexus descriptione. Valeriana minor. Raj. Hist. p. 388.

α. β. Valeriana foliis caulinis pinnatis, polygama. Linn. Virid. Cliff. p. 5. Valeriana foliis caulinis pinnatis, sexu distincta. Hort. Cliff. p. 16. Flo. Succ. p. 11. n. 31. Valeriana foliis imis ovalibus, superioribus plerumque pinnatis, sexu distincta. Hall. Helv. p. 663.

pure

pure white; and the latter male-flowers, pretty large, of a bright white, with a blush of red; in neat umbels. They flower in May and June. The last is plentiful in a bog under bushes near the *Ostium* of the brook below *Nunwick*, from five to nine inches high; the first in another by the *Ostium* of the brook at *Wark*,—on the south side, from nine to fourteen inches high. Culture makes no alteration in them.

60. *Great Burnet Saxifrage (f)*. In dry pastures, and on banks about hedges. Under the hedges at *Fair-show* and *Long-Rigge*, near *Nunwick*. On a gravelly bank, on the north-east side of the bridge at *Barwesford*, near *Chipchace*. The root is oblong, white, and acrid. The stalk is round, striated, fistulous, and branched, two feet high. The leaves are simply pinnated, each composed of a double row of ovated, ferrated foliola, on pedicles, joined to a middle rib, with an odd leaf at the end. The flowers are white, in umbels, moderately large. It flowers in June and July. It is of an acrid, but not unpleasant, taste. It is much commended as a pectoral or stomachic by the *Germans*, especially the followers of *Stabl*, and, according to *Haller* *, deservedly.

(f) *Saxifraga magna*. *Dod. Pempt.* p. 315. *Purg.* p. 494. cum bona Icone. *Pimpinella Saxifraga*. *Matth.* p. 1032. *Cam. Epit.* p. 775. *bene. Ger.* p. 887. *emac.* p. 1044. *Raj. Hist.* i. p. 445. *Syn.* iii. p. 213. *Dal. Pharm.* *Tragofelinum majus, Pimpinella major.* *Tabern.* p. 88. *bene. Saxifraga hirsuta major.* *I. B.* iii. p. 109. *Park. Theatr.* p. 947. *Pimpinella Saxifraga major umbella candida.* *C. B. Pin.* p. 109. *Morif. Umbell.* p. 13. t. 5. cum folio bene depicto. *Hist. Oxon.* iii. p. 284. *Ruyf. Flo. Jen.* p. 230. *Tragofelinum majus umbella candida.* *Tourn. Inst.* p. 309. *Boerb. Ind. A.* p. 54. *Pimpinella major Germanica foliis magis incis.* *Barr. Icon.* p. 243. *Pimpinella.* *Linn. Hort. Cliff.* p. 106. *Pimpinella foliis pinnatis: foliolis radicalibus subrotundis; summis linearibus.* *Sp. Pl.* 263. *Pimpinella foliolis subrotundis.* *Flo. Suec.* p. 86. n. 246. *Hill. Nat. Hist. Pl.* p. 348. *Tragofelinum pinnis femilobatis, circumferratis.* *Hall. Helv.* p. 428.

* *Ibid.*

61. *Small Burnet Saxifrage (g)*. In dry pastures, and on hedge-banks. In the rectory-den at *Simonburn*, plentifully. The root is oblong, very slender, white, and acrid. The stalk is round, striated, and branched, sparingly set with leaves, divided into five long segments. The radical leaves are simply pinnated; the folioles in a double series on two sides of a pedicle, with a single leaf at the end, roundish, crenated, and of a dusky green colour. The flowers are white, in umbels. It flowers in July and August. It is one of the ingredients in the *Pulvis Ari compositus* of the shops. The common herbarists frequently gather the root of the small *Sanguisorba* for it.

62. We have the *Mountain-Saxifrage*, with finely-divided leaves (*b*); in the same den, under the road to *Tecket*, sparingly. It flowers at the same time with the former; of which it is a variety. The petals are revolute, or turn up, and bend inwards; which makes them seem as if they were cut.

(*g*) *Tragofelinum minus*, *Pimpinella minor*. *Tabern.* p. 88. *bene*. *Pimpinella Saxifraga minor*. *Cam. Epit.* p. 775. *Dal. Pharm.* p. 125. *Morif. Umbell.* p. 13. t. 5. *Pimpinella Saxifraga minor-foliis Sanguisorbæ*. *Raj. Hist.* 1. p. 445. *Syn.* iii. p. 213. *Saxifraga hirsina minor foliis sanguisorbæ*. *I. B.* iii. p. 3. *Pimpinella Saxifraga major altera*. *C. B. Pin.* p. 159. *Pimpinella Saxifraga major nostras*. *Park. Theatr.* *Pimpinella Saxifraga vulgaris pimpinellæ minoris foliis*. *Hist. Oxon.* iii. p. 285. *Pimpinella Saxifraga hirsina minor montana foliis alte incis.* *Barr. Icon.* p. 738. *Tragofelinum alterum majus*. *Tourn. Inst.* p. 309. *Boerb. Ind. A.* p. 54. *Trogofelinum pinnis subrotundis, circumferratis*. *Hall. Helv.* p. 429.

(*b*) *Saxifraga parva*. *Dod. Pempt.* p. 315. *optime*. *Pimpinella, saxifraga minor*. *Lob. Icon.* p. 709. *eadem* *Icon. Saxifraga Pimpinella Germanica minor*. *Cluf. Pann.* p. 697. *Hist.* p. cxcvii. *eadem*. *Tragium alterum DIOSCORIDIS*. *Column. Phyt.* p. 61, &c. *Tab. xvii.* *Pimpinella crispa f. petræa*. *Tabern.* p. 89. *Saxifraga hirsina minima Pimpinella crispa, Tragi*. *I. B.* iii. p. 113. *Pimpinella Saxifraga minor*. *C. B. Pin.* p. 160. *Raj. Hist.* p. 445. *Pimpinella Saxifraga minor foliis dissectis*. *Hist. Oxon.* iii. p. 285. *Pimpinella Saxifraga minor crispa*. *Morif. Umbell.* p. 17. t. 5. *Tragofelinum minus*. *Tourn. Inst.* p. 309. *Tragofelinum pinnis laciniatis, superius tenuissimis*. *Hall. Helv.* p. 429.

63. *Meadow*

63. *Meadow Saxifrage (i)* is plentiful in moist meadows and pastures. The flowers are in umbels, of a yellowish-white. Each flower consists of five petals, almost equal and entire. They are hooked or turn inwards at the ends, which makes them appear as if they were notched. The seed is thick and large, with three *striae* so remarkably deep, as to make it seem *alate*, or winged. Both it and the root are used for the gravel. It flowers in June and July.

64. *Bastard-Stone-Parfley (k)*. On ditch-banks. On a gravelly bank by the road on the south-east side of the bridge at *Barwescford*; also in the lane between the *Edge-house* and *Chollerton-road*. The flowers are white, in umbels. It flowers in July and August. The seed is very small, brown, and striated. It is put to the same use as the former.

65. *Tuberous esculent Earth-Nut (l)*. In dry mountainous pastures and meadows. In the rectory-den at *Simonburn*, plentifully. The
Tuber,

(i) *Siler alterum pratense*. *Dod. Pempt.* p. 310. *bene*. *Silaum quibusdam, flore luteolo*. *J. B.* iii. p. 170. *Sefili pratense*. *C. B. Pin.* p. 162. *Morif.* Umbell. p. 17. *Semen V. u. Rupp.* Flo. Jen. p. 225. *Dill. Giff.* p. 120. *Sefili pratense MONSPLIENSIMUM*. *Hist. Oxon.* iii. p. 287. *Saxifraga ANGLICA facie sefili pratensis*. *Ger.* p. 890. *emac.* 1087. *Raj. Hist.* i. p. 453. *Sefili pratense nostras*. *Park. Theatr.* p. 905. *Saxifraga vulgaris*, *Offic. Dal. Pharm.* p. 127. *Angelica pratensis Apii folio*. *Tourn. Inst.* p. 313. *Peucedanum foliis pinnatim divisis laciniatis, oppositis*. *Linn. Hort. Cliff.* p. 94. *Royen. lugdb.* p. 98. *Peucedanum pinnis duplicato pinnatis, foliis latiusculis, longe trifidis*. *Hall. Helv.* p. 442.

(k) *Sifon, five Officinarum Amomum*. *I. B.* iii. p. 107. *Raj. Hist.* i. p. 443. *Bot. Monsp.* 242. *Sifon quod Amomum Officinis nostris*. *C. B. Pin.* p. 154. *Amomum, Offic. Dal. Pharm.* p. 124. *Sium aromaticum, Sifon Officinarum*. *Tourn. Inst.* p. 308. *Raj. Syn.* iii. p. 211. *Dill. Giff.* p. 139. *Boerb. Ind. A.* p. 57. *Sifon DIOSCORIDIS*. *Hist. Oxon.* iii. p. 283. *Sifon. Mor. Umbell.* p. 14. *Sifon foliis pinnatis, umbellis erectis*. *Linn. Sp. Pl.* 252. *Royen. lugdb.* p. 105.

(l) *Bulbocastanum*. *Dod. Pempt.* p. 433. *Raj. Hist.* i. p. 440. *Syn.* iii. p. 209. *Morif. Umbell.* p. 5. *Dal. Pharm.* p. 123. *Bulbocastanum majus folio Apii*. *C. B. Pin.* p. 162. Hist.

Tuber, or bulb, lies deep in the ground; brown on the outside, and white within, of an irregular roundish shape; of a grateful taste, wholesome and nutritive.

66. *Yellow-flowered Tragopogon*, or *Goats-Beard* (*m*). In meadows, and in stony places, by waters, plentifully. It is one of those plants which, by an invariable law in nature, performs its constant *Vigilia*, by closing its leaves about noon. From which remarkable property the common people call it, *Go to Bed at Noon*. The root and young shoots are esculent, of an agreeable taste, without any acrimony or viscidty, very nourishing. It flowers in July.

67. *Purple-flowered Tragopogon*, or *Scorzouera* (*n*), does not grow with us, but as it may have escaped out of gardens.

Hist. Oxon. iii. p. 274. *Tourn. Inst.* p. 307. *Berch. Ind. A.* p. 70. *Nucula terrestris SEP- TENTRIONALIUM.* *Lob. Icon.* p. 745. *Apios.* *Turn. Hist. Pl.* p. 40. *Ph. Tr.* No. 202. *Bunium.* *Linn. Flo. Lapp.* n. 208. *Royen. lugdb.* p. 107. *Hall. Helv.* p. 782. inter addenda. *Vulgo.* KIPPER-NUT, FIG-NUT, & HAWK-NUT.

(*m*) *Barba hircina.* *Dorsten.* p. 80. *bene.* *Tragopogon f. barbula hirci.* *Matth.* p. 537. *bene. Cam. Epit.* p. 312. cum *Charactere.* *Tragopogon luteum.* *Lob. Icon.* p. 550. *Ger.* p. 595. *emac.* p. 735. *Raj. Hist.* i. p. 252. *Syn.* iii. p. 76. *Tragopogon luteum majus.* *I. B.* ii. p. 1058. *Tragopogon pratense luteum majus.* *C. B. Pin.* p. 274. *Hist. Oxon.* iii. p. 79. *Tourn. Inst.* p. 477. *Berch. Ind. A.* p. 90. *Dill. Giff.* p. 91. *Vaill.* p. 266. *Tragopogon pratense.* *Linn. Sp. Pl.* 789. *Tragopogon calycibus florem superantibus.* *Hort. Cliff.* p. 382. *Flo. Suec.* n. 648. *Royen. lugdb.* p. 119. *variet. prima.* *Tragopogon foliis carinatis, amplexicaulibus, gramineis, flore luteo.* *Hall. Helv.* p. 758.

(*n*) *Scorzouera elatior angustifolia PANNONICA.* *Park. Theatr.* p. 410. *Viperina angustifolia elatior.* *Ger. emac.* p. 737. *Tragopogonis species sive Scorzouera major angustifolia subcæruleo flore.* *I. B.* II. p. 1062. *Scorzouera angustifolia subcærulea.* *C. B. Pin.* p. 275. *Raj. Hist.* i. p. 249. *Hist. Oxon.* iii. p. 83. *Tourn. Inst.* p. 476. *Tragopogon purpureo-cæruleum, porri folio, quod Artifi vulgo.* *Tragopogon calycibus corollæ radio longioribus, foliis integris acuminatis strictis, pedunculis superne læcrassatis.* *Linn. Hort. Upsl.* 243.

68. *Blue-flowered Mountain SONCHUS*, or *Sow-Thistle (o)*. On the borders of corn-fields about *Willington* and *Howden-Pans*, sparingly. Its usual height is from three to five feet. The flowers are on villose glutinous pedicles, in a long spike, of an elegant blue colour. It flowers in July and August. The seed is ovated and compressed, with three *striæ* or furrows, and winged with down.

69. The *great, English, soft, or gentle Thistle*, or *melancholy Thistle (p)*, is common in moist alpine woods and meadows. The stalk is very handsome, gradually tapering from the base to the top, from two to three feet high. The flower is large, of a bright purple. The calyx is imbricated. It flowers in June and July.

70. The *purple-flowered dwarf Carline Thistle (q)* is not unfrequent in mountainous pastures, and on dry banks. The leaves are disposed

(o) *Sonchus cæruleus*. *Cam. Epit.* p. 281. *bene.* *Sonchus levis cæruleo flore.* *Clus.* *Pannon.* p. 650, 651. *Sonchus levior Austriachus* iii. *cæruleo flore.* *Ejusd.* *Hist.* p. cxlvii. *Sonchus levis quartus folio cæruleo.* *Tabern.* p. 191. *Sonchus cæruleus latifolius.* *I. B.* ii. p. 1005. *Raj.* *Hist.* p. 225. *Vaill.* p. 258. *Scheuchz.* *Itin.* i. p. 50. *Sonchus levis laciniatus*, vel *Sonchus alpinus cæruleus.* *C. B. Pin.* p. 124. *Hist. Oxon.* iii. p. 62. *Lactuca montana latifolia laciniata flore cæruleo.* *Tourn. Inst.* *Scheuchz.* *Itin.* vi. p. 459. *Sonchus flore cæruleo.* *Royen.* *Jugdb.* p. 126. *Sonchus LAPPONUM altissimus*, *floribus cæruleis.* *Linn. Flo. Lapp.* n. 290. *Sonchus caule erecto*, *foliis pinnato hastatis*, *apice cordato triangulis*, *floribus racemosis.* *Hort. Cliff.* p. 385. *Royen.* p. 128. *Sonchus floribus spicatis cæruleis.* *Hall. Helv.* p. 754.

(p) *Cirsium BRITANNICUM.* *Clus.* *Pann.* p. 657. *Cirsium ANGLICUM* ii. *Ejusd.* *Hist.* p. cxlviii. *cum Icone non optima.* *Cirsium BRITANNICUM Clusii repens.* *I. B.* iii. p. 46. *Raj.* *Hist.* i. p. 306. *Syn.* iii. p. 193. *Cirsium singulari capitulo squamato*, *vel incanum alterum.* *C. B. Pin.* p. 377. n. v. *ex CLUSIO.* *Scheuchz.* *Itin.* iv. p. 332. *Cirsium BRITANNICUM repens*, *foliis majoribus subtus incanis.* *Hist. Oxon.* iii. p. 149. *Tourn. Inst.* p. 447. *Cirsium Helenii folio*, *capitulo magno.* *Vaill. Act.* 1718. p. 200. *Cirsium foliis longissime lanceolatis*, *ferratis*, *subtus tomentosis.* *Hall. Helv.* p. 683. *Cirsium montanum foliis longis ferratis subtus incanis.* *Ibid.* t. 21. *Icon elegantissima.*

(q) *Chamæleon exiguus.* *Trag. Hist.* p. 852. *bene.* *I. B.* iii. p. 62. *Carlina minor purpureo flore.* *Clus. Hist.* p. clvi. *cum Icone.* *Carlina acaulos minor*, *purpureo flore.* *C. B.*

Pin.

disposed on the ground in the form of a circle, on pedicles, semi-pinnated; the pinnules sometimes with two, and sometimes with three, lobes, ferrated, and ending in sharp spines. The stalk is hardly an inch long. The head is very large, and long with brown, triangular scales, shining, and not prickly. The seed is a little hooked, and winged with down, about two inches long.

71. We have the *elegant woolly-headed Thistle* (*r*) about the hedges under the hill by the church at *Wall's-End*, near *Newcastle*, sparingly. The stalk is firm, of a man's height, and branched. The leaves are very large, a foot or more in length, rough, succulent, and downy underneath, semi-pinnated; the pinnules long, with two lobes, the nerve of each lobe ending in a robust spine, the terminale spine longest. The flower is purple, long, and bending. The heads are very large and spherical, with acute upright scales, covered with a fine silk-like down, each scale terminated with a yellow prickle. The seed is white,

Pin. p. 380. *Raj.* Hist. i. p. 310. cum descriptione optima. *Carlina montana minor*, acaulos. *Barrel.* Icon. 493. *Carduus humillimus SEPTENTRIONALIS*, flore purpuro-rubente. Hist. *Oxon.* iii. p. 156. *Cirsium acaulos* flore purpureo. *Tourn.* Inst. p. 448. *Vaill.* Act. 1718. p. 201. *Carduus acaulis*, calyce glabro. *Linn.* Act. *Stockh.* 1741. p. 204. Flo. *Suec.* p. 236. n. 656.

(*r*) *Carduus Erioccephalos.* *Dod.* Purg. p. 445. *optime.* *Pempt.* p. 723. *Clus.* Pann. p. 666. Hist. p. cliv. *Carduus tomentosus*, CORONA FRATRUM Herbariorum. *Lob.* ii. p. 9. *eadem* Icon. *Carduus tomentosus*, CORONA FRATRIS dictus. *Park.* Theatr. p. 978. *Raj.* Hist. i. p. 311. *Syn.* iii. p. 195. *Carduus capite tomentoso.* *I. B.* iii. p. 57. *Carduus capite rotundo tomentoso.* *C. B.* Pin. p. 382. Hist. *Oxon.* iii. p. 155. *Tourn.* Inst. 441. *Rupp.* Flo. Jen. p. 150. *Carduus Erioccephalos*, *Offic. Dal.* Pharm. p. 105. *Erioccephalos capite rotundo maximo.* *Vaill.* p. 204. *Carduus foliis sessilibus bifariam pinnatifidis*, laciniis alternis erecti, calycibus globosis villosis. *Linn.* Sp. Pl. 823. *Hortus Upsl.* 249. *Carduus foliis sinuatis decurrentibus: denticulis & superficie spinosis*, calycibus lanigeris. *Royen.* lugdb. p. 133. *Cirsium foliis spinosis*, hirsutis, semipinnatis, pinnis semilobis, capite rigente, tomentoso, sphaerico. *Hal.* Helv. p. 680.

compressed, almost oval, and obliquely truncated. The placenta is esculent, as is the stalk, wholesome and nourishing.

72. The *elegant purple-flowered Ladies Thistle* (*s*) is plentiful in the lane at *Tynemouth*, leading to the church, very near the village. I have observed it also under a hedge on the banks of the *Tyne* by the *Ostium* of *Willington-burn*, on the west side, near *Howden-pans*. I have not seen it in any other parts with us. The leaves are very large, with an undulated, plicated margin, variously serrated, the denticles ending in sharp spines, of a deep glossy green, the nerves milk-white, which give it a beautiful appearance. The stalk is from five to six feet high, firm, and branched. The flowers are large, of a bright purple. The calyx is armed with robust prickles. It flowers in July and August. The seed is used by emulsion for acute pains and diseases of the breast with success*; especially for that kind of pectoral rheumatism which is said to be sometimes confounded with the pleurisy.

(*s*) *Carduus MARIÆ*. *Trag.* p. 850. *bene.* *Ger.* p. 989. *emac.* p. 1149. *Raj.* *Hist.* i. p. 312. *Syn.* iii. p. 87. *Dal.* *Pharm.* p. 105. *Marianus carduus.* *Cord.* *Dios.* l. iii. c. 14. *Carduus lacteus.* *Matth.* p. 676. *foliis incisif, Cam.* *Epit.* 445. *Carduus leucographus.* *Dod.* *Pempt.* p. 721, 722. *Silybum, Carduus Mariæ, & lacteus.* *Lob.* *Icon.* ii. p. 7. *eadem Icon.* *Carduus Marianus, f. lacteus.* *Tabern.* p. 699. *Carduus Marianus, f. lacteis maculis notatus.* *I. B.* iii. p. 52. *Carduus albis maculis notatus vulgaris.* *C. B.* *Pin.* p. 381. *Hist.* *Oxon.* iii. p. 155. *Tourn.* *Inst.* p. 440. *Martyn.* *Tourn.* i. p. 143, 144. *Boerb.* *Ind.* A. p. 136. *Dill.* *Giff.* p. 129. *Silybum albis maculis notatum, flore purpureo.* *Vaill.* p. 219. *Icon.* 31. *Carduus squamis calycinis margine & apice spinosis.* *Linn.* *Hort.* *Cliff.* p. 393. *Hort.* *Upf.* 250. *Royen.* *lugdb.* p. 133. *Silybum nervis foliorum albis.* *Hall.* *Helv.* p. 684.

* *Semina in medicina adhibentur, amara, farinosa, ad emulsiões in morbis pectoris laudata, etiam certioribus experimentis, (BRESLAV. 1718. p. 149. 1063.) quibus constat, dolores punctorios & coagulatum sanguinem earum usu sublato fuisse. HALLER.*

Two drams of it infused in six ounces of the distilled water of its leaves effects a cure †.

73. The *purple-flowered, nutant Musk-Thistle (t)*, which is one of the most common thistles by way-sides and in waste places in some of the southern counties, especially about *Cambridge*, but not about *London*, is very rare with us, except about *Newcastle*, between the *Glass-houses* and *Dent's-hole*, where it is in great plenty. It flowers in July and August. The flowers are very large, and pendulous, of a bright purplish-red. The calyx is armed with yellow prickles, exceedingly sharp and robust. The seed is of a light brown, smooth, and glossy, crowned with hairs. It has a faint scent of musk, very perceivable about the time of flowering.

74. The *procumbent, purple-flowered Star-Thistle (u)*, which is plentiful on wastes, and by high-ways in many of the southern counties,

† MARTYN. locis citatis.

(t) *Carduus nutans*. *I. B.* iii. p. 56. cum *bona* Icone. *Raj.* Hist. i. p. 308. *Carduus alatus major*, flore rubro moschato, capite nutante. Hist. *Oxon.* iii. p. 153. *Carduus moschatus* flore amplo, capite deflexo. *Vaill.* Act. 1718. p. 195. *Icon bona* MERIANÆ, n. c. *Onopoxos* amplo capite purpureo, angustifolius. *Barrel.* Icon. 1116. omnino nostrum refert, distinguunt tamen. VAIL. *Onopordon.* *Park.* Theatr. p. 681. *Carduus* foliis spinosis semidecurrentibus, floribus nutantibus, squamis calycinis superne patentibus. *Linn.* Act. *Stockb.* 1741. p. 204. Flo. *Suec.* n. 655. *Carduus* foliis sinuatis decurrentibus margine spinosis, floribus solitariis nutantibus. *Hort.* Cliff. p. 393. *Royen.* lugdb. p. 132. *Carduus* foliorum laciniis complicatis & spinosis, capitulo spinoso nutante. *Hall.* *Helv.* p. 676.

(u) *Carduus stellatus*. *Dod.* *Pempt.* p. 733. *Purg.* p. 448. *bene.* *Ger.* p. 1003. *emac.* p. 1166. *Raj.* Hist. i. p. 317. *Syn.* iii. p. 87. *Dal.* *Pharm.* p. 107. *Carduus stellatus* foliis *Papaveris erratici*. *C. B.* *Pin.* p. 387. *Dillen.* *App.* p. 15. *Carduus stellatus*, sive *Calcitrapa*. *I. B.* iii. p. 89. *Tourn.* *Inst.* p. 440. *Martyn.* *Tourn.* i. p. 149. *Hippophæstum* vel *Hippaë* *Dioscoridis*. *Column.* *Phyt.* p. 85, &c. *TAB.* xxiv. *Jacea* ramosissima, capite longis aculeis, stellatim nascentibus, armato. Hist. *Oxon.* iii. p. 144. *Calcitrapa* *Officina-*

rum.

counties, is only observed to grow with us in the same place with the former. The stalk is usually from a foot to two feet in length, and branched. The leaves are soft, very hairy, with a broad nerve, and pinnules at distances, long, lanceolated, and moderately cut, or lacinated, not prickly. It flowers in June and July. The flowers are of a lively purple. The outer florets are disposed in the form of a radiated circle. The calyx is imbricated, and armed with rigid spines. The seed is cordiform. It is used with success at *Paris* for urinary obstructions; one dram infused in a glass of white wine. The exterior *Cortex* of the root, gathered about the end of September, dried in the shade, and finely powdered, is likewise used there in the same manner, and in the same quantity, for an intermitting fever, on the approach of the fit*. The root was formerly used by other foreigners as a *succedaneum* to the *Eringo*-root †.

75. The *purple-flowered Saw-wort* (*x*), is scarce with us. A plant of it was found at *West-Dibden*, near *Hexham*, with the *Chamarubus*;

rum flore purpurascente. *Vaill.* p. 209. *Centaurea calycibus, tubulato-spinosis, sessilibus, foliis linearibus, pinnatifidis.* *Linn. Hort. Cliff.* p. 423. *Royen. lugdb.* p. 140. *Calcitrapa foliis laxe pinnatis, mollibus, capitulis ad latera caulis sessilibus.* *Hall. Helv.* p. 689.

* *Tournefort. Martyn.*

† *Camerarius.*

(*x*) *Serratula.* *Matth.* p. 945. *Cam. Epit.* p. 682. *Dod. Pempt.* p. 42. *C. B. Pin.* p. 235. *I. B.* iii. p. 23. *Raj. Hist.* i. p. 331. *Syn.* iii. p. 23. *Dill. Giff.* p. 168. *Boerb. Ind. A.* p. 144. *Dal. Pharm.* p. 108. *Serratula MATTHIOLI.* *Chuf. Pann.* 547. *Hist.* p. viii. ex *DOD.* *Serratula tinctoria* i. *Tabern.* 156. *Foliis omnibus integris.* *Serratula tinctoria* ii. *ejusd.* p. 175. *Foliis inferioribus integris, superioribus incis.* *Serratula tinctoria* iii. *ejusd. foliis omnibus incis.* *Serratula purpurea.* *Ger.* p. 576. *emac.* p. 713. *Serratula vulgaris foliis laciniatis.* *Hist. Oxon.* iii. p. 133. *Serratula, vulgaris facie, foliis integris.* *Ejusd. ibid.* *Jacea nemorensis, quæ Serratula vulgo.* *Tourn. Inst.* p. 444. *Serratula foliis pinnatifidis, lacinia terminatrice maxima.* *Linn. Hort. Cliff.* p. 391. *Flo. Succ.* n. 660. *Hort. Ups.* 249. *Royen. lugdb.* p. 143. *Hill. Nat. Hist. Pl.* p. 567. *Carduus inermis, foliis glabris, imis ovatis, superioribus ad basin pinnatis.* *Hall. Helv.* p. 678.

from

from which I have a thriving one under culture from a slip of it. The stalk is slender, from two to three feet high, and branched at the top. The leaves are firm, smooth, and ferrated at the edges, sometimes simple and ovated, and sometimes with acute semi-pinnules, the terminale one largest. The calyx is cylindrical, elegantly imbricated, and smooth. The flowers are in a kind of umbels; composed of uniform purple florets. The seed is crowned with hairs, of a brownish shining yellow. Few of them seem to arrive at a fecundating state, especially those that are very small, which may be the reason why it is such a scarce plant with us. It flowers in July and August. It is tinctorial. A fine yellow is drawn from it, which is very much valued. It is, therefore, like other tinctorial plants, fit for wounds. It is commended for those that are occasioned by falls, and for ruptures, but it is seldom used*.

76. The *Golden-Rod* (*y*) is frequent on the strands of alpine brooks, and about rocks. The root is fibrous. The stalk is from a foot to three feet high, and branched. The bottom-leaves are usually ovated and ferrated; the upper ones ovated and lanceolated, firm, hairy, and crenated, on pedicles. The flowers are in spikes, at distances, of a pale shining yellow. The florets, of which they are composed, are few and large. The tube is bicorneous. The semi-florets have three nerves with a contracted apex, cut into five or ten parts. The calyx is of a pale shining

* Ad Colorem flavum expetitur, &c. HALLER.

(*y*) *Virga aurea*. Ger. p. 348. *emac.* p. 430. *Raj.* Hist. i. p. 278. *Syn.* p. 81. *Dal.* Pharm. p. 88, 89. *Virga aurea vulgaris*. *Park.* Theatr. p. 542. *Hist. Oxon.* iii. p. 124. *Virga aurea latifolia ferrata*. *C. B.* Pin. p. 268. *Virga aurea vulgaris latifolia*. *I. B.* ii. 1062. *Tourn. Inst.* p. 484. *Vaill.* Act. 1720. p. 396. *Solidago floribus per caulem simplicem undique sparsis*. *Linn.* Flo. Lapp. n. 306. *Solidago caule erecto, racemis alternis erectis*. *Hort. Cliff.* p. 409. *Flo. Succ.* n. 685. *Royen.* lugdb. p. 161. *Hall.* Helv. p. 729.

green.

green. The seed is conic, and striated, with an acute base, and a round, plumose crown. It flowers in August.

77. There is a VARIETY of it *with purplish Stalks, and firm lightly serrated Leaves, of a smooth pleasant green (z)*, among the furz on *Four-stone-hills*, and among the rocks under the *Roman wall* by *Crag-lake*.

It is astringent and bitter. It is used by decoction for internal bruises, and outwardly in an ointment for wounds. For old putrid sores and ulcers it is excellent, cleansing and healing them. A great cure was obtained with it in an ulcer of the *Urethra* by an ingenious foreigner, which is mentioned with respect by the learned *Gottenberg-professor*, who calls it—*pulchram Sanationem* *. Three drams of it, powdered fine, and taken in a convenient liquid three times at due intervals in eight hours, helps persons afflicted with the stone, whom it sometimes has cured by bringing it away †.

78. *Round, white-flowered, Mountain-Cudweed, or Cat's-foot (a)*. On dry alpine heaths. At *Temple-Green*, near *Wark*, in *Tynedale*. On a dry bank near *Thockrington* by the road to *Watling-street*. On *Etallmoor*, by the road to the coal-work, plentifully. It grows after

(z) *Virga aurea alpina, laurinis rigidioribus foliis. Boccone. p. 33. t. 16.*

* HALLER. loco citato.

† Ibid.

(a) *Pilosella minor. Dod. Pempt. p. 68. Icon. interior. Clus. Pann. p. 486. Hist. p. 330. Pilosella minor quibusdam aliis Gnaphalii Genus. I. B. iii. p. 162. Gnaphalium montanum, flore rotundiore. C. B. Pin. p. 263. Elichrysum montanum, flore rotundiore candido. Tourn. Inst. p. 453. Vaill. Act. 1719. p. 387. Boerb. Ind. A. p. 120. Dill. Giff. p. 60. Gnaphalium montanum folio rotundiore, purpurea et alba. Hist. Oxon. iii. p. 89. t. xi. f. 32.*

the

the manner of the garden-daisy, in tufts, with procumbent stalks which take root at the joints, and send forth new plants. The leaves are oblong, indented at the edges, with a nerve through the middle, and pointed; of a smooth deep green on the upper part, and hoary underneath. The flower-stalks are three or four inches high, round, and hoary, with short, narrow, pointed leaves. The flowers are at the top, in a kind of umbel, each on a separate pedicle, the largest in the center, of a bright white; the disk sometimes adorned with a beautiful blush of red.

79. *Round, purple-flowered Mountain-Cudweed, or Cat's-foot (b).* At *Temple-Green*, with the former, by the road-side. The flowers are of a bright purplish-red, neat and compact. They retain their beauty under culture.

80. *The long white-flowered Mountain Cudweed, or Cat's-foot*, is plentiful with the two former. The stalks are taller, and not so firm. The flowers are less elegant. They are long, irregular, and of a dull white; though they are all of the same family, and distinguished only by their sex; the two first bearing male, and this female flowers (*c*). They are called *Everlasting* flowers by our shepherds and common people on the wastes, from their holding their colour after they are gathered. The flowers of the two first

(*b*) *Elichrysum montanum*, flore rotundiore sub-purpureo. *Tourn. Inst.* p. 453.

(*c*) *Pilosella minor*. *Dod. Pempt.* p. 68. *Icon exterior.* *Gnaphalium montanum longiore & folio & flore.* *C. B. Pin.* p. 263. *Elichrysum montanum longiore & folio & flore albo.* *Tourn. Inst.* p. 453. *Martyn. Tourn.* i. p. 237. *Vaill. Act.* 1719. p. 387. *Gnaphalium montanum album.* *Ger.* p. 516 *emac.* p. 640. *Raj. Hist.* i. p. 283. *Syn.* iii. p. 83. *Gnaphalium montanum sive PES CATI.* *Park. Theatr.* p. 690. *PES CATI*, *Offic. Dal. Pharm.* p. 90. *Gnaphalium caule simplicissimo, corymbo terminatrice, Sarmetis procumbentibus.* *Linn. Hort. Cliff.* p. 400. *Flo. Suec. n.* 672. *Royen. lugdb.* p. 147. *Gnaphalium sexubus tota planta dist. ncta.* *Hall. Helv.* p. 698.

are as beautiful on the stalks at two year's end, as in the time of flowering, if gathered dry, and kept free from dust. They flower in May and June. The seed is minute, with a plumose crown. The leaves are used for defluxions of the lungs, and for the convulsive or whooping cough in children.

81. *Purple-flowered Yarrow, or Millfoil (d)*. By way-sides, and on new ditch-banks, not unfrequent with the white sort (*e*); of which it is a variety.

The common *Yarrow* is commended for internal hæmorrhages, and defluxions of all kinds. It is an excellent remedy for stubborn cancers, with garden hyssop; an equal quantity of both pounded together, and a spoonful of the juice drank in a glass of white wine every morning fasting. A young gentlewoman in the south of *England*, of about thirty years of age, had a cancer in her breast, so dangerous, that nothing less than amputation, it was thought, could save her life; which she declining, a gentleman of great medical experience, and of a humane disposition, recommended the use of this simple remedy, by taking

(*d*) *Millefolium purpurei floris*. *Dod. Pempt.* p. 100. *Millefolium vulgare purpureum minus*. *C. B. Pin.* p. 140. *Hist. Oxon.* iii. p. 38. *Achillea vulgaris flore purpureo*. *Vaill.* p. 415.

(*e*) *Millefolium*. *Boot. Icon.* 36. *Millefolium seu Achillea*. *Dod. Pempt.* p. 100. *Millifolium vulgare*. *Park.* p. 693. *Raj. Hist.* i. p. 345. *Syn.* iii. p. 91. *Millefolium vulgare album*. *C. B. Pin.* p. 140. *Tourn. Inst.* p. 496. *Martyn. Tourn.* ii. p. 122-3. *Hist. Oxon.* iii. p. 38. *Boerb. Ind. A.* p. 122. *Dill. Giff.* p. 140. *Millefolium Stratiotes pennatum terrestre*. *J. B.* iii. p. 136. *Millefolium, Offic. Dal. Pharm.* p. 95. *Achillea vulgaris flore albo*. *ACT. REG. Par. Ann.* 1720. p. 320. *Achillea vulgaris, flore albo*. *Vaill. Act.* 1720. p. 415. *Achillea foliis pinnato-pinnatis*. *Linn. Flo. Lapp.* n. 311. *Achillea foliis duplicato-pinnatis, glabris, laciniis linearibus acute laciniatis*. *Hort. Cliff.* p. 413. *Flo. Suec.* n. 705. *Royen. lugdb.* p. 175. *Achillea pinnis foliorum plurimis, longe æqualibus, pinnatis, pinnulis trifidis & quinquefidis*. *Hall. Helv.* p. 715.

of which the cancer gradually abated, and, at length, died away into a hard *Neucleus*, turning round in her breast, and continuing so without any uneasy sensation to the day of her death, which was at the age of seventy.

Yarrow, with beautiful bright yellow Flowers (*f*), is lately introduced into the borders of some of the better gardens with us.

The white double-flowered *Goose-Tongue* (*g*), said to grow near *Winder-mere*, in *Westmorland*, does not grow with us that I have observed.

82. *Tansy* (*h*), which was formerly thought only to grow in gardens, is in great abundance on the banks of the river *Till*;

(*f*) *Stratiotes lutea*. *Clus. Hisp.* p. 371. *benè*. LUGD. *Stratiotes millefolia flavo flore. Clus. Hist.* p. 330. *Millefolium minus* f. *Stratiotes chiliophyllos. Dod. Pempt.* p. 101. ex *CLUSIO*. *Millefolium luteum. Lob. Icon.* p. 748. *Tabern.* p. 131. *Raj. Hist.* i. p. 347. *Millefolium tomentosum luteum. C. B. Pin.* p. 140. *I. B.* iii. p. 138. *Hist. Oxon.* iii. p. 39. *Pontedr.* p. 259. *Achillea lutea tomentosa minor tenuissime laciniata. Vaill.* p. 418. *Achillea foliis linearibus pinnatifidis, villosis, foliolis tripartitis, intermedio longiore. Linn. Hort. Cliff.* p. 413. *Royen. lugdb.* p. 175. *Achillea pinnis folioriorum æqualibus, tomentosis, pinnulis primis trifidis, secundis simplicibus. Hall. Helv.* p. 716:

(*g*) *Ptarmica vulgaris pleno flore. Clus. Hist. cum Icone. Dracunculus pratensis flore pleno. C. B. Pin.* p. 98. *Achillea foliis integris, minutissime serratis, flore pleno.*

(*h*) *Tanacetum. Trag.* p. 158. *benè*. *DOD. Pempt.* p. 36. *benè*. *DE BOOT. Icon.* 66. *Raj. Hist.* i. p. 366. *Syn.* iii. p. 93. *Dal. Pharm.* p. 98. *Tanacetum vulgare luteum. C. B. Pin.* p. 132. *Hist. Oxon.* iii. p. 2. *Tourn. Inst.* p. 461. *Martyn. Tourn.* ii. p. 290, 291. *Vaill. Act.* 1719. p. 369. *Tanacetum vulgare flore luteo. I. B.* iii. p. 131. *Tanacetum Millefolii foliis. Lob. Icon.* p. 749. ex *DOD.* *Artimisia DIOSCORIDIS. Tabern.* p. 10. *Tanacetum foliis pinnatis planis, pinnis serratis. Linn. Flo. Lapp.* n. 295. *Tannacetum foliis pinnatis, pinnis pinnatifidis incisis serratis. Hort. Cliff.* p. 398. *Flo. Succ.* n. 666. *Royen. lugdb.* p. 185. *Tanacetum foliis pinnatis, pinnis sempinnatis, floribus umbellatis. Hall. Helv.* p. 694.

β. *Varieetas oris foliorum crispis, DOD. & LOBELIO picta.*

also on the bank of the *Tweed*, between *Cornhill* and *Carham*. It is also frequent in many other places, about hedges. It flowers in June and July. It is bitter, aromatic, and a vermifuge. A dram of the dried flowers by infusion is commended for the hysterics. It promotes perspiration, and strengthens the bowels*. The leaves bruised, and applied to the head at night on going to bed, eases and comforts the body after violent fatigues †. Four ounces of the juice is used for intermitting fevers ‡.

83. *Feverfew* (*i*), a valuable *Uterine*, is plentiful among the rocks by *Tecket-water-fall*. It used formerly to be seen only in gardens; from which it has likely by some means escaped. It sometimes produces plants with double flowers, spontaneously (*k*); which are frequent in gardens.

84. *Filipendula*, or *Dropwort* (*l*). In a pasture called the *Crag-clofe*, a quarter of a mile north from *Barwesford*, on the right hand

* *Fulv. Gherli* Osserv. p. 58.

† *Boccone* Osserv. p. 80.

‡ *Pontedra*.

(*i*) Febrifuga. *Dorsten*. p. 121. Parthenium seu Matricaria. *Matth*. p. 902. Matricaria *Dod. Pempt.* p. 35. *Ger.* p. 526. *emac.* p. 652. *Raj. Hist.* i. p. 357. *Syn.* iii. p. 93. Matricaria vulgaris five sativa. *C. B. Pin.* p. 133. *Hist. Oxon.* iii. p. 32. *Tourn. Inst.* p. 493. *Vaill.* p. 365. *Boerh. Ind. A.* p. 110. *Dill. Giff.* p. 140. Matricaria vulgo minus Parthenium. *I. B.* iii. p. 129. Matricaria Officinarum, ACT. REG. PAR. A. 1720. Matricaria, Parthenium, Offic. *Dal. Pharm.* p. 97. Matricaria foliis compositis planis, foliolis ovatis incisif, pedunculis ramosis. *Lim. Hort. Cliff.* p. 416. *Royen. lugdb.* p. 173. Matricaria foliis, pinnatis, pinnis latis, incisif, semiflosculis brevissimis. *Hall. Helv.* p. 719.

(*k*) Matricaria flore pleno. *C. B. Pin.* p. 134. Parthenium pleno five polyphylo flore. *Clus. Pann. & Hist.*

(*l*) Filipendula. *Matth.* p. 865. *Cam. Epit.* p. 608. *benz. Dod. Pempt.* p. 56. *I. B.* iii p. 189. *Ger.* p. 900. *emac.* p. 1058. *Raj. Syn.* i. p. 623. *Syn.* iii. p. 259. *Morif. Umbell.* p. 38. *Rupp. Flo. Jen.* p. 129. *Dal. Pharm.* p. 163. Filipendula vulgaris. *Clus. Pann.* p. 710.

hand of the road to *Chipchace*, in great abundance. I never observed it in any other place with us. The root is composed of tuberous or knobby fibres. The stalks are striated, fistulous, and naked to the top, from a foot to two feet high. The leaves are long, pinnated, and serrated at the edges. The flowers are in an umbellated panicle; each usually composed of six orbiculated petals, of a bright white, and often with a beautiful blush of red. The calyx in its maturity is reflex, and divided into six parts. It flowers in June and July. Under culture it grows to three feet high, and is branched at the top. The root is astringent, aperient, and diuretic. It was formerly in good account for the hæmorrhoids, but now rarely enters into use.

85. *Melilot (m)*. On the banks of the river *Wanfsbeck*, by a grindstone-quarry, near *Ashington*. By the path to the bathing-well at *Cornhill*, near a streamlet. The stalks are firm, fistulous, and branched, from two to four feet high. The leaves are ternate, oblong, and serrated at the edges, of a deep shining green, on pedicles. The flowers are of a pale yellow, in a pendulous late-

p. 710. Hist. p. ccxi. Hist. *Oxon.* p. 322. *C. B.* Pin. p. 163. *Tourn.* Inst. p. 293. *Martyn.* *Tourn.* i. p. 258-9. *Boerb.* Ind. A. p. 43. *Filipendula foliis pinnatis, foliolis uniformibus.* *Linn.* Hort. Cliff. p. 191. Flo. Suec. n. 404. *Royen.* lugdb. p. 277. *Filipendula foliis longis, angustis, extremo trilobato, minimis pinnulis intermissis.* *Hall.* Helv. p. 307.

(*m*) *Melilotus.* *Rivin.* t. 6. *optime.* *Trifolium odoratum* sive *Melilotus.* *Dod.* *Pempt.* p. 567. *optime.* *Trifolium odoratum* sive *Melilotus vulgaris, flore luteo.* *I. B.* ii. p. 370. *Melilotus officinarum* GERMANIÆ. *C. B.* Pin. p. 331. *Tourn.* Inst. p. 407. *Martyn.* *Tourn.* ii. p. 112, 113. *Rupp.* Flo. Jen. p. 208. *Melilotus vulgaris.* *Park.* *Theatr.* p. 719. *Raj.* Hist. p. i. p. 951. Syn. iii. p. 331. *Melilotus, Offic.* *Dal.* Pharm. p. 226. *Trifolium odoratum* f. *Melilotus fruticosa lutea vulgaris vel Officinarum.* Hist. *Oxon.* p. 161. *Trifolium floribus racemosis leguminibus nudis dispermis, caule erecto.* *Linn.* Hort. Cliff. p. 376. Flo. Suec. n. 619. *Royen.* lugdb. p. 381. *Melilotus siliquis turgidis, brevibus, obscure transversim rugosis.* *Hall.* Helv. p. 587.

ral series, in spikes. It flowers in July and August. On the warm fertile banks of the *Wansbeck*, it is robust, tall, and thriving: By the streamlet at *Cornhill*, it is slender, short, and meager, owing to the sterility and coldness of the soil.

It is an acrid, bitter plant, but of no disagreeable odour. The distilled water of the flowers being mixed with other aromatic waters, has the remarkable property not only of retaining, but of increasing their scent*. It is used in the sweet-scented water at *Paris*, called *Eau de Corduë* †. The flowers give ease, by infusion, in cholic-pains, and inflammations of the bowels ‡. The leaves are in most frequent use as an emollient in external applications, especially for painful tumours, and wounds difficult to heal.

86. *Strawberry-Trefoil* (n). On the banks of *Halypike*-lake, plentifully.

87. *Annual, Hare's-foot-Trefoil* (o). On dry hedge-banks, and barren places. On an old hedge made up of earth and stone by the road

* *Cæsalpinus*.

† *Townfort. Geoffroi. iii. p. 836.*

‡ *Chomel.*

(n) *Trifolium fragiferum nostras purpureum folio oblongo. Hist. Oxon. ii. p. 144. t. 13. f. 2. Raj. Syn. iii. p. 33. Tourn. Inst. Martyn. Tourn. ii. p. 313. Trifolium fragiferum. Raj. Cant. p. 166. (a quo, et Martyno, distinguitur a Frisco CLUSII). Trifolium spicis subovatis, calycibus inflatis, dorso gibbis. Linn. Hort. Cliff. p. 373. Royen. lugdb. p. 378. Hall. Helv. p. 582.*

(o) *Lagopus. Dod. Pempt. p. 577. Flo. Jen. p. 206. Lagopus, PES LEPORIS. Lob. Icon. ii. p. 39. Lagopus vulgaris. Park. Theatr. p. 1107. Raj. Hist. i. p. 948. Lagopus, PES LEPORINUS, Offic. Dal. Pharm. p. 226. Lagopus trifolius quorundam. I. B. ii. p. 377. Trifolium arvense, humile, spicatum, sive Lagopus. C. B. Pin. p. 328. Tourn. Inst. p. 405. Martyn. Tourn. ii. p. 314. Raj. Syn. iii. p. 330. Dill. Gifs. p. 99. Boerb.*

Ind.

road opposite to *Crag-clofe*, near *Barwesford*. It flowers in August; when it is beautiful with its shining pale purple glume or panicle. It is an astringent, and commended for the dysentery, but is seldom used.

88. *Tormentil-Cinquefoil* (*p*). On dry banks, and stony places. On a gravelly bank about a hundred yards west from *Ainwick-grange*, on the north side of the lane that leads to *Hexham*. It flowers in June and July. The flowers are of a sulphur-yellow.

89. *Creeping Tormentil*, with petiolated deeply indented Leaves (*q*). On alpine heaths. On the top of great *Waneyhouse-crag*. About the rocks in a hilly pasture on the west side of *Goat-stones*, by *Raven's-bugh-crag*, near *Simonburn*, with the common species, with cauline sessile Leaves (*r*). The root of both is of great use as a styptic.

Great

Ind. A. ii. p. 31. *Trifolium Lagopoides purpureum arvense, humile, annuum, sine Lagopus minimus vulgaris*. Hist. Oxon. ii. p. 141. *Trifolium spicis villosis ovalibus, dentibus calycinis fetaceis æqualibus*. Linn. Hort. Cliff. p. 375. Flo. Suec. n. 616. Royen. lugdb. p. 379. *Trifolium spicis villosis, calyce & denticulis plumosis*. Hall. Helv. p. 583.

(*p*) *Pentaphyllum minus*. Cam. Epit. p. 760. *optime*. *Quinquefolium petræum majus*. Tabern. p. 122. *bene*: *Quinquefolium folio argenteo*. C. B. Pin. p. 225. Tourn. Inst. Martyn. Tourn. ii. p. 202. *Pentaphyllum erectum foliis produnde sectis subtus argenteis flore luteo*. I. B. ii. p. 398. Raj. Hist. p. 613. Syn. iii. p. 255. Hist. Oxon. p. 190. t. 19. f. 11. *Potentilla foliis digitatis, caule erecto corymbofo*. Linn. Flo. Suec. n. 417. *Potentilla foliis digitatis inciso-ferratis, caule recto*. Hort. Cliff. p. 193. *Potentilla foliis quinatis angustissimis, subtus tomentosis, caule erecto*. Hall. Helv. p. 341.

(*q*) *Tormentilla alpina*. Cam. Epit. Hall. Helv. p. 341. *Tormentilla alpina major*. Park. Theatr. Raj. Hist. i. p. 1618. *Tormentilla reptans*. Raj. Syn. iii. p. 257. *Pentaphyllum reptans alatum foliis profundius ferratis*. Plot. Nat. Hist. of Oxfordshire, c. 6. p. 7. Tab. 9. f. 5.

(*r*) *Tormentilla*. Cam. Epit. p. 685. *optime*. Dod. Pempt. p. 118. I. B. ii. p. 598. Raj. Hist. i. p. 617. Syn. iii. p. 257. Dal. Pharm. p. 161. Linn. Hort. Cliff. p. 194. Royen. lugdb.

Great cures have been done with it by decoction in old ulcers*.

90. *Purple-flowered Marsh-Trefoil (s)* is not unfrequent in ditches, and about bogs, on the wastes.

91. We have the *trifoliate purple-flowered Wood-Sorrel (t)* in the woods, and under bushes, about *Hexham*. It flowers in April and May. It is a pretty variety; not altering under culture.

92. The *lobated-leaved Sanicle, with white umbellated flowers (u)*, is frequent in moist woods. It flowers in May. It is a celebrated

lugdb. p. 276. *Tormentilla sylvestris*. *C. B.* Pin. p. 326. *Tourn. Inst.* p. 298. *Rupp. Flo. Jen.* p. 53. *Linn. Lapp.* n. 213. *Pentaphyllum* aut potius *Heptaphyllum* flore aureo tetrapetalo tormentilla dictum. *Hist. Oxon.* p. 190. t. 19. f. 13. *Potentilla* foliis quinatis, flore tetrapetalo, caule erecto. *Hall. Helv.* p. 341.

* Decocto in sanandis pravis ulceribus magna cum felicitate usus est.—*Vesal. de rad. Chin.* a Clariff. *HALL.* citat.

(s) *Pentaphyllum palustre Cordi.* p. 95. *Icon bona.* *Quinquefolium palustre. Cam. Epit.* p. 762. *Quinquefolium quartum, Dod. Pempt.* p. 177. *Pentaphyllum rubrum palustre. Lob. Icon.* p. 691. *Raj. Hist.* i. p. 611. *Pentaphyllum* vel potius *Heptaphyllum* flore rubro. *I. B.* ii. p. 398. *Quinquefolium palustre rubrum. C. B. Pin.* p. 326. *Pentaphylloides palustre rubrum. Tourn. Inst.* p. 397. *Pentaphyllum* f. *Heptaphyllum* majus erectum rubrum palustre. *Hist. Oxon.* ii. p. 189. *Comarum. Linn. Flo. Lapp.* n. 214. *Flo. Suec.* 422. *Hort. Cliff.* p. 195. *Royen. lugdb.* p. 276. *Hall. Helv.* p. 337.

(t) *Trifolium acetosum* flore purpureo. *Cam. Epit.* p. 584. n. 2. *Oxys* flore subcæruleo. *Tourn. Inst.* p. 88. *Oxalis* radice dentata, foliis ternatis, scapo nudo unifloro purpureo.

(u) *Sanicula. Dod. Pempt.* p. 140. *Linn. Hort. Cliff.* p. 88. *Royen. lugdb.* p. 93. *Hall. Helv.* p. 449, 450. *Dill. Giff.* 64. *Sideritis tertia Dioscoridis. Column. Phytobas.* p. 59. *Tab. xvi.* *Sanicula Officinarum. C. B. Pin.* p. 319. *Hist. Oxon.* ii. p. 616. *Tourn. Inst.* p. 326. *Rupp. Flo. Jen.* p. 225. *Boerb. Ind. A.* p. 73. *Dal. Pharm.* p. 131. *Sanicula, five Diapensa. Raj. Hist.* i. p. 475. *Syn.* iii. p. 221. *Sanicula* foliis radicalibus simplicibus, flosculis omnibus sessilibus. *Linn. Flo. Suec.* n. 222.

astringent,

astringent, used for wounds, and for hæmorrhages, both internal and external, with extraordinary success †.

93. We have the *Globe-Ranunculus*, or *Locker-gowlons* (*w*), in moist mountainous woods and meadows, in great abundance. The stalk is round, green, and succulent, tapering from the base to the top, two feet high. The flower is large, orbiculated, and turns in at the edges, of a beautiful bright yellow. The seed is jet-black and glossy. It flowers in May and June ‡.

94. The *white, sweet-scented-flowered Woodroof* (*x*), remarkable for having a fixed alkaline salt more abundantly than any other

† Dudum celebris est vi astringente siccante, vulneraria, externa, interna; etiam quando sanguis effusus resolvendus est. HALLER.

(*w*) *Ranunculus flore globofo*. *Dod. Purg.* p. 287. *optime*. *Pempt.* p. 43. *Ranunculus flore globofo*, quibusdam *Trollius flos*. *I. B.* iii. p. 419. *Ranunculus montanus Aconiti folio flore globofo*. *C. B. Pin.* p. 182. *Ranunculus globofus*. *Park. Theatr.* p. 331. *Raj. Hist.* p. 700. *Pseudo-Helleborus ranunculoides, flore globofo*. *Hist. Oxon.* iii. p. 467. *f. 12. t. 2. f. 2.* *Helleborus niger, ranunculi folio, flore globofo majore*. *Tourn. Inst.* p. 272. *Helleboro-ranunculus, flore luteo globofo*. *Boerb. Ind.* i. p. 297. *Helleborus flore clauso erecto petiolato, caule simplicissimo*. *Linn. Flo. Suec.* n. 474. *Helleborus foliis angulatis multifidis, flore globofo*. *Hort. Cliff.* p. 227. *Royen. lugdb.* p. 484. *Helleborus uniflorus; petalis & filiquis plurimis*. *Hall. Helv.* p. 318.

‡ In alpebus suavilentia sua placet. *ibid.* HALL.

(*x*) *Asperula odorata flore albo*. *Dod. Pempt.* p. 355. *bene*. *Asperula odorata flore*. *Cluf. Pann.* p. 686. *Hist.* p. clxxv. *Asperula f. Rubeola montana odorata*. *C. B. Pin.* p. 334. *Asperula odorata alba*. *Hist. Oxon.* iii. p. 331. *Boerb. Ind. A.* p. 149. *Aparine latifolia humilior montana*. *Tourn. Inst.* p. 114. *Martyn. Tourñ.* i. p. 64. *Asperula sylvatica*. *Rupp. Flo Jen.* p. 4. *Asperula*. *Raj. Hist.* i. p. 483. *Syn.* iii. p. 224. *Asperula odorata*, *Offic. Dal. Pharm.* p. 134. *Asperula foliis octonis lanceolatis, floribus fasciculatis pedunculatis*. *Linn. Sp. Pl.* 103. *Flo. Suec.* n. 114. *Asperula foliis pluribus, floribus pedunculo elevatis*. *Hort. Cliff.* p. 33. *Royen. lugdb.* p. 255. *Rubeola foliis octonis, feminibus hispida, ex summo caule paniculata*. *Hall. Helv.* p. 457.

plant †, is frequent about the roots of trees in woods, and under damp hedges. The leaves are verticillate and stellate. The flowers are milk-white, monopetalous, cut into four segments, and cruciform. The seed is hooked at the end, set with hairs. It flowers in May. It is used by infusion for inflammations occasioned by falls, and for wounds. The flowers in a conserve are commended for paralytic complaints.

95. *Enchanter's Nightshade (y)* is plentiful under trees on wood-banks. It is in great abundance by the *Ostium* of *Gofton-burn*, on the north side, near *Wark*, in *Tynedale*; also at the west end of the rectory-den at *Simonburn*. The root consists of white, jointed, succulent fibres, sending forth new plants at distances. The stalk is round, slender, and branched, from a foot to two feet high. The leaves are in pairs, on long pedicles, lightly hairy, nearly cordiform, sometimes indented at the edges, and sometimes not, and sometimes undulated, of a pale green. The flowers are in pairs, in the axæ of the leaves, on pedicles, in thin spikes. They are dipetalous, small, and white, sometimes with a blush of red. The calyx is of a reddish-green. The seed is bilocular. It flowers in May and June. The leaves are used in an ointment for the hæmorrhoids*.

I have not observed the *lesser Enchanter's Nightshade, with small, cordiform, and deeper-serrated Leaves (z)*, to grow with us.

96. *Per-*

† Sal fixus inter omnes alcalina vi excellit. *Gmelin. Act. Petrop. v. p. 286.*

(y) Herba DIVI STEPHANI. *Tabern. p. 730. Icon bona. Solanifolia, Circæa dicta major. C. B. Pin. p. 168. Hist. Oxon. ii. p. 617. Circæa LUTETIANA. Lob. p. 266. Icon floris mala. Raj. Hist. i. p. 401. Syn. iii. p. 289. Tourn. Inst. Circæa Linn. Hort. Cliff. p. 7. Flo. Suec. n. 5. Royen. lugdb. p. 303. Hill. Nat. Hist. Pl. p. 164. Circæa major, foliis longioribus, obiter crenatis. Hill. Helv. p. 456.* * *Chomel.*

(z) *Circæa minima. Column. Ecphr. ii. p. 80. Tourn. Inst. Scheuchz. It. i. p. 34. Salanifolia Circæa alpina. C. B. Pin. p. 168. Hist. Oxon. ii. p. 617. Circæa Lutetiana minor. Park.*

96. *Perforate-leaved St. John's-wort (a)* is in great plenty among bushes on dry banks, and on the borders of woods. Its flowers in July and August. It is eminently astringent. The flowers are so turgid with a red fluid, that by distillation they yield an oil like a resinous balsam. Hence it stands in the first class of vulneraries. For its extraordinary power in helping weak nerves, it obtained the name of *Fuga Dæmonum*. An essence of the tops of it, with essence of *Yarrow* or *Milfoil*, is a celebrated febrifuge, a great restorer and strengthener of weak spirits; and of great service to those who are under afflictions from worms*. It is commended for ulcers in the kidneys by decoction, cleansing and healing them. A decoction of the flowers is advised for disorders of the lungs †. An infusion of them in fallad-oil is an antient and approved remedy for wounds.

97. *Small, procumbent, perforate St. John's-wort (b)* is less common. I met with it under the bushes by the brook at the west end of the

Park. *Theatr. Raj. Hist.* i. p. 401. *Circæa calyce colorato. Linn. Flo. Lapp. n. 3. Circæa minima, foliis brevioribus dentatis. Hall. Helv. p. 456.*

(a) *Hypericon. Dod. Pempt. p. 76. optime. Hypericum. Raj. Hist. ii. p. 1018. Syn. iii. p. 342. Dal. Pharm. p. 233. Hypericum vulgare. C. B. Pin. p. 279. Hist. Oxon. ii. p. 459. Tourn. Inst. Martyn. Tourn. ii. p. 26, &c. Tourn. Inst. p. 254. Martyn. Tourn. ii. p. 26, &c. Rupp. Flo. Jen. p. 98. Dill. Giff. p. 103. Linn. Flo. Lapp. p. 275. Hypericum, perforata, fuga dæmonum. Tabern. Icon. p. 864. Hypericum vulgare f. perforata caule rotundo, foliis glabris. I. B. iii. p. 381. Hypericum floribus, caule annuo, foliis punctatis obtusis. Linn. Hort. Cliff. p. 380. Flo. Succ. n. 625. Hall. Helv. p. 630.*

* *Æt. Hafn. i. Obsv. 40.*

† *Boerhaav.*

(b) *Hypericum minus. Dod. Pempt. p. 76. Hist. Oxon. ii. p. 469. Hypericum minimum supinum. I. B. iii. p. 384. Hypericum minus supinum, vel supinum glabrum. C. B. Pin. p. 279. Tourn. Inst. Hypericum minus supinum. Park. Theatr. Raj. Hist. i. p. 1019. Syn. iii. p. 343. Hypericum floribus trigynis, caulibus ancipitibus prostratis. Linn. Sp. Pl. 785. Hypericum humifusum, foliis perforatis, punctis in margine nigris notatis. Hall. Helv. p. 360.*

rectory-den at *Simonburn*. The leaves are more firm, and the perforations more obscure than those of the former.

98. *Small upright St. John's-wort (c)* is frequent in damp woods, and about moist shadowy rocks. It is in great plenty on the tops of the large rocks in the middle of the brook below *Tecket*, between the two banks of wood. In the time of flowering it makes a beautiful appearance both in its wild state and under culture. It flowers in June and July.

99. The *elegant imperforate St. John's-wort (d)*, said to grow on the rocks between *Shap* and *Anna-well**, and on *Conzie-scar*, near *Kendal*†, in *Westmorland*, does not grow with us where I have been.

(c) *Hypericum pulchrum*. *Trag.* p. 74. *Tragi. I. B.* iii. p. 383. *Raj. Hist.* p. 1019. *Syn.* iii. p. 343. *Hypericum minus erectum*. *C. B. Pin.* p. 279. *Hypericum minus glabrum erectum pulchrum*. *Hist. Oxon.* ii. p. 470. *Hypericum floribus trigynis, calycibus ferrato-glandulosis, foliis cordatis, glabris*. *Linn. Sp. Pl.* 786. *Hypericum foliorum basi latissima, foliis calycis brevioribus obtusis*. *Hall. Helv.* p. 361.

In flore & calyce ampullæ resiniferæ, ut in primo *Hyperico*. *Lister.* apud *Lowthorp.* ii. p. 696, 697.

(d) *Hypericum elegantissimum non ramosum, folio lato*. *I. B.* iii. p. 383. *Raj. Hist.* p. 1021. β *Linn. Flo. Succ.* p. 225. *Ascyrum sive Hypericum bifolium glabrum non perforatum*. *C. B. Pin.* p. 280. *Androsæmum campoclarensse*. *Column. Ecphr.* i. p. 73. t. 74. *Icon optima*. *Androsæmum bifolium, glabrum, perfoliatum, non perfoliatum*. *Hist. Oxon.* ii. p. 471. f. 5. t. 6. f. 9. *Androsæmum glabrum non ramosum*. *Magn. Bot. Monspel.* *Hypericum foliorum ora punctata, calyce ferrata*. *Hall. Helv.* p. 361. *Sequenti descriptione*.

Prioris (Tragi) satis adfines est, caule sub floribus longe nudo, raris foliis, folia maxima, ovata, & ex ovatis acuminata, non perforata, ora insignita serie propria punctorum nigrorum. Flores similes, sed pauciores, in umbellam aphyllam congesti. Calycis foliola ferrata, quovis dente terminato globulo resinoso: sub quavis anthera globulus etiam niger.

* *Raj. Syn.* loco citato.

† *Wilson. Syn.*

100. *Hairy perforate St. John's-wort, or Tutsan St. John's-wort (e)*, is plentiful under the trees in damp woods. Among the moist rocks by the brook below *Tecket* it grows to the height of three or four feet. It flowers in July and August.

101. *Square-stalked, imperforate St. Peter's-wort (f)* is frequent about bogs in woods, pastures, and the moist strands of brooks. It is in great abundance at the south end of the pasture on the north side of the rectory-house at *Simonburn*, also in a bog under the bushes by a spring at the west end of the rectory-den, at the same village. It is a beautiful plant under culture. It flowers in July and August.

I have not observed the *procumbent hoary-leaved St. Peter's-wort (g)* to grow with us.

(e) *Androsæmum alterum hirsutum*. *Column. Ecphr.* i. p. 75. t. 74. *Icon optima*. *Androsæmum hirsutum*. *C. B. Pin.* p. 280. *Hypericum Androsæmum dictum*. *I. B.* iii. p. 382. *Raj. Syn.* iii. p. 343. *Hypericum majus sive Androsæmum MATTHIOLI*. *Raj. Hist.* p. 1020. *Androsæmum ascyron dictum, caule rotundo hirsuto*. *Hist. Oxon.* ii. p. 471. f. 5. t. 6. f. 11. *Hypericum villosum erectum, caule rotundo*. *Tourn. Inst.* p. 255. *Hypericum floribus trigynis, calycum ferraturis capitatis, caule tereti*. *Linn. Hort. Cliff.* p. 380. *Flo. Suec. n.* 626. *Royen. lugdb.* p. 44. *Hypericum villosum, calyce serrato, foliis perforatis*. *Hall. Helv.* p. 361.

(f) *Ascyrum*. *Dod. Pempt.* p. 78. *Ger.* p. 434. *emac.* p. 542. *Raj. Hist.* ii. p. 1019. *Dal. Pharm.* p. 233. *Hypericum ascyrum dictum, caule quadrangulo*. *I. B.* iii. p. 382. *Tourn. Inst.* p. 255. *Rupp. Flo. Jen.* p. 99. *Boerb. Ind. A.* p. 24. *Dill. Giff.* p. 171. *Raj. Syn.* iii. p. 344. *Hypericum seu Androsæmum Ascyrum dictum, caule quadrangulo, glabro*. *Hist. Oxon.* ii. p. 471. *Hypericum floribus trigynis, caule quadrato herbaceo*. *Linn. Hort. Cliff.* p. 380. *Flo. Suec. n.* 624. *Royen. lugdb.* p. 473. *Hypericum caule quadrangulo, foliis perforatis, flore non punctato*. *Hall. Helv.* p. 362.

(g) *Hypericum supinum tomentosum alterum*. *Clus. Hist.* p. clxxxii. *Hypericum supinum*. *Dod. Pempt.* p. 76. *Icon.* 77. *Hypericum supinum tomentosum minus vel Monspeljacum*. *C. B. Pin.* p. 279. *Hypericum palustre supinum tomentosum*. *Tourn. Inst.* p. 255. *Martyn. Tourn.* ii. p. 31, 32.

102. *Square-stalked, yellow-flowered Moneywort (b)*. Under bushes in moist woods, frequent. The stalk is procumbent, taking root at the joints. The leaves are roundish, in pairs, on very short pedicles. The flowers are also in pairs, on long pedicles. They are monopetalous, but so deeply cut as to seem pentapetalous, with elliptic segments. They are of a beautiful yellow. The calyx consists of five cordated folioles. It flowers in May and June. It is a very great astringent, good for all kinds of defluxions, internal and external*; very much commended for curing ulcerous tumours in the legs of old people; also for wounds, few plants healing them sooner or more effectually.

103. *Small, Thyme-leaved, purple-flowered Money-wort (i)*. In marshy places, and about bogs, not unfrequent. On the north side of the streamlet by *Acome-smelting-mill*, near *Hexham*, plentifully.

104. *Perennial, yellow-flowered Pimpernel of the Woods (k)*. In moist woods, and on the strands of brooks and rivers. In *Chipchace-island*,

(b) *Nummularia*. *Dod.* *Pempt.* p. 600. *Ger.* p. 505. *emac.* p. 630. *Raj.* *Hist.* ii. p. 1099. *Syn.* iii. p. 283. *Dal.* *Pharm.* p. 188. *Nummularia* f. *centimorbia*. *I. B.* iii. p. 370. *Nummularia major lutea*. *C. B.* *Pin.* p. 309. *Hist. Oxon.* ii. p. 567. *Martyn.* *Tourn.* ii. p. 132, 133. *Dill.* *Giff.* p. 98. *Nummularia lupina* five *Nummularia Officinarum*. *Rupp.* *Flo. Jen.* p. 84. *Lysimachia humifusa*, folio rotundiore flore luteo. *Tourn. Inst.* p. 141. *Lysimachia foliis subrotundis, floribus solitariis, caule repente.* *Linn. Virid. Cliff.* p. 13. *Hort. Cliff.* p. 52. *Flo. Succ. n.* 168. *Royen.* *lugdb.* p. 416. *Ha'l. Helv.* p. 482.

* *Boerhaav.*

✱

(i) *Nummularia* flore purpurascente. *C. B.* *Prodr.* p. 136. cum descriptione. *Martyn.* *Tourn.* ii. p. 134. *Nummularia rubra*. *I. B.* iii. p. 371. *Lysimachia*, folio rotundiore, flore purpurascente. *Tourn. Inst.* p. 141.

(k) *Nummularia sylvatica*. *Gesn.* *Hort.* p. 268. Foliis bene depictis. *Anagallis*, *Clus.* *Hist.* p. clxxxii. *Pann.* p. 443. *Anagallis lutea*. *Lob.* p. 566. ex *Clusio*, *Tab.* p. 717. *Raj.* *Hist.* p. 1024. *Anagallis lutea* NUMMULARIÆ similis. *I. B.* iii. p. 370. *Anagallis lutea nemorum*.

island, in great abundance, in a light sandy soil, fertilized by floods. The stalk is procumbent, taking root at the joints, slender, lightly tinged with red. The leaves are on short pedicles, ovated, and sparingly lanceolated; in which lies the difference between it and the yellow-flowered *Money-wort*. The flowers are monopetalous, in pairs on short pedicles, of a beautiful yellow. The calyx is divided into five stellate segments.

105. *Annual scarlet-flowered Pimpernel (l)*. In corn-fields. In the fields about *St. John-lee* and *Hexham*, plentifully. The stalks are slender, square, and branched. The leaves are ovated, and sparingly lanceolated. The flowers are in pairs on pedicles, of a bright and beautiful scarlet. The calyx is deeply divided into five acute segments, of the same colour. The tube is short and white. The stamina about the tube are bearded, and crowned with summits or antheræ of a bright gold-yellow. It flowers in June and July.

106. *Annual blue-flowered Pimpernel (m)*. Among corn, but not common. In the corn-fields about *Alnwick*, sparingly. In its whole form

nemorum. *C. B.* Pin. p. 252. *Hist. Oxon.* ii. p. 569. *Lyfimachia humifusa folio subrotundo acuminato flore luteo. Tourn. Inst.* p. 142. *Vaill.* p. 144. *Lyfimachia foliis ovato-acutis, floribus solitariis, caule procumbente. Linn. Hort. Cliff.* p. 52. *Hall. Helv.* p. 481.

(*l*) *Anagallis mas. Cam. Epit.* p. 394. *optime. Dod. Pempt.* p. 32. *Ger.* p. 494. *emac.* p. 617. *Raj. Hist.* ii. p. 1023. *Anagallis phænicea mas. I. B.* iii. p. 369. *Anagallis flore phœniceo. C. B.* Pin. p. 252. *Hist. Oxon.* ii. p. 568. *Tourn. Inst.* p. 1842. *Raj. Syn.* iii. p. 282. *Park. Theatr.* p. 558. *Rupp. Flo. Jen.* p. 126. *Dill. Giff. Hall. Helv.* p. 481. *Anagallis terrestris mas, Offic. Dal. Pharm.* p. 187. *Anagallis foliis ovatis. Linn. Hort. Cliff.* p. 52. *Anagallis foliis indivisis. Royen. lugdb.* p. 416. *Linn. Flo. Succ. n.* 169.

(*m*) *Anagallis femina. Cam. Epit.* p. 395. *Dqd. Pempt.* p. 32. *Ger.* p. 494. *emac.* p. 617. *Raj. Hist.* ii. p. 1024. *Syn.* iii. p. 282. *Anagallis terrestris femina, Offic. Dal. Pharm.* p. 187.

form it is somewhat larger than the former, and constantly holds its distinction in the colour of the flower, notwithstanding the authority of two great names who think otherwise, and that they are changeable by culture*.

107. *Dwarf-Cistus*, or *little Sun-flower* (n). In dry mountainous pastures, and by way-fides in gravelly places. On the gravelly bank by the road on the east side of the bridge at *Barwesford*, near *Chipchace*, plentifully. It flowers in June and July.

108. *Thyme-leaved Cistus*, or *little Sun-flower* (o). On the *Roman-wall*, above the rocks, by *Crag-lake*. The stalks are procumbent, very

p. 187. *Anagallis cæruleo-flore*. *C. B. Pin.* p. 252. *Hist. Oxon.* ii. p. 569. *Tourn. Inst.* p. 142. *Martyn. Tourn.* i. p. 56. *Park. Theatr.* p. 558. *Rupp. Flo. Jen.* p. 15. *Boerb. Ind. A.* p. 204. *Dill. Giff.* p. 132. *Hall. Helv.* p. 482.

* LINNÆUS utramque conjungit, & ROYENIUS *Anagallidem* vocat, *foliis indivisis*, p. 416. Sed nunquam puto, aut rubra in cæruleum, aut in illam ista cultu transiit. Cl. HALL. loco citato.

(n) *Helianthimum*. *Cord. Hist.* p. 89. *Hyslopus campestris*. *Trag.* p. 221. *bene. Flos Solis*. *Dod. Pempt.* p. 193. *Flos folis, sive panax chironium*. *Cam. Epit.* p. 501. cum caractere. *Chamæcistus*. i. *Clus. Hist.* p. 73. *Helianthemum GERMANICUM*. *Tabern. Icon.* p. 1062. *bene. Helianthemum ANGLICUM luteum*. *Ger.* p. 1100. *emac.* p. 1282. *Helianthemum vulgare flore luteo*. *I. B.* ii. p. 15. *Tourn. Inst.* p. 248. *Martyn. Tourn.* ii. p. 1. *Rupp. Flo. Jen.* p. 95. *Dill. Giff.* p. 82. *Boerb. Ind. A.* p. 272. *Chamæcistus vulgaris flore luteo*. *C. B. Pin.* p. 465. *Raj. Hist.* ii. p. 1013. *Panax Chironium, HELIANTHEMUM*, *Offic. Dal. Pharm.* p. 233. *Cistus stipulis quaternis, foliis oblongis, utrinque glabris, caule procumbente*. *Linn. Hort. Cliff.* p. 206. *Royen. lugdb.* p. 476. *Helianthemum foliis subhirsutis, omnibus longe ellipticis*. *Hall. Helv.* p. 358.

(o) *Chamæcistus serpyllifolia*. *Clus. Pann.* p. 62, 63. *bene. Chamæcistus* ii. *Clus. Hist.* p. 73. *Cistus humilis serpyllifolia*. *Tabern.* p. 1061. *Chamæcistus repens serpyllifolia lutea*. *C. B. Pin.* p. 466. *Raj. Hist.* p. 1014. *Chamæcistus serpylli folio flore luteo*. *Park. Theatr.* p. 657. *Helianthemum folio serpylli flore majore aureo odorato*. *Tourn. Inst. Helianthemum foliis ad caulem ovalibus, inferioribus longe ellipticis*. *Hall. Helv.* p. 359.

much

much branched, and woody, usually about four inches long. The leaves are firm, smooth, and of a lively glossy green. Culture makes no change in it. It flowers in July and August.

109. *Male Speedwell, Fluellin, or true Paul's Betony* (*p*). In woods, and about shadowy rocks. Among the rocks under the *Roman wall* on the west side of *Shewingheels*, and in *Ramshorwood*, by the road-side, plentifully. The stalks are mostly procumbent, firm, hoary, and taking root at the joints. The leaves are in pairs at the divarication of the branches, moderately firm, hairy, ovated, and crenated at the edges, of a pale green. The flowers are in spikes. They vary in their colour; sometimes of a pale blue, with red or blue veins; sometimes white, with red veins; and sometimes entirely white. They are monopetalous. The ovary is cordiform and compressed. The seed is roundish and yellow. It is an astringent and bitter plant. It is used by infusion for defluxions from the head in great colds, coughs, and difficulty of breathing, and all diseases of the breast and lungs, with just commendations*. Two ounces of the juice drank at a time, and often, is advised for alleviating the anguish and torture of the gout †. The *Thime-leaved, Female Fluellin, or Paul's*

(*p*) *Veronica. Cam. Epit. p. 461. optime. Veronica mas supina & vulgatissima. C. B. Pin. p. 246. Raj. Hist. i. p. 851. Syn. iii. p. 281. Tourn. Inst. p. 143. Martyn. Tourn. ii. p. 330. Boerb. Ind. A. p. 224. Veronica supina vulgaris foliis ferratis. Hist. Oxon. ii. p. 318. Veronica caule repente, scapis spicatis, foliis oppositis ovatis strigosis. Linn. Flo. Lapp. n. 5. Hort. Cliff. p. 8. Veronica floribus spicatis, foliis oppositis, caule procumbente. Flo. Suec. n. 8. Veronica foliis ficcis ovatis ferratis, caule procumbente, ex alis racemosa. Hall. Helv. p. 530.*

* In tussi, asthma leviori, ad catarrhales nocturnas suffocationis, in majoris etiam pectoris morbis (BRESLAURIENSES, 1722. *M. Febr. BUCHWALD*, p. 287.) infusum omnino laudem meretur. HALLER. l. c.

† Boerhaav.

Betony (*q*) is usually gathered and sold for it to the shops by the common herbarists.

110. *Great Bistort, or Snakeweed* (*r*). In moist meadows, by waters. In a meadow below *Alnwick*-castle, on the banks of the river *Aln*, opposite to *Denwick*-mill, plentifully. In an island in the river *Tyne* below *Newburn*, called the *King's Meadow*. The root is cylindrical, variously and uncertainly contorted, of a reddish-brown without, and red within. The bottom-leaves are on long pedicles, edged with small foliaceous appendages; the upper ones narrow, and amplexicaule. They are of a deep green on the upper part, and whitish underneath; smooth or rugose at the edges, according to the age or size of the plant. The stalk is round, slender, and jointed, from a foot to two feet high. The flowers are in a short, thick spike, usually of a rose-colour, with a silvery scale under each, on a pedicle, and monopetalous, cut into four or five ovated moderately pointed segments. It flowers in June and July. The root is a very great astringent, and com-

(*q*) *Veronica pratensis*. *Dod.* 1. 41. *ben.* *Veronica minor serpyllifolia*. *Lob.* Icon. p. 472. *Veronica femina quibusdam aliis BETONICA PAULI*. *I. B.* iii. p. 285. cum *bona* descriptione & icone. *Veronica pratensis serpyllifolia*. *C. B.* Pin. p. 247. *Hist. Oxon.* ii. p. 319. *Tourn. Inst.* *Veronica pratensis minor*. *Park. Theatr.* p. 551. *Raj. Hist.* p. 848. *Syn.* iii. p. 279. *Veronica foliis inferioribus oppositis ovatis superioribus alternis lanceolatis, floribus solitariis*. *Linn. Hort. Cliff.* p. 9. *Reyen. lugdb.* p. 302. *Veronica foliis ovatis, raro crenatis, floribus longe spicatis, glabris, fructu bifido*. *Hall. Helv.* p. 533.

(*r*) *Bistorta*. *Cam. Epit.* p. 683. *Icon bona. Dod. Pempt.* p. 33. & de purg. p. 40. *Bistorta major*. *Clus. Hist.* p. lxxix. *Ger.* p. 322. *emac.* p. 399. *Raj. Hist.* i. p. 186. *Syn.* iii. p. 147. *Bistorta major rugosifloribus foliis*. *I. B.* iii. p. 538. *Dill. Giff.* p. 89. *Bistorta radice minus intorta*. *C. B.* Pin. p. 192. *Hist. Oxon.* ii. p. 585. *Tourn. Inst.* p. 511. *Boerb. Ind.* A. ii. p. 86. *Bistorta foliis ovato-oblongis acuminatis*. *Linn. Hort. Cliff.* p. 150. *Hort. Upf.* 95. *Hill. Nat. Hist. Pl.* p. 406. *Bistorta foliis imis appendiculatis, femine triquetra*. *Hall. Helv.* p. 178.

mended

mended for defluxions, both by outward and inward applications*.

111. The *small, soboliferous, white-flowered Bistort*, or *Snakerweed* †, with no foliaceous appendages at the bottom-leaves (*s*), does not grow with us that I have observed.

112. *Great Oxlip* (*t*). In woods, and under bushes, by waters, frequent. It produces beautiful varieties under culture, by which I obtained two, very fine; the flowers of one are red, with silver edges, and a yellow eye; those of the other red also, the eye yellow, divided into five angles, in the form of a star, the stalk a foot and a half high, tapering from the base to the top, on which I have sometimes numbered nineteen pips.

* Sed liceat monere, hæc medicamenta tunc demum adhiberi posse, quando unice adstringendum est, & fibra roboranda, nocere vero quoties aliquid corrigendum est in eo ipso humore, qui fluxionem facit v. g. in dysenteriis. HALLER. l. c.

† Flos perpetuo albus, ut male varietatem candido flore distinxerit PONTEDRA.—HALLER. l. c.

(*s*) Bistorta minor sive alpina. *Cam. Epit.* p. 684. Icon egregia. *Hist. Oxon.* ii. p. 585. ex CAM. Bistorta alpina minima sobolifera, EJUSD. *ibid.* ex CLUSIO. Bistorta alpina pumila varia. *Park. Theatr.* p. 392. *Raj. Hist.* i. p. 187. *Scheuchz. Itin.* ii. p. 130. Bistorta alpina minima foliis imis subrotundis & minutissime ferratis. *Raj. Syn.* iii. p. 147. Bistorta foliis ad oram nervosis, imis ovalibus, superioribus linearibus, femine gigartino. *Hall. Helv.* p. 179.

(*t*) Primula veris altera. *Matth.* p. 1150. *Cam. Epit.* p. 884. bene. Primula veris major flore pallido. *Dod. Pempt.* p. 146. cum Icone. Primula veris pallido flore elatior. *Clus. Hist.* i. p. 301. *Tourn. Inst.* p. 124. *Boerb. Ind. A.* p. 199. Primula veris caulifera pallido flore inodoro. *I. B.* iii. p. 496. *Dill. Giff.* p. 44. Verbasculum pratense vel sylvaticum inodorum. *C. B. Pin.* p. 241. *Hist. Oxon.* ii. p. 554. *Vaill.* 164. Primula pratensis inodora lutca. *Ger.* p. 635. *emac.* p. 780. *Raj. Hist.* ii. p. 1081. *Syn.* iii. p. 284. Herba PETRI, Offic. *Dal. Pharm.* p. 188. Primula foliis rugosis, hirsutis, spica inclinata, flore pallido, majori, inodoro. *Hall. Helv.* p. 483.

113. I met with a pretty variety of it among bushes in a field behind the school-house at *Walls-End*; the flowers red, punctated with white, with a yellow eye (*u*).

The elegant *purple-flowered Birds-Eye*, with *Auricula-like Leaves* (*w*), said to be plentiful in the boggy meadows about *Shap* in *Westmorland**, does not grow with us that I have observed.

114. *Alternate-leaved Golden Saxifrage* (*x*). About shadowy springs, and water-courses, not unfrequent. Under the trees by *St. Mungo's* well, at *Hall-barns*, near *Simonburn*, sparingly, with the common *opposite-leaved species* (*y*). The root is fibrous and creeping. The stalk is round and succulent, four or five inches long. The leaves are reniform, hairy, crenated, and alternate, on long

(*u*) *Primula foliis denticulatis rugosis, floribus capitatis luteo-rubris, albo punctatis.*

(*w*) *Primula veris rubro flore. Clus. Pann. p. 340. Hist. p. 300. Tourn. Inst. Primula veris minor purpurascens. I. B. iii. p. 498. Raj. Hist. p. 1084. Verbasculum umbellatum alpinum minus. C. B. Pin. p. 242. Hist. Oxon. ii. p. 555. Raj. Syn. iii. p. 285. Primula floribus erectis fastigatis. Linn. Flo. Lapp. p. 79. Primula foliis crenatis glabris, limbo florum plano. Linn. Hort. Cliff. p. 50. Flo. Suec. n. 162. Sp. Pl. 143. Hill. Nat. Hist. p. 261, 262. Primula foliis glabris, rugosis, subtus farinosis, umbellifera. Hall. Helv. p. 484.*

* *Ray's Select Remains. Itin. ii. p. 212. (Under the name of Paralyfis flore rubro.)*

(*x*) *Saxifraga aurea foliis pediculis oblongis infidentibus. Raj. Hist. i. p. 207. Syn. iii. p. 158. Sedum palustre luteum majus foliis longis pediculis infidentibus. Hist. Oxon. iii. p. 477. f. 12. t. 8. f. 8. Cryosplenium foliis amplioribus auriculatis. Tourn. Inst. p. 146. Cryosplenium. Linn. Hort. Cliff. p. 149. Cryosplenium foliis alternis. Flo. Suec. n. 317. Sp. Pl. 398. Hall. Helv. p. 189. Hill. Nat. Hist. Pl. p. 404.*

(*y*) *Saxifraga aurea repens oppositis foliis reniformibus subhirsutis crenatis breviter pediculatis.*

Chryosplenium foliis oppositis. Linn. Sp. Pl. 398. Sav. Monf. 128. Hill. Nat. Hist. Pl. p. 404.

pedicles,

pedicles, of a pale green. The flowers are in a little cluster on the top of the stalk, on short pedicles, of a bright gold-yellow. The calyx is patent, and divided into four roundish revolute segments. It flowers in April and May.

115. The *lesser opposite-leaved Golden Saxifrage* (z), which the curious *Gottenburgh-Professor* assures us he never saw*, is one of the most common plants we have by shady springs and water-courses.

116. *Tuberous white Saxifrage* (a). About old stone-walls topped with earth, and among bushes by waters. On the banks of the rivulet opposite to *Burn-house*, near *Simonburn*. On an old hedge of earth and stone at *Barwesford*, by the road to *Chipchace*, in great abundance. The roots are fibrous and slender, with many small whitish-red bulbs, of the size of a garden-pea. The bottom-leaves are reniform, deeply crenated, as if divided into lobes, an inch in diameter, on pedicles three inches long. The stalk is a foot high or more, and branched, sparingly set with

(z) *Saxifraga palustris* ANGLICA. *Park. Theatr.* p. 427. *Raj. Hist.* p. 1032. *Saxifraga palustris foliis tenuissimis*, f. *Saxifraga palustris* ANGLICA. *Raj. Syn.* iii p. 350. *Saxifraga palustris* ANGLICA. *Ger. emac.* p. 567. *Alfine spergulæ facie minima, feminibus nudis.* *Tourn. Inft.*

* Speciem five varietatem, *foliis conjugatis*, pictam apud DODONÆUM & LOBELIUM, nunquam vidi. HALLER. l. c.

(a) *Saxifraga tertia.* *Matth.* p. 978. *Saxifraga quarta.* *Cam. Epit.* p. 719. *Saxifraga alba.* *Dod. Pempt.* p. 315, 316. *Ger.* 693. *emac.* p. 841. *Raj. Hist.* ii. p. 1048. *Dal. Pharm.* p. 235. *Saxifraga rotundifolia alba.* *C. B. Pin.* p. 309. *Tourn. Inft.* p. 252. *Martyn. Tourn.* ii. p. 236. *Rupp. Flo. Jen. Boerb. Ind. A.* p. 222. *Raj. Syn.* iii. p. 354. *Dill. Giff.* p. 50. *Saxifraga alba radice granulosa.* *I. B.* iii. p. 706. *Sedum bicorne album rotundifolium erectum radice granulosa.* *Hist. Oxon.* iii. p. 473. *Saxifraga foliis reniformibus lobatis, caule ramoso, radice granulosa.* *Linn. Hort. Cliff.* p. 167. *Flo. Suec. n.* 350. *Royen. lugdb.* p. 453. *Hall. Helv.* p. 401. *Hill. Nat. Hist. Pl.* p. 431.

leaves,

leaves, alternately. The flowers are large, of a bright white. The calyx is hairy. It flowers in May and June. The *Tubera* are used by infusion in wine, or by decoction in water, as a diuretic*.

We have it in gardens with a beautiful double flower (*b*).

117. *English Marsh Saxifrage (c)*. About alpine bogs and lakes. At the east end of *Bromley-lake*, on the strand, plentifully. The stalks are procumbent, four or five inches long, with many branches and joints. The bottom-leaves are an inch long and narrow. The upper ones are short, linear, firm, and rigid, in pairs at the joints. The flowers are on the tops of the stalks and branches. They are moderately large, milk-white, and stellate. The ovary opens into five parts. The seed is reniform. It flowers in July and August. It is a pretty plant in its flowering state.

118. The *long-leaved Mouse-ear-Chickweed, with a large Flower (d)*, is not unfrequent on dry banks. It is plentiful between the *Glass-houses,*

* MARTYN. l. c.

(*b*) β . Flore pleno. ACT. HAFN. Ann. iii. Obf. 81. BOERH.

(*c*) Polygonum foliis gramineis alterum. *Læs. Flo. Prufs.* p. 204. Icon. 64. *bene.* Arenaria. *C. B.* iii. p. 723. *Vaill.* 7. Arenaria palustris. *Rupp. Flo. Jen.* p. 89. Alfine nodosa GERMANICA. *C. B. Pin.* p. 251. Saxifraga palustris ANGLICA. *Ger. emac.* p. 567. *Park. Theatr.* p. 427. *Raj. Hist.* p. 1032. Saxifraga palustris foliis tenuissimis, f. Saxifraga palustris. *Raj. Syn.* iii. p. 350. Alfine Spergulæ facie, feminibus nudis. *Tourn. Hist.* p. 244. Alfine palustris Ericæ folio Polygonoides, articulis crebrioribus, flore albo pulchello. *Pluk. Alm.* p. 23. t. 7. f. 4. Spergula minor, foliis *Knawel*, flore majusculo albo. *Dill. Giff.* p. 158. Spergula foliis oppositis, pedunculi simplicibus. *Linn. Hort. Cliff.* p. 173. Flo. Suec. n. 378. *Hill Nat. Hist. Pl.* p. 438. Alcine foliis fusciculatis, petiolis simplicibus, petalis integris. *Hall. Helv.* p. 389.

(*d*) Holostium caryophyllacum. *Tabern.* p. 233. *bene.* Auricula muris pulchro flore albo. *J. B.* iii. p. 360. Caryophyllus arvensis hirsutus, flore majore. *C. B.* p. 210. Myofotis arvensis, hirsuta

houses, and Dents-hole, near Newcastle upon Tyne. The flowers are large and white, with yellow antheræ.

119. The great, *perennial, March-Chickweed (e)* is in great abundance under trees on both sides of the brook at *Simonburn*. The root is slender and creeping. The stalks are numerous, fistulous, weak, and full of joints. The leaves are large, nearly cordiform, mucronated and hairy, in pairs at the joints, of a pale green colour. The flowers are large, white, and stellate, with green antheræ, on pedicles. It flowers in May.

120. *Maiden-Pink (f)*. On dry banks, and in barren pastures. On the furz-bank in the rectory-glebe at *Embleton*. In a dry pasture at *Wooler-haugh-head, near Cheviot*. On *Chapel-hill at Belford*. On a dry bank by the rivulet at *Swinburn-castle*. The root is small, white and fibrous. The stalks are part procumbent, and part upright, seven or eight inches long, and branched. The

hirsuta flore majore. Tourn. Inf. p. 245. Martyn. Tourn. ii. p. 125. Vaill. Bot. Par. p. 41. t. 30. f. 4. optime. Cerastrum foliis calycibusque hirsutis. Linn. Hort. Cliff. p. 1741. Royen. lugdb. p. 450. Myofotis foliis oblongis, obtusis, flore calycem excedente. Hall. Helv. p. 384.

(e) Alfine major. Dod. Pempt. p. 29. Alfine major repens perennis. I. B. iii. p. 362. Alfine altissima nemorum. C. B. Pin. p. 250. Hist. Oxon. ii. p. 550. Tourn. Inf. Raj. Syn. iii. p. 347. Scheuchz. Itin. ii. p. 150. Alfine foliis ovato-cordatis. Linn. Hort. Cliff. p. 173. Flo. Lapp. n. 186. Royen. lugdb. p. 449. Alfine foliis cordatis petalis bipartitis. Hall. Helv. p. 386.

(f) Caryophyllus montanus. i. Tabern. Icon. p. 287. Caryophyllus minimus, pulchellus, supinus, maculis aureis argenteisve aspersus. Lob. Icon. 444. Betonica coronaria, five Caryophyllus minor, folio viridi nigricante, repens, flore argenteis punctis notato. I. B. iii. p. 329. Caryophyllus simplex, supinus, latifolius. C. B. Pin. p. 208. Martyn. Tourn. i. p. 155. Caryophyllus minor, repens, nostras. Raj. Hist. ii. p. 988. Syn. iii. p. 335. Dill. Elth. p. 412. Dianthus floribus solitariis, squamis calycinis lanceolatis, corollis crenatis. Linn. Hort. Cliff. p. 164. Flo. Svec. n. 342.

leaves

leaves are oblong and narrow, in pairs. The flowers are on the tops of the stalks and branches, very beautiful, of a light red, with circles of a deeper red in dots; blowing in a constant succession from Midsummer to near Martinmas, and under culture to near Christmas, severe frosts only making them desist. The cauline leaves resemble those of the dwarf *Garden-Pink* used in edgings, and the flowers those of the *Sweet William*, from which it is sometimes called the MULE-PINK.

121. *Purple-flowered Centaury (g)* is frequent in dry hilly pastures. It flowers in July.

122. I met with a beautiful variety of it on the bank of the rectory-den at *Simonburn*, by the road-side; the stalk twelve inches and a half high; the bottom-leaves an inch and a quarter, and the upper ones an inch, long; the two lowest branches four inches and a half in length; the flowers of a lively purple (*b*). It flowers at the same with the former.

123. *Short, bushy, annual Centaury, with bright purple Flowers (i)* is frequent in a large flexuous opening of the wood in the same

(*g*) *Centaureum minus*. *Dod. Pempt.* p. 336. *bené. Cam. Epit.* cum caractere. *C. B. Pin.* p. 278. *Raj. Hist.* ii. p. 1092. *Syn.* iii. p. 286. *Tourn. Inst.* 122. *Martyn. Tourn.* i. p. 162. *Boerb. Ind. A.* p. 223. *Dill. Giff.* p. 127. *Dal. Pharm.* p. 189. *Centaureum minus flore purpureo. I. B.* iii. p. 353. *Gentiana foliis lineari-lanceolatis, caule dichotomo, corollis infundibuliformibus quinquefidis. Linn. Hort. Cliff.* p. 81. *Gentiana foliis trinerviis, ovatis, floribus umbellatis, tubo strictissimo. Hall. Helv.* p. 475.

(*b*) *Gentiana caule altiore dichotomo, floribus lanceolato-ovatis, umbellatis, læte purpureis.*

(*i*) *Centaureum minus rubrum. Hist. Oxon.* p. 566. *Centaureum purpureum, minimum. Mor. Hort. Bles. Centaureum minimum, purpureum ramosum. Magn. Bot. Monsp. Martyn. Tourn.* i. p. 163.

den,

den, at the east end. It flowers in July and August. It is also a variety of the former, and differs from it only by its low stature, bushiness, and brightness of its flowers. The common sort is used with great commendations in intermitting fevers, by infusing a handful of the tops of it in white wine, or giving a dram of the extract of it with as much powder of *Jesuits bark*, when there are obstructions in the bowels, which cures without any return *. It is used by infusion in a glass of white wine as a pectoral, to give appetite, and for disorders occasioned by worms, but it is not an agreeable draught, which makes an extract from it to be commonly preferred.

124. *Yellow Centaury (k)* is frequent in the dry hilly pastures about a quarter of a mile west from *Honeyclugh-crag*, near *Chesterwood* and *Whinety*, on *South Tyne*. It flowers in August. The flowers contain a yellow fluid which by distillation yields an oil like a resinous balsam, like that mentioned of *St. John's-wort* †.

125. *Blue-flowered annual, autumnal Gentian, or Felwort (l)*. In dry mountainous pastures. In *Crag-close*, near *Burwesford*, in great abundance. It flowers in September.

126. There

* MARTYN.

(*k*) *Centaureum luteum*. *Clus. Hisp.* p. 356. *Cam. Epit.* p. 427. *ben.* *Centaureum luteum*. *I. B.* iii. p. 355. *Centaureum luteum perfoliatum*. *C. B. Pin.* p. 278. *Raj. Hist.* p. 1093. *Hist. Oxon.* ii. p. 565. *Tourn. Inst. Martyn.* *Tourn.* i. p. 164. *Gentiana caule dichotomo, foliis connatis, corollis octofidis*. *Linn. Hort. Cliff.* p. 81. *Royen. lugdb.* p. 433. *Hall. Helv.* p. 480.

† LISTER apud LAWTHORP. ii. p. 638. DERHAM. in Epist. ad RAI.

(*l*) *Gentiana*. viii. *Clus. Pann.* p. 289. *five fugax* ii. *Hist.* p. 315. *Gentiana pratensis flore lanuginoso*. *C. B. Pin.* p. 188. *Tourn. Inst.* p. 81. *Dill. Giff.* p. 172. *Raj. Syn.* iii. p. 275. *Scheuchz. Itin.* iv. p. 334. *Gentiana annua foliis centaurii minoris*. *Martyn.*

126. There is a VARIETY of it at the north-west end of the same close *with Milk-white Flowers (m)*; in flower at the same time.

127. *Blue-flowered, centaury-leaved, annual, autumnal Gentian (n)*. In the same close. It is sometimes found very small, but, for the most part, is taller than the former; the flowers more sparingly set. It flowers in September. It varies in the colour of the flower; sometimes of a beautiful purple.

128. I met with an uncommon and beautiful VARIETY of it in the same close. The root is slender. The stalk is four inches high and branched. The flowers are on the tops of the branches. The calyx is broad, roundish, or ventricose. The tube is long, with blue segments, and intermediate plicated florets (*o*). It flowers late in September.

129. *Daisy-leaved annual Cardamine (p)*. In the same close. The radical or bottom-leaves are on pedicles, and ovated, sometimes entire,

Tourn. i. p. 278. *Gentiana corollis hypocrateriformibus fauce barbatis*. Linn. Hort. Cliff. p. 81. n. 203. *Gentiana foliis arplexicaulibus, floris fauce barbata*. Hall. Helv. p. 473.

(*m*) *Gentiana alpina autumnalis minor fugax annua flore albo*.

(*n*) *Gentiana xi*. Cluf. Pann. p. 291. *fugax v*. Hist. p. 315, 316. *ben*. *Gentiana minor*. Tabern. p. 728. ex CLUSIO. *Gentiana fugax quinta CLUSII flore cæruleo colore elegantissimo*. I. B. iii. p. 527. *Raj*. Hist. p. 720. *Gentianella alpina æstiva centaurii minoris folio*. C. B. Pin. p. 188. Hist. Oxon. iii. p. 480. *Gentiana humillima, caule ramofo, tubo floris longissimo*. Hall. Helv. p. 475.

(*o*) *Gentianella annua azureo flore*. Barrel. Icon. 48. *ben*. *Gentiana æstiva calyce turgido pentagono*. *Raj*. Syll. extr. p. 132. *Gentiana cærulea calyce turgido*. Scheuchz. Itin. i. p. 37. *Gentiana calycis pentagoni alis maximis*. Hall. Helv. p. 476.

(*p*) *Plantula Cardamines æmula*. Cluf. Pann. p. 458. cum *bona* Icone. Et———*Sinapi pumilum alpinum*. Cluf. Pann. p. 549. Hist. p. cxxix. *Plantula Cardamines alterius æmula*.
Ejusd.

entire, and sometimes with one or two deep serratures. The cauline leaves are sessile and ovated. It is from three to four or five inches high. The flowers are milk-white. The calyx is brown. The seed is also brown, of a flat shape, in long bilocular capsules or pods; transparent and glossy in September, when the seed is perfected. It is also found with petiolated cauline leaves, as figured by *Linnaeus*.

130. *Daisy-leaved annual Wall-crests, or Tower-Mustard (q)*. On an old wall topped with earth near *Colwell*, by the *Chollerton*-road to *Wallington*, on the north side. The bottom-leaves are often elegantly disposed in the form of a circle. They are ovated, sparingly lacinated, and serrated, rough, hairy, and rigid. Those on the stalk are amplexicaule, lacinated, and lightly serrated. The stalk is from five to nine or ten inches high, branched at the root, and almost naked above, straight and erect. The flowers are milk-white, succeeded by long pods. The calyx is tubulous. There is no style. It flowers in June and July.

Ejusd. Hist. p. cxxix. *Sinapi pumilum alpinum folio Bellidis.* CLUS. I. B. ii. p. 870. *Nasturtium alpinum Bellidis folio minus.* C. B. Prodr. *Raj.* Hist. p. 817. *Scheuchz.* Itin. i. p. 44. cum descriptione. *Nasturtium minus Bellidis folio.* Hist. *Oxon.* ii. p. 221. *Cardamine pumila Bellidis folio, alpina.* Ger. emac. Icon bona. *Raj.* Syn. iii. p. 330. *Barbarea montana integro folio.* *Boccone.* p. 138, & p. 109. t. 88. Et *Barbarea alpina integro folio saxatilis.* *Ejusd.* p. 74. t. 88. *Cardamine foliis simplicibus ovatis petiolis longissimis.* *Linn.* Flo. Lapp. n. 206. t. 9. f. 2. Flo. Suec. n. 564. *Hall.* Helv. p. 560.

(q) *Erysimo similis hirsuta.* *Matth.* p. 432. *Erysimo similis hirsuta non laciniata alba.* C. B. Pin. p. 101. Prodr. *ejusd.* p. 42. cum Icone; *laciniata,* p. 44. *Barbarea muralis.* I. B. iii. p. 869. *Raj.* Hist. p. 799. *Erysimum minimum album hirsutum.* Hist. *Oxon.* ii. p. 219. *Turritis minor.* *Magn.* Bot. Monsp. *Tourn.* Inst. *Martyn.* *Tourn.* ii. p. 318. *Turritis foliis omnibus dentatis hispidis alternis amplexicaulibus.* *Linn.* Hort. Cliff. p. 339. Flo. Suec. n. 545. *Royen.* lugdb. p. 339. *Turritis foliis asperis dentatis, caule simplici.* *Hall.* Helv. p. 561.

131. *Long leaved Milk-wort (r)* is common under hedges and bushes in dry pastures, and on the borders of woods. It is in the rectory-den at *Simonburn* in great plenty. The stalks are from six to eight or nine inches high. The flowers are in a long spike, in a lateral series. The leaves are a little bitter. It flowers in July.

It varies in the colour of its flowers, being sometimes blue or purple, and sometimes variegated with white, and not unfrequently of a pure white.

132. *Small round-leaved Milk-wort (s)* is frequent in dry mountainous pastures, and in the opening of woods, by way-sides. It is at the east end of the same den, on a dry shady bank, near the road. The flowers are mostly blue, or of different degrees of purple or red, but rarely white.

133. *Small Marsh Milk-wort, with Myrtle or Box-like Leaves (t)* is frequent on moist alpine heaths, and about damp shady rocks. It

(*r*) *Polygala vulgaris major*. *Cluf.* Pann. p. 315. *Hift.* p. 324. *I. B.* iii. p. 337. *Raj.* *Hift.* ii. p. 1335. *Vaill.* Tab. xxxii. f. 1. *eximie*. *Polygala major*. *C. B.* Pin. p. 215. *Polygala tetrapetala filiculosa, bicapularis, longo angusto folio major*. *Hift. Oxon.* ii. p. 326. *Polygala foliis lineari lanceolatis, caulibus diffusis herbaceis*. *Linn. Virid. Cliff.* p. 70. *Hort. Cliff.* p. 352. *Flo. Suec.* n. 585. *Royen. lugdb.* p. 393. *Polygala foliis omnibus acutis*. *Hall. Helv.* p. 607.

(*s*) *Polygala vulgaris minor*. *Cluf.* *Polygalon multis*. *I. B.* ii. p. 386. *Polygala vulgaris*. *C. B.* Pin. p. 215. *Tourn. Inst.* p. 174. *Rupp. Flo. Jen.* p. 205. *Boerb. Ind. A.* p. 236. *Dill. Giff.* p. 78. *Raj. Syn.* iii. p. 287. *Polygala, Offic. Ger. emac.* p. 448. *Raj. Hift.* ii. p. 1335. *Dal. Pharm.* p. 196. *Polygala latifolia humilior, spicis brevioribus, floribus dilute purpureis*. *Zanich.* p. 214. t. 38. *Polygala foliis imis subrotundis, superioribus angustis acutis*. *Hall. Helv.* p. 606.

(*t*) *Polygala myrtifolia palustris humilior et ramosior*. *Raj. Syn.* iii. p. 287. *Polygala buxei minoris folio flore cæruleo*. *Vaill. Tab. xxxii. f. 2.* *Et Polygala minor foliis circa radicem rotundioribus*. *EJUSD. ib.* p. 161. n. 4.

is in great plenty on *Broadpool*-common, and in the pastures at *Goat-stones*, by *Raven's-hugh-crag*, near *Simonburn*. The root is fibrous, and sends forth many stalks; four, but rarely five, inches long; frequently procumbent from their weakness. The under leaves are round and firm; the upper ones narrow; both of a lively green. The flowers are in spikes, in a lateral series, for the most part of a beautiful blue, sometimes variegated with white in elegant capillary lines; holding their colour in drying. It is a very bitter plant, and retains its bitterness a long time.

134. *Long-leaved Sun-Dew* (*u*) is frequent in marshy places in woods, and about bogs. It is in a bog on the north side of *Slater-field*, near *Simonburn*, plentifully.

135. *Round-leaved Sun-Dew* (*w*) is less common. It is in the Duke of *Portland's* wood near *Hexham*. They are both low plants, about four inches high. The flowers of both are in thin spikes, on pedicles. They are small, of a bright white. They have the name of *SUN-DEW* from the drops of a clear fluid standing always on their red hairy leaves in the hottest day. They are so fatal to sheep, that the common people call them, *the red Rot*; owing to vermicular *OVA* inserted in the leaves, which fecundate
in

(*u*) *Ros folis*. *Dod. Pempt.* p. 474. *bene. I. B.* iii. p. 761. *Rorida five folis ros, & Drofion recentiorum. Lob. Icon.* p. 811. *Icon propria. Ros folis folio oblongo. C. B. Pin.* p. 357. *Hift Oxon.* iii. p. 620. f. 15. t. 4. f. 2. *Raj. Hift.* ii. p. 1100. *Syn.* iii. p. 356. *Tourn. Inf.* p. 245. *Ros folis major seu longifolius. Barrel. Icon.* p. 251. n. 11. *Drofera scapis radicatis foliis oblongis. Linn. Flo. Lapp.* n. 110. *Flo. Suec.* n. 258. *Royen. lugdb.* p. 417. *Rorella caule simplicis, foliis ellipticis. Hall. Helv.* p. 372.

(*w*) *Rorida f. Ros folis major. Lob. Icon.* p. 811. *Ros folis folio rotundo. C. B. Pin.* p. 357. *Raj. Hift.* ii. p. 1100. *Syn.* iii. p. 356. *Hift. Oxon.* iii. p. 620. *Tourn. Inf.* p. 245. *Baerb. Ind. A.* p. 216. *Ros folis, Offic. I. B.* iii. p. 761. *Dal. Pharm.* p. 238.

Ros

in the liver, the animalcules preying upon it till it can no longer perform its natural functions, and death ensues.

136. *Butter-wort*, or *Yorkshire Sanicle* (x). On the dripping banks of alpine brooks, and about bogs, plentifully. The root is a small imbricated or scaly bulb. It sends forth sometimes one, and sometimes two or three stalks, from two to four or five inches high, slender and succulent. The leaves are from an inch to two inches long, disposed on the ground in the form of a circle. They are of a yellowish-green, and in the most sultry weather are covered with a shining pinguid fluid. The flower is on the top of the stalk, and nutant, of a violet-colour.

137. There is a variety of it in mountainous boggy meadows, with a very *large* flower, of a duller purple, and a remarkable *long spur* (y).

It is a cathartic. In *Parkinson's* time, it was the physic of the poorer sort of people in *Wales*, made into a syrup*. In the *Lap-*

Ros folis minor f. rotundifolius. *Barrel.* Icon. p. 251. n. 1. *Drofera scapis radicatis, foliis orbiculatis.* *Linn.* Flo. Lapp. n. 107. Flo. Suec. n. 257. *Royen.* lugdb. p. 417. *Rorella caule simplici, foliis rotundis, retusis.* *Hall.* Helv. p. 372.

(x) *Pinguicola.* *Cluf.* p. 310. *Pann.* p. 360. cum bona Icone. *Pinguicola GESNERI.* *J. B.* iii. p. 546. *Raj.* Hist. p. 751. *Syn.* iii. p. 289. *Tourn.* Inf. *Sanicula montana, flore calcari donata.* *C. B.* Pin. p. 243. *Pinguicola, f. Sanicula EBORACENSIS.* *Park.* Theatr. p. 532. *ben.* *Viola palustris, Pinguicola.* Hist. *Oxon.* ii. p. 477. *Pinguicola nectario cylindrico longitudine petali.* *Linn.* Flo. Lapp. n. 11. Flo. Suec. n. 21. *Sp.* Pl. 17. *Royen.* lugdb. p. 304. *Hill.* Nat. Hist. Pl. p. 168. *Pinguicola calcare gracili, cylindrico, violaceo flore.* *Hall.* Helv. p. 611, 612.

(y) *Pinguicola flore amplo, purpureo, calcare longissimo.* *Raj.* Hist. p. 752. *Tourn.* Inf. a. Major. *Hall.* Helv. p. 612.

* *Park.* Theatr. p. 534.

land-Oeconomy it is of frequent use. To sheep it is very hurtful. Goats, horses, and horned cattle will not eat of it †.

138. *Round-leaved Winter-green* (z). In woods, and upon heaths. On the edge of the moor by *Dilligate-Hall*, near *Hexham*. In the Duke of *Portland's* wood, and in other woods, near that town. In the bank of wood opposite to the west-end of the Rectory-den, at *Simonburn*, on the north-east side of the freestone quarry. On the hedge-bank by the road up the hill to *Simonburn-castle*, near a small spring. On the borders of *Ramsborw-wood*, by the way-side, near *Wark*, in *Tynedale*, plentifully. The root consists of white, succulent, or bulbous fibres; slender, divaricated, and jointed, sending forth new plants at distances. The leaves are roundish, with an obtuse point, firm and smooth, on long pedicles. The stalk is five or six inches high, or more, angulated, and naked more than half way up. The flowers are in a thin spike, on short bending pedicles. They are campaniform, of a bright white, sometimes with a blush of red.

It varies in the form and size of the leaves. Those on the moor by *Dilligate-Hall*, are nearly orbiculated, thick, succulent, and of a glossy green, often two inches and a quarter long, on pedicles of the same length. At all the other places they are

† *Linn. Amæn. Acad.* Vol. 2. p. 238.

(z) *Pyrola*. *Cam. Epit.* p. 723. *I. B.* iii. p. 535. ex descriptione, *Raj. Hist.* ii. p. 1233. *Syn.* iii. p. 363. *Ger.* p. 330. *emac.* p. 408. *Dill. Giff.* p. 94. *Dal. Pharm.* p. 237. *Pyrola rotundifolia major*. *C. B. Pin.* p. 191. *Hist. Oxon.* iii. p. 504. *Tourn. Inst.* p. 256. *Boerb. Ind. A.* p. 278. *Pyrola major et elatior foliis oblongis, pistillo florum incurvo*. *Rupp. Flo. Jen.* p. 236. *Pyrola foliis subrotundis, scapo racemoso*. *Linn. Hort. Cliff.* p. 162. *Pyrola staminibus adscendentibus, pistillis declinatis*. *Flo. Suec.* n. 330. *Pyrola staminibus & pistillo declinatis*. *Flo. Lapp.* n. 169. *Hall. Helv.* p. 421. *Pyrola tuba incurva*. *Hall. It. Helv.* 29.

firm,

firm, smaller, rather oblong than orbicular, with an obtuse point, and sometimes lightly ferrated. It flowers in June. The tube is incurvated or hooked. The stamina are reflex or turn up to guard the ovary.

139. *Small Winter-green with roundish ferrate-leaves (a)*. On the borders of *Ramshew-wood*, by the road-side, with the former, plentifully. I never observed it in any other place. The leaves are roundish, mucronated, firm, and lightly ferrated. The stalk is from three to four or five inches high, and of the same shape as the former. The flowers are in a short spike, close and compact, of a bright white, and always with a beautiful blush of red. The tube is short, straight, broad at the end, and divided into five parts. The stamina are revolute or bend inwards, to protect the ovary. It flowers at the same time with the former.

The leaves of both kinds are astringent. They are used for wounds and bruises, by decoction, infusion, fomentation, or in an ointment. They are commended for ulcers in the breast.

140. *Winter-green, with Chickweed-flowers (b)*, said by Mr. Ray to grow among the bushes in mountainous places north of the

(a) *Pyrola folio ferrato*. *I. B.* iii. p. 536. *Raj. Hist.* ii. p. 1233. *Hist. Oxon.* iii. p. 505. *Pyrola folio mucronato serrato*. *C. B. Pin.* p. 181. *Tourn. Inst.* p. 256. *Raj. Syn.* iii. p. 363. *Pyrola folio mucronato*. *Rupp. Flo. Jen.* p. 236. *Pyrola tenerior*. *Park. Theatr.* p. 509. *Pyrola secunda* CLUSII. *Ger. emac.* p. 408. *Pyrola altera*, *Offic. Dal. Pharm.* p. 237. *Pyrola floribus racemosis dispersis, staminibus pistillisque rectis*. *Linn. Flo. Succ.* p. 331. *Pyrola foliis obiter ferratis subrotundis, racemosis floribus, tuba recta*. *Hall. Helv.* p. 420. *Pyrola tuba recta minor, folio frequentius ferrato, spica brevior & densior*. *Hall. Herc.* 7.

(b) *Herba Trientalis*. *I. B.* iii. p. 506. *Pyrola Alpinæ flore EUROPEÆ*. *C. B. Pin.* p. 191. *Alfinanthemos*. *Raj. Syn.* iii. p. 286. *Trientalis*. *Linn. Flo. Lapp.* n. 139. *Flo. Succ.* n. 302. *Royen. lugdb.* p. 432.

Roman Wall, has been much fought for by myself and others, but hitherto in vain.

141. *Perfoliate-grass of Parnassus (c)*. In moist sandy places, and about bogs. On the sea banks, called the Links, between *Dru-ridge* and *Cresswell*, composed of drifted sea-sand. On the strand at the east end of *Bromley-lake*, plentifully. The root consists of small perennial fibres. The leaves are cordiform at the base, and amplexicaule, pointed at the ends, of a pale green colour. The stalk is five or six inches high, slender, and angulated, with a single leaf. The flower is moderately large, composed of five white petals, with numerous beautiful veins. The antheræ are elliptic and compressed, with spherical yellow summits. The younger stamina closely embrace the ovary; the older ones are expanded. The ovary is conic and four-cornered, with four valves, and a kind of *hiatus* on the apex, but no tube. The seed is yellow, oblong and numerous, disposed in a single capsule on four placenta's, parted half-way by a membrane, without an axis, as in the poppy. The calyx is composed of four folioles, shorter than the flower. It flowers in August and September. The leaves and the roots were formerly commended in a decoction or infusion for diseases of the eyes, and obstructions of the liver, but are now disregarded.

(c) Gramen Parnassium. *Dod. Pempt.* p. 564. Gramen Parnassium. *Ger. emac.* p. 840. *Raj. Hist.* ii. p. 1049. Gramen Parnassi DODONÆO, quibusdam *Hepaticus* Flos. *I. B.* iii. p. 537. Gramen Parnassi, flore albo simplici. *C. B. Pin.* p. 309. Parnassia palustris & vulgaris. *Tourn. Inst.* p. 246. *Martyn. Tourn.* ii. p. 159, 160. *Boerb. Ind. A.* p. 243. *Dill. Giff.* p. 172. *Raj. Syn.* iii. p. 355. *Pyrola rotundifolia minor palustris flore unico ampliore.* *Hist. Oxon.* iii. p. 505. *Hepatica alba, Offic. Dal. Pharm.* p. 236. Parnassia. *Linn. Hort. Cliff.* p. 113. *Flo. Lapp. n.* 108. *Flo. Suec. n.* 252. *Royen. lugdb.* p. 420. *Hall. Helv.* p. 316.

142. *Yellow Star of Bethlehem (d)*. In the wood-bottom at the west end of the *Rectory-Den* at *Simonburn*, plentifully. The root is a small, succulent, round bulb. It sends forth two leaves, eight or nine inches long, half an inch broad, and ribbed lengthways. The stalk is angulated, eight inches high, with two small narrow leaves near the top. The flowers are stellate, on pedicles, in a kind of umbel. They are green on the outside, bordered with yellow, and of a fair yellow within. The tube is a triangular prism; the stigma divided into three parts. It flowers in April and May. The flowers are very beautiful under a warm sun, being then reflex; but are expanded at other times, except in cold, cloudy, or haizy weather, and at night, when they close till the morning, and sun-shine appears.

143. *Little purple-flowered Orchis (e)*. In *Crag-clofe*, near *Barwescford*. The flowers are in a very short, compact spike, elegantly

(d) *Bulbus sylvestris*. *Dod. Pempt.* p. 222. *Cluf. Pann.* p. 19. *Hift.* p. 188. *Ornithogalum luteum*. *Tabern.* p. 633. *bene. C. B. Pin.* p. 71. *Raj. Hift.* p. 1154. *Syn. iii.* p. 372. *Tourn. Inst. Bulbus sylvestris FUCHSII, flore luteo, f. Ornithogalum luteum. I. B. ii.* p. 623. *Ornithogalum luteum majus floriferum. Hift. Oxon. ii.* p. 381. f. 4. t. 13. f. 12. *Stellaris arvensis, flore luteo umbellato. Dill. Giff.* p. 38. *Ornithogalum scapo anguloso diphylo pedunculis umbellatis simplicibus. Linn. Flo. Suec. n. 270. Sp. Pl.* 306. *Hill. Nat. Hift. Pl.* p. 376. *Ornithogalum scapo diphylo, pedunculis simplicibus terminatricibus, filamentis omnibus subulatis. Linn. Hort. Cliff.* p. 124. *Royen. lugdb.* p. 31. *Phalangium radice subrotunda, foliis & floribus umbellatis. Hall. Helv.* p. 293.

(e) *Orchidis genus rarius & elegans. Gesn. Tab. Coll.* p. 93. *Orchis PANNONICA iv. Cluf. Hift.* p. 268. *Pann.* p. 236. *bene. Raj. Hift.* p. 1215. *Syn. iii.* p. 277. *Orchis minor flore guttato sanguineo. Cam. Hort.* p. 111. *Cynosorchis militaris pratensis humilior. C. B. Pin.* p. 81. *Orchis militaris pratensis humilior. Hift. Oxon. iii.* p. 492. t. 12. f. 20. *non bene. Tourn. Inst.* p. 432. *Vaill. Bot. Paris.* p. 149. t. 31. f. 35, 36. *Orchis militaris minima RIVINI. Rupp. Flo. Jen.* p. 279. t. 2. f. 1. *Orchis bulbis indivisis, nectarii labio quadrifido punctis scabro, cornu obtuso, petalis distinctis. Linn. Flo. Suec. n. 726. Act. Upsl. 1740.* p. 11. *Act. Stoch. 1741.* p. 207. *Orchis radicibus subrotundis, spica densa, crusculis labelli ampliter divergentibus. Hall. Helv.* p. 263.

vari-

variegated with purple and white and bloody spots. The spur is hardly a line broad. It flowers in August.

144. *Round purple-flowered Orchis (f)*. In the same clofe. The flowers are in a short, broad, compact spike, of a beautiful pale rose-colour. The spur is slender, of about half the length of the ovary. It flowers in August and September.

145. *Sweet-scented purple-flowered Orchis (g)*. In mountainous wet meadows. In the meadow on the north and north-east side of *Crag-lake*, under the *Roman wall*. The flowers are of a dusky purple, in a short, close spike, of an agreeable odour. The spur is as long, or longer, than the ovary. It flowers in June.

146. *Sweet-scented,, purple-flowered Mountain-Orchis, with long leaves (h)*. On dry alpine banks, upon heaths, and on the banks of corn-fields, and other untilled places. On a dry bank by the road on the east side of *Simonburn-castle*, near the brook. On the bank of a corn-field on the north-west side of the *ostium* of the brook at *Wark*, in *Tynedale*, plentifully. On *Broadpool-Common*, between *Consheels* and *Blake-law*, near *Simonburn*, by the road-side,

(f) *Orchis rotundus*. *I. B.* ii. p. 765. *Orchis flore globoso*. *C. B.* Pin. p. 81. *Hist. Oxon.* iii. p. 292. *Raj. Hist.* p. 1216. *Orchis rotunda*. *Raj. Syll. Stirp. ext.* p. 191. *Orchis radicibus conicis, spica brevi, densa, petalis caudatis*. *Hall. Helv.* p. 365.

(g) *Orchis purpurea spica congesta pyramidalis*. *Raj. Hist.* p. 1215. *Syn.* iii. p. 377. t. 18. *Icon. optima*. *Hist. Oxon.* iii. p. 492. *Orchis radicibus subrotundis, bracteis flore brevioribus, nectarii labio trifido, seta longissima*. *Linn. Hort. Cliff.* p. 429. *Royen. lugdb.* p. 14. *Orchis radicibus subrotundis, spica densa, labello æqualiter tripartito, calcari o. a. n. longitudine*. *Hall. Helv.* p. 364.

(h) *Cynorchis montana purpurea odorata*. *C. B.* Pin. p. 81. *Hist. Oxon.* iii. p. 491. *Orchidis genus parvum, flore profus purpureo, odoris suavissimi*. *J. B.* iii. p. 763. *Raj. Hist.* p. 1215. *Orchis montana purpurea odorata*. *Tourn. Inst.*

next the fields, sparingly. The stalk is slender, from six to nine inches high. The flowers are in a thin spike, of a uniform bright purple, and sometimes with two different shades, lighter and deeper, of a high fragrant scent, which it retains under culture. It flowers in July.

147. *Sweet-scented Butterfly-Orchis*, or *Satyrion* (*i*). In mountainous meadows, frequent. The flowers are white, with a yellowish tinge; the spur an inch, or an inch and a half, long. They are in a thin spike, and of a grateful smell. It flowers in June.

148. There is a VARIETY of it on the borders of mountainous woods, and dry shady banks, with tall spikes of bright white odoriferous flowers, and a longer spur, from an inch and a half to two inches; the stalk often a foot and a half high; the leaves next the ground remarkably large and broad (*k*). It is not unfrequent on the borders of *Ramshew-wood*, by the way-side, near the mill. It is also frequent on the dry shadowy banks by the streamlet below *Honeyclugh*, near *Chesterwood*. It retains its beauty and grateful fragrance under culture. It flowers in June and July.

(*i*) Testiculus candidus, odoratus major. *Cord. Hist.* ii. c. 29. Testiculus bifolius *ejusd.* l. 2. c. 104. Testiculi species v. *Cam. Epit.* p. 625. *ben.* Orchis serapias primus. *Dod. Pempt.* p. 237. *Coron.* p. 219. *Icon. bona.* Orchis alba calcare longo. *I. B.* ii. p. 771. *oblongo.* *Hist. Oxon.* iii. p. 495. *Raj. Hist.* p. 1221. Orchis alba bifolia minor, calcare oblongo. *C. B. Pin.* p. 83. *Tourn. Inst. Vaill. Bot. Paris.* p. 151. t. 30. f. 7. Orchis bulbis indivisis, nectarii labio lanceolato integerrimo, cornu longissimo, petalis patentibus. *Linn. Flo. Suec.* n. 723. *A&.* *Upf.* 140. p. 5. *Sp. Pl.* 939. *Mat. Med.* 411. Orchis radicebus conicis, labello lingulato simplicissimo. *Hall. Helv.* p. 266.

(*k*) Orchis latifolia maxima. *Clus. Pann.* p. 237. Orchis amplissima foliis binis splendentibus. *I. B.* ii. p. 772. Orchis bifolia latissima. *C. B. Pin.* p. 82. *Raj. Syll. Stirp. ext.* p. 191. *Tourn. Inst.* Orchis amplioribus foliis. *Hall. Helv.* p. 266, 267.

149. *Small, autumnal, sweet-scented, yellow-flowered Orchis, or Monorchis (l).* At the north end of *Crag-clofe*, near *Barwesford*. The root is a single sphaerical bulb, more firm than those of the other orchis's. It sends forth two and sometimes three leaves. The stalk is slender and naked. The flowers are of a pale greenish yellow, of a grateful sweet odour. Three of the petals of each flower are simple and roundish? Two others, and the lip, are cruciform. There is no spur.

150. *Autumnal Pseudo-Orchis (m).* In the same clofe, with the former. The roots consist of cylindric, bulbous fibres. The leaves are obtuse and elliptic, even those on the stalk. The flowers are in a long compact spike, of a pale yellowish-green, with very short tumid spurs, and have no scent. The three larger petals of each are white; the two smaller ones of a greenish-yellow. The beard is like that of the *MONORCHIS*, divided into three parts.

(l) *Orchis pusilla pallida odorata* vi. *Clus. Pann.* p. 239. *Orchis* vii. *Ejusd.* Hist. p. 269. *Orchis parva autumnalis lutea*. *I. B.* iii. p. 768. *Orchis odorata moschata*, s. *Monorchis*. *C. B. Pin.* p. 84. *Raj.* Hist. p. 1217. *Syn.* iii. p. 378. *Hist. Oxon.* iii. p. 497. *Scheuchz.* Itin. vii. p. 516. *Rupp.* Flo. Jen. p. 152. Icon. t. 2. *Hall.* Herc. 6. *Monorchis montana minima*, flore obsoleta, vix conspicuo. *Michel.* Nov. Pl. Gen. p. 30. t. 26. *Icon pulchra.* *Herminium bulbo supra radicato, nectarii labio trifido.* *Linn.* Flo. Suec. n. 740. *Act. Upf.* 1740. p. 29. *Herminium radice globosa.* Flo. *Lapp.* p. 317. *Orchis radice subrotunda, labello, & duobus petalis cuculli cruciformibus calcare nullo.* *Hall.* *Helv.* p. 269.

(m) *Pseudo-orchis alpina* flore herbaceo. *Michel.* Nov. Pl. Gen. p. 30. t. 26. *Limodorum montanum* flore albo virecente. *Chomel.* Comment. Acad. Scient. *Paris.* 1705. p. 517. *Satyrium bulbis fasciculatis; foliis lanceolatis; nectarii labio trifido acuto, intermedio majore.* *Linn.* Flo. Suec. n. 733. *Act. Upf.* 1740. p. 19. *Orchis palmata alpina*, spica densa albo-viridi. *Hall.* Herc. 68. *Orchis radicibus multis, cylindricis, labello, trifido, calcare brevissimo.* *Hall.* *Helv.* p. 270.

151. *Small autumnal Satyrion, with oblong cauline leaves (n)*. In the same mountainous pasture with the two former. The cauline leaves are broad and elliptic. The flowers are in a thin spike, with a very short broad spur. They are mostly of a greenish-yellow, but sometimes with a small tinge of purple, with two serratures in the lip.

152. *Long-leaved Marsh Hellebore (o)*. In bogs. In a bog by the brook at *Slaterfield*, near the path to *Simonburn*. The flowers are moderately large, and pendulous. They are white, with a tinge of purple on the outside. The interior part of the heel is elegantly streaked with purple. On the under lip is a small yellow spot. It flowers in July and August.

153. *Broad-leaved Mountain Hellebore (p)*. In woods and shadowy places. In the plantation at *Nunwick* by the road to *Park-End*,
under

(n) *Orchis palmata flore viridi*. *C. B. Prodr.* p. 30. *Raj. Cantabr.* p. 107. bona descriptione. *Tourn. Inst. Scheuchz. It.* vii. p. 516. *Orchis palmata flore luteo viridi*. *Raj. Hist.* p. 1224. *Orchis palmata, OPHRIOS flore viridi*. *Hist. Oxon.* iii. p. 499. *Orchis palmata, flore galericulato, dilute viridi*. *Læs. Prufs.* p. 182. *Icon.* 59. *bene*. *Orchis flore viridi, instar floris OPHRIOS, petalo inferiore, et propendente bifido*. *Rupp. Flo. Jen.* p. 242. *Satyrium bulbis palmatis, foliis oblongis obtusis, nectarii labio trifido lineari: intermedia obsoleta*. *Linn. Flo. Suec.* n. 730. *Act. Upsl.* 1740. p. 18. *Satyrium foliis oblongis caulinis*. *Flo. Lapp.* n. 313. *Royen. lugdb.* p. 14. *Orchis radicibus palmatis, labello bifurco, mucrone ex divisione eminente, calcare brevissimo*. *Hall. Helv.* p. 270.

(o) *Helleborine angustifolia palustris f. pratensis*. *C. B. Pin.* p. 187. *Helleborine palustris nostras*. *Raj. Hist.* p. 1231. *Syn.* iii. p. 384. *Hist. Oxon.* iii. p. 487. *Tourn. Inst. Scheuchz. Itin.* vii. p. 519. *Helleborine floribus obsolete carnis, labello obtuso*. *Hall. Helv.* p. 275.

(p) *Helleborine*. v. *Clus. Hist.* p. 273. iv. *Pann.* p. 275. *Dod. Pempt.* p. 284. *I. B.* iii. p. 516. *Rupp. Flo. Jen.* p. 237. *Dal. Pharm.* p. 255. *Helleborine latifolia montana*.

C. B.

under tall beach and *English* elms, plentifully. The root consists of many thick bulbous fibres. The stalk is of the thickness of a large writing-quill, round and smooth, from one to three feet high. The leaves are perfoliate and alternate, six or seven in number, two inches broad in the middle, four inches and a half long, and lanceolated, of a lively green. The flowers are in a thin spike of eight or nine inches long, in the larger plants, pendulous, of a yellowish-green, with a spot of dusky purple at the bottom of the lip. It flowers in August.

The *Ladies Slipper* (*q*), said by Dr. *Turner** to grow in a boggy place in a field at *Newton* on the *Moor*, near *Alnwick*, is not now observed to grow there.

154. *Creeping Hellebore Orchis*, or *Satyrion*, with *Plantain-like leaves* (*r*). In mountainous woods. I met with a plant of it in *Ramshorn-*

C. B. Pin. p. 186. *Raj. Hist.* ii. p. 1230. *Syn.* iii. p. 383. *Tourn. Inft.* 436. *Hist. Oxon.* iii. p. 486. cum Icone, t. 11. f. 1. *monstrofa*, ex Hort. AICHST. *Boerb. Ind. A.* p. 153. *Dill. Giff.* p. 131. *Serapias bulbis fibrosis, nectarii labio obtuso petalis brevior.* *Linn. Flo. Suec.* n. 734. *Act. Upf.* 1740. p. 21. *Serapias multifolio, multifloro.* Hort. Cliff. p. 429. *Royen. lugdb.* p. 13. *a. Helleborine floribus ex viridi & purpureo variis, labello acuminato, foliis brevissimis.* *Hall. Helv.* p. 275.

(*q*) *Pseudo-damafonium.* *Clus. Pann.* 272. bona descriptione. *Elleborine recentiorum i. Ejsfd. Hist.* p. 272. *Calceolus MARIANUS.* *Dod. Pempt.* p. 180. f. 1, 2. *Tourn. Inft.* p. 437. *Calceolus MARIÆ.* Hort. AICHST. *Vern. Ord.* viii. t. 6. f. 1. bene. *Raj. Syn.* iii. p. 385. *Damafonii species quibusdam f. Calceolus MARIÆ.* *I. B.* iii. p. 518. *Hel-leborine flore rotundo f. Calceolus.* *C. B. Pin.* p. 187. *Raj. Hist.* ii. p. 1232. *Hist. Oxon.* iii. p. 480. t. 11. f. 14. *Calceolus.* *Rupp. Flo. Jen.* p. 277. *Hall. Helv.* p. 276. *Cypripedium radicibus fibrosis, foliis ovato-lanceolatis caulinis.* *Linn. Flo. Suec.* n. 735. *Act. Upf.* 1740. p. 24. *Cypripedium foliis ovato-lanceolatis.* *Flo. Lapp.* n. 138. *Royen. lugdb.* p. 13.

* *Turn. Hist. Pl.*

(*r*) *Orchis minor flosculis albis radice repente.* *Cam. Hort.* p. 111. *Icon.* xxxv. *optime.* *I. B.* ii. p. 770. cum aliena Icone. *Pseudo-orchis.* *C. B. Pin.* p. 84. *Raj. Hist.* p. 1226.

Orchis

wood, by the road to the mill on the south side of *Wark's-burn*, in *Tynedale*. The root consists of bulbous fibres, slender, divaricated, and implicated. It sends forth short broad leaves next the ground, with nerves, like those of plantain; and there are very small ones on the stalk, which is about a foot high. The flowers are in a thick spike, in a lateral series; of a pale greenish-yellow, hairy and tetrapetalous, in which it differs from the *Helleborines*. It flowers in August.

155. *Twayblade*, with ovated leaves (*s*), is frequent under bushes in moist woods. It flowers in June. The leaves are large, of a lively green.

156. I met with a VARIETY of it with *three* leaves (*t*) in the bank of wood opposite to the west end of the Rectory-den at *Simonburn*, which produced only *two* leaves under culture.

Orchis minor radice repente f. *Pseudo-orchis*. *Raj.* Syll. p. 193. *Helleborine sylvatica repens plantaginis folio*. *Hist. Oxon.* iii. p. 487. t. 14. f. 9. *Pyrola angustifolia polyanthos radice geniculata*. *Læf. Pruff.* p. 210. Icon. 68. *benè*. *Helleborine sylvatica radice repente*. *Rupp.* Flo. Jen. p. 238. qui et ipse novit *tetrapetalem* esse. *Orchioides floribus pallidis inodoris*. *Trew.* Comm. lit. 1731. Spec. 8. p. 60. 1736. Tab. vi. cum egregia Icone. *Satyrium bulbis fibrosis, foliis ovatis radicalibus, floribus secundis*. *Linn.* Flo. Suec. n. 732. *Act. Upf.* 1740. p. 20. *Satyrium foliis ovatis radicalibus*. Flo. Lapp. n. 314. *Royen.* lugdb. p. 14. *Epipactis*. *Hall.* Helv. p. 277.

(*s*) *Pseudo-Orchis bifolium*. *Dod.* Pempt. p. 242. *Ophris bifolia*. *C. B.* Pin. p. 87. *Tourn.* Inst. p. 437. *Boerb.* Ind. A. ii. p. 153. *Dill.* Giff. p. 75. *Bifolium majus seu Ophris major quibusdam*. *I. B.* iii. p. 533. *Raj.* Hist. ii. p. 1232. Syn. iii. p. 385. *Bifolium majus vulgare*. *Hist. Oxon.* iii. p. 489. *Bifolium*, *Offic. Dal.* Pharm. 255. *Ophris foliis ovatis*. *Linn.* Hort. Cliff. p. 429. Flo. Suec. n. 738. *Act. Upf.* 1740. p. 28. *Royen.* lugdb. p. 15. *Hall.* Helv. p. 277.

(*t*) *Ophris trifolia*. *C. B.* Pin. p. 87. β . *Linn.* Suec. l. c.

157. *Marsh Twayblade*, with small cordiform leaves (*u*), is not uncommon about alpine bogs. It flowers in July and August. The leaves of the large sort are used with great commendations for wounds*.

158. *Bird's Nest* (*w*). In woods, and in banks under hedges, frequent. The root is a group of bulbous, implicated, cylindrical fibres. The stalk is a foot high, or more, on which are short, thin membranes, resembling leaves, of a reddish-brown. The flowers are in a long spike, of the same colour †. It flowers in June and July.

159. *Orobanche* or *Broom-rape* (*x*). In barren shady places. Among the furz on *Fourstone-hills*, near *Hexham*, in great abundance.

(*u*) *Bifolium minimum*. *I. B.* iii. p. 534. *Ophrys minima*. *C. B. Pin.* p. 87. *Prodr.* p. 31. *Ophrys foliis cordatis*. *Linn. Flo. Suec.* n. 739. *Flo. Lapp.* n. 247. *Act. Upf.* 1740. p. 29.

* Pro insigni vulnerario habetur. HALLER. l. c.

(*w*) *Neottia*. *Dod. Pempt.* p. 553. *Pseudoleimodorum*. *Cluf. Hist.* p. 270. *bona* Icon, non autem descriptio. *Orchis abortiva fusca*. *C. B. Pin.* p. 86. *Orobanche affinis Nidus Avis*. *I. B.* ii. p. 782. *Raj. Hist.* ii. p. 1228. *Nidus Avis*. *Raj. Syn.* iii. p. 381. *Tourn. Inst.* p. 438. *Orobranche*, radice e fibris compacta, major, flore obsoleto. *Hist. Oxon.* iii. p. 503. f. 12. t. 16. f. 18. *Neottia bulbis fasciculatis nectarium labio bifido*. *Linn. Flo. Suec.* n. 742. *Act. Upf.* 1740. p. 33. *Ophris aphylla*. *Hall. Helv.* p. 278.

† In hac Planta aditus ad tubam apertissimus est.

(*x*) *Orobanche major*. *Cluf. Pann.* p. 242. *Orobanche i.* *Cluf. Hist.* p. 270. *Limodorum f. Orobanche*. *Dod. Pempt.* p. 552. *Orobanche flore majore*. *I. B.* ii. 780. *Orobanche major Garyophyllum olens*. *C. B. Pin.* p. 87. *Hist. Oxon.* iii. p. 502. *Tourn. Inst.* p. 175. *Rupp. Flo. Jen.* p. 192. *Boerb. Ind. A.* p. 240. *Raj. Syn.* iii. p. 288. *Orobanche*, *Offic. Dal. Pharm.* 197. *Orobanche f. Rapum Genistæ*. *Ger.* p. 1130. *emac.*

dance. The root is a round imbricated bulb. The stalk is from a foot to two feet high, with a few membranes instead of leaves, of a dusky brown. The flowers of the younger plants are in a thick, and the older ones in a thin, spike, as is usual. They are of a faded purple. It flowers in June and July.

160. The slender straw-coloured *Orobanche*, with oblong flowers (y), is not unfrequent in the woods near *Wark* in *Tynedale*, about the tree-roots under putrid leaves, an inch or two only under the surface. I have observed it in *Ramshaw*-wood by the road-side, near the mill; also under the bushes on the bank on the east side of the *ostium* of *Wark's*-burn. The stalk, membranes, and flowers, are of a pale yellow, or straw-colour, beautiful in the time of flowering, in July and August.

161. *Great Toothwort* (z). In damp woods. In the wood-bottom at the west end of the rectory-den at *Simonburn*. The root is

p. 1311. *Park*. *Theatr.* p. 1362. *Raj.* *Hist.* ii. p. 1227. *Orobanche* caule simplicissimo. *Linn.* *Hort. Cliff.* p. 321. *Flo. Suec.* n. 519. *Royen.* *lugdb.* p. 299. *Orobanche* caule simplici, albido, foliis sub flore longioribus. *Hall.* *Helv.* p. 610.

(y) *Orobanche*, quæ *Hypopitys* dici potest. *C. B.* *Pin.* p. 88. *Prodr.* p. 31. *Orobanchoides* nostras, flore oblongo flavescente. *Tourn.* *Act.* 1706. *Orobanche* verbasculi odore. *Plot.* *Oxfordsh.* p. 146. t. 9. f. 6. *Orobanche* flore brevior duplici, verbasculi odore. *Hist. Oxon.* iii. p. 504. f. 12. t. 16. f. 20. *Hypopithys* lutea. *Dill.* *Giff.* p. 99. *Monotropa* floribus lateralibus octandris, terminatrici decandro. *Linn.* *Flo. Suec.* n. 329.

(z) *Anblatum.* *Cord.* *Hist.* p. 89. *Dod.* *Pempt.* p. 553. cum bona *Icone.* *Dentaria.* *Matth.* p. 964. bene. *Dentaria* major. *Cam.* *Epit.* p. 705. sive *αφύλλος* I. *Clus.* *Pann.* p. 452. *Hist.* p. clx. *Anblatum cordi* f. *αφύλλος*. *I. B.* iii. p. 783. *Anblatum* flore e rubro candicante. *Tourn.* *Coroll.* 48. *Orobanche* radice dentata major. *C. B.* *Pin.* p. 88. *Raj.* *Hist.* ii. p. 1229. *Syn.* iii. p. 288. *Hist. Oxon.* ii. p. 503. *Scheuchz.* i. p. 35. *Dentaria* CRODYLIA. *Tabern.* *Hist.* 1231. *Squamaria.* *Rivini.* *monop. irr.* t. 88. bene. *Rupp.* *Flo. Jen.* *Hall.* *Helv.* p. 611. *Squamata* f. *Dentaria* major. *AICHST.* *Vern. Ord.* I. t. 1. f. 1. bene. *Dentaria* major *αφύλλος* *Orobanche* facie. *Barrel.* *Icon.* 80. *Lathræa* caule simplicissimo, corollis pendulis, labio inferiore trifido. *Linn.* *Sp. Pl.* 606. *Flo. Suec.* n. 518. *Hill.* *Nat. Hist. Pl.* p. 507.

a divaricated bulb, elegantly imbricated. It is white, with a bluish tinge. It sends forth one, and sometimes two or three stalks, from four to six inches high, thick, round and succulent, of a light purple, with a few oval ferrated membranes on the lower part, instead of leaves. The flowers are monopetalous; and bilabiate. They are in a spike, in a pendulous lateral series; commonly in pairs, with one between each pair, of a beautiful flesh-colour on their first appearance, on short white pedicles, not easily seen for a broad white pointed membrane on the back of each, smooth and glossy. The calyx is campaniform and divided into four parts, of a flesh-colour, with a short white down upon it, as is on the flowering part of the stalk. The ovary is compressed, ovated, pointed, and uni-locular. The seed is of a greyish-black, roundish, and numerous, disposed on a placenta. In its older state it assumes a less gay appearance. The stalk is then of a languid purple, and the flowers of a dull white. It flowers in April and May.

I have not observed the *bulbous, seven-leaved Dentaria, with five black clustered berries in the axæ of the leaves (a)*, to grow with us.

162. *Naked, channelled Horse-Tail (b)*, called *Shave-grass*, from its being used by artificers for polishing, and said by a late learned and

(a) *Dentaria baccifera*. *Clus.* Pann. p. 445. *Dentaria* iv. *Clus.* Hist. p. cxxi. *Dentaria bulbifera*. *Lob.* p. 687. *Dentaria septifolia*. *Tabern.* p. 144. *Dentaria heptaphyllos baccifera*. *C. B.* Pin. p. 322. *Raj.* Hist. i. p. 784. *Hist. Oxon.* ii. p. 254. *Town.* Inst. p. 225. *Park.* Theatr. p. 619. *Dentaria*, *Offic. Dal.* Pharm. p. 200. *Dentaria foliis inferioribus pinnatis, supernis simplicibus*. *Lin.* Hort. Cliff. p. 335. *Flo. Suec.* n. 565. *Royen.* lugdb. p. 340. *Hall.* Helv. p. 557.

(b) *Equisetum foliis nudum non ramosum sive junceum*. *C. B.* Pin. p. 16. *Rupp.* Flo. Jen. p. 282. *Equisetum nudum*. *Raj.* Hist. i. p. 129. *Syn.* iii. p. 131. *Equisetum*

and able botanist not to be common in *England* †, is plentiful in a flood-foil under bushes on the banks of *North Tyne*, near *Nunwick* and *Chipchace*; and many other places. The dairy-women in the neighbourhood use it for smoothing their milk-veffels. It thrives very well under culture in river-sand, mixt with a little gravel.

163. *Hare's-Tail Rusfb (c)*, grateful to sheep, and fattening them, called by the shepherds *Mofs-crops*, is plentiful in mountainous moffes. The leaves in the spring are of a deep and beautiful red.

164. *Great Cat's-Tail, or Reed-mace (d)*, is not unfrequent in flow-running waters and ponds. It is in a pond at *Ainwick-bank-foot*,

caule simplicissimo, aspero, vaginis non laciniatis. *Hall. Helv.* p. 143. sequenti descriptione.

“Caules cubitales et ultra, absque foliis aut ramis. Vaginæ longe minimæ, absque denticulis, brevissimis apicibus nigris notatæ. Caulis fulcatus in eminentibus Jugis dentes habet ad lentem vitream facile conspicuos, pene uti Cyperoidea gramina, ut instar linæ metalla poliat.”

† MARTYN.

(c) *Juncus alpinus cum cauda leporina.* *I. B.* iii. p. 514. *Raj. Hist.* ii. p. 1306. *Scheuchz.* It. i. p. 41. *Juncus alpinus capitulo lanuginoso, f. SCHÆNOLAGUROS.* *C. B. Pin.* p. 2. *Prodr.* p. 7. *Scheuchz. Hist. Gram.* p. 302. t. 7. f. 1, 2, 3. & *Agrost. Prodr.* 26. t. 7. *Gramen junceum lanatum alterum DANICUM.* *Park. Theatr.* p. 1271. *Hist. Oxon.* iii. p. 224. t. 9. f. 6. *Et gramen junceum f. Juncus alpinus capitulo lanuginoso.* *Hist. Oxon.* ib. *Icon. ex C. B. Linagrostis alpina major, capitulo singulari minori.* *Michel. Nov. Gen. Pl.* p. 54. *Linagrostis capite singulari ALOPECUROIDES.* *Vaill.* p. 117. *Linagrostis foliis teretibus, spica unica subrotunda.* *Hall. Helv.* p. 250. *Eriophorum culmis teretibus vaginatis, spica membranacea.* *Linn. Flo. Suec.* n. 45. *Eriophorum spica lanis involuta Act. Ups.* 1736. p. 47. *Eriophorum spica erecta, caule tereti.* *Flo. Lapp.* n. 23. *Royen. lugdb.* p. 51.

(d) *Typha.* *Matth.* p. 863. *Cam. Epit.* p. 607. *Ger.* p. 42. *emac.* p. 46. *Raj. Hist.* ii. p. 1312. *Syn.* iii. p. 436. *Dal. Pharm.* p. 259. *Linn. Hort. Cliff.* p. 439. *Flo. Suec.*

foet, near *Hexham*, to which it is a great ornament, with its beautiful glume or panicle, on a stalk five or six feet high.

165. *Great Spearwort (e)*, is in a pond at the south-west end of *Wide-haugh*, near *Hexham*, sparingly. The root is fibrous. The stalk is round, smooth, fistulous, and branched, three or four feet high. The leaves are sessile, a foot long, and an inch broad, thick, smooth and pointed. The flowers are at the top of the stalk and branches, of a beautiful orange-yellow, three quarters of an inch in diameter; holding their colour in drying. It flowers in June and July.

166. *Great white Water-Lily, or Water-rose (f)*. In the lakes under the *Roman Wall*, on the north and north-west side of *Shewing-*

n. 772. *Royen. lugdb. p. 73. Typha palustris. Dod. Pempt. p. 604. Tabern. p. 246. Typha palustris major. C. B. Pin. p. 20. I. B. ii. p. 539. Hist. Oxon. iii. p. 246. f. 8. t. 13. f. 1. bene. Tourn. Inst. p. 540. Rupp. Flo. Jen. p. 26. Dill. Giff. p. 154. Boerh. Ind. A. ii. p. 167. Typha palustris maxima. Park. Theatr. p. 1204. Typha clava crassiflora. Hall. Helv. p. 260.*

(e) *Ranunculus lanceatus major. Tabern. p. 48. Icon bona. Ranunculus longo folio maximus, Lingua PLINII. I. B. iii. p. 865. Ranunculus longifolius palustris major. C. B. Pin. p. 180. Hist. Oxon. ii. p. 442. Tourn. Inst. p. 292. Rupp. Flo. Jen. p. 81. Boerh. Ind. A. p. 54. Ranunculus flammeus major. Raj. Hist. i. p. 587. Syn. iii. p. 250. Park. Theatr. p. 1215. Flammula, Offic. Dal. Pharm. p. 159. Ranunculus foliis lanceolatis, caule erecto. Linn. Hort. Cliff. p. 228. Flo. Suec. n. 457. Ranunculus erectis, foliis longis, sessilibus, capitulo squamulis distincta. Hall. Helv. p. 322.*

(f) *Nymphaea alba. Cord. Hist. p. 98. Matth. p. 893. Cam. Epit. p. 634. Dod. Pempt. p. 585. I. B. iii. p. 770. Ger. 672. emac. p. 819. Raj. Hist. ii. p. 1320. Syn. iii. p. 368. Dal. Pharm. p. 238. Nymphaea alba major. C. B. Pin. p. 193. Hist. Oxon. iii. p. 513. Tourn. Inst. p. 260. Rupp. Flo. Jen. p. 130. Nymphaea foliis cordatis integerrimis calyce quadrifido. Linn. Sp. Pl. 510. Nymphaea calyce tetraphyllo, corolla multiplici. Flo. Lapp. n. 219. Flo. Suec. n. 427. Hort. Cliff. p. 203. Royen. lugdb. p. 480. Nymphaea calyce tetraphyllo, fructu rotundo. Hall. Helv. p. 302.*

Sheels,

Sheels, plentifully. In *Grinden-lake*, sparingly. It flowers in July and August. It raises its head in a gradual expansion above the water about seven in the morning, and about four in the afternoon sinks down again to its former station, into a state of rest, closing its leaves; a faculty common to an abundance of other plants, and very wonderful, having their constant periodical *vigils*; designed by the supreme Author of nature, as is thought, for the great end of fœcundation*. With the root, and the pine-bark, the poor *Swedes* are said to have kept themselves alive in the want of other food in times of great dearth†. The distilled water of the flowers and leaves is an antient and approved remedy in fevers, and for all kinds of inflammations. It is also of antient use as a cosmetic, clearing the skin of pimples, and other deformities, caused by heat, giving it an agreeable softness. A bath made of the leaves, gives composure and rest to persons under fatigues from long and unseasonable watchings, by only washing the feet at going to bed, when it is warm. Made into a syrup, it promotes sleep. The *Turks* make a liquor of it, of which they are very fond‡.

167. The *great yellow Water-Lily* (*g*) is plentiful in the same lakes, and in many slow running waters; in the rivulets of *Pont* and

* See Mr. *Pulteney's* curious Observations on the Sleep of Plants in the PHILOSOPHICAL Transactions.

† *Linder. de venen.* p. 651.

‡ *Tavernier. Haller. l. c.*

(*g*) *Nymphaea lutea. Matth.* p. 894. *benè*, ut et in *Cam. Epit.* p. 635. cum Characterè. *Dod. Pempt.* p. 585. *I. B.* iii. p. 771. *Ger.* p. 672. *emac.* p. 819. *Raj. Hist.* ii. p. 1319. *Syn.* iii. p. 368. *Dal. Pharm.* p. 238. *Nymphaea lutea major. Clus. Hist.* ii. p. lxxxvii. *C. B. Pin.* p. 193. *Park. Theatr.* p. 1252. *Hist. Oxon.* iii. p. 513. *Tourn. Inst.* p. 261. *Boerb. Ind. A.* p. 281. *Dill. Giff.* p. 112. *Nymphaea calyce magno pentaphyllo. Linn. Flo.*

and *Blyth*; also in the pond at *Wide-haugh*, near *Hexham*, with the great *Spearwort*. It flowers in July and August. The flowers keep their colour pretty well in drying under proper management.

168. The beautiful, *fimbriated*, *small yellow Water-Lily* (*b*); the *double-flowered*, *sweet-scented Frogbit* (*i*), both said to be plentiful in a ditch by the side of *Awdery-causey*, in the Isle of *Ely*, close to the great wooden bridge by the road from *London* to *Cambridge**; the true *Acorus*, or *sweet-smelling Flag* (*k*), said to grow plentifully in the river *Soar* about *Normanton*, in *Leicestershire* †; and the *Water-*

Flo. Lapp. n. 218. Flo. Suec. n. 426. Hort. Cliff. p. 203. Sp. Pl. 510. *Royen*. lugdb. p. 480. *Hill*. Nat. Hist. Pl. p. 472. *Nymphæa calyce magno pentaphyllo, fructu pyramiformi*. *Hall*. *Helv.* p. 302.

(*b*) *Nymphæa lutea minor flore fimbriato*. *I. B.* ii. p. 772. *C. B.* Pin. p. 194. *Raj.* Syn. iii. p. 368. *Nymphoides aquis innotans*. *Tourn.* Inst. p. 153. *Martyn.* *Tourn.* ii. p. 135. *Menyanthes foliis cordatis integerrimis, corollis ciliatis*. *Linn.* Sp. Pl. 142.

(*i*) *Nymphæa alba minima flore odoratissimo*. *Raj.* Syn. iii. et. Cant. p. 101. p. 290. *Morus Ranæ flore pleno odoratissimo*. *Merret.* Pin. p. 79. *β. Hydrocharis flore pleno*. *Hall.* *Helv.* p. 301.

* *Merret.* l. c. *Nymph. fimbr. flo. in fluvio CAM. infra CANTABR. copiosissime.*
Martyn. l. c.

(*k*) *Calamus aromaticus*. *Cord.* *Diosc.* p. 1. *Michel.* Nov. Pl. Gen. p. 43. t. 31. *Acorum legitimum*. *Clus.* Pann. p. 257. Hist. p. 231. *Rupp.* Flo. Jen. p. 261. *Calamus aromaticus vulgaris, multis Acorum*. *I. B.* ii. p. 734. *Acorus verus f. calamus aromaticus OFFICINARUM*. *C. B.* Pin. p. 34. *Linn.* Hort. Cliff. p. 37. *Boerb.* Ind. A. ii. p. 167. *Dill.* Giff. p. 110. *Dal.* Pharm. p. 259. *Acorus verus f. Calamus OFFICINARUM*. *Park.* Theatr. p. 140. *Raj.* Hist. ii. p. 1313. Syn. iii. p. 437. *Typha aromatica clava rugosa*. Hist. *Oxon.* iii. p. 246. f. x. t. 13. f. 4. *Acorus* *Linn.* Flo. Suec. n. 277. Sp. Pl. 324. *Royen.* lugdb. p. 6. *Hall.* *Helv.* p. 259.

† *Mr. W. Pulteney's Observations on the Plants of Leicestersh.* Ph. Tr. Vol. xlix.

Aloe, or *Fresh-Water-Soldier* (1), said to grow plentifully in the fens of *Lincolnshire* and *Ely*, and by *Awdry-causey* with the sweet *Frogbit* †; do not grow in any of our waters, so far as I have observed.

169. The *yellow Water-Iris*, or *Flag-Flower* (m), is common. It flowers in June. The flowers are of a caustic taste. The root was formerly used as a *succedaneum* to the *true Acorus*. It is astringent and acrid, and cannot be taken inwardly without danger to the bowels. Four ounces of the juice causes a violent constipation †. It is therefore at present justly denied a place in all judicious medical forms, and wisely turned out of the confectionary. Applied to an aching tooth, it is said to give speedy relief †. The true ACORUS is of very different powers*.

169. We

(1) *Stratiotes f. militaris aizoides*. *Lob. Hist.* p. 904. *Aloë palustris*. *C. B. Pin.* p. 286. *Stratiotes foliis Aloes, femine longo*. *Raj. Syn.* iii. p. 29. *Stratiotes*. *Linn. Flo. Lapp.* n. 222. *Flo. Succ.* n. 444. *Hort. Cliff.* p. 221. *Stratiotes foliis ensiformi-triangularis ciliato-aculeatis*. *Sp. Pl.*

† *Merret. Raj. Syn.* I. c.

(m) *Iris lutea f. Pseudo-acorus*. *Cord. Hist.* ii. c. 43. *Pseudo-Acorum*. *Matth.* p. 22. *Acorum falsum*. *Cam. Epit.* p. 6. *bene*. *Pseudo-Iris*. *Dod. Pempt.* p. 248. *Butomon*. *Clus.* p. 232. *Iris palustris lutea*. *Tabern.* p. 643. *Ger.* p. 46. *emac.* p. 50. *Raj. Hist.* ii. p. 1186. *Syn.* iii. p. 374. *Tourn. Inst.* p. 360. *Rupp. Flo. Jen.* p. 26. *Pseudo-iris palustris*. *Hort. AICHST. Vern. Ord.* 8. t. 7. f. 3. *pulchre*. *Acorus adulterinus*. *C. B. Pin.* p. 34. *Blair. Pharm. Bot.* p. 31. *Iris palustris lutea f. Acorus adulterinus*. *I. B.* ii. p. 732. *Hist. Oxon.* ii. p. 353. t. 6. f. 11. *Dill. Giff.* p. 79. *Dal. Pharm.* p. 247. *Linn. Flo. Lapp.* n. 16. *Iris foliis ensiformibus, corollis imberbibus, petalis interioribus stigmatibus minoribus*. *Hort. Cliff.* p. 19. *Flo. Succ.* n. 33. *Royen. lugdb.* p. 18. *Iris imberbis, lutea, nervo folii eminente*. *Hall. Helv.* p. 281.

† *Blair.*

† *Allen. Synopf.* p. 321. *Cl. Hall. cit.*

* “ Ad ventriculi debilitatem fidum medicamentum est, five acidis cruditatibus turgeat, five flatibus vexetur in histericis corporibus, five nauseabundus ad vomitum nimis facilis
“ fit.

170. We have the *blue-flowered Iris (n)* in boggy places, but it is not common. The root has a contrary effect from the former. It is a violent cathartic. It is a favourite remedy with some people for the dropsy. A learned foreigner * used to give the juice of it every other day, from one to four ounces, mixed with half an ounce of cream of tartar; whose example was followed by others. The flowers are tinctorial. An elegant green colour is drawn from them †. It flowers in June.

The *pale purple-flowered Water-Gladiole (o)*, said to be plentiful in *Winander-mere*, and *Hull's-water*, in *Westmorland*, and in *Grayfonterne*

“ fit. Dosis crudi qualem existimo efficacissimi sumi, ad duas drachmas, neque male puto
 “ in vino Burgundico infundi, quod consilium est CHOMELII. Aquam distillatam, non, ut
 “ BOERHAAVIUS & HERMANNUS ingratam, sed omnino aromaticam exhibet. I. A. WE-
 “ DEL. in dis. propria.

“ Facillimus est agnitu. Longa folia, tres & ultra lineas lata, a nervo inæqualiter divi-
 “ duntur, & altera medietas transversis rugis plicatur. Typha flava, unica, foliis brevior.
 “ Sapore aromatico omnes stirpes septentrionis indigenas facile superat.” HALL. HELV.
 p. 259.

(n) Gladiolus cæruleus, *Trag.* p. 699. *Iris sylvestris.* *Cord. Hist.* i. ii. c. 40. *Matth.* p. 17. Tab. p. 648. *Iris sylvestris major.* *Cam. Epit.* p. 2. *Iris latifolia major vulgaris.* *Clus. Hist.* p. 224. *Iris in BELGIO purpurea.* *Dod. Pempt.* p. 233. *Iris vulgaris violacea.* f. *purpurea sylvestris.* *I. B.* ii. p. 709. *Iris vulgaris GERMANICA* f. *sylvestris.* *C. B. Pin.* p. 30. *Tourn. Inst.* p. 358. *Rupp. Flo. Jen.* p. 25. *Iris vulgaris.* *Raj. Hist.* ii. p. 1180. *Dal. Pharm.* p. 247. *Iris corollis barbatis, caule foliis longiore, multifloro.* *Linn. Hort. Cliff.* p. 18. *Royen. lugdb.* p. 17. *Hall. Helv.* p. 280.

* *Chamel.* † Ex floribus elegans color viridis paratur. *Haller.* l. c.

(o) Gladiolus aquaticus f. Gladiolus palustris. *Dod. Pempt.* p. 950. Gladiolus stagnalis DORTMANNI. *Clus. cur.* 40. *Raj. Hist.* ii. p. 1325. *Syn.* iii. p. 237. Lucoicum palustre, flore subcæruleo. *C. B. Pin.* p. 202. DORTMANNA palustris, floribus sparsis

terne near *Cockermouth*, in *Cumberland* †, is not observed to grow in any of our waters; neither have we the *flowering Rush* (p).

171. *Marsh-Asphodel*, or *Bastard-Asphodel* (q), is frequent in boggy mountainous grounds. It is in a marshy pasture under the rocks by the *Roman* wall on the west side of *Shewing-sheels*; also in the bogs at *Hord-lee*, near *Bellingham*, plentifully. The flowers are in a spike. They are stellate, of a bright and beautiful yellow, punctated with red. It flowers in July. By a wonderful instinct in nature, *Deer* are said to staunch the blood of their wounds, and to heal them by lying down upon it. It is a quick-healing plant, and in dangerous wounds requires to be restrained by a less active ingredient ‡.

pendulis. *Rudb. Aët. Upf. 1720. p. 97. t. 2. optime.* *Lobelia foliis linearibus bilocularibus integerrimis, caule subnudo. Linn. Flo. Suec. n. 714.* *Lobelia foliis bilocularibus subulatis. Flo. Lapp. n. 279. Hort. Cliff. p. 426.*

† *Wilson. Syn. Ray. l. c.*

(p) *Gladiolus palustris. Cord. Hist. p. 121. bona descriptio. Juncus floridus. Matth. p. 1037. bene. Cam. Epit. 781. I. B. ii. p. 524. Raj. Hist. p. 700. Blair. Bot. Eff. p. 215. cum Characterē. Gladiolus aquatilis. Dod. Pempt. p. 600. Juncus floridus major. C. B. Pin. p. 12. Juncus cyperoides floridus palustris. Lob. Ic. p. 86. Juncus cyperinus floridus. Tabern. p. 250. Sedo affinis juncoides umbellata palustris. Hist. Oxon. iii. p. 468. f. 12. t. 5. f. penult. Juncus cyperoides palustris. Hort. AICHST. Vern. Ord. t. 4. f. 3. Butomus flore roseo. Tourn. Inst. p. 270. Butomus Vaill. Bot. Par. p. 24. Rudbek. p. 96. Raj. Syn. iii. p. 273. Linn. Flo. Lapp. n. 159. Flo. Suec. n. 328. Hort. Cliff. p. 155. Royen. lugdb. p. 35. Hall. Helv. p. 299.*

(q) *Asphodelus luteus palustris. Dod. Pempt. p. 208. Pseudo-asphodelus primus vel major. CLUS. Hist. Pseudo-asphodelus palustris ANGLICUS. C. B. Pin. p. 29. Phalangium ANGLICUM palustre, IRIDIS folio. Tourn. Inst. p. 368. Raj. Syn. iii p. 375. Anthericum foliis ensiformibus, filamentis lanatis. Linn. Flo. Suec. n. 268. Sp. Pl. 311. Anthericum scapo folioso laxē spicato, filamentis villosis. Flo. Lapp. n. 136. Royen. lugdb. p. 45.*

‡ PH. TRANSACT. No. 117.

172. *Adders-tongue* (*r*). On the borders of a wood by a foot-way below *Honeyclugh-crag*, on the east side of a streamlet, near *Chesterwood*, in great abundance, on a dry bank, used for meadow. I never met with it in any other place with us. The root is orbiculated at the crown, with cylindric bulbous fibres, an inch and a half or two inches long, equally and uniformly extending every way in the ground, three or four inches deep. It sends forth a single ovated leaf, without a nerve, thick and succulent, of a yellowish-green. The stalk is from three to near five inches high. The tongue is slender and mucronated, for the most part simple, but sometimes bifid, and not unfrequently trifid. The fructifications are closely arranged in a double series to the middle of it, with an elegant kind of ferrature at the edges. It flowers in May and June. It is used with great commendations for green wounds. Made into an ointment with *Dwarf-Elder*, it is an effectual and never-failing remedy for cattle bitten by the adder, and other pernicious reptiles.

173. *Moonwort* (*s*). In dry hilly pastures. On both sides of the *Roman Wall* at *Tower-tay*, near *Wall-wick*. In a pasture near
the

(*r*) *Ophioglossum*. *Cam.* Epit. p. 364. bene. *Hall.* *Helv.* p. 131. *Hort.* EYSTETT. *Vern. Ord.* vi. t. 7. f. 2. *I. B.* iii. p. 708. *Ger.* p. 327. *emac.* p. 404. *Raj.* *Hist.* i. p. 126. *Syn.* iii. p. 128. *Dill.* *Giff.* p. 67. *Dal.* *Pharm.* p. 62. *Ophioglosson.* *Matth.* p. 594. *Dod.* *Pempt.* p. 139. *Lingua vulneraria.* *Cord.* *Hist.* ii. c. 118. p. 153. *Ophioglossum vulgatum.* *C. B.* *Pin.* p. 354. *Hist.* *Oxon.* iii. p. 595. t. 5. *Plum.* *Filic.* AMERIC. p. 36. t. *B.* f. 5. *Tourn.* *Inst.* p. 548. *Boerb.* *Ind. A.* p. 27. *Ophioglossum fronde ovata.* *Linn.* *Flo. Suec.* n. 839. *Ophioglossum folio ovato, spica distica.* *Hort.* *Cliff.* p. 472.

(*s*) *Lunaria minor.* *Cam.* *Epit.* p. 643. *Icon bona.* *Ger.* p. 328. *emac.* p. 405. *Park.* *Theatr.* p. 507. *Raj.* *Hist.* i. p. 127. *Lunaria.* *Dod.* *Pempt.* p. 139. *Cord.* *tylv.* p. 221. *Dal.* *Pharm.* p. 62. *Lunaria botrytis minor.* *Clus.* *Hist.* p. cxviii. *Lunaria botrytis.* *I. B.* iii. p. 709. *ACHTETT.* *Vern. Old. Fruct.* t. 3. f. 3. *Barrel.* *Icon.* 252. n. III. *Epimedium.* COLUMN. *Phytobas.* p. 65, &c. *TAB.* xviii. *pulchre.* *Lunaria racemosa minor &*

the high *Wood-house*, or *West-wood*, a mile from the west boat, near *Hexham*. The root is fibrous, black on the outside, and yellow within. It sends forth a single round pedicle with a pinnated leaf, formed of four or five pair of folioles, with a terminale one, each small at the base of an elegant lunulated figure. A little stalk rises from the *Axæ* of the leaves, on which are numerous peduncles, with greenish-yellow flowerets. It flowers in May. The fructifications are mature in June, like a white powder.

I have not observed the *flowering Water-Fern*, or *Osmund-Royal* (*t*), which is said to be in the ditches on *Brigsteer-moss*, near *Kendal*, in *Westmorland**, to grow with us.

174. *Small rough Spleen-wort* (*u*) is frequent about alpine shadowy rocks. It is plentiful about *Tecket-rocks*, both above and below

vulgaris. *C. B.* Pin. p. 354. *Hist. Oxon.* iii. p. 594. *Boerb.* Ind. A. p. 127. *Dill.* Giff. *Raj.* Syn. iii. p. 128. *Osmunda foliis lunatis.* *Tourn.* Inst. p. 547. *Scheuchz.* It. i. p. 46. *Hall.* Helv. p. 130. *Osmunda scapo caulino unico, fronde pinnata solitaria.* *Linn.* Flo. *Succ.* n. 842. *Osmunda folio pinnatifido: pinnis lunulatis.* *Flo. Lapp.* n. 389. *Osmunda fronde pinnata caulina, pinnis lunulatis.* *Hort. Cliff.* p. 472.

(*t*) *Filix floribus insignis.* *I. -B.* iii. p. 733. *Filix ramosa, non dentata, florida.* *C. B.* Pin. p. 357. *Osmunda regalis f. Filix florida.* *Park.* Theatr. p. 1038. *Ger. emac.* p. 1131. *Raj.* *Hist.* i. p. 151. *Plum.* *Filic. AMERIC.* p. 35. t. *B.* f. 4. *Martyn.* *Tourn.* ii. p. 152. *Osmunda vulgaris & palustris.* *Tourn.* Inst. p. 547. *Filix botrytis five florida major pinnulis non dentatis ex adverso nascentibus.* *Hist. Oxon.* iii. p. 593. *Osmunda scapo paniculata polyphyllo.* *Linn.* Flo. *Succ.* n. 840. *Osmunda frondibus caulinis simpliciter pinnatis, pinnis lanceolatis.* *Hort. Cliff.* p. 472.

* *Wilf.* Syn.

(*u*) *Asplenon sylvestre.* *Trag.* p. 550. *Icon bona.* *Struthiopteris.* *Cord.* *Hist. Hall.* Helv. p. 132. *Lonchitis aspera.* *Dod.* *Pempt.* p. 469. *Ger.* p. 978. *emac.* p. 1140. *Raj.* *Hist.* i. p. 138. *Syn.* iii. p. 118. *Lonchitis altera NEOTRICORUM.* *CLUS.* *Pann.* p. 705. *Hist.* p. cccxiii.

below the water-fall; also about the rocks by the spring at *Long-Crag*, near *Watlingstreet*. The younger plants are disposed on the ground in the form of a star.

175. The *flowering Stone-Fern* (*w*) is plentiful among the rocks under the *Roman wall*, on the west-side of *Shewing-sheels*. It is also among the rocks by *Crag-lake*, towards the west end, in great abundance. It grows in tufts. The root is composed of long, black, capillary fibres. The stalks are naked for four or five inches, smooth, and slender. The *foliola* are of a lively green, elegantly cut; part like those of curled parsley, and part narrow and reflex at the edges, on which are the fructifications, perfected in August and September, of a beautiful orange-yellow.

176. *Hind's-Tongue* (*x*) is scarce with us. I have observed it to grow sparingly among the rocks by a small cataract, or water-fall,

p. ccxiii. *Lonchitis aspera minor*. *Cam. Epit.* p. 665. *Park. Theatr.* p. 1042. *Lonchitis altera foliis POLYPODII*. *I. B.* iii. p. 744. *Lonchitis minor*. *C. B. Pin.* p. 359. *Lonchitis vulgatiore folio vario*. *Hist. Oxon.* iii. p. 569. *Polypodium angustifolium folio vario*. *Tourn. Inst.* p. 540. *Boerb. Ind. A.* ii. p. 25. *Pteris fronde pinnatifida lanceolata, laciniis parallelis integerrimis*. *Linn. Flo. Suec.* n. 844. *Hill. Nat. Hist. Pl.* p. 137. *Pteris fronde pinnata, foliolis linearibus parallelis*. *Royen. lugdb.* p. 497.

(*w*) *Adiantum album floridum* f. *Filicula petræa crispa*. *Pluknet.* p. 9. t. 3. f. 2. ubi utrumque foliorum genus pingitur. *Raj. Hist.* i. p. 159. *Filix botrytis minima, f. filicula petræa florida ANGLICA foliis plurifariam divisis*. *Hist. Oxon.* iii. p. 593. f. 14. t. 4. f. 4. habet etiam utrumque foliorum genus. *Osmunda Westmorlandica foliis tenuissime diffusis*. *Petiver. n.* 798. *Filicula montana florida perelegans* f. *Adiantum album floridum*. *Blair. Observ.* p. 110. *Filix ramis duplicato ramosis, latissime divisis, pinnulis profunde crenatis, per fecunditatem integris*. *Hall. Helv.* p. 133.

(*x*) *Scolopendrium*. *C. rd. Hist.* p. 113. *Phyllitis*. *Matth.* p. 831. *Cam. Epit.* p. 579. *Icon bona*. *Dod. Pempt.* p. 467. *Ger.* p. 976. *emac.* p. 1138. *Raj. Hist.* i. p. 134. *Syn.* iii. p. 116. *Phyllitis vulgaris*. *Cluf. Hist.* p. ccxiii. *Phyllitis* f. *Lingua cervina* TRAGI.

fall, at *Honeyclugh-crag*, near *Chesterwood*, on *South Tyne*. It is also sparingly about the rocks in the clugh, or gill, at *Sandoe*, near *Hexham*. The fructifications are on the back of the leaves in oblique lines, perfected in autumn. It is of a nauseous taste. It is commended for the spleen and obstructions in the liver. It is used by infusion in ale in the spring with us, for attenuating and sweetening the blood. In *Italy*, the leaves are in frequent use for burns and scalds *. It enters into vulnerary draughts †.

177. *Spleen-wort*, or *Miltwaft* (*y*), one of the five capillaries, said to be on *Trout-beck-bridge*, in *Westmorland* †, does not grow with us where I have been.

I. B. iii. p. 756. *Lingua Cervina OFFICINARUM. C. B. Pin.* p. 353. *Tourn. Inst.* p. 544. *Boerb. Ind. A.* p. 23. *Dal. Pharm.* p. 63. *Plumier. Filic. AMERIC.* p. 34. t. *A. f.* 4. *Lingua cervina vulgaris. Hist. Oxon.* iii. p. 556. *Asplenium frondibus linearibus integris basi cordatis inflexis; petiolis hirsutis. Linn. Hort. Cliff.* p. 474. *Flo. Suec. n.* 853. *Royen. lugdb.* p. 498. *Hall. Helv.* p. 134.

* *Welsch. Microm.* p. 30.

† *Haller. l. c.*

(*y*) *Scolopendria vera. Trag.* p. 551. *Icon bona. Scolopendrium f. Asplenon. Cord. Hist.* p. 175. *Asplenium. Dod. Pempt.* p. 468. *Asplenium f. Ceterach. I. B.* iii. p. 139. *Ger.* p. 978. *emac.* p. 1140. *Raj. Hist.* i. p. 139. *Park. Theatr.* p. 1046. *Hist. Oxon.* iii. p. 561. *Tourn. Inst.* p. 544. *Martyn. Tourn.* i. p. 84, 85. *Plum. Filic. AMERIC.* p. 33. t. *B. f.* 3. *Ceterach OFFICINARUM. C. B. Pin.* p. 354. *Dal. Pharm.* p. 63. *Asplenium fronde pinnatifida laciniis alternis adnatis. Linn. Hort. Cliff.* p. 474. *Royen. lugdb.* p. 498. *Hall. Helv.* p. 135. sequenti descriptione.

“ In cespites densos ex nigris radiculis nascitur. Folia sola odit, absque caulibus, dura, pallide viridia, ea ad medium nervum alterna adnascuntur, & proximis basibus confluent. Pars averfa muscoso, paleari, rubigine tota obducitur. Scrobiculi feminales ad nervum inclinati. *Tourn. Tab.* 318.

“ Inter quinque plantas capillares numeratur, & in usum rarius recipitur. Splenem diminuere veteres dixerunt, quod coagula hypochondriaca resolveret, quæ splenem magnum faciunt. *BOERH.*”

† *Wilson. Syn.*

178. *Englisb*

178. *English black Maiden-hair* (z), another of the five capillaries, of great use as a pectoral, is frequent about alpine rocks. It is in the fissures of the rocks by *Tecket-water-fall*. It is among the rocks under the *Roman wall*, on the west side of *Shewing-sheels*, and by *Crag-lake*, in large tufts, from five to nine inches long.

I have not observed the *small Sea-fern* (a), in shape and colour very much resembling the former, but more robust, to grow about our sea-rocks.

179. *Black Maiden-hair* (b), is frequent at the roots of trees in alpine woods, and about moist rocks. It is in the bank of wood
under

(z) *Trichomanes*. *Cord. Hist.* p. 170. *Matth.* p. 1202. *Cam. Epit.* p. 925. *Dod. Pempt.* p. 471. *Park. Theatr.* p. 1051. *Raj. Hist.* i. p. 140. *Dal. Pharm.* p. 64. *Trichomanes* f. *Polytricon*. *J. B.* ii. p. 754. *Dill. Giff.* *Trichomanes* f. *Polytricum OFFICINARUM*. *C. B. Pin.* p. 356. *Hist. Oxon.* iii. p. 591. *Tourn. Inst.* p. 539. *Plumier. Filic. AMERIC.* p. 26. t. B. f. 1. *Boerb. Ind. A.* p. 25. *Asplenium fronde pinnata, foliolis subrotundis crenatis*. *Linn. Hort. Cliff.* p. 474. *Flo. Lapp. n.* 388. *Flo. Suec. n.* 854. *Royen. lugdb.* p. 498. *Hall. Helv.* p. 135.

(a) *Chamæfilix marina ANGLICA*. *Lob. Icon.* p. 814. *J. B.* iii. p. 737. *Raj. Syn.* iii. p. 119. *Filicula maritima ex infulis stæchadibus*. *C. B. Pin.* p. 358. *Filix marina ANGLICA*. *Raj. Hist.* i. p. 140. *Lonchitis maritima*. *Tourn. Inst.* *Asplenium fronde pinnata, foliis ovatis, margine superiore gibbo incis.* *Linn. Hort. Cliff.* p. 474. *Royen. lugdb.* p. 498. *Hall. Helv.* p. 136. sequenti descriptione.

“Priori fatis similis est, tota robustior, cauliculis nigris, foliis conjugatis amplioribus, oblique triangularibus, ita ut ea pars, quæ fini folii propria est, ventricosa basi, & quasi appendiculata sit. Inscriptiones per paria, tria ad septem, sed altero in latere plures.”

(b) *Adiantum foliis longioribus pulverulentis pediculo nigro*. *C. B. Pin.* p. 355. *Hist. Oxon.* iii. p. 588. t. 4. f. 16. *Boerb. Ind. A.* p. 26. *Adiantum nigrum OFFICINARUM*. *J. B.* iii. p. 743. *Raj. Hist.* i. p. 152. *Syn.* iii. p. 126. *Martyn. Tourn.* i. p. 10. *Dal. Pharm.* p. 65. *Adiantum nigrum OFFICINARUM pinnulis obtusioribus, & eadem pinnulis acuti-*

under the freestone-quarry on the west side of *Hall-barns*, near *Simonburn*. It is also in the wood by the slate-quarry at *Blake-law*, opposite to *Low Moralee*, near *Wark*, in *Tynedale*. The root is fibrous, creeping, and divaricated, sending forth new plants at distances. The stalk is naked for about three or four inches, of a blackish-green, smooth and glossy. The pinna is cordiform, broad at the bottom, and shorter all the way up; of a pale, but beautiful green, keeping its colour in drying. It is often gathered and sold to the shops for the *Trichomanes* by the common herbarists, with which it is so nearly allied in virtue, that it is adjudged by a learned author at *Paris* to be one of the chief pectorals, and is therefore admitted there, and with us, among the capillaries, but not by the *Germans* *.

180. *White Maiden-hair, Wall-rue, or Tent-wort (c)*, is not common. It is sparingly on both sides of the bridge over the *Tyne* at
Cor-

acutioribus. *Tourn. Inst.* p. 542. *Adiantum nigrum. Blackw. Tab.* 220. *ben.* *Asplenium frondibus duplicato pinnatis, foliis inferioribus majoribus, foliis obverse ovatis, superne crenatis. Royen. lugdb.* p. 498. *Asplenium ramis ramosis, confertis, sursum decrefcentibus. Hall. Helv.* p. 136.

* “ Inter capillares plantas apud Gallos & Anglos refertur nomine *Adianthi nigri*, Germanicis officinis incognitum. *CHOMELIUS* inter pectorales præcipuo loco ponit, p. 82.”
HALLER. l. c.

(c) *Capillus veneris. Dorsten.* p. 61. *ben.* *Ruta muraria. Trag.* p. 529, 530. *Dod. Pempt.* p. 470. *I. B.* iii. p. 753. *C. B. Pin.* p. 356. *Tourn. Inst.* p. 541. *Plum. Filic. AMERIC.* p. 29. t. *A. f.* 3. *Boerb. Ind. A.* p. 26. *Raj. Syn.* iii. p. 123. *Paronychia. Matth.* p. 1041. *Cam. Epit.* p. 785. *optime.* *Adiantum album. Cord. Diosc.* iv. c. 526. *Tab.* p. 796. *Raj. Hist.* i. p. 146. *Martyn. Tourn.* i. p. 9. *Salvia vitæ f. Ruta muraria. Lebel.* p. 811. *Park. Theatr.* p. 1050. *Ger.* p. 983. *emac.* p. 1144. *Dal. Pharm.* p. 64. *Filicula petrææ RUTÆ facie. Hist. Oxon.* iii. p. 585. *Asplenium frondibus alternaim decompositis, foliolis cuneiformibus crenulatis. Linn. Flo. Succ.* n. 855. *Sp. Pl.*

Corbridge. It is also sparingly in the fissures of the church-wall of *St. Peter*, in *Bywell*. There is a plant of it in a fissure of the chancel-wall of the church at *Simonburn*, on the north side. It was more frequent before many of the old towers and other ancient castellated buildings were pulled down. It was in great plenty, and larger than common, in the joints and crevices of the old ruin of *Simonburn-castle*, before it was taken down, and an artificial one raised in its room, for an object of pleasure, by its owner, *Sir Lancelot Allgood*, of *Nunwick*, Knight. Some of the plants that were sheltered within the hollows from the winds, were four, and others near five, inches high, sustained by no other nourishment than the mortar, a mixture of lime and sand, and such salts as might be derived from the walls, mellowed by age, and parting freely. The fructifications are on the back-part of the foliola, perfected in September, of a coal-black. It is one of the five capillaries, and is not unfrequently used as a *succedaneum* to the true maiden-hair. Its chief use is as a pectoral, in the form of tea *. There are some who advise it for the scurvy †. It sometimes enters into emetic draughts ‡.

181. *Polypody (d)* is frequent at the roots of trees and about rocks in damp mountainous woods, and old shadowy stone-walls,

1081. *Royen. lugdb. p. 498. Hill. Nat. Hist. Pl. p. 140. Asplenium ramis duplicato ramosis, pinnis ferratis, æqualibus, & laxe dispositis. Hall. Helv. p. 137.*

* *Alleyn. Chomel.*

† *Etmuller, ex experimento Michaelis.*

‡ *Boerhaavius, HIPPOCRATIS imitator. CL. HALLER. l. c.*

(*d*) *Polypodium. Trag. p. 539. Cord. p. 171. Matth. p. 1292. I. B. iii. p. 746. Raj. Hist. i. p. 137. Raj. Syn. iii. p. 117. Ger. p. 972. emac. p. 1132. Filicula f. Polypodium. Cam. Epit. p. 993. Polypodium majus. Dod. Pempt. p. 464. Polypodium vulgare. C. B. Pin. p. 357. Park. Theatr. p. 1039. Hist. Oxon. iii. p. 562. Tourn. Inst. p. 540.*

walls, topped with earth. The fructifications are on the back of the leaves, in orbiculated or round dots, in a double series, parallel to the nerve, perfected in autumn, of a beautiful orange-yellow. The root is of a nauseous, but sweetish taste. A drachm or two of the juice of it taken at a time, is commended for the hypochondriac affection*. It is cathartic or purgative, but not effectual under a less quantity than four ounces †. It is therefore seldom used alone. It is an ingredient in pectoral and hepatic draughts ‡.

182. *Oak-Fern (e)* is frequent in the fissures of moist rocks, and on the banks of damp woods. It is in the fissures of the rocks by the stone-grotto above *Tecket-water-fall*, and among the rocks on the banks of *Crook-burn*, between the lime-kiln and *Town-sheele*, about a mile and a half west from *Tecket*. It is in the bank

Martyn. Tourn. ii. p. 182, 183. *Plum. Fil. Americ.* p. 27. t. A. f. 2. *Boerb. Ind. A.* p. 24. *Polypodium quercinum, OFFICINARUM.* *Dal. Pharm.* p. 63. *Polypodium pinnatum, pinnis lanceolatis integris.* *Linn. Flo. Lapp.* n. 380. *Hall. Helv.* p. 137.

* BOERHAAVE *Præl.*

† CHOMEL. *plant. Us.* p. 487.

‡ HALLER. l. c.

(e) *Dryopteris f. Querna-Filix.* *Lob. Adv.* p. 363. *Icon.* p. 825. *Dryopteris f. Filix Querna repens.* *Park. Theatr.* p. 1041. *Filix pumila saxatilis ii.* *Clus. Hist.* p. cccii. *Filix minor non ramosa.* *I. B.* iii. p. 740. *Raj. Hist.* i. p. 46. *Tourn. Inst.* p. 537. *Filix saxatilis foliis non ferratis.* *C. B. Pin.* p. 358. *Pluknet. Almg.* t. 159. f. 3. *Icon. bona. Scheuchz.* v. p. 425. *Filix non ramosa minor sylvatica repens.* *Hist. Oxon.* iii. p. 580. f. 14. t. 4. f. 17. *Polypodium tenerum minus.* *Boerb. Ind. A.* p. 25. *Polypodium pinnatum, pinnis lanceolatis pinnatifidis, integris, inferioribus nutantibus.* *Linn. Flo. Lapp.* n. 382. *Hall. Helv.* p. 138.

“ Pinnæ totæ nervis conspicuis pictæ, ut *Filix femina.* Extremæ pinnæ longe & difformiter in unum segmentum confluunt.” *Haller.* l. c.

of wood below the freestone-quarry opposite to the upper end of the rectory-den at *Simonburn*, plentifully with the *black Maiden-hair*, where it is larger than common, in a moist clay-soil, covered with moss, rotten sticks, and putrid leaves, to whose fertilizing salts it owes its grossness and luxuriancy. The root is black, fibrous, and creeping, sending forth new plants at small distances. The stalk is naked for three or four inches or more, smooth, slender and fragile. The pinnules are broad at the bottom, and narrower all the way up, lanceolated, and ending in a remarkable long segment, of a yellowish-green, with many nerves. The fructifications are in dots on the back of the *foliola*, perfected in autumn. Its usual height is from seven to twelve inches.

183. *Creeping Water-Fern*, or the *lesser Marsh-Fern (f)*, is not common. It is in the fissures of the cavernous dripping rocks of *Tecket-water-fall*; also in the hollows of the shadowy dripping rocks on the edge of the brook below *Tecket*, on the north side, in large tufts. I observed it too on a moist bank at the end of the steep crag in *Honeyclugh*, below the small cataract, near *Chesterwood*, on the east side. The root is tufted and knobby at the crown, with long blackish creeping fibres. It sends forth a great

(f) *Filix fontis admirabilis ad marem vulgarem non ramosam, accedens, non dentata. I. B. iii. p. 109. descr. Et Filix tenuissime & profunde denticulata MONTHELGARDICA. Icon. ib. Filix minor palustris repens. Raj. Syn. iii. p. 122. Synonyma mutavit cl. HALLER, examinatis notis & descriptionibus. Hanc enim frequentia orbiculorum feminalium, illam inordinatæ pinnæ distinguunt & parvitas. Polypodium pinnis ramorum integris, frequentibus, ordinatim descrescentibus. Hall. Helv. p. 139. sequenti descriptione.*

“ Ad filicem marem omnino accedit, statura, frequentia confertorum ramorum, qua priores superat, pinnarum longitudine, & oris parallelis, &c. Sed margines integerrimi sunt, & basibus confluent, uti in *priore* (n. 81.) Orbiculi feminales numerosi, ad 10 paria, & ultra, concinno ordine disponuntur.” HALLER. l. c.

number of stalks, naked for four or five inches, slender, round, smooth, of a dark glossy green, and sometimes with an amethystine tinge, especially those in the fissures of the dripping rocks, from nine to fifteen inches high. The pinnules and folioles are narrow at the top, of a lively pleasant green: the folioles are finely cut. The fructifications are on the back part, in numerous neat dots, perfected in September, of a dark or blackish-brown.

184. *Crested Male-Fern* (*g*) is plentiful on wood-banks. A handful of the root, infused in white wine, is advised by a learned foreigner * as an excellent remedy for tumours that threaten a dropfy. It is also commended for killing worms, and taking away pains in the stomach †.

185. The *small crested Fern* (*h*) is frequent about damp rocks in mountainous woods. It is plentiful among the rocks in the wood-

(*g*) Filix. *Dorsten.* p. 124. *Cam. Epit.* p. 991. Filix mas. *Fuchf.* p. 594. *bene. Matth.* p. 1290. *Dod. Pempt.* p. 462. Filix mascula. *Cord.* p. 169. Filix vulgo mas dicta s. non ramosa. *I. B.* iii. p. 797. Filix mas non ramosa dentata. *C. B. Pin.* p. 358. *Hist. Oxon.* iii. p. 578. cum Icone, t. 3. f. 6. *Tourn. Inst.* p. 536. t. 310, 311. *Boerb. Ind. A.* p. 26. *Dill. Giff.* p. 103. Filix mas vulgaris. *Park. Theatr.* p. 1036. *Raj. Hist.* i. p. 143. Filix mas non ramosa, pinnulis latis, densis, minutim dentatis. *Ger. emac.* p. 1129. Filix mas pinnulis cristatis. *Vaill. Bot. Paris.* p. 53. t. 9. f. 2. Polypodium fronde duplicato pinnata, foliolis obtusis crenulatis, petiolo strigoso. *Linn. Hort. Cliff.* p. 475. *Flo. Succ.* n. 846. *Royen. lugdb.* p. 499. *Hall. Helv.* p. 139.

* CHOMEL. *supp. a l'hist. des pl. usuel.* p. 145. conf. p. 489.

† HALLER. I. c.

(*h*) Filix mollis sive glabra vulgari mari non ramosæ accedens. *I. B.* iii. p. 738. *Vaill. Bot. Paris.* p. 53. t. 9. f. 4. Filicula fontana latiori folio ad imum solummodo ramosa. *Pluknet. Alm.* p. 150. t. 180. f. 6. *omnino videtur.* Filix non ramosa major, pinnulis latiusculis longioribus, in profundos denticulos divisos. *Hist. Oxon.* iii. f. 14. t. 3. f. 11. *videtur emnina.*

wood-banks by the brook below *Tecket*. It is a lower and slenderer plant than the former, with somewhat deeper serratures at the edges of the pinnules; otherwise they are pretty much alike, both in the closeness of the branches and pinnules, and number and disposition of the fructifications, which are commonly six or seven together.

186. The *Male-Fern*, with thin-set deeply-indented leaves (*i*), is not unfrequent about moist shady rocks. I have observed it about the large rocks by the brook below *Tecket*; also below the cat-ract at *Honeyclugh*, near *Chesterwood*. The pinnules are much longer than those of the former. They are more frequently and deeply crenated, sometimes even to the very nerve. The fructifications are in orbicular dots on the back part, about six in a group together, perfected in the latter end of autumn.

187. *Dwarf Stone-Fern* (*k*) is in the fissures of the dry cavernous parts of the steep freestone rocks on both sides of the brook below *Tecket*, sparingly. The root is fibrous and tufted. It sends forth many stalks, four inches long, smooth, and firm, of a pale

omnino. Filix non ramosa latifolia dentata. *Tourn. Inst.* p. 536. Polypodium fronde duplicato-pinnata: pinnis obtusis coadunatis crenatis. *Linn. Flo. Suec.* n. 848. Polypodium ramorum pinnis obtusis ellipticis, crenis imis pinnarum bifidis: *Hall. Helv.* p. 139.

(*i*) Filix petræa femina i. *Tabern.* p. 793. Icon bona. Filix mas non ramosa, pinnulis angustis rarioribus profunde dentatis. *Hist. Oxon.* iii. p. 579. f. 14. t. 3. f. 8. bene. *Pluknet. Phyt.* p. 130. t. 130. f. 4. *Raj. Hist.* p. 144. *Syn.* iii. p. 121. Polypodium fronde duplicato-pinnata, pinnulis lanceolatis, acutis, pinnatifidis. *Linn. Flo. Lapp.* n. 386. *Flo. Suec.* n. 847. *Royen. lugdb.* p. 499. *Hall. Helv.* p. 140.

(*k*) Adiantum album. *Lobel. Advers.* p. 361. Icon. p. 810. *omnino videtur*. Filicula fontana. *Tabern.* p. 792. Filicula fontana minor. *C. B. Pin.* p. 358. Polypodium pinnarum pinnis bidentatis, & tridentatis, brevissimis. *Hall. Helv.* p. 140.

whitish-

whitish-green. The branches are thin set, the shortest about an inch long, the middle ones larger, producing but few pinnules, and sparingly, not more than nine. The largest have three serratures, the rest only one. The fructifications are round, about five together.

There is a variety of it in the fissures of the moister rocks of a more firm texture (*l*), owing chiefly to its situation.

188. The *least Stone-Fern (m)* is on the east side of a large rock in the brook opposite to *Tecket*, sparingly. It is from an inch to two inches long, rarely more. The folioles are shorter and less than those of the *Trichomanes*. I have observed it in a fissure of the same rock with the saffron-yellow *Byffus*, and the small fringed *Lichen*, rising through the middle of them. It dies down to the root on the approach of winter, commonly before October. Its smallness often makes it overlooked and unobserved.

189. The *fine cut Stone-Fern, with slender brittle stalks (n)*, is not unfrequent about alpine-rocks. I have observed it among some of those at *Tecket*; also at *Little Waneyhouse-crag*, near *Swethope-lake*. The stalks, in general, are half a foot high. The branches are sparingly disposed. The pinnules are lobated and ferrated.

(*l*) *Adiantum filicinum durius crispum minimum. Barrel. Ic. 432. n. 1. Icon bona.*

(*m*) *Filix saxatilis omnium minima elegantissima. Pluknet. t. 89. f. 3. Icon certe respondet. RAJ. Hist. iii. p. 78.*

(*n*) *Adiantum album folio filicis. I. B. iii. p. 739. omnino. Filix saxatilis cauliculo tenui fragili. Pluknet. t. 180. f. 5. Raj. Syn. iii. p. 125. Adiantum filicinum aquaticum mollius minimum. Barrel. Icon. 432. n. 2. Polypodium fronde duplicato-pinnata, pinnis remotis, foliolis subrotundis incis. Linn. Flo. Lapp. n. 384. Flo. Succ. n. 849. Royen. lugdb. p. 500. Hall. Helv. p. 140.*

The largest lobes only are cut to the nerve. When the lobes are rounder, broader, and not so deeply cut, it makes a variety different from the next to be described. The groups of fructifications are larger, and in old plants entirely cover the back part of the lobes.

190. The *slender Stone-Fern*, with crested folioles (o), is frequent in the clefts of alpine-rocks. I have observed it in the fissures of *Tecket-rocks*, and other places. It very much resembles the former. It differs from it by its narrow pinnules, and bifid acute serratures, ending in spinules, like the *small crested Fern*, and cut to the very nerve; also by the smaller number of fructifications on the back of the folioles, which never cover them entirely.

191. The *small branched Female-Fern* (p), is not uncommon in woods. It is a foot high. The branches are in pairs on the stalk, and gradually shorter. These also are branched, and have distinct pinnules, firm, close, and long, marked with parallel lines. The fructifications are in groups, and yellow.

192. The *great branched Male-Fern*, with crested pinnules (q), a beautiful fern, is not common. I have observed it among the

(o) *Filix Rhætica tenuissime denticulata*. *J. B.* iii. p. 740. *Filix pumila saxatilis altera*. *Pluknet.* p. 151. t. 179. f. 5. *Segmenta latiora pinxit*. *Polypodium pinnis ramorum laxepinnatis, pinnulis acute dentatis*. *Hall. Helv.* p. 140.

(p) *Filix arborea*. *Trag.* p. 538. *bene*. *Filix petræa femina* iv. *Tabern.* p. 794. *Filix ramosa minor pinnulis non dentatis*. *C. B. Pin.* p. 358. *Tourn. Inst.* *Filix ramosa minor*. *J. B.* iii. p. 741. *Raj. Hist.* i. p. 151. *Polypodium trifidum, ramis pinnatis, pinnis pinatifidis*. *Linn. Flo. Lapp.* n. 387. *Polypodium pinnis ramorum pinnatis, pinnulis confertis, oblongis, integerrimis*. *Hall. Helv.* p. 141. *Non est Dryopteris TRAGI*. *Pluknet.* t. 179. f. 4.

(q) *Filix mas ramosa pinnulis dentatis*. *Pluknet.* t. 181. f. 2. *Icon bona*. *Raj. Hist.* i. p. 150. *Syn.* iii. p. 124. *Polypodium pinnis ramorum pinnatis pinnulis laxis, obtusis, obiter serratis*. *Hall. Helv.* p. 141.

damp

damp rocks by the brook below *Tecket*, and under the trees on the banks of *North Tyne*, on the south side of the *ostium* of *Wark's-burn*, sparingly. The branches are in pairs on the stalk, and gradually shorter, like those of the common Male-fern. They produce others in pairs after the same manner. They have pinnules, rather broad than winged, sparingly disposed, with deep acute serratures, each denticle ending in a herbaceous spinule. The whole plant is firm, and of a lively glossy green.

193. *Great rough Spleen-wort* (*r*) is not unfrequent. It is on the shadowy banks of *North Tyne*, on the south side of the *ostium* of *Wark's-burn*, where there are a great variety of ferns. The stalk is chaffy. Many of the pinnules are of an equal breadth. They have remarkable triangular foliaceous appendages at the base; and are acutely crenulated at the edges, the denticles ending in spinules. The fructifications are in round dots on the back part of the margin, about twelve or more, in a double series. Its whole form is more rough and firm than any of the other ferns, and easily distinguished from them at first sight by its chaffy complexion, of a reddish-brown.

194. The *prickly auriculate Male-Fern* (*s*) is plentiful among the damp shadowy rocks by the brook below *Tecket*; also among
those

(*r*) *Lonchitis aspera major*. *Matth.* p. 992. *Cam. Epit.* p. 664. *Hist. Oxon.* iii. p. 566. *Lonchitis aspera mas.* *Tabern.* p. 799. *Lonchitis altera cum foliis denticulatis*, f. *Lonchitis altera* MATTHIOLI. *I. B.* iii. p. 744. *Lonchitis aspera.* *C. B. Pin.* p. 359. *Raj. Hist.* i. p. 138. *Syll. ext.* p. 170. *Tourn. Inst.* t. 314. *Scheuchz. Itin.* i. p. 42. *Polypodium fronde pinnata lanceolata foliolis lunulatis ciliato serratis declinatis pediculis strigosis.* *Linn. Hort. Cliff.* p. 475. *Polypodium pinnis ad basin appendiculatis, oris ciliaribus.* *Hall. Helv.* p. 141.

(*s*) *Filix aculeata Lonchitidi affinis.* *Pluknet.* p. 151. t. 180 f. 3. optime. *Raj. Hist.* iii. p. 84. *Filix Lonchitidi affinis.* *Raj. Syn.* iii. p. 127. (*Ubi quatuor species recensentur*

those below the small cataract in *Honeyclugh*, near *Chesterwood*. The stalk is chaffy. The branches are gradually shorter all the way up. Two, and sometimes four, pair of the pinnules are distinct and auriculate, but many of them run into one great segment. The folioles are prickly at the edges, and lanceolated at the ends; of a lively glossy green on the upper part, and rough underneath. The fructifications are on the under disk, in orbiculated or round dots, in a double series, in number fourteen, perfected in the latter end of autumn. It makes very different appearances according to its different stages of growth, and situation. Seminal plants, about moist dripping rocks, assume the form of the *fine-cut Stone-fern*, and continue so for about a year under culture, with tumid conspicuous veins, and then change to the state described.

195. The *great, prickly, auriculate Male-Fern* (t), a variety of the former, is on the wood-bank, under the steep rocks, below *Tecket*. It differs from it by its size, and the number of distinct pinnules, even to ten pair, which are auriculate. In other respects it is like it*.

quæ vel ad duas vel ad unam videntur reduci posse.) *Polypodium pinnis ramorum paucissimis distinctis, & auriculatis, oris ciliaribus.* *Hall. Helv. p. 142.*

(t) *Filix aculeata major.* *C. B. Pin. p. 358. mas. Prodr. p. 151.* *Filix Lonchitidi affinis.* *I. B. iii. p. 739.* *Lonchitis aculeata major.* *Tourn. Inst. p. 538.* *Filix mas pinnulatis latis auriculatis spinosis.* *Hist. Oxon. iii. p. 580. t. 3. f. 15.* *Icon optima. Raj. Syn. iii. p. 121. non autem PLUKENETI, t. 79. f. 6.* *Filix mas aculeata nostras alis expansis mucosa lanugine tectis Pluknet. p. 151. t. 180. f. 1.* *Omnino videtur, etsi distinguat Rajus, Syn. iii. p. 121.* *Polypodium pinnis ramorum plerisque distinctis, auriculatis, ciliaribus.* *Hall. Helv. p. 142.*

* Olim C. BAUHINUS suam aculeatam majorem multis modis ludere deprehendit, ut CL. HALLER. observatum, l. c.

For the first discovery of the fructifications of ferns in *England*, we are indebted to a curious and sagacious naturalist of *Bristol*, Dr. *William Cole*, who gave an account of it to the secretary of the Royal Society, Dr. *Robert Hook*, Sept. 30th 1669. The learned *Swammerdam* has an epistolary dissertation on the seed of the male-fern in his *Biblia Naturæ*, and at the end of it a curious engraving, representing the seed-vessels, their mechanism, and the seed as viewed by a good magnifier.

Mosses and *Submarines* are numerous. I shall only take notice of such as are of oeconomical use, or curious, according to my proposed plan.

1. *Long, implicated Tree-Moss*, or *Usnea of the shops (u)*. On the steep perpendicular precipices at great *Waneyhouse-crag*, in great abundance. It is five or six inches long. The fructifications are in the form of *scutellæ*, or dishes, on the sides and at the extremities of the more robust and rigid plants. It was a principal ingredient in the famous perfumed powder, called *Pulvis Cyprius*, formerly of so great account at *Montpelier* in *France*, as to form a considerable article of trade*. The *Laplanders* use it for their feet after much fatigue in walking. It is said to be a rare plant in *England* †. It varies in its form according to its age, being very

(u) *Muscus arboreus*, *Usnea OFFICINARUM*. *C. B.* Pin. p. 361. *Raj.* Hist. i. p. 114. Syn. iii. p. 64. n. 1, &c. *Dal.* Pharm. p. 59. *Lichen longissimus*, ex cinereo candicans, rugosus, mollior, receptaculis florum reflexis. *Michel.* Nov. Pl. Gen. Ord. v. n. 2. t. 33. f. 2. *Hall.* Helv. p. 70. n. 4. *Muscus arboreus ramosus longissimus cinereus*. *Scheuchz.* It. vii. p. 514. *Lichen ramis filiformibus ramosis pendulis confertis*. *Linn.* Flo. Lapp. n. 457. *Lichen filamentosus pendulus, ramis implexis, scutellis radiatis*. Flo. Succ. n. 984. *Usnea vulgaris loris longis implexis*. *Dill.* Hist. Musc. p. 56. t. 11. f. 1.

* *I. B.* ii. where is the whole process of making it.

† *DALE.* Ph. l. c.

bushy

bushy and tangled in its younger state. In its older one it is more open and less implicated, as it grows in length and thickness. Those that bear the fructifications are robust, with dichotomous branches, some with finer, and others with more rigid points, or fibrils. These *Micheli* has figured four different times as four different plants. One of these, which is the first he mentions, he calls the *knotty Usnea* (*w*). The knots are only the fructifications, which before they expand into the form of dishes, are orbicular, and look like knots. The fructifications of the alpine *crested coralline Moss* are formed after the same manner. He has drawn it more after nature than *Dillenius*. The second is that I have referred to among the *Synonyms*, used by the judicious *Haller*. It has longer and finer points. *Dillenius* acquaints us he never observed it in all his searches *. The third is with rigid (*x*), and the fourth with small (*y*), fibrils at the ends. It is in all these forms on the face of the same steep and lofty precipices. It is one and the same plant under all these appearances in its state of fructification. An over-fondness for being the author of the discovery of new and unknown plants, natural to the most ingenious men, stimulated by a generous ardour for the enlargement of knowledge, led the learned and curious *Micheli* into this mistake; and a want of opportunity for observation, made it not mended by others.

(*w*) Lichen nodosus, cinereus, longissimus, receptaculis florum refuscentibus. *Michel.* Ord. v. t. 39. f. 1.

* *Usnea loris longis dichotomis, extremitatibus tenuioribus.* *Dill. Hist. Musc.* p. 59. t. II. f. 2.

(*x*) Lichen cinereus longissimus, rugosus, junceus, & subasper. *Michel.* Ord. v. t. 39. f. 3.

(*y*) Lichen ex cinereo candicans, longissimus, furculis rigidioribus, receptaculis florum refuscentibus. *Ibid.* t. 39. f. 4.

2. *Black Mane-Ufnea*, or *Rock-Hair* (z). On the perpendicular steep of great *Waneyhouse-crag*, with the former. On *Raven's-hugh-crag*, near *Simonburn*; also on the precipices under the *Roman wall* by *Crag-lake*, plentifully; in pendulous tufts, from four to seven or eight inches long, of a greenish-black, and sometimes entirely black.

3. *Black Wool-Ufnea* (a). On a large rock above the water-fall at *Tecket*, on the north-west side. On the branches of the *Erica*, or common heath, projecting over the tops of the rocks at *Long-Crag*, by *Watling-street*, near *Swinburn-castle*. It has very much the appearance of black wool, spreading, and variously implicated, soft in winter and in the spring, but afterwards dry and rigid.

4. *Stringy spreading Ufnea* (b). On alpine rocks, and the trunks of old trees. On a large rock on the south-east side of the brook below *Tecket-water-fall*, plentifully.

(z) *Lichen capillaceus longissimus* f. *Muscus arboreus nigricans*, *Ufnea Officinarum*. *Michel*. Ord. v. n. 7. p. 77. *Hall*. *Helv.* p. 70. *Muscus arboreus capillaceus longissimus niger*. *Scheuchz.* It. vii. p. 513. *Musco-fungus trichoides e nigredine cinereus jubæ instar faxibus & lapidibus adnascens*. *Hist. Oxon.* iii. p. 633. n. 15. *Muscus corallinus faxatilis fœniculaceus*. *Pet.* *Musc.* n. 78. *Raj.* *Syn.* iii. p. 65. n. 7. *Conserva arborea fusco-virens, jubæ instar e ramis arborum dense dependens mollis*. *Dill.* *Giff.* p. 20. *Lichen ramis filiformibus ramosis pendulis, alis compressis*. *Linn.* *Flo. Lapp.* n. 456. *Ufnea jubata nigricans*. *Dill.* *Hist. Musc.* p. 64. t. 12. f. 7.

(a) *Muscus coralloides lanæ nigræ instar faxis adherens*. *Raj.* *Syn.* iii. p. 65. *Lichen filamentosus ramosissimus decumbens implicatus*. *Linn.* *Flo. Succ.* n. 987. *Ufnea lanæ nigræ instar faxis adhærens*. *Dill.* *Hist. Musc.* p. 66. t. 13. f. 8.

(b) *Muscus caule rigido instar fili chalybei*. *Raj.* *Syn.* iii. p. 65. *Conserva arborea ex cinereo & fusco virens intorta & extensa rigida*. *Dill.* *Giff.* 200. *Lichen filamentosus subramosus decumbens implicato-flexuosus*. *Linn.* *Flo. Succ.* n. 988. *Ufnea rigida horsum versus extensa*. *Dill.* *Hist. Musc.* p. 66. t. 13. f. 10.

5. *Small, black, solid, coralline Moss (c)*. On a large rock on the south side of the brook opposite to *Tecket*, by the path to *Upperton*. On the rocks by *Crag-lake*. It is a very small elegant plant, in tufts, half an inch long, divaricated and branched, the two last branches ending in two short horns, of a glossy black.

6. *Brown, prickly, solid, Coralline Moss (d)*. On the rocks by *Crag-lake*, in tufts. The stalks are an inch long, compressed, and branched; the branches ending in very minute spinnules, without any conspicuous receptacles for the fructifications: of a blackish-brown, or chestnut colour.

7. *Crisp, warty, solid, coralline Moss (e)*. On the rocks under the *Roman wall* by *Shewing-sheels*, and by *Crag-lake*, at the west end, plentifully. It grows in broad tufts, sometimes taking up a space of half a foot, or more, nourished by a thin coat of earth,

(c) *Lichen fruticosus alpinus minimus nigerrimus*. *Hall. Helv.* p. 70. t. 2. f. 1.

(d) *Lichen terrestris angustior ramosissimus fuscus*. *Michel. Ord. v.* p. 78. n. 17. *Hall. Helv.* p. 70. *Vaill. Bot. Paris.* p. 115. *Muscus montanus, fuscus, ramosissimus, non tubulatus*. *Raj. Hist.* iii. p. 21. *Syn. ii.* p. 21, n. 7. *Vaill. Paris.* t. 26. f. 8. *non optime, si omnino noster est*. *Lichenoides non tubulosum, ramosissimum, fruticuli specie, rufro-nigrescens*. *Dill. Giff.* p. 202. *Raj. Syn.* iii. p. 66. n. 10. *Coralloides fruticuli specie, fuscum spinosum*. *Dill. Hist. Musc.* p. 12. t. 17. f. 31.

(e) *Lichen alpinus ramosus glaucus botryoides*. *Scheuchz. It.* ii. p. 137. t. 19. f. 4. *Michel. Ord. v.* p. 78. n. 22. t. 53. f. 7. *Hall. Helv.* p. 71. *Et, Lichen cinereus, fruticosus, saxatilis, racemulis, feminum undique obductus, receptaculis florum nigricantibus*. *Michel. l. c.* n. 20. t. 53. f. 5. *judice LINNÆO*. *Lichenoides non tubulosum cinereum ramosum totum crustaceum*. *Raj. Syn.* iii. p. 66. *Corallina alpina valde crispa*. *Fet. Gaz.* p. 158. t. 65. f. 7. *Musco-fungus coralloides terrestris dense ramificatus cinereus & veluti incrustatus NORWEGICUS*. *Hist. Oxen.* iii. p. 633. f. 15 t. 7. f. 12. *Lichen caule ramoso solido, foliolis crustaceis tecto*. *Linn. Flo. Lapp.* n. 439. *Royen. lugdb.* p. 512. *Coralloides crispum & botryforme alpinum*. *Dill. Hist. Musc.* p. 114. t. 17. f. 33.

formed

formed of decayed putrid moss. The stalks are from an inch to an inch and a half long, and branched, with short fibrils, and warty excrescences of a greyish-white, as if powdered. The fructifications are on the sides of the more rigid fibrils, in the form of very small black tubercles, sometimes smooth, and sometimes uneven, appearing through a magnifier as if two or three were joined together. It is a scarce plant. *Dillenius* refers us to the *Welch* mountains, and the transmarine Alps, for it.

8. *Cypress-like, solid, coralline Moss (f)*. On the rocks at *Long-Crag*, by *Walling-street*; also on the rocks by *Tecket-water-fall*, plentifully. It is from an inch and a half to two inches high. The younger plants are thick set with folioles, the older ones with few, of a light brown, with a tinge of bright grey, in their recent state, and glossy. The fructifications are at the top of the more robust plants, on short rigid fibrils, in the form of orbicular or round tubercles, first of a light glossy brown, and afterwards black. Some of both colours are on the same plant in March. It is accounted a scarce plant, and not very plentiful, even at *Snowden*.

9. *Crested, fine-leaved, solid, coralline Moss (g)*. In a remarkable fissure, or *sinus*, on the top of great *Waneyhouse-crag*, called the *Bier*, plentifully. On the east side, and near the bottom, of a large shadowy rock on the south side of the brook below *Tecket-*

(f) *Lichenoides non tubulosum, ramulis scutellis nigris terminatis. Raj. Syn. iii. p. 66. Coralloides cupressiforme, capitulis globosis. Dill. Hist. Musc. p. 117. t. 17. f. 35.*

(g) *Corallina montana fruticosior. Raj. Syn. i. p. 18. Lichenoides non tubulosum ramosissimum fructiculi specie cinereo-fuscum. Syn. Ejsd. iii. p. 65. Lichen erectus ramosissimus, ramis teretibus nudis filiformibus obtusis. Linn. Flo. Lapp. n. 440. t. 11. f. 4. Coralloides alpinum corallinae minoris facie. Dill. Hist. Musc. p. 116. t. 17. f. 34.*

water-

water-fall, near the top of the bank. It has only a thin coat of earth, formed of rotten moss, to sustain it. The stalks are from an inch to an inch and a half long and branched. The folioles are fine, close, and thick set, down to the very base of the younger plants, of a grey colour, with a cast of sea-green, and sometimes with a blush of red. The fructifications are on the tops of the branches of the more robust and aged ones. They are first roundish, and afterwards expand to a flat circular form, a quarter of an inch in diameter, of a beautiful black, with a purplish cast; in their recent state resembling the nap of velvet. Above them is a crest of fine short spinnules. It is a scarce plant. *Dillenius* refers us to the *Welch* mountains for it. It is in its greatest beauty in the latter end of September.

10. The *prickly, distorted, tubulous, horned Moss, with foliaceous excrescences (b)*, is not unfrequent on dry barren heaths, and on old walls topped with earth. It is on an old wall on the south side of the military road, a quarter of a mile west from *Carrarw*, plentifully. It is from two to three or four inches high, and branched, in the form of a little bush, dichotomous, distorted, rigid and prickly. The fructifications are small and orbicular, at the top of the incurvated fibrils, first of a flesh-colour, and afterwards brown; perfected in autumn. It varies in its size and shape, according to its age and situation. On shadowy heaths and walls it is robust, and frequently compressed. In a

(b) *Lichen coralloides, tubulosus, major, montanus, e cinereo-viridi refuscens, caulibus recurvis, nonnihil foliosis, inordinate dispositis, receptaculis florum crassioribus resuscitentibus. Michel. Ord. vi. p. 80. n. 10. t. 40. f. 5. Hall. Helv. p. 68 Musco-fungus corniculatus major cinereus ramulis latioribus, & fere verrucosis. Hist. Oxon. iii. p. 633. n. 8. Lichenoides tubulosum ramosum rigidius, majus & crassius, cinereo-fuscum. Dill. Giff. p. 203. Raj. Syn. iii. p. 67. n. 16. Coralloides sparsum, caulibus tortuosis & spinosis. Dill. Hist. Musc. p. 101. t. 16. f. 25.*

more

more exposed situation, on dry walls, and naked rocks, it is meager and slender, but in both these states it is covered with a scabrous crust. It sometimes, indeed, loses its coat by being weather-beaten, or by age, and then it is sometimes taken for a different species.

¶ 11. The *glabrous, prickly, tubulous, horned Moss (i)*, is frequent about dry alpine rocks, and on old walls, topped with earth. It is plentiful on the same wall with the former. It is also upon *Tecket-rocks*. It is in the form of a little bush, from an inch to three inches high, usually of a dark grey or brown. The branches are glabrous, slender and rigid, ending in reflex sharp fibrils.

12. The *soft, grey, tubulous, horned Moss (k)*, is not uncommon in the openings of woods, and barren shady places. I have observed it under the bushes by the road between *Broadpool-common* and *Thorough-gates*, near *Simonburn*, in autumn. It is three or four inches high, of a whitish-grey, sparingly set with branches and foliaceous excrescences. The fructifications are on the tips, small and orbicular, of a reddish-brown.

(i) Lichen terrestris, atro-fuscus, minor, ramosior, ac rigidior, & veluti aculeatus. *Michel. Ord. v. n. 18. p. 78.* Lichen coralloides durior, alpinus, minimus, ramosissimus. *Hall. Helv. p. 69.*

(k) Muscus corniculatus. *Tabern. p. 809. Icon bona. I. B. iii. p. 767.* Lichenoides tubulosum cinereum, minus crustaceum, minusque ramosum. *Dill. Giff. p. 203. Raj. Syn. iii. p. 67. n. 17.* Lichen fructiculosus, tubulosus, dichotomus, ramis simplicibus subulatis. *Linn. Flo. Suec. n. 981.* Lichen caule erecto dichotomo, ramis tubulatis. *Flo. Lapp. n. 435. Royen. lugdb. p. 512.* Coralloides corniculis longioribus & rarioribus. *Dill. Hist. Musc. p. 102. t. 16. f. 26.*

The *horned* mosses were formerly used for coughs and difficulty of breathing, but are now not regarded.

13. *White coralline Moss, or Rein-Deer Moss (l)*. On heaths, and about moist rocks, plentifully. It is of a bright white, very much branched, soft and tender in its younger state. The fructifications are on the fibrils of the more robust plants, first of a glossy brown, and afterwards black, in the form of tubercles, but they are rarely seen. It is of great use in the *Lapland*-economy, being the food of the *Rein-deer* in winter. They become fat with it, and give plenty of good milk, of which both butter and cheese are made. In defect of it, they are fed with the *black Mane-Ufnea* *.

14. *Brown-tipt, tubulous, coralline Moss (m)*. On moist rocks, and sometimes on the ground with the former. On the rocks at *Sbit-*

(l) Lichen coralloides, tubulosus, major, candidus, ramosissimus, receptaculis, florum refuscentibus, perexiguus. *Michel*. Ord. vi. n. 1. p. 79. t. 40. f. 1. *Hall*. Helv. p. 69. Muscus corallinus s. Coralloides montana. *Tabern*. Icon. p. 810. *Pet*. n. 76. Muscus coralloides. *I. B.* iii. p. 865. Muscus coralloides, s. cornutus montanus. *C. B.* Pin. p. 361. Lichenoides tubulosum, ramosissimum, fruticuli specie, candicans. *Dill*. Giff. p. 202. *Raj*. Syn. iii. p. 66. n. 14. Musco-fungus coralloides montanus ramosissimus cinereus vulgaris. *Hist. Oxon.* iii. p. 633. f. 15. t. 7. f. 9. Coralloides corniculis candidissimis. *Tourn*. Inst. p. 565. Lichen fruticulosus perforatus ramosissimus, ramulis nudentibus. *Linn*. Flo. Suec. n. 98. Lichen caule erecto tereti ramosissimo, alis perforatis. Flo. Lapp. n. 437. *Royen*. lugdb. p. 511. Coralloides montanum fruticuli specie ubique candicans. *Dill*. Hist. Musc. p. 107. t. 16. f. 29.

* Hoc musco RANGIFERI fere pascuntur. Inde forte iis animalibus lac pinguisimum, & ex eo butyrum scbi fere odere, caseus vero copiosissime paratur. *Linn*. Flo. Lapp. n. 437. & n. 163.

(m) Lichenoides tubulosum ramosissimum, fruticuli specie candicans, corniculis refuscentibus. *Dill*. Giff. p. 203. *Raj*. Syn. iii. p. 67. n. 15. Coralloides fruticuli species candicans, corniculis refuscentibus. *Dill*. Hist. Musc. p. 110. t. 16. f. 30.

lington, near *Wark*, in *Tynedale*, plentifully. The stalks of the young plants are round, of a bright white, tipped with brown. Those of the old ones are compressed, and entirely brown; which are the distinctions between it and the former.

15. *Great, soft, open, coralline Moss (n)*. On moist heaths. On *Broadpool*-common by *Ravenshugh*-crag, at the roots of the *Ericæ*, plentifully. It is three or four inches high, perforated at the divarications of the branches, and also at the ends, with spinules elegantly disposed in the form of a star.

16. *Small, soft, open, coralline Moss (o)*. With the former, frequent. It is from an inch to three inches high, with very short branches at the top, perforated like the former. At the bottom and on the lower part are small folioles, of a pale green above, and white underneath, sparingly crenated. The upper part is thick set with foliaceous excrescences. The fructifications are on the tips of the fibrils or branches of the more robust plants, small and orbicular, of a reddish-brown, perfected in September.

(n) *Lichenoides tubulosum*, cauliculis mollioribus & crassioribus majus. *Raj. Syn.* iii. p. 67. n. 20. *Coralloides perforatum majus, molle & crassum.* *Dill. Hist. Musc.* p. 98. t. 15. f. 21.

(o) *Lichen coralloides tubulosus, albidus, minor et mollior, caulibus crassioribus, minus ramosis, receptaculis florum perexiguis, resuscitantibus.* *Michel. Ord.* vi. p. 79. n. 7. *Lichenoides tubulosum, cauliculis mollioribus & crassioribus, minus.* *Raj. Syn.* iii. p. 67. n. 21. *Lichen fruticulosus perforatus, ramulis brevissimis.* *Linn. Flo. Suec.* n. 979. *Lichen caule ramoso, alis perforatis, ramis brevissimis acutis.* *Flo. Lapp.* n. 438. *Royen. lugdb.* p. 511. *Coralloides perforatum minus, molle, & tenue.* *Dill. Hist. Musc.* p. 99. t. 16. f. 22.

17. There is a VARIETY of it on *Tocket-rocks* a little more than an inch long, thick set with foliaceous excrescences, in the form of a *stag's-horn* (*p*).

18. There is another VARIETY among other mosses in the *firus* or large aperture, called the *Bier*, on the top of great *Waneyhouse-crag*, near *Swethope-lake*, with slender stalks, two or three inches high, divided into two straight, upright forks, or tubules (*q*).

19. There is a third VARIETY in the shadowy clefts of *Raven's-bugh-crag*, and of the precipices by *Crag-lake*, with short, thick, cylindric stalks, an inch and half long, sparingly set towards the top with short, slender *setæ*, with numerous minute crenated folioles, larger on the lower part and at the bottom, of a pleasant sea-green above, and silvery underneath, shrivelling up in drying (*r*). It is in its greatest beauty in September, when the fructifications are perfected, of a reddish-brown, and orbicular, on the obtuse ends of the stalks. It is very soft and tender, and loves to be sheltered from cold and rain by other plants, or the projections of the rocks, and therefore is commonly found growing in broad tufts in places not exposed, in some cavernous part or warm recess, towards the bottom.

(*p*) *Muscus coralloides, saxatilis, cornua CERVI referens. C. B. Pin. p. 361. Lithobryon coralloides. Column. Echphr. ii. p. 83. Coralloides cornua CERVI referens corniculis brevioribus. Tourn. Inst. p. 565. Lichenoides tubulosum cinereum humile, DAMÆ cornua referens. Dill. Giff. p. 203. ß. Linn. Flo. Suec. p. 358.*

(*q*) *Coralloides mollis & tenerior caule bifurcato.*

(*r*) *Coralloides foliolis crenatis læte virentibus superne, subtus argenteis, caule molli cylindrico, leviter setaceo.*

20. *Small, branched Moss, with scarlet Heads (s)*. On moist rocks, and upon heaths. On the rocks of *Tecket*. On *Broadpool*-common by *Raven's-bugh-crag*. On *Calleley-hill*, in great abundance. The stalk is an inch high, sparingly branched. The heads, or fructifications, rise in February, of a beautiful scarlet.

21. *Proliferous, Cup-Moss, with scarlet tubercles (t)*. On dry alpine rocks. On the rocks in *Rotheley-park*, near *Wallington*. The tubule or stalk is an inch high or more, of a greenish-grey, and sometimes of a light-grey. The fructifications are elegantly disposed round the edges of the cup, in the form of tubercles, and in its proliferous state often entirely efface it. They are of a bright scarlet. Infused in lye, they are said to strike a purple, fair and durable. It appears in October, and holds its beauty all the winter, till late in the spring. The scarlet turns to a deep purple in drying.

22. *Thigh-*

(s) *Lichen coralloides, tubulosus, cinereus, minor, parum ramosus, receptaculis florum coccineis.* *Michel.* Ord. vi. p. 80. n. 15. *Hall.* *Helv.* p. 68. *Muscus coralloides apicibus coccineis.* *Raj.* *Hist.* i. p. 113. *Cat. stirp. Brit.* p. 297. *Lichenoides coralliforme, apicibus coccineis.* *Raj.* *Syn.* iii. p. 68. n. 24. *Musco-fungus montanus, corniculatus, minor, erectus, apicibus coccineis.* *Hist. Oxon.* iii. p. 633. n. 2. *Coralloides ramulosum, tuberculis coccineis.* *Dill.* *Hist. Musc.* p. 96. t. 15. f. 19.

(t) *Lichen pyxidatus, (rugosus, prolifer, & non prolifer) acetabulorum oris coccineis & tumentibus.* *Michel.* Ord. viii. p. 82. n. 3. t. 41. f. 3. *Et, Lichen pyxidatus prolifer, acetabulis rudibus & minus cavis receptaculis florum coccineis.* *EJUSD.* n. 4. *Lichen (forte) pyxidatus acetabulorum oris coccineis non tumentibus.* *Scheuchz.* *Itin.* ii. p. 136. *Lichen pyxidatus prolifer acetabulorum oris coccineis & tumentibus.* *Hall.* *Helv.* p. 65. *Lichen pyxidatus acetabulorum oris coccineis & tumentibus.* *Vaill.* *Bot. Paris.* t. 21. f. 4. *Muscus pyxioides labellis saturate croceis* *Boccen.* *Mus. di Piante.* p. 142. t. 104. *Muscus multiformiter pyxidatus acetabulis coccineis.* *Pet.* n. 73. *Plot.* *Staff.* t. 14. f. 1. *Musco-fungus pyxidatus calyce altero alteri innato apicibus nonnunquam coccineis.* *Hist. Oxon.* iii.

22. *Thigh-bone-like Cup-Moss (u)*. Among the heath by *Raven's-hugh-crag*. The tubule is an inch and a half or two inches high. It is robust, and very much resembles a thigh-bone, from which it has its name. It is not in the *Flora Angelica*.

23. *Radiated Cup-Moss (v)*. On the rocks by *Crag-lake*, frequent. The cups are large, with many short folioles, elegantly disposed. They are sometimes proliferous, and send forth young plants both from the center and the margin, in which state it is exceedingly beautiful. The tubercles or fructifications are of a fine scarlet.

24. *Horned Cup-Moss (w)*. On the rocks at *Raven's-hugh-crag*, at the roots of the *ericæ*. The stalks or tubules are often three or

p. 632. f. 15. t. 7. f. 4. *Lichenoides tubulosum pyxidatum tuberculis amæne coccineis, proliferum*. *Dill. Giff.* p. 205. *Raj. Syn.* iii. p. 70. n. 36. *Lichen scyphifer simplex in-tegerrimus, stipite cylindrico, tuberculis coccineis*. *Linn. Flo. Suec.* n. 972. *Coralloides scyphiforme, tuberculis coccineis*. *Dill. Hist. Musc.* p. 82. t. 14. f. 7.

(u) *Coralloides scyphiforme, offis femoris facie*. *Dill. Hist. Musc.* p. 91. t. 15. f. 15.

(v) *Lichen pyxidatus ramosus & prolifer receptaculis florum resuscitantibus*. *Michel. Ord.* viii. p. 82. t. 41. f. 7. *Et, Lichen pyxidatus ENDIVIÆ folio, &c.* p. 82. n. 10. t. 42. f. P. P. pulchre. *Et, Lichen pyxidatus ramosus & prolifer medius*. *Id.* n. 8. *ut videtur*, CL. HALL. *Judice. l. c.* *Lichen pyxidatus, prolifer, marginibus ferratis*. *Hall. Helv.* p. 65. *Muscus pyxiodes*. *Barrel. Rar. Icon.* 1278. n. 2. *Lichenoides pyxidatum marginibus eleganter foliatis*. *Raj. Syn.* iii. p. 69. *Lichen caule simplici, calyce turbinato, centro multipliciter prolifero*. *Linn. Flo. Lapp.* n. 432. *Coralloides scyphiforme, marginibus radiatis & foliatis*. *Dill. Hist. Musc.* p. 85. t. 14. f. 9.

(w) *Lichen pyxidatus & corniculatus prolifer, e veridi obsoleto lutescens*. *Michel.* p. 80. *Ord.* vii. n. 1. t. 41. f. 1. *Lichen pyxidatus & corniculatus prolifer*. *Scheuchz. It. Alp.* I. p. 42. t. 5. f. 3. *Hall. Helv.* p. 66. *Coralloides scyphiforme cornutum*. *Dill. Hist. Musc.* p. 92. t. 15. f. 16.

four or more in a group, from two to three inches high, with lacinated folioles at the base, and on the lower part; of a lively sea-green above, and silvery underneath. Some of the younger plants are naked, in figure like a horn, and often mistaken for a species of the horned moss. The more robust and aged ones are branched and proliferous. It is elegantly drawn in its different stages of growth and variations by *Dillenius* and *Micheli* *.

25. *Branched Cornu-copia Cup-Moss (x)*. About the decayed stumps of trees in woods, and moist alpine rocks, frequent. It is two inches high, with crenated folioles at the base, of a light grey. The fructifications appear in the spring on the points of the serratures of the cup, in the form of small round tubercules.

26. The *clumsy indented Cup-Moss (y)* is frequent among the *ericæ* under *Raven's-hugh-crag*, in winter and in the spring. The stalk

* *Locis citatis.*

(x) *Muscus cornucopioides cristatus.* *Boccon.* Mus. di Piante. t. 107. & t. 8. p. 21. Lichen pyxidatus prolifer verrucosus oris tumentibus & nigris. *Tourn. Inst. Vaill. Bot. Paris.* p. 115. *Hall. Helv.* p. 66. Lichenoides tubulosum cinereum, valde crustaceum, ramulis brevioribus & crebrioribus ex acetabulis enascentibus. *Ray. Syn.* iii. p. 68. n. 26. Coralloides cornu-copioides incanum, scyphis cristatis. *Dill. Hist. Musc.* p. 94. t. 15. f. 17.

(y) Lichen pyxidatus teres acetabulis minoribus repandis. *Michel.* p. 80. Ord. vii. n. 2. t. 41. f. 2. *Est pyxidati adultior & ramosa ætas.* *Hall. Helv.* p. 66. *Tourn. Inst.* p. 549. *Vaill. Bot. Paris.* p. 115. Lichenoides tubulosum minus ramosum, cauliculis crassioribus difformibus. *Ray. Syn.* iii. p. 68. n. 22. Corallina montana, difformis. *Ejusd. Syn.* ii. App. p. 332. Lichen scyphipher simpliciusculus subventricosus, calycibus dentatis. *Linn. Flo. Suec.* n. 977. Lichen caule simplici, apice acuto aut calyce turbinato terminatrice. *Flo. Lapp.* n. 433. t. 11. f. 5. Coralloides crassius subincanum, calycibus dentatis. *Dill. Hist. Musc.* p. 95. t. 15. f. 18.

β. Lichenoides tubulosum magis ramosum, maxime difforme. *Ray. Syn.* iii. p. 68. *in ætate adultiore.*

or tubule is an inch and a half long, with laciniated folioles at the bottom, and on the lower part. It is first erect, and afterwards incurvated, of the thickness of a common writing-quill, simple, and some with one or two branches, slender towards the base, and more robust upwards, with foliaceous excrescences, of a dull grey, with a greenish cast.

27. The tall, slender, brown, indented, Cup-Moss (*z*), is not unfrequent on the rocks by Crag-lake, many of them together in a group. It is two inches high, slender, and of a bright shining brown. The denticles of the ferratures of the cup turn up, and become pedicles to sustain the tubercles or fructifications, which are of a reddish-brown and entirely efface it.

28. There is a VARIETY of it at the roots of the *ericæ* about the rocks at Raven's-hugh-crag, with incurvated spinnules or branches, rising towards the middle of the stalks. The cups are oblong, deep, and moderately laciniated at the edges, somewhat resembling the sockets of a candlestick; as does the whole plant a branched one, in miniature (*a*).

(*z*) Lichen pyxidatus & corniculatus ramosus alpinus e fusco-cinereus, pyxidulis crenatis. *Michel.* p. 81. Ord. vii. n. 9. t. 41. f. 5. *nomen, non autem Icon, CL. HALL. judice, loco infra cit. sub.* n. 30. t. 41. f. 5. Lichen pyxidatus, ramosus, acetabulis fimbriatis. *Ejusd. ib.* n. 10. *Tourn. Inst.* p. 545. *Vaill. Bot. Paris.* Musco-fungus pyxidatus gracilior ramosus, calycibus ferratis. *Hist. Oxon.* iii. p. 362. f. 15. t. 7. f. 6. Lichenoides pyxidatum cinereum elatius, ramulis pyxidatim desinentibus. *Raj. Syn.* iii. p. 69. n. 32. Lichen scyphifer ramosus denticulatus filiformis. *Linn. Flb. Suec.* n. 975. Coralloides scyphiforme ferratum elatius, cauliculis gracilibus glabris. *Dill. Hist. Musc.* p. 88. t. 14. f. 13.

(*a*) Coralloides montanum elatius & ramosus, e fusco glabro, calycibus oblongis leviter laciniatis.

This

This species is always of a smooth shining complexion, which is a distinction reckoned peculiar to it.

29. The *small, rattle-leaved Trumpet-Cup-Moss (b)*, is frequent in dry barren places upon heaths, also on old walls topped with earth under trees, and about rocks. It is an elegant little plant, of a trumpet-like form. The cups change to slender filiform pedicels to sustain the fructifications, which are in the shape of minute scarlet tubercles. It is very rare to find it in this state. I met with it on the rocks by *Crag-lake*.

30. The *slender indented Cup-Moss (c)* is not unfrequent with the former, and the *Chalice-Moss (d)*. It is sometimes prolific to the third degree, in which state it is very beautiful.

The

(b) *Lichenoides tubulosum pyxidatum exiguum, fusco-virens. Dill. Giff. p. 204. Raj. Syn. iii. p. 70. n. 37. Coralloides scyphis gracilibus tubiformibus, PEDICULARIS folio. Dill. Hist. Musc. t. 14. f. 10.*

(c) *Lichen non ramosus acetabulis fimbriatis. Michel. p. 83. Ord. viii. n. 13. t. 41. f. 5. Tourn. Inst. p. 549. Musco-fungus pyxidatus gracilior & levis calycibus ferratis. Pluknet. Amalth. p. 149. Lichenoides tubulosum & pyxidatum marginibus ferratis. Dill. Giff. p. 204. Raj. Syn. iii. p. 69. n. 30. Lichen pyxidatus marginibus ferratis. Hall. Helv. p. 65. Lichen scyphifer simplex denticulatus, stipite cylindrico. Linn. Flo. Suec. n. 973. Lichen scyphiforme gracile, marginibus ferratis. Dill. Hist. Musc. p. 84. t. 14. f. 8.*

(d) *Muscus pyxioides saxatilis. C. B. Prodr. p. 152, &c. Lichen pyxidatus minor. Vaill. Bot. Par. p. 115. t. 21. f. 6. Michel. t. 41. f. 1. non vero nomen. Lichen tabulosus pyxidatus cinereus. Hall. Helv. p. 64. Lichen scyphifer simplex crenulatus, tuberculis fuscis. Linn. Flo. Suec. n. 971. Sp. Pl. 1151. Coralloides scyphiforme, tuberculis fuscis. Dill. Hist. Musc. p. 79. t. 14. f. 6.*

e. *Lichen pyxidatus major. Tourn. Inst. p. 549. t. 325. f. D. Vaill. l. c. f. 8. Micheli. p. 82. nomen, non autem Icon. Lichenoides tubulosum pyxidatum cinereum. Dill. Giff.*

The *Chalice-Moss* was formerly used in a powder, decoction, or syrup, for curing the convulsive or whooping cough in children *; for which it kept up its character as a specific, till the *Cortex Peruviana*, a more powerful analeptic, was found to answer the end more effectually †.

31. *Tree-Lungwort*, or *Oak-Lungs*, of a reticular figure, and of a pale brownish colour, with brown *scutellæ* at the edges (*e*), is frequent on old oaks and other trees in thick woods. It varies in its reticular form and devarications, according to its different stages of growth. It was antiently used with great commendations for a dry hectic cough, and other diseases of the breast, in a syrup or decoction; but it very rarely enters into modern prescrip-

p. 204. Lichen caule simplici, calyce turbinato, margine tenui. *Linn. Flo. Lapp.* p. 428. *Royen. lugdb.* p. 512. *interdum duar. unciar. altitudine in saxis alpium humidis, et truncis arborum. unius plantæ duæ varietates, unde unica icon est apud veteres, Cam. Epit. scilicet.* p. 783. *Magnolium, & alios.*

* WILLIS *Pharm. rational.* f. 1. c. 6. de tussi puerorum convulsiva.

† HUXHAM. *de aere & morbis epidem.* Vol. 1. p. 76, 77.

(*e*) *Pulmonaria. Dorsten.* p. 24. b. Icon bona. *Matthiol.* p. 1039, &c. *Cam. Epit.* p. 783. *Dod. Pempt.* p. 474. *Trag.* p. 524. Lichen arboreus f. *Pulmonaria arborea. I. B.* iii. p. 759. *Tourn. Inst.* p. 549. *Michel.* p. 86. Ord. xiv. n. 1. *conf. t. 45. f. 1. quæ varietas esse videtur.* *Hall. Helv.* p. 73. *Boerb. Ind. A.* p. 17. *Muscus Pulmonarius. C. B. Pin.* p. 361. *Dal. Pharm.* p. 59. *Blackwall. t. 336.* *Muscus arboreus pulmonarius. Raj. Hist. i.* p. 114. *Lichenoides peltatum arboreum maximum platyphyllum. Dill. Giff.* p. 208. *Raj. Syn. iii.* p. 76. n. 86. *Musco-fungus arboreus platyphyllos ramosus è viridi fuscus. Hist. Oxon. iii.* p. 634. f. 15. t. 7. f. 1. *Platysina reticulatum marginibus scutelliferis. Hill. Nat. Hist. Pl.* p. 88. *Lichen foliis oblongis divisis, superficie reticulata punctata. Linn. Flo. Lapp. n. 444. Royen. lugdb.* p. 509. *Lichenoides pulmoneum reticulatum vulgare, marginibus peltiferis. Dill. Hist. Musc. p. 212, 213. t. 29. f. 113.*

† “ Adstringit omnino, uti tota fere lichenum classis, & exiguo in usu est.” HALLER. l. c. HOFMANN. *de Med. Officin* p. 447.

tions, being accounted too great an astringent †. The common people in *Herefordshire* dye their stockings brown with it. They call it *Rags*.

32. The *sinuated ash-coloured Ground-Liverwort, Ground-Jew's-Ear,* or *Star of the Earth (f)*, so famous in modern times for curing the bite of a mad dog, on the recommendation of Dr. Mead, given before the approach of the hydrophobia in powder with pepper *, an equal quantity of each, with bleeding and cold-bathing, is frequent at the roots of trees in damp woods, and about hedges, with the *large reddish-brown species (g)*.

33. Fine

(f) Lichen pulmonarius miximus e cinereo resuscens, inferne subrufus, receptaculis florum rubris plano-orbiculatis. *Michel.* p. 84. Ord. xii. n. 2. Lichen pulmonarius, saxatilis, rufescens, superne planus, inferne reticulatus. *Tourn. Inft.* p. 549. Lichen pulmonarius, saxatilis digitatus. *Vaill. Bot. Paris.* p. 116. t. 21. f. 16. *Icon non bona, MICHELI judice. l. c.* Musco-fungus terrestris latifolius cinereus, HEPATICÆ facie. *Hist. Oxon.* iii. p. 632. f. 15. t. 7. f. 1. Lichen terrestris cinereus. *Raj. Hist. Pl. i.* p. 117. *Cat. ANGL.* p. 185. Syn. ii. App. 23. *Hall. Helv.* p. 74. Lichenoides peltatum terrestre cinereum majus, foliis divisis. *Dill. Giff.* p. 208. *Raj. Syn.* iii. p. 76. n. 87. Platysma sinuosum scutellis ovato-rotundis. *Hill. Nat. Hist. Pl.* p. 89. Lichen cinereus, *Offic. Dal. Pharm.* p. 59. *Blackwall.* t. 336. Lichen foliis planis subrotundis lobatis obtusis, calyce plano lacinula propria adnato. *Linn. Flo. Lapp.* n. 441. *Royen. lugdb.* p. 508. Lichenoides digitatum cinereum, LACTUCÆ foliis sinuosis. *Dill. Hist. Musc.* p. 200. t. 27. f. 102.

* OLDENBURG ad RAIUM *Epist. posth.* p. 110. idque experimentis comprobavit. GEORG. DAMPIER. *Ph. Tr.* n. 237. *Pulvis antilyffus* Officinarum LONDINENSIVM fit ex eo ipso LICHENE & pipere nigro. Dosis una scrupulorum iv. Sir HANS SLOANE l. c. conf. MORTIMER in *Ph. Tr.* n. 443. p. 319. D. MEAD. *Lib. de Venen.* Ed. 4. p. 156. HALLER. l. c.

(g) Lichen pulmonarius, major, inferne obscurus, desuper e cinereo virescens, receptaculis florum nigricantibus, primum circinatis, deinde teretibus. *Michel.* Ord. xii. n. 4. p. 85. t. 44. f. 2. *Hall. Helv.* p. 73. *Farrel. Icon.* 1278. n. 1. Lichen pulmonarius saxatilis digitatus. *Vaill. Bot. Paris.* p. 116. t. 21. f. 18. *nimis pictorie.* Lichenoides peltatum

33. Fine green Lichen, or Liverwort with black warts (*b*). On the rocks under the Roman wall by Crag-lake, sparingly. The digitated lobes of the older plants are large, concave, or turned inwards at the edges. They are of a lively glossy sea-green on the upper part, whitish at the edges underneath, and the rest of a dark brown. The fructifications are in the form of small warts or tubercles, of a coal-black. It does not hold its colour in drying, but the whole plant with the fructifications, turn brown. From one of these it is sometimes described by authors, for want of an opportunity of seeing it in its recent state. It is a very uncommon plant. *Dillenius* observed it in the woods about *Giffa*, but assures us that he never met with it any where else.

34. Smooth, pitted, Endive-like Lichen or Liverwort (*i*). On dry rocks, and on the ground. On a large millstone-rock above *Tecket-*

tatum terrestre refuscens. *Dill. Giff. p. 208.* *Syn. iii. p. 77. n. 88.* Lichen foliis planis, subrotundis, lobatis, obtusis, calyce plano lacinula propria adnata. *Linn. Flo. Lapp. n. 441.* Lichenoides digitatum refuscens, foliis LACTUCÆ crispis. *Dill. Hist. Musc. t. 27. f. 103.*

(*b*) Lichen pulmonarius maximus, verrucosus, superne e cinereo virescens, inferne obscurus, receptaculis florum rubris circinatis. *Michel. Ord. xii. n. 3. p. 85.* Lichen pulmonarius digitatus ericetorum, læte virescens, nigris punctis notatus. *Rupp. Flo. Jen. p. 298.* Muscus pulmonarius corpusculis fuscis papillatus. *Læfel. Pruff. p. 172. n. 474.* Lichenoides peltatum terrestre virescens foliorum superficie verrucosa. *Dill. Giff. p. 208.* Lichen maculatus montanus non descriptus. *Wagn. Hist. Nat. Helv. p. 280.* Lichen foliaceus repens lobatus obtusus planus, subtus avenius villosus. *Linn. Flo. Suec. n. 962.* Lichen foliis planis subrotundis lobatis obtusis, calyce plano ovali lacinula propria adnato, niveus. *Flo. Lapp. n. 442.* Lichenoides digitatum læte virens, verrucis nigris notatum. *Dill. Hist. Musc. p. 207. t. 28. f. 106.*

(*i*) Lichen foliaceus adscendens laciniatus crispus glaber lacunofus albus, margine elevato. *Linn. Flo. Suec. n. 958.* Lichen niveus sinubus dædaleis laciniatus, ramis erectis, calyce orbiculato. *Flo. Lapp. n. 446. t. 11. f. 1.* Lichenoides lacunofum candidum glabrum, endiviæ crispæ facie. *Dill. Hist. Musc. p. 162. t. 21. f. 56.*

water-fall, on the north-west side; also on another large rock on the north-side, near the top of the bank, plentifully. It covers almost the whole face of the first rock eastward, and is sustained by a little thin spongy earth, formed of decayed putrid moss. The leaves are erect, concave, or turned inwards at the edges, and lacinated, brown underneath, and of a silvery glossy white above, with a cast of sea-green in the younger plants. The fructifications are on the older ones, in the form of minute brown tubercles, which on a silvery ground form a beautiful variegation. It is not in the *Flora Angelica*. We are referred to the transmarine Alps for it by *Dillenius*.

35. *Purple, tinctorial Lichen* or *Liverwort*, with black *scutellæ* or *dishes* (*k*). On the steep rocks under the Roman wall by Crag-lake, towards the west end, plentifully; also on a steep rock at *Raven's-bugh* crag. The folioles are implicated, elegantly lacinated, and sometimes bifid at the ends, about an inch long, of a dusky purple colour, and blackish when dry, thick set with long, rigid, black hairs, in one or two lines underneath, conspicuous at, but not growing on, the edges. The *scutellæ* or fructifications are orbicular, and turn inwards. The common people in the mountainous parts of *Wales*, *Derbyshire*, and *Scotland*, use it in dying purple, prepared by powdering and urine. The *Welch*

(*k*) Lichen Pulmonarius, tinctorius, foliis eleganter, & tenuiter divisis, inferne nigricantibus, & cirrhosis, superne purpureis, & lacunatis, receptaculis florum concoloribus. *Michel. Ord.* xxii. n. 2. p. 90. t. 49. f. 2. Lichen petræus purpureus DERBIENSIS. *Park. Theatr.* p. 1315. *Raj. Hist.* i. p. 116. *Merr. Pin.* p. 72. Lichen crustæ modo saxi adnascens, tinctorius. *Tourn. Inf.* p. 549. Lichen nigricans Omphalodes, *EJUSD. ib. Vaill. Bot. Paris.* p. 116. n. 13. t. 20. f. 10. Lichen imbricatus, foliolis multifidis glabris obtusis canis, punctis vagis eminentibus. *Linn. Flo. Suec.* n. 947. *Sp. Pl.* p. 1143. Lichenoides saxatile tinctorium, foliis pilosis purpureis. *Raj. Syn.* iii. p. 74. n. 70. *Dill. Hist. Musc.* p. 185. t. 24. f. 80.

call

call it *Kenkerig*. The *Scotch* call it *Cork* or *Arcell*. Our northern people seem to call all the stone-mosses, that yield a red or purple dye, *Cork*. They gather this in the spring, being then in the greatest perfection.

36. The grey, blue-pitted Lichen, or *Liverwort* (l), the *Usnea Cræmii humani* of the old *Materia Medica*, said by *Linnaeus* to give a purplish dye; the curled lichen with yellow folioles and *scutelle* (m), said by the same curious author to yield a yellow dye, and to be a specific for the jaundice among the common people in *Sweden*, are frequent on old walls, rocks, and trees.

37. Grey crustaceous Lichen, or *Stone-Moss*, with purplish-red *scutelle* or *dishes* (n). On the rocks at the two *Waneyhouse*-craggs, plentifully; also on the rocks at *Long-Crag*, by *Watlingstreet*, sparingly,

(l) Lichen pulmonarius, foliis eleganter divisis, inferne nigerrimis & cirrhosis, superne lacunatis, & glauco cinereis, receptaculis florum fusco-virescentibus. *Michel*. Ord. xii. n. 1. p. 90. t. 49. f. 1. *Hall*. *Helv.* p. 77. Lichen opere phrygio ornatus. *Vaill.* *Bot.* Paris. t. 21. f. 1. Musco-fungus lichenoides minor cinereus vulgatissimus. *Hist. Oxon.* iii. p. 634. f. 15. t. 7. f. 6. non bene. Lichenoides crusta foliosa superne ex cinereo glauca inferne & cirrhosa scutellis nigricantibus. *Dill.* *Giff.* p. 206. *Raj.* *Syn.* iii. p. 72. n. 61. Lichen imbricatus, foliolis sinuatis scabris lacunosis, scutellis folio concoloribus. *Linn.* *Flo. Suec.* n. 946. Lichenoides vulgatissimum cinereo-glaucom lacunosum & cirrhosum. *Dill.* *Hist. Musc.* p. 188. t. 24. f. 83.

(m) Lichen DIOSCORIDIS & FLINII secundus, colore flavescente. *Column.* *Ephras.* i. p. 330. cum bona *Icone*, p. 331. *Michel.* p. 89, &c. *Tourn.* *Inst.* *Vaill.* *Hall.* *Helv.* p. 76. Lichenoides crusta foliosa scutellata flavescente. *Dill.* *Giff.* p. 206. *Raj.* *Syn.* iii. p. 72. n. 59. Lichen foliaceus laciniatus crispus fulvus. *Linn.* *Flo. Suec.* n. 967. Lichen fulvus sinubus dædaleis laciniatus. *Flo. Lapp.* n. 450. *Royen.* *lugdb.* p. 510. Lichenoides vulgare sinuosum, foliis & scutellis luteis. *Dill.* *Hist. Musc.* p. 180. t. 24. f. 76.

(n) Lichenoides tartareum lividum, scutellis rufis. *Dillen.* *Hist. Musc.* p. 133. t. 18. f. 14.

with

with the two common species, with *reddish-brown* (o) and with *large black scutellæ* (p). It is usually in broad orbicular groups, moderately thick, adhering close to the rocks; but in its older state, easily raised in large plates and entire with a knife; of a whitish-grey, or silvery colour. The *scutellæ* or fructifications are numerous; first white, afterwards of a light red, and at length of a deep purplish-red and glossy, with a white circle round the edges, sometimes crenated, and sometimes not. It is exceedingly beautiful in its state of fructification, elegantly variegating large rocks at the two former places. It is accounted a scarce plant. *Dillenius* refers us to the *Welch* alpine rocks for it. It is not in the *Flora Angelica*.

38. *Grey, tinctorial, crustaceous Lichen, or Stone-Moss, with large yellow dishes* (q). On the rocks at the two *Waneyhouse*-craggs; also on those of *Raven's-ugh* and *Tecket*, plentifully. It is thick, leprous, and spreading, of a rugose granular surface, and often mealy, of a silvery grey colour. The orbicular *scutellæ* or fructifications are large, moderately concave, of a fair pale yellow,

(o) Lichen crustaceus arboribus adnascens ex cinereo-albicans, receptaculis florum crebris subfuscis limbo albo crenato cinctis. *Michel. Ord.* xxxiv. n. 29. p. 97. Lichen leprosus albicans, scutellis subfuscis, margine cinereo subcrenato. *Linn. Flo. Succ.* n. 943. Lichenoides crustaceum & leprosum, scutellis subfuscis. *Raj. Syn.* iii. p. 71. n. 45. *Dill. Giff.* p. 205. *Hist. Musc.* p. 134. t. 18. f. 16.

(p) Lichen saxatilis amplioribus & elegantissimis scyphis nigricantibus ornatus. *Rupp. Flo. Jen.* i. p. 351. ii. p. 299. Lichenoides crustaceum & leprosum, scutellis nigricantibus majoribus & minoribus. *Dill. Hist. Musc.* p. 133. t. 18. f. 15. *Raj. Syn.* iii. p. 71.

(q) Lichenoides crustaceum & leprosum, acetabulis majoribus luteis, limbis argenteis. *D. RICHARDSON. Raj. Syn.* iii. p. 71. n. 46. Lichen crustaceus albidus, scutellis luteis, margine albo. *Linn. Sp. Pl.* 1141. Lichenoides crustaceum & leprosum acetabulis majoribus luteis, limbis argenteis. *Dill. Hist. Musc.* p. 132. t. 18. f. 13.

with

with a white circle round the edges. Our common people on the wastes, who call it *Cork*, dye a fine red with it. They prepare it by drying, powdering, and steeping it in urine, as the *French* do the *Pérille*. The *Welch* call it *Caddlod* and *Ken Gwin*, and use it also in dyeing red, prepared after the same manner. It is a beautiful plant in its state of fructification. It was thought peculiar to *Wales*, till Dr. *Richardson* observed it on the alpine *Yorkshire* rocks. In the *Flora Angelica*, it is called the *Welch-Liverwort*.

39. *Crayfish-eye-like, tinctorial, crustaceous Lichen, or Stone-Moss (r)*. On moor-stones, of the fine rag-kind, about *Crag-sheels*, and *Black-bow-burn*, i. e. the *Black-bill-burn*, near *Wark*, in *Tynedale*. The Stones are so remarkably white with it, that they may be discerned at a considerable distance, in all seasons of the year. The dishes or fructifications are of the same colour. The limb is convex, yellow, and fleshy on being cut through. It is the *Pérille d'Auvergne*, or *Orseille de Terre*, of the *French*, in the province of *Auvergne*, for striking a purple or red, known to them before the discovery of the *Orchel*, an extraneous lichen from the rocks of the *Archipelago*, the *Canary-islands*, *Cape-Verde*, &c. to which it is inferior in quality, but in more common use. They prepare it with urine and lime. The *Orchel* is prepared with urine and potash. It is a scarce plant. It is not in the *Flora Angelica*.

40. *Hard, white, tinctorial, crustaceous Lichen, or Stone-Moss, with black tubercles (s)*. On alpine rocks, frequent. On the rocks at

(r) *Muscus crustaceus scutellaris leprosus cinereus*. *Petiv.* p. 79. *Lichenoides crustaceum & leprosum, scutellare cinereum*. *Dill. Giff.* p. 205. *Raj. Syn.* iii. p. 7c. n. 42. *Lichen crustaceus leprosus, scutis cinereis*. *Vaill. Bot. Paris.* p. 116. n. 22. *Lichenoides leprosum tinctorium, scutellis lapidum cancri figura*. *Dillen. Hist. Musc.* p. 130. t. 18. f. 10.

(s) *Lichen leprosus candidus, tuberculis atris*. *Linn. Flo. Suec.* n. 1058. *Sp. Pl.* 1140. *Lichenoides tartareum tinctorium candidum, tuberculis atris*. *Dill. Hist. Musc.* p. 118. t. 18. f. 8.

Raven's-bugh-crag. On the rocks by *Crag-lake*. It is moderately thick, granular, and of a cracked surface, sometimes mealy. The tubercles or fructifications are of a convex form, coal-black, appearing in January. The *Welch* use it in dying scarlet. They prepare it by powdering, and infusing it three weeks in urine. They prefer it to what they call *Kenkerig*.

41. *Yellow, Map-like, crustaceous Lichen, or Stone-Moss (t).* On the whinstone-rocks by *Crag-lake*, at the south-west end, close by the *Roman* wall, plentifully. The fructifications are in the form of black *Areolæ* on a yellow ground, resembling the lines of a map, making an elegant and beautiful variegation. It is a scarce plant. *Dillenius* refers us to the *Welch* mountains, and to the transmarine alps, for it.

42. *Greenish-white, farinaceous Moss, with fungus-like Tubercles (u).* On mountainous mosses, also on the tops of large rocks, in a

(*t*) *Lichen crustaceus saxatilis, luteus, nigris lineis varius.* *Michel.* Ord. xxxiv. n. 19. p. 97. *Hall.* Helv. p. 84. *Lichenoides crustaceum tenuissimum, segmentis quadratis flavo & nigro colore eleganter variegatis.* *Dill. Giff.* *Lichen leprosus flavescens, liniolis nigris mappam referens.* *Linn.* Flo. Suec. n. 940. *Lichenoides nigro-flavum, tabulæ geographicæ instar pictum.* *Dill. Hist. Musc.* p. 126. t. 18. f. 5.

(*u*) *Lichen crustaceus terrestris, crusta granulosa ex albo subcinerea, receptaculis florum rotundis carneis pediculo infidentibus.* *Michel.* Ord. xxxv. p. 100. t. 59. f. ult. *Hall.* Helv. p. 82. *Fungus omnium minimus turbinatus croceus.* *Boccon.* Mus. ii. p. 150. t. 110. *Fungus granulofus incarnatus, s. non vesicus.* xxxiii. *Læfel.* Pruff. p. 97. n. cclv. *Fungelli incarnati coloris minuti Musco innati.* *Menz.* pugill. rarior. t. 6. *Lichen terrestris Eri-cetorum, basi muscosa capitulis fungiformibus carnei coloris.* *Rupp.* Flo. Jen. p. 298. *Lichenoides fungiforme, crusta leprosa candida, capitulis & pediculis incarnatis.* *Dill. Giff.* p. 205. *Raj.* Syn. iii. p. 70. n. 40. *Lichen leprosus candidus, tuberculis incarnatis.* *Linn.* Sp. Pl. 1141. *Coralloides fungiforme carneum basi leprosa.* *Dillen.* Hist. Musc. p. 76. t. 14. f. 1.

moist turf-soil, with other mosses. On the top of great *Waney-house-crag*. On a large rock on the shadowy bank below *Tucket-water-fall*, on the south side. On the heath-grounds by *Halypike-lake*, plentifully. It lies on the moss-earth, and sometimes on the *sphagnum* with reflex folioles, in the form of a mouldiness. The tubercles or fructifications are of a beautiful flesh-colour, and cut through like a *fungus*. It is an elegant little plant. It was never known to grow in *England*, till the late Dr. *Richardson*, of *Byerley*, in *Yorkshire*, found it on the alpine mosses in that county.

43. *Creeping Wolf's-Claw-Moss*, or *Club-Moss*, with alternate folioles and branches (*v*), is not unfrequent on alpine heaths, and shadowy rocks. It is among the rocks by *Crag-lake*. It is also on the heath on the south side of the *Roman* station at *House-steeds*, by a small rill, near the military-road. It is a very rambling plant. It is fixed down to the ground by small fibres rising from the under side of the branches. The folioles of the younger plants are of a lively green, those of the older ones are yellowish, at the ends of the branches of which are short juliferous spikes, of a pale yellow or straw-colour. Under the scales of these are the fructifications in cordated capsules, in the form of a yellow powder; perfected in August. It is used for cutaneous inflammations, fist-

(*v*) *Muscus terrestris* f. *Lycopodium*. *Dod. Pempt.* p. 472. *Muscus terrestris repens* f. *clavatus*. *C. B. Pin.* p. 360. *Muscus clavatus* f. *Lycopodium*. *Ger.* p. 1374. *emac.* p. 1562. *Park. Theatr.* p. 1307. *Raj. Hist.* i. p. 120. *Syn.* iii. p. 107. *Hist. Oxon.* iii. p. 623. *Muscus clavatus procumbens*. *Hort. Eychst. Æst. Ord.* viii. t. 12. f. 2. *Vaill.* p. 123. *Lycopodium Tabern.* p. 814. *Dill. Giff. App.* p. 87. *Dal. Pharm.* p. 61. *Lycopodium caule repente, foliis patulis, pedunculis spica gemina terminatis*. *Linn. Flo. Lapp.* n. 418. *Flo. Suec.* n. 859. *Hort. Cliff.* p. 476. *Royen. lugdb.* p. 506. *Hall. Helv.* p. 92. *Lycopodium vulgare pilosum anfragosum & repens*. *Dill. Hist. Musc.* p. 441. t. 58. f. 1.

tures and chaps of the skin, the pain and anguish of which it relieves by its remarkable emollient and anodyne powers*.

44. *Creeping Cypress-Moss, or Heath-Moss (w)*, is frequent on *Cheviot*, in places somewhat wet. It creeps on the ground, like the former, and is branched in a dichotomous manner, sometimes with five, six, or seven short ramifications, two inches long. The younger plants are of a lively green. The older ones are more upright, and yellowish. The short juliferous spikes are of a straw-colour. The fructifications are between the scales in reniform bilocular capsules, like a small yellow powder, perfected in September.

45. *Upright Fir-Moss (x)* is plentiful among the moist rocks under the *Roman wall*, on the west side of *Sherwing-sheels*; also among the

* “*Vis ista mitigans & anodyna procul dubio a mechanica figura particularum oritur, unico, quod sciam, exemplo virium medicarum per mechanica principia evidentissime explicatarum.*” HALLER. l. c.

(w) *Muscus clavatus foliis CUPRESSI.* C. B. Pin. p. 369. *Raj. Hist. i. p. 121.* *Muscus terrestris ramosus pulcher.* I. B. iii. p. 767. *Muscus terrestris, cupressinus, nanus, siriensis.* Scheuchz. It. i. p. 43. *Lycopodium foliis quadrifarium imbricatis acutis, furculis erectis, dichotomis spicis sessilibus teretibus.* Linn. Sp. Pl. 1104. *Lycopodium caule repente, ramis tetragonis.* Flo. Lapp. n. 417. t. 91. f. 6. Flo. Suec. n. 861. Hort. Cliff. p. 476. *Reyen lugdb. p. 506.* Hall. Helv. p. 93. *Lycopodium SABINÆ facie.* Raj. Syn. iii. p. 108. n. 3. Dill. Hist. Musc. p. 455. t. 58. f. 2.

(x) *Muscus erectus ramosus saturate viridis.* C. B. Pin. p. 360. *Muscus terrestris Abieti-formis.* Raj. Hist. i. p. 121. Hist. Oxon. iii. p. 624. f. 15. t. 5. f. 9. *Selago foliis & facie ABIETIS.* Rupp. Flo. Jen. p. 330. Raj. Syn. iii. p. 106. Hall. Helv. p. 94. *Muscus terrestris.* Scheuchz. It. i. p. 44. t. vi. f. 2. *ubi flosculos, nescis quos, describit.* *Selago tertia THALII.* Breyn. Eph. Nat. Cur. Dec. 1. An. iv. v. Obf. 149. cum bona Icone. *Lycopodium foliis sparsis octifariis, furculo dichotomo erecto fastigiato, floribus sparsis.* Linn.

Sp.

the rocks under the same wall by *Crag-lake*, towards the west end, where it is frequently six or seven inches high. The root consists of small capillary fibres, from which rise one, and sometimes two or three stalks, with branches in a dichotomous manner, first two, then other two, and sometimes two more, according to its age and strength. The folioles are oblong, narrow and pointed, a little convex on one side, and concave on the other, more close and thick set upwards than at the bottom of the stalks and branches, especially at the ends. The young plants are green; the older ones yellowish. The fructifications are in the *axæ* of the folioles in yellow reniform capsules, like a yellow powder, perfected in August and September. It is a beautiful plant in its state of fructification, the folioles and capsules being then of a bright gold-yellow. It is an emetic and cathartic, and is used as such by some people.

46. *Trailing Hypnum, with waved fins (y)*, is among the rocks under the *Roman wall* by *Crag-lake*; also among those at little *Waneyhouse-crag*, sparingly. It is of a compressed shape and creeping, sometimes simple, and sometimes branched, two or three inches long, of a yellowish-green, and glossy. The fructifications rise in *April* from the *axæ* of the leaves, on capillary pedicles of a fine red. The capsules are oblong, and of a straw-colour with *calyptra*. At the base of the pedicle is a squamose matter, or *involucrum*, called by *Dillenius*, PERICHÆTIUM, which is

Sp. Pl. 1102. *Lycopodium caule erecto dichotomo*. Flo. Lapp. n. 420. Flo. Suec. n. 857. Hort. Cliff. p. 476. *Royen*. lugdb. p. 506. Selago vulgaris ABIETIS rubræ facie. *Dill. Hist. Musc.* p. 435. t. 56. f. 1.

(y) *Hypnum repens crispum, cauliculis compressis, Lycopodii in morem per terram sparsis*. *Raj. Syn.* iii. p. 88. n. 46. *Hypnum pennatum undulatum, Lycopodii instar sparsum*. *Dill. Hist. Musc.* p. 271. t. 36. f. 2.

the great characteristic of the *Hypna*. It is a beautiful plant, and retains its colour a long time in drying.

47. *Hoary Hypnum-like Mountain Bryum, with the fructifications in orbicular capsules on the sides of the branches (z)*, is common on alpine rocks in large tufts. It is on *Tecket*-rocks; also on those by *Crag-lake*, and the two *Waneyhouse*-crag.

48. *Long, transparent Mother of Thyme-leaved Bryum, with sharp sloping heads (a)*, is on the shady dripping rocks on the edge of the brook below *Tecket*, plentifully. It is accounted a scarce plant. *Dillenius* refers us to the *Welch* mountains, and to the transmarine Alps for it.

49. *Branched Polytricum, bearing heads from its tops (b)*, is frequent on *Broadpool*-common, by *Raven's-hugh*-crag. It is a scarce plant. We are referred to *Snowden* for it by *Dillenius*.

50. *Small Stone-Licken, or Liverwort, with crenated folioles (c)*, is frequent on *Tecket*-rocks.

(z) *Bryum hypnoides, capitulis plurimis erectis, lanuginosum. Raj. Syn. iii. p. 97. n. 28. Hall. Helv. p. 102. t. 3. f. 4. Muscus trichoides lanuginosus alpinus. Pativ. n. 85. Muscus terrestris vulgari similis lanuginosus. LWHYD. Hist. Oxon. iii. p. 625. f. 15. t. 5. f. 7. (commode). Muscus alpinus ramosior erectis flagellis brevioribus & lanuginosis. Pluknet. Almag. p. 255. t. 47. f. 5. non bene. Bryum capsulis erectis, caule erecto, ramis lateralibus brevibus fertilibus. Linn. Flo. Lapp. n. 396. Flo. Suec. n. 894. Bryum hypnoides polycephalon lanuginosum montanum. Dill. Hist. Musc. p. 372. t. 47. f. 32.*

(a) *Bryum pendulum, Serpilli folio longiore pellucido, capsulis oblongis cuspidatis. Dill. Hist. Musc. p. 416. t. 53. f. 80.*

(b) *Polytrichum alpinum ramosum, capsulis e Summitate ellipticis. Dill. Hist. Musc. p. 427. t. 55. f. 4.*

(c) *Hepatica media, capitulo hemisphærico. Mich. Gen. Pl. p. 3. t. 2. f. 2. Marcantia calyce communi quinquefido hemisphærico. Linn. Flo. Lapp. n. 424. Flo. Suec. n. 932. Royen. lugdb. p. 507. Lichen pileatus parvus, foliis crenatis. Raj. Syn. iii. p. 114. Dill. Hist. Musc. p. 519. t. 75. f. 2.*

51. *Lichen-like Mnum, with divided leaves (d)*, is not common. I observed it on a large rock on the edge of the brook opposite to *Tocket*, on the south side, sparingly. It is disposed in an orbicular form, from the size of a shilling to that of a crown-piece, of a deep purple at the base, and of a bright yellowish-green at the edges, elegantly lacinated. The fructifications are globuliferous, on capillary pedicles about an inch long, mature in September. It is a beautiful plant.

For the first discovery of the flowers and seeds of mosses, we are indebted to *Micheli*.

Next of *Submarines*.

1. *White Sea-Coralline (e)*. On the shore near *Dunstonbrough-castle*, on the north side, plentifully in spring and autumn, on shells and other marine bodies, in tufts. It is commended as a vermifuge, given from ten grains to two scruples in a dose.

2. *Capillaceous, dichotomous, purple fucus, with multifid and yellow extremities, and white tophaceous hairy cases on the bottom and part of the upper branches (f)*. With the former frequent. It is four or five

(d) *Blasia pusilla, lichenis pyxidati facie. Michel. Gen. Pl. p. 14. t. 7. Blasia. Linn. Flo. Suec. n. 933. Mnum lichenis facie. Dill. Musc. p. 237. t. 31. f. 1.*

(e) *Muscus coralloides squamulis loricatus. C. B. Pin. p. 364. Muscus coralloides candidus coralloides squamatus. I. B. Hist. ii. p. 249. Et, Corallina. Ejusd. iii. p. 810. Tourn. Inst. p. 570. Sertularia ramis teretibus, articulis cylindricis lapideis æqualibus. Linn. Flo. Lapp. n. 536. Flo. Suec. n. 1134.*

(f) *Fucus tricoides nostras aurei coloris, ramulorum apicibus furcatis. Raj. Syn. iii. p. 45. Pluknet. Phyt. t. 184. f. 2.*

inches

inches long, very much branched, in a dichotomous manner, and divided at the points, some bifid, or trifid, and others multifid, of the thickness of a strong horse-hair, with cases regularly bristled or set with short hairs. It is of a deep purple, except at the ends, which are of a pale yellow. It is also frequent without the bristled incrustation.

3. *Small scarlet Fucus, with a porous incrustation on the branches (g).* On the same shore, sparingly. It is three inches long, moderately branched, of a bright scarlet. The incrustation is white, porous, and in parts hairy, spangled with glittering testaceous corpuscles. It is also frequent without the incrustation.

4. *Small scarlet and white fucus (h).* On the same shore, and other places on the coast, sparingly. It is membranaceous and divaricated, two or three inches long, of a beautiful scarlet and white. The scarlet holds its colour in drying. The white turns to a straw-colour.

5. *Purple, membranaceous, esculent Fucus (i).* On the shores of *Cresswell, Dunstonbrough, and Berwick*, plentifully. Our fishermen call it *Dulse*. In *Scotland* it is called *Dils*, and in *Ireland*, *Dulesh*.

(g) *Fucus membranaceus cerznoides varie dissectus.* *Raj. Syn. iii. p. 44.* *Alga minor suave-rubens varie divisa.* *Mart. Dec. p. 32. t. 32.* *Fucus membranaceus ramosissimus, ramulis linearibus.* *Linn. Flo. Suec. n. 1012.*

(h) *Fucus pulcre albo rubens, foliis latis brevissimis laciniatis.*

(i) *Fucus scoticus latissimus edulis dulcis.* *Sibbald. Scot. illustr. 26.* *Raj. Syn. iii. p. 46.* *Raj. Hist. i. p. 74.* *Fucus caule tereti brevissimo, folio maximo ensiformi subsimplici.* *Linn. Flo. Lapp. n. 460. Flo. Suec. n. 1010.*

Of *Lythophita* or *stony submarines*, I have observed only these two.

1. A *Sea-Mushrome*, in the form of the tuberculose headed *Lycopèrdon*, with a kind of an oblong thick pedicle of a glossy white, like an enamel, with irregular blotches of a shining vermilion-red. Broken, it shews a laminated texture, and a *Congeries* of *Tubuli vermiculares* from top to bottom (*k*).

2. A *sessile, echinated Sea-Mushrome*, of a glossy white, with the same *Tubuli vermiculares* within (*l*). I had both these from the sea-strand at *Rofs-links*, near *Belford*. They seem to be the production of some sea-cavern.

From the *Mosses* and *Submarines*, proceed we to the *Mushromes*. They are not less numerous. I shall only mention those that are of highest rank at table, and such as deserve notice for their configuration and beauty.

1. *White esculent Mushrome with red gills and a convex crown, with divaricated prominent ridges and furrows, forming a kind of reticular work* (*m*). I met with it on the common between *Goston* and *Long Lee*, near *Wark*, in *Tynedale*. I took the figure off with the

(*k*) *Coralloides fungiforme maritimum lamellatum pileo albo-rubente glabro tuberculoso, pediculo oblongo brevi, tubulis vermicularibus intra creberrimis.*

(*l*) *Coralloides fungiforme maritimum lamellatum sessile, albo-nitidum, echinatum, tubulis vermicularibus flexuosis crebre confertum.*

(*m*) *Fungus camprestris superne albus, eleganter reticulari modo striatus, subtus lamellis pulchre rubris.*

Thurston-clay. It is a beautiful variety of the common *Champignon* (*n*).

2. *Large white esculent Mushrome, with a remarkable broad crown and long pedicle* (*o*). In the bank of wood opposite to the rectory-den at *Simonburn*, not unfrequent in autumn. It is entirely white. It is accounted by the curious to be of a finer flavour than the *Champignon* *.

3. *Esculent, yellow, contorted Mushrome, or Chanterell* (*p*). In shady pastures, and on the borders of woods. I have observed it under the trees at the west end of the rectory-den at *Simonburn*, and other places. It is of a pale yellow, and variously contorted, of an agreeable taste.

(*n*) *Fungus campestris albus superne, inferne rubens.* *I. B.* iii. p. 824. *Raj. Hist.* i. p. 87. *Syn.* iii. p. 2. n. 1. *Michel. Gen. Pl.* p. 174. n. 8. *Vaill. Bot. Paris.* p. 75. n. 7. *Hall. Helv.* p. 50. *Fungus esculentus.* *Park. Theatr.* p. 1317. n. 12. *Fungus, Offic. Dal. Pharm.* p. 57. *Amanita campestris alba superne, inferne rubens.* *Dill. Giff.* p. 177. *Agaricus caulescens, pileo convexo squamato albido lamellis ruffis.* *Linn. Flo. Suec.* n. 1045.

(*o*) *Fungus Pileolo lato, longissimo pediculo variegato.* *C. B. Pin.* p. 371. *Vaill. Bot. Paris.* p. 74. *Amantia ficca & levis, pileo magno plano, orbiculari, pediculo longo, plerumque bulbiformi.* *Dill. Giff.* p. 180. *Raj. Syn.* iii. p. 3.

* *M. LISTER. Raj. Syn.* 1. c.

(*p*) *Fungus luteus s. pallidus CHANTERELLE dictus se contorquens esculentus.* *I. B.* iii. p. 832. *Raj. Syn.* iii. p. 2. *Fungus angulosus & velut in lacinia sectus.* *C. B. Pin.* p. 371. *Vaill. Bot. Paris.* t. 11. f. 14, 15. *Amanita lutea oris contortis.* *Dill. Giff.* p. 179. *Agaricus caulescens lamellis ramosis decurrentibus.* *Linn. Flo. Suec.* n. 1049. *Agaricus caulescens fulvus, pileo concavo margine reflexo, lamellis erectis, stipite brevissimo.* *Flo. Lapp.* n. 493.

4. *Purple esculent Mushrome, with white gills, and a white pedicle (q).* In dry shady places. I observed it in a lane at the north end of a small village called *Donkley-Wood*, near *Hordlee*, upon *North Tyne*, near *Bellingham*, in September, plentifully. The pedicle is short, thick, and not bulbous. The head is a little depressed in the center, rough at the edges, and striated; sometimes of a beautiful purplish-red, and sometimes of a rose-colour, with an admixture of white. The gills are thick, and thin set, with intermediate *rugæ*, or a kind of half gills. They are white, and in their older state yellowish.

5. *Esculent purple Mushrome, with a bulbous pedicle (r).* In woods, in October and November, frequent. The pedicle on its first rising is a thick bulb, protected from the chilling night-dews and cold air by a close silky film, up to the very edges of its little head. It rises gradually higher; but in its highest state is very short and thick, carrying a head of a vast size, sometimes a foot

(q) Fungus major rubescens pediculo brevi crasso lamellis crebris albis. *Raj. Syn.* iii. p. 4. n. 16. Fungus esculentus albus & subpurpureus varius, lamellis prorsus albis. *Michel. Gen. Pl.* p. 155. n. 9. Fungus subtus niveus, brevi petiolo, pileo ad oras rugoso, varii coloris. *Hall. Helv.* p. 39. n. 27.

(r) Fungus esculentus bulbosus dilute purpureus. *Michel. Gen. Pl.* p. 149. n. 1. t. 74. f. 1. *Hall. Helv.* p. 52. n. 88. Fungus totus violaceus exitialis. *Boccon. Mus. Fificca.* t. ad p. 301. f. 5. Fungus major violaceus. *Vaill. Bot. Paris.* p. 67. n. 45. Fungus cæruleus major. *Buxbaum. Cent.* 4. t. 9. *Et*, Fungus eleganter cæruleus pediculo bulboso. *Ejusd. Plant. circa HAL.* p. 121. *Et*, Fungus lividus pediculo bulboso. *Ejusd. Cent.* 4. t. 22. Agaricus caulescens, pilei margine violaceo tomentoso, stipite cærulescente lina ferruginea. *Lim. Flo. Suec.* n. 1066.

β Amanita pediculo bulbiformi, pileo fusco, lamellis, & pediculo brevi bulbiformi. *Dill. Giff.* p. 184.

γ. Fungus pileo magno orbiculari sublivido, lamellis albis, pediculo brevi bulbiformi violaceo. *Raj. Syn.* iii. p. 3. n. 13.

in diameter. The gills are of various orders, and moderately close set. It is entirely of a beautiful purple or violet colour, but of short duration, soon changing to a pale dull purple, or dusky yellow.

6. *Small violet, or amethystine Mushroom (s)*. In the bank of wood opposite to the upper end of the rectory den at *Simonburn*, plentifully in September, among mosses, and on rotten sticks under the deciduous putrid leaves. It is of a firm texture. The stalk or pedicle is slender, tubulous, and thickest at the bottom. The head is convex, and small, for the length of the stalk, which is from an inch to two inches and a half. The gills are thick, and thin set. It is all over of a beautiful violet or amethystine colour, with a *farina* on the head, like what we see on flocs. The gills hold their colour a long time, but the head soon loses its bloom, changing to a pale bluish-grey.

7. *Small blue and green Mushroom, with blue and rose-coloured gills (t)*. Among the moss on the trunks of old trees in thick woods. I observed it on the lower part of the mossy trunk of a *Scotch elm* in the bank of wood by the brook below *Tecket*, plentifully, in October. The pedicle is an inch long, and slender, of a fine blue with an admixture of green. The head is hæmisphærical, and of

(s) Fungus dilute violaceus, pileolo parvo, pediculo gracili, præalto, fistuloso. *Michel. Gen. Pl. p. 150. n. 8.* Fungus durior totus amethystinus, lamellis crassioribus. *Hall. Helv. p. 52. n. 87.* Fungus minor amethystinus. *Vaill. Bot. Paris. p. 67. n. 43.* Fungus cæruleus minor pediculo gracili. *Buxbaum. Cent. 4. t. 12. f. 1.*

(t) Fungus parvus elegans, Cantharidum colorem, splendorem & odorem æmulans, pileolo cum vertice lævi, reliqua parte pulchre striato, lamellis carnis, pediculo cylindrico fistuloso. *Michel. Gen. Pl. p. 168.* Striis differt, colore alcedit. Fungus ex cæruleo viridis, lamellis cæruleo-roseis. *Hall. Helv. p. 51. n. 83.*

the same colour; but changes by age to a pale whitish-grey. The gills are thick for its size, and not close set, of a bluish-rose-colour. It is pellucid, and held up by the stalk to the light, or lying fresh in its highest bloom on a table, has the beauty and lustre of a polished gem.

8. *Small scarlet Mushrome, with yellow gills and a yellow pedicle (u).* In the openings of woods. In an opening by a broad flexuous path towards the east end of the rectory-wood at *Simonburn*, frequent, in autumn, in small groups. The pedicle is an inch long, and thick, of a gold yellow. The gills are thick, moderately close set, and of the same colour. The head is convex, an inch and a half in diameter, of as bright a scarlet as can be imagined, on its first rising from under the herbage and fallen leaves; but vanishes by degrees to a reddish yellow, out of its shady situation; and, on being brought into a house, with the earth about it, languishes in a night's time to the same colour. It is fleshy and very brittle.

9. *Scarlet Mushrome, with white fissile conic rays, white gills, and a white bulbous pedicle (v).* Under fir-trees, not unfrequent. I observed it in considerable plenty in a fir-grove at *Brandon-whitehouse*, by the rivulet of *Bramish*, in September. The bulb is thick and round, from which rises a pedicle of a bright white,

(u) Fungus montanus pileo coccineo, lamellis aureis, stipite brevi aureo crassiusculo. Fungus coccineus, inferne aurantii coloris. D. BREYNIUS. *Michel. Gen. Pl.* p. 159. Fungus parvus, pileolo hemisphærico, desuper coccineo, inferne lamellis aureis, pediculo summa parte plerumque coccinea, ima vero aurea. *Ibid.* n. 2.

(v) Fungus pileo coccineo radiis multifidis conicis albis variis, lamellis crebris albis, pediculo albo ad basin globoso,

with a small round head, of a beautiful scarlet, glossy like fattin, with white filile conic rays at distances, like those of the stellate *Lycoperdon*, forming an elegant variegation. The pedicle gradually rises higher, from an inch to three or four inches. The head also gradually expands, from an inch to three inches in diameter. The gills are fine, close set, and white. It is of a good smell, and excels all others that I have seen for beauty. It holds its colour and gloss a long time in drying; under proper management.

10. *Bloody Mushrome, with white warts, white gills, and a white bulbous pedicle (w)*, is frequent in meadows. The bulb is of a remarkable thickness. The pedicle rises gradually to an uncommon length, with an annular membrane, which soon vanishes, of a pure white. The head is first campaniform, and afterwards flat, of a vast size, sometimes a foot in diameter; of a deep blood-red, variegated with warts, and striated at the edges. The gills are thin, numerous, and white. It is of a most ungrateful foetid smell, and poisonous. We are informed by a learned foreigner, that it killed five men with its virulent poison in *Lithuania* *. It is much coveted by small flies, and for that reason is sometimes called the *Flic-Mushrome*.

(w) Fungorum perniciosorum genus. xii. *Clus. Sp. 4.* p. cclxxx. cum Icone. Fungus muscarius. *Trag.* p. 941. *Cord. in Diosc.* p. 68. Fungi venenati muscarii species iv. *I. B.* iii. p. 841. Fungus pileolo desuper fature rubro, & ad *Laccæ* colorem accedente, ad oras striato, inferne albo, pediculo palmari, cylindrico & anulato. *Michel. Gen. Pl.* p. 186. Fungus non vescus II. *Læselii. Pruss.* p. 88. (*qui anulum etiam vidit.*) Agaricus caulescens petiolo albo ad basin globofo, pileo sanguineo, verrucis & lamellis albis. *Linn. Flo. Lapp.* n. 515. Fungus pileo sanguineo verrucofo, lamellis albis, anulo fugaci, pediculo bulbofo. *Hall. Helv.* p. 39. *nomen hoc, et Linnæi, optimum.*

* LÆSEL. l. c.

11. *Reddish-brown Mushrome, with red zones or circles round an Umbilicus in the center, and flesh-coloured gills and pedicle (x).* In alpine woods. In the rectory-wood at *Simonburn*, frequent, in August and September, under oak-trees. The pedicle is short, thick, and cylindric, an inch or an inch and a half long, of a pale red or flesh-colour. The head turns in at the edges, regularly deepening from the rim to the center, forming a *concave* or *Umbilicus*, with beautiful zones or circles round it, of a pale red, on a reddish-brown ground, from two to four inches in diameter. The gills are close set, of a pale red or flesh-colour, and turn white by age. It is beautiful in its younger state, and keeps its colours a long time in drying.

12. *Viscid deep green Mushrome, with a white circle round the edges, and white gills, and a white annulated pedicle (y).* In the bank of wood opposite to the upper end of the rectory-den at *Simonburn*, not unfrequent in September among mosses, and on rotten sticks, with the small violet or amethystine Mushrome. The pedicle is white, slender and tubulous, an inch and a half or two inches long, with an annular permanent membrane toward the top. The head is hemispherical, of a deep green, with a circle of bright white at the edges, a little viscid and glossy, an inch in diameter. The gills are thick and not very close, of a bright white. It

(x) Fungus pileo ex fusco rubens, in medio umbilicatus, zonis rubellis cinctus, margine inflexo, lamellis carnis, stipite carneo cylindrico.
Fungus lactescens, acris, pileolo ampliore, centro cavo, & subfusco, reliqua parte zonulis circularibus lateritii coloris dilutis, & faturis alternatim positis veluti fasciata, lamellis, & pediculo albis. *Michx.* Gen. Pl. p. 143. *Amanita major rubescens*, aut *subfulva*, pediculo brevi, lamellis crebris, albenibus. *Dill. Giff.* p. 181. *Martyn. Tourn.* i. p. 45:

(y) Fungus pileolo viscido, intense viridi, margine, lamellis, & stipite annulato albis.

holds

holds its colour a long time in drying, except the gills, which turn brownish.

13. *Glossy, dark-grey, conic Mushroom, with white gills, and a white, bulbous, tall, annulated pedicle (z).* In dry shady pastures, in autumn, not unfrequent. The pedicle is four inches long, with brown dots on a white ground, of a fine shape, tapering from the base to an annular permanent membrane, which in its younger state closes the mouth of the gills, like an *operculum*, and opens on its farther expansion, shewing their delicate whiteness. The head is of the shape of a large obtuse cone, of a dark grey, or ash-colour, of a silky lustre, which it retains in drying.

14. *The great, white funnel-like Mushroom, with white gills, and a short, white, cylindric pedicle (a),* is not uncommon in the openings, and on the borders, of alpine woods. I have observed it with the small scarlet and gold-yellow mushroom in the rectory-wood at *Simonburn*; also on the borders of *Ramshaw-wood*, by the roadside, above the mill, near *Wark*, in *Tynedale*, in autumn. The pedicle is an inch long, and about as much in thickness. The head is at first reflex at the edges, which afterwards gradually rise upwards, and form a great hollow, like a funnel, sometimes five inches deep, and twelve inches over at the brims. The gills are very close, with intermediate shorter ones, or a kind of

(z) Fungus pileo conico cinereo late nigrescens, lamellis albis, stipite procero albo bulboso, anulo non fugaci cincto.

(a) Fungus lacteus, maximus, infundibuli forma. *Vaill. Bot. Par. p. 61.* *Amanita major lactescens, pileo ex albo purpurascente, lamellis crebris, caule brevi.* *Martyn. Tourn. i. p. 43.*

half gills. It is entirely white in its younger state, and turns to a buff-colour by age, with a dusky purplish cast.

15. The *small Mushrome*, with a white nutant head, white gills, and a white capillaceous pedicle (b), is frequent in woods, on the decayed stalks of plants, in autumn; with the small white species, with a capillaceous pedicle of a shining purple (c).

16. The *small, white, pellucid Mushrome*, with five rays from the axis to the circumference, instead of gills (d), is frequent in the bottoms of damp woods in winter, and after rains, on rotten sticks and putrid leaves. I have often observed it in the wood by the brook below Tecket.

17. *Small, pellucid, reddish-brown Auriculate Mushrome*, with gills of the same colour (e). In woods, not uncommon; on the decayed

(b) *Fungus minimus totus albus, pileolo hemisphærico utrinque striato, lamellis rarioribus. Michel. Gen. Pl. p. 166. n. 3. t. 80. f. 11. Hall. Helv. p. 36. n. 8. Fungus parvus candidissimus lamellatus pediculo longo gracili. Raj. Syn. iii. p. 9. n. 46. Buxbaum. Cent. iv. p. 21. t. 32. f. 3. Fungus minimus albus umbilicatus striatus. Vaill. Bot. Par. p. 71. n. 6.*

(c) *Fungus pileolo candicante lamellis paucis, pediculo fusco splendente. Vaill. Bot. Par. p. 69. n. 58. t. 11. f. 21, 22, 23. Michel. p. 168. n. 5. Hall. Helv. p. 36. Fungus caule nigro, capillari, Androsaces capitulo. Boccone. Mus. di Piante. p. 143. t. 108. Fungus minimus adianhi aurei pediculo, an Mithridaticus MENZELII. Sherard. Raj. Hist. iii. p. 19. Syn. iii. n. 49. Amanita minima muscosa. Dill. Giff. p. 182.*

(d) *Fungus minimus albus, pileolo hemisphærico in arborum caudicibus. Michel. Gen. Pl. p. 146. n. 34. t. 74. f. 7. Hall. Helv. p. 36. Fungus minimus candidus, absque lamellis. Raj. Syn. iii. p. 12. n. 11.*

(e) *Agarico-fungus quercinus, tener, auricularis, totus ex fusco rubescens, lamellis creberrimis. . . . Agaricum squamosum, rufescens, pediculo donatum, subtus lamellis densis. Michel. Gen. Pl. p. 123. n. 18. t. 65. f. 7.*

stumps

stumps of fallen oaks. I never met with it on the stumps of any other trees. It is three quarters of an inch in diameter, and in its mature state covered with a white powder. The gills are fine and close. It is soft, pellucid, and nutant on the least motion. It is sometimes deformed, by growing in groups one over another.

18. *Small, yellowish-white Auriculate-Mushrome, with gills of the same colour (f).* On the trunks of old elms, by waters, in horizontal groups. It is frequent in the rectory-wood at *Simonburn*; also at the bottom of the adjoining wood at *Tecket*, in autumn, by the brook. It is sometimes disfigured, by its numbers growing over one another, horizontally.

19. There is a VARIETY of it on the same trees in autumn with *large lacinated lobes (g)*, very beautiful.

20. There is another Variety resembling a *small Piſten (h)*.

21. *Small, white, Auriculate-Mushrome, with white Gills (i).* On the decayed stalks of plants in wood-bottoms, frequent. It is

(f) *Agaricum auriculæ, vel flabelli forma, superne subobscurum, inferne album, & lamellatum. Michel. Gen. Pl. p. 123. n. 4. t. 65. f. 1.*

(g) *Agarico-fungus carnosus ex albo flavescens ad ora lobis laciniatis, subtus lamellatus.*

(h) *Agaricus parvus lamellatus pectunculi forma elegans. Dill. Giff. p. 192. Raj. Syn. iii. p. 21. n. 23. Fungus parvus lamellatus pectunculi forma albo adnascens. Vaill. Bot. Paris. p. 70. n. 63. t. 10. f. 1.*

(i) *Agarico-fungus minimus, tener, albus. Hall. Helv. p. 58. Agaricus lamellatus minimus albus. Buxbaum. Cent. v. t. 7. f. 3.*

very

very small, thin, and nutant, of a bright white. The gills are fine, and close.

These *Auriculate-mushrooms*, with gills, are all fixed to the trees, or decayed stalks of plants, horizontally, by a kind of pedicle, in some so small as to be almost imperceptible.

22. The great dusky yellow *Mushroom*, with *Tubules underneath*, and a tall, thick, bulbous pedicle (*k*), is frequent in woods, in autumn. On being cut, and the wound held up to the sun, the fluid gives all the colours, in its changes, of the rainbow. It is tinctorial, and gives a purple to linen *. It is said to be esculent, and not unfrequent at the *Italian tables* †. We are told by *Linnaeus* that cows eat it, but that it makes their milk nauseous ‡.

23. The reddish-brown *Mushroom*, with yellow *Tubules underneath*, and a slender annulated pedicle (*l*), is less common. I observed it, in its mature state, at the upper end of the rectory-wood at *Simon-*

(*k*) *Suillus esculentus crassus*, superne fulvus, inferne initio albidus, dein ex flavo subvirescens, pediculo ventricoso, & supernæ parti pilei concolore. *Michel. Gen. Pl.* p. 127. *Fungus porosus crassus. Raj. Syn.* iii. p. 11. n. 2. *Boletus magnus Julii Mensis. Dill. Giff.* p. 188. *Suillus fulvus inferne ex flavo virescens. Hall. Helv.* p. 29. sequenti optima descriptione.

“Varia diversis temporibus fabrica est. Pediculus juniori bulbosus, adulto longior, & gracilior, modo terreus, modo ex sanguineo varius. Pileolus plerumque figura conii truncati, superne fulvus, aut leoninus, aut terreus, vel glaber, vel elegantur reticulatus bicolor. Facies inferior in juniori flava cum virore, adultiori terrea & inelegantior. Semper vero mollis caro est, pori laceri; ampli, pediculus absque anulo.”

* *Ph. Tr.* No. 110.

† *Michel*, l. c.

‡ *Flo. Oeconom.*

(*l*) *Boletus luteus. Dill. Giff.* p. 18. t. 10. n. 1. *Fungus Cent.* v. p. 7. t. 14. *Suillus annulatus terreus inferne flavescens. Hall. Helv.* p. 29.

burn, under oak-trees in the middle of October. The tubules were covered for the whole length with the fructifications, in the form of a yellow powder. The exterior coat or film over their mouths was rotted off and perished, which shewed them to great advantage.

The tubules of these are capable of being separated from the crown, or the upper fleshy part.

24. *Yellowish-white Mushrome with quadrangular tubules, and a thick pedicle (m)*. Under the fir-trees on the hill by the Roman wall at Tower-tay, near Walwick, frequent, in August and September. The root is succulent, and gradually rises to a thick pedicle, from an inch and a half to two or three inches long, and sometimes more. The head is from two to four inches in diameter. It is very soft and tender. The tubules or pores on the under part are square, terminated with dentated and orbicular protuberances. It is intirely of a yellowish-white, and turns to a gold yellow by age. Cut transversely, it shews the form of the tubules. It stains the fingers on being touched, like the saffron clay-ochre, and diffuses a most ungrateful smell. It retains its form, yellow colour, and scent a long time in drying.

25. *Ash-coloured, tessellated Mushrome, with quadrangular tubules or pores underneath (n)*. On alpine heaths. I met with it in Septem-

(m) *Polyporus Alni radicibus innascens, molli & crassa pulpa, pileolo desuper ex spadiceo fulvo, inferne luteo-viridi, pediculo brevi, supernæ pileoli parti concolore. Michel. Gen. Pl. p. 130. t. 70. f. 1. Polyporus amplissimus albidus, alveolis quadrangulis. Hall. Helv. p. 25. n. 1. Pilei facies inferior sit alveolis quadratis, quos terminant eminentia juga dentata.*

(n) *Polyporus alpinus cinereus, pileolo superna parte lacero & veluti tessellato, inferne instar favi ample perforato. Michel. Gen. Pl. p. 130. t. 71. f. 2.*

ber on *Bewick-common*, in *Glendale*. I also met with it at *Highboralee*, near *Wark*, in *Tynedale*. I took off the figure of its tessellated head with the *Thurston-clay*, which shews it to great exactness. The pedicle is short and thick. The head is convex, five inches in diameter, with deep *striae*, cracks, or clefts, resembling a tessellated or reticular work. The *Alveoli*, tubules, or pores underneath are square, and of an umbre-colour. Cut through transversely, their form is conspicuous.

The pores or tubules of this kind of mushrooms cannot be separated from the crown or upper part.

26. *Bright white esculent Mushroom, with long aculeated Spinnules underneath, and a tall pedicle (o)*. On the upper part of the bank of wood opposite to the rectory-den at *Simonburn*, in September, sparingly. It is intirely of a bright white. The pedicle is two or three inches long. The head is from two to three inches in diameter. It has a fine smooth skin, and changes to a yellowish-white in drying.

27. *Pale yellow esculent Mushroom, with aculeated Spinnules underneath, and a short thick pedicle (p)*. In the same bank, in August, plentifully. The pedicle is short and thick, of a yellowish-white. The head is two or three inches in diameter, of a pale yellow. It grows both single, and in groups. The heads of the first are

(o) *Fungus pene candidus prona parte erinaceus*. *I. B.* iii. p. 828. *Raj.* Hist. i. p. 108. *Syn.* iii. p. 11. n. 6. *Hist. Oxon.* p. 637. *Erinaceus esculentus albus crassus*. *Michel.* *Gen. Pl.* p. 132. t. 72. f. 2. *Hall.* *Helv.* p. 31. n. 1.

(p) *Erinaceus esculentus pallide luteus*. *Michel.* *Gen. Pl.* p. 132. t. 72. f. 3. *Hall.* *Helv.* p. 32. n. 2. *Erinaceus coloris pallide lutei*. *Dill.* *Giff.* p. 188. t. 1. *Fungus erinaceus*. *Vaill.* *Bot. Paris.* p. 58.

usually not deformed. Those of the latter mostly are disfigured by their numbers, multiform, and turned upwards with the spinules erect, in a crest-like manner. It holds its colour in drying.

28. *Yellowish-white, conic, cavernose Mushrome, or Morel (q)*. Under ash-trees, in a flood-foil, by waters, frequent, in April and May, after warm showers. In *Claw-wood*, on the banks of *South-Tyne*, near *Allerwash*. On the banks of *North Tyne*, near *Chipchace*; also on the banks of the brook at *Simonburn*. The pedicle is short, thick, wrinkled, tubulous, and white. The head is of a different form, according to its different stages of growth, situation, and state of the season; sometimes like a tall pyramid, swelling at the base; sometimes like a short, ventricose obtuse cone, and sometimes like a long acute one; always with numerous cells, larger or smaller, according to its size, forming a beautiful reticular work*. Under the shade of ash and beach trees, on the edge of the brook opposite to the upper end of the rectory-den at *Simonburn*, in a rich sandy loam thrown up by torrents or floods, I have gathered it so large, as to weigh a quarter of a pound, in the middle of a mild May, warm, with gentle showers. It is of a yellowish-white, and changes by age to a pale reddish-yellow, and in drying to a straw-colour. Snails are very fond of it, and there are commonly some within the large ones, which eat them up by degrees, if not gathered.

(q) Tuber. *Trag.* p. 932. *Fungorum esculentorum Genus, i. Clus. Hist. Pl. rar. p. cclxiii.* Fungus rugosus, vel cavernosus, f. merulus, ex albo nonnihil rubescens. *I. B. iii. p. 836.* Fungus porosus amplior orbicularis. *C. B. Pin. p. 370.* Boletus esculentus, rugosus, amplior, & orbicularis. *Michel. Gen. Pl. p. 203. t. 85. f. 1, 2.* Boletus petiolo rugoso, pileo locelluloso ovali. *Hall. Helv. p. 24. nomen optimum.*

* See The Description of it by *M. Lyster, M. D.* in his Journey to *Paris*.

29. There

29. There is a variety of it in the same kind of soil, and under the shade of ash-trees, in a small island formed by *North Tyne*, near *Lee-hall*, and a cottage on the brow of the hill above it, called, *Carey-house*; and on the banks of *South Tyne*, in *Knar's-dale*, of an ash-colour (*r*), changing by age, and in drying, to a rusty grey. It never arrives to the size of the former, but is always small.

They are both ingredients in culinary sauces. When first dried, they give a scent to a room like that of a strong beef-gravy; and when used, taste like it, rich and high-flavoured.

30. *Fetid Pseudo-Morel*, or *Bastard-Morel* (*s*). In the same places with the former, not unfrequent. It so much resembles them in its exterior figure, that it is often gathered for them by mistake, or inadvertency. The head is more slender, open at the bottom, and the *Cavernula* more narrow and longer. The stalk is also not so robust. It is of a brown colour, with an admixture of a sordid greenish-yellow, which it retains in drying; of an ungrateful foetid smell, which it likewise retains, and communicates it to a room, if strung and hung up in ever so small a quantity. These are distinctions sufficient to know it by, not to mistake it for the genuine kinds, whose heads are always close at the bottom, and of no ungrateful scent, either in their recent or dried state.

(*r*) *Fungus porosus, rugosus, albicans, quasi fuligine infectus.* *C. B.* Pin. p. 370. *Boletus esculentus rugosus albicans, quasi fuligine infectus.* *Tourn.* Inst. p. 561. t. 329. f. A. *Morchella minor oblonga, fuligine quasi infecta.* *Dill.* Giff. p. 188. *optime.*

(*s*) *Phallo-Boletus esculentus, pileolo parvo, conico, ex fulvo subobscuro, pediculo leuco, fistuloso.* *Michel.* Gen. Pl. p. 203. t. 84. f. 3.

31. *Fetid, snow-white, Horn-Mushrome (t)*. This was for some years an annual production at the foot of my own garden, at the south-east end, at *Simonburn*, and was with difficulty rooted out; its stringy fibres, and globular buttons, appearing in digging three feet under the surface. It annually grows in great plenty at the east end of a plantation of firs, beech, and *Scotch* elms, on the other side of the brook by the road to *Hall-Barns* from *Simonburn*, nauseous to the traveller by its foetid smell. It comes up in April and May, in mild showery weather. The root is a round bulb, with bulbous fibres, from which rises a thick, tall, cylindrical pedicle, with a conic head, at first covered with a reticular film, like a mantle of the finest wrought-work, snow-white, splendidly gay, and gradually opens, and shews reticular cells of the same brightness. At first sight one cannot help admiring its beautiful form, but a near approach sensibly convinces us of its interior qualities, and that, like some other objects of outward elegance, it is better seen at a distance than near. After it is arrived at its maturity, it quickly languishes and melts away into a gelatinous substance.

32. *Asb-coloured, crisp, lacinated Mushrome, OR CURLED ELVELA, with a thick, wrinkled or sinuose, fistulous pedicle (u)*. In damp woods.

(t) Fungus Phalloides. *I. B.* iii. p. 843. Boletus Phalloides. *Tourn. Inst.* p. 562. *Raj. Syn.* iii. Phallus HOLLANDICUS. *Park. Theatr.* p. 1322. Fungus Phalloides BATAVICUS, pileo laciniato, & veluti crispo. *Raj. Hist.* iii. p. 25. Phallus vulgaris, totus albus, volva rotunda, pileolo cellulato, ac summa parte umbilico pervio, ornato. *Michel. Gen. Pl.* p. 201. t. 83. Vulgo. *Stink-horn*. MARTYN. *Tourn.* ii. p. 174.

(u) Fungoides fungiforme crispum laciniatum & varie complicatum, pediculo crasso strato rimoso & fistuloso. *Michel. Gen. Pl.* p. 204. t. 86. f. 7. egregie. *Pleraque forte Species MICHELII ibi recensitæ huc pertinent.*—Fungus pro capitulo laminas aliquot laciniatas folia

woods. Under the tall beach-trees in the plantation at *Nunwick*, near the avenue, plentifully in July, especially after rains. The pedicle is thick, unequally striated or furrowed, and fistulous, mostly conic; but it sometimes varies in its form, and is broad, and deformed, as if two or three were coalesced or joined together. The head is one large, expanded, lacerated *Lamina*, of various forms, but always more smooth than the stalk, and not perforated. Sometimes the stalks are deformed and palmated at the ends, without a head, like the white coralline mushrooms.

33. *Ash-coloured, bicollate Mushroom, or MITRE-MUSHROME, with a slender, striated, solid pedicle (v)*. With the former, not unfrequent, of which it is a variety. The stalk is single, slender, moderately wrinkled or striated, two or three inches long. The head is a bicellate *lamina*, resembling a *Bishop's Mitre*; sometimes varying in its form, and running into a long convex-like shape. It is of a light grey, or ash-colour, darker towards the bottom of the stalk.

34. *Dark grey, companiform, conic Mushroom, or CORNUCOPIA-MUSHROME (w)*. In woods. In the middle of the bank of wood oppo-

folia querna imitantes emittens. Raj. Hist. Pl. iii. p. 25. Boletus petiolo rugoso, pileo latissimo laciniato. Hall. Helv. p. 23. Elvela pileo deflexo adnato lobato difformi. Linn. Flo. Suec. n. 1103.

(v) *Fungoides fungiforme pullum, crispum, & varie complicatum, pediculo tenuiori non fistuloso. Michel. Gen. Pl. p. 204. n. 7. t. 86. f. 9. Fungus autumnalis velut apex flaminis. Menz. pugill. rar. t. 6. Boletus mitram Pontificis referens pullus. Rupp. Flo. Jen. p. 302. & Boletus mitram Pontificis referens pullus. EJSUD. ib. Boletus petiolo rugoso, pileolo planiori. Hall. Helv. p. 23. β. Linn. Flo. Suec. p. 384.*

(w) *Fungoides nigricans majus Cornucopiæ forma. Vaill. Bot. Paris. p. 57. t. 13. f. 22. optime. Peziza conica labro reflexo. Hall. Helv. p. 21.*

site to the west end of the rectory-den at *Simonburn*, in September, plentifully. It is a membranaceous tube, reflex at the edges, from two to three inches long; externally of a dark glossy grey, and internally of a glossy brown.

35. *Ash-coloured, companiform, conic Mushroom, with lacinated edges, OR TRUMPET-MUSHROME (x)*. With the former, frequent, in the middle of September. It grows *fasciculatim*, or in groups. It is an incurvated membranaceous tube, reflex at the brims and lacinated; from two to three inches long; of an ash-colour without, and of a reddish-brown within.

36. *Petiolated, membranaceous, scarlet Cup-Mushrome (y)*. On decayed hazel twigs and branches under mosses and putrid leaves at the east end of *Tecket-wood*, plentifully, in January. The stalk or pedicle is sometimes three quarters of an inch long; the cup as much in diameter, and half an inch deep, of a bright scarlet within, and of a flesh-colour without, exceedingly beautiful, pellucid when held up to the light.

37. *Small, sessile, orange-yellow, membranaceous Cup-Mushrome (z)*. On an old stone-wall, topped with earth, on the north side of the

(x) *Fungoidaster cespitosus, superne fuscus, inferne cinereus. Michel. Gen. Pl. p. 201. t. 82. f. 5. optime. TROMBETTO di morto maggiore a cefpi. Id. ib. Fungoides tubulosum laciniatum fuscum. Buxbaum. Pl. Halens. p. 130. cum Icone. Fungus tubæ Fallopianæ æmulus. Raj. Hist. iii. p. 34. Peziza tubæ Fallopianæ æmula. Dill. Giff. p. 194. Raj. Syn. iii. p. 20. n. 17. Peziza conica ore lacero. Hall. Helv. p. 21.*

(y) *Fungoides coccineum acetabuli forma. Michel. Gen. Pl. p. 207. n. 13. Town. Inst. Fungus membranaceus seu coriaceus acetabuli modo concavus colore intus coccineo seu kermefino saturo. Raj. Syn. iii. p. 18. n. 5.*

(z) *Peziza lutea minima verna. Dill. Giff. p. 195. Peziza disciformis miniata planior. Hall. Halv. p. 20.*

military-

military-road, a quarter of a mile west from *Carraw*, in the spring, plentifully, among other mosses.

38. *Small, sessile, white, proliferous Cup-Mushrome (a)*. About the decayed roots of fir-trees, but not common. I observed it on those by the road in the rectory-den at *Simonburn*, in the spring, sparingly. It rises in the form of a small globule, and after some time opens, and shews a large cup, a quarter of an inch in diameter, of a glossy white. Other globules rise on the sides and in the center of the cup, which give it the appearance of a cup and balls in miniature. These by degrees open, and assume the form of cups. It is a beautiful species. Two or three commonly grow together, at small distances.

39. *Tufted, yellow, clavated, coralline Mushrome (b)*. In the openings of thick woods, in autumn, sparingly. I met with it in one of the walks in the vicarage-wood at *Hartburn*. It is flattish and succulent, slender at the bottom, tumid in the middle, gradually tapering to an obtuse point, two inches long; growing in tufts, twenty or thirty, or more together, of a beautiful saffron-yellow.

40. *Branched, tufted, yellow, clavated, coralline Mushrome (c)*. In damp woods. At the west end of the rectory-wood at *Simonburn*,
not

(a) *Cyathoides*, quod *Fungus semnifer*, minor, fere hemisphæricus. *Raj. Syn.* ii. App. p. 333. & ed. iii. p. 20. n. 21. t. 1. *Michel. Gen. Pl.* p. 222. n. 5.

(b) *Clavaria cespitosa*, media, lutea. *Michel. Gen. Pl.* p. 209. t. 87. f. 11. *Clavaria cespitosa mollior apice obtuso. Hill. Nat. Hist. Pl.* p. 60. cum bona Icone. *Digitellus clavatus croceus. Martyn. Tourn.* i. p. 228. n. 1.

(c) *Esculentorum fungorum genus xix. Species i. Clus. Hist. rar. Planet.* p. cclxxiv. *Fungi digitelli lutei. Trag.* p. 940. *Fungus ramofus flavus. I. B.* iii. p. 837. *Raj. Hist.* i.

not unfrequent in the spring and autumn. It is from an inch and a half to three inches long, of a compressed form, and succulent, one or two branches rising towards the middle, with large clavated apices, of the same beautiful colour as the former.

41. *Branched, white, coralline Mushrome (d)*. In the upper part of the bank of wood opposite to the west end of the rectory-den at *Simonburn*, sparingly, in autumn, among the putrid leaves and mosses. It is thick, succulent, and very much branched, three inches long, of a bright beautiful white.

42. *Branched, gelatinous, reddish-brown Mushrome, with globose apices (e)*. I met with this on a fallen crab-tree at the west end of *Tocket-wood*, in great abundance, in autumn. It is about half an inch long, and divides in the middle into three branches, each terminated by a small pellucid globule.

43. *Stemless, round, pulverulent Mushrome, with stellar rays (f)*. On dry hills, in autumn. I observed it on *Glanton-pike*, near *Whittingham*, in September, plentifully.

p. 103. & Syn. iii. p. 16. Fungus xix. *Lesel.* Pruss. p. 84. *Coralloides flavum.* *Tourn.* Inst. p. 562. *Michel.* Gen. Pl. p. 209. *Digitellus coralliformis, luteus, minus ramosus.* *Martyn.* *Tourn.* i. p. 228. n. 4. *Fungoides-coraliforme.* *Dill.* Giff. p. 190. *Corallo-fungus flavus.* *Vaill.* Bot. Paris. p. 41. t. 8. f. 4. *Coralloides flavum ramosissimum.* *Hall.* Helv. p. 15. *Clavaria ramis confertis ramosissimis, inæqualibus.* *Linn.* Flo. Suec. n. 1106.

(d) *Esculentorum fungorum genus xix. Sp. 3. Clus.* p. cclxxv. *Fungus ramosus albidus.* *I. B.* iii. p. 837. *Raj.* Syn. iii. p. 16. *Coralloides albidum.* *Michel.* Gen. Pl. p. 209. n. 2. *Corallo-fungus candidissimus.* *Vaill.* Bot. Par. p. 41. t. 8. f. 2. *Digitellus coralliformis, candidissimus minus ramosus.* *Martyn.* *Tourn.* i. p. 229.

(e) *Fungus ex fusco rubescens, gelatinosus, ramosus, apicibus orbiculatis pellucidis.*

(f) *Lycoperdon globosum, album, cortice primario in stellulas elegantissimas dissecto, ac distributo.* *Michel.* Gen. Pl. p. 218. n. 10. t. 97. f. 3.

45. *Great, round, pulverulent Mushrome, with stellar rays, and a short, thick pedicle (g).* On Chapel-hill, at Belford, in the latter end of autumn. On Broadpool-common, between Con-sheels and Blake-law, near Simonburn, in September, after rains, frequent. The pedicle is about an inch and a half or two inches long. The head is very large, round, and snow-white, with many stars of a moderate size, very handsome. I met with a considerable number of them on that hill in September.

46. *Lesser, petiolated, round, pulverulent Mushrome, with large fissile rays, and a stellate osculum (b).* On the banks of the rivulet of Bramish, near Ingram. The pedicle is about an inch long. The head is round, of the size of a small pipin; the stars large, fissile, as if impressed with a tool, very beautiful. I met with great numbers of them on the banks of that rivulet in the middle of September.

47. I observed, at the same place, a beautiful VARIETY, of a compressed form, with broad and elegant undulations between the stars, resembling the marine *Brain-Stone (i).*

(g) Fungus pulverulentus, crepitus lupi dictus, coronatus, & inferne stellatus. *Raj.* Syn. iii. p. 27. n. 11. t. 1. f. 1. Geaster major, umbilico fimbriato. *Michel.* Gen. Pl. p. 220. n. 1. t. 100. f. 1, 2, 3. Fungus stellatus. *Boccon.* Mus. i. t. 305. Lycoperdon volva multiplici patente, capitulo glabro, ore acuminato dentato. *Linn.* Hort. Cliff. p. 479. Flo. Succ. n. 1113.

(b) Geaster medius, radiis plerumque multifidis, umbilico seu ore stellato. *Michel.* Gen. Pl. p. 220. n. 5. t. 100. f. 5. Lycoperdon volva stellata, radiis multifidis, osculo stellato. *Hill.* Nat. Hist. Pl. p. 51.

(i) Geaster compressiformis, Astroitis marini instar, elegantissime undulatum striatus, radiis multifidis, umbilico seu osculo stellato.

48. *Small turret-like pulverulent Mushrome, with fissile rays, and a stellate osculum (k).* I met with this beautiful and uncommon species on a ditch-bank by the military road, at a small distance from a remarkable precipice in the *Roman-wall*, called the *Peel*; where there were two or three of them together in September.

Mushromes increase by seed, and by their stolens or suckers, and constantly produce the same species as other plants. For the first clear discovery of their propagation by seed, we are indebted to *Micheli*. He not only beheld them with his microscope, but demonstrated them by experiments. He preserved and sowed several species, and brought them to perfection. For later discoveries, we are obliged to our own countryman, *Dr. Hill*. Before their discoveries were made, the learned *Dr. Lister* was of opinion, that the *lamellæ*, or gills of mushrooms, were the *capsulæ* or pods for their seeds, but did not give any proof of their existence by experiments.

(k) *Geaster volvæ radiis & operculo elevatis.* *D. Watson.* Ph. Tr. No. 474. *Lycoperdon volva stellata radiis fissilibus.* *Hill, Nat. Hist. Pl. p. 52.*

C H A P. IX.

O F B I R D S.

1. **O**N the highest and steepest part of *Cheviot*, so called from its being the *chief* of the mountains round it, the *Eagle* (*a*) sometimes has its airy. Two beautiful ones were bred there a few years ago, one of which was shot by a gentleman's servant. A sportsman afterwards killed one of the parent-birds. In the beginning of January, 1735, a very large one was shot near *Warkworth*, which measured, between the points of the wings extended, eleven feet and a quarter. There was another killed, 1761, near *Tindal-house*, by *William Carr*, of *Etall*, Esq; They are said to be in such plenty in the *North* of *Scotland*, in the *Orkneys*, that whoever kills one is intitled to a hen from every house in the parish. It is a beautiful Bird, robust, and of a mighty spirit, and fierce nature; the hooked beak sharp and terrible, the mouth wide, the eyes large, in a kind of hollow, bright and sparkling like fire; the iris of a greenish flame-colour, the pupil black, preserved in their vigour and strength from external injuries, not only by a *periophthalmium* or nictitating membrane, which serves other birds instead of eye-lids, but also with four *opercula* or eye-lids, two above and two under, with which it covers its eyes instantaneously, whenever it is disposed. It is so quick-sighted,

(a) *Chrysaëtos*. *Will. Orn.* p. 27. t. 1. *Raj.* Av. p. 6. n. 1. *Charlet.* Av. p. 70. n. 1. *Falco cera lutea, pedibus alatis, corpore rufo.* *Linn. Faun. Suec.* p. 18. n. 56.

that

that in its most towering flights, far out of human observation, it can discern the smallest thing upon the ground or in the water even the minutest of the finny race; or the youngest leverets in their feats; darting upon its prey with the celerity of an arrow. It builds in the most retired, inaccessible places, and lays four eggs.

2. We have the *Bald Buzzard* (*b*), so called from its yellowish-white crown, which at a distance looks like baldness, about the alpine mosses; where it is known to the shepherds and many of the common people by the name of the *Bastard-Eagle*. It is, indeed, so like an eagle, that it is mentioned as one by an antient and curious naturalist under the name of *Halyætus* (*c*). The eyes are not hollow as in the eagle's, but prominent; the iris of a bright sparkling yellow. The back and wings are of a dark brown; the under part of the body white; the legs and feet blue, from which it had the name of *Cyanopoda* given it by *Gesner* (*d*), i. e. the Blue-legged Falcon. It lives upon water-fowl, and upon fishes. It breeds annually on the mosses near *Greenly-lake*, among the tall herbage and *junci*. It lays four eggs, white, of an elliptic shape.

3. We have the *Glead*, or *Swallow-tail'd Falcon* (*e*); the only one hitherto known with that remarkable distinction, in the alpine,

(*b*) *Balbufardus*. *Turn.* Av. apud *GESN.* *Will.* Orn. p. 37. t. 6. *Raj.* Av. 16. n. 3. *Falco* pedibus ceraque cæruleis; corpore supra fusco, capite albo. *Linn.* Faun. Suec. p. 19. n. 57.

(*c*) *Aldr.* Orn. l. 2. c. 3.

(*d*) *Gesn.* Av. 74.

(*e*) *Milvus*. *Charlet.* Av. p. 72. n. 14. *Will.* Orn. p. 41. t. 6. *Raj.* Av. p. 17. n. 6. *Falco* cera flava; cauda forcipata, corpore ferrugineo, capite albidiore. *Linn.* Faun. Suec. p. 19. n. 59.

and

and some of the vale, woods. It is in the greatest numbers in the west and north-west parts, where many of them usually join company, and in towering undulating flights look out for young poultry, which is no sooner perceived by the old ones, than they warn their little offspring by a signal to take shelter under their wings; but the unwary wanderer is sure to be seized and carried off. It is a great destroyer of wood-pigeons, and in the scarcity of such dainties condescends to live upon mice.

4. The *Dove-coloured Falcon*, with black pointed wings, and the breast elegantly variegated with brown and white in transverse lines, usually called the *Hen-Harrow*, and the *Henbarrier (f)*, breeds annually on *Cheviot*, and on the shady precipices under the *Roman wall* by *Crag-lake*, and on those of great *Waney-house-crag* near *Sweethope-lake*. The *Hen* is of a rusty brown, with a white spot under the eyes; the breast and belly of a reddish-white; the train variegated with black and yellowish-red transverse lines alternately, the red broadest; the rump white, which in flying has the appearance of a ring, from which she acquired the name of the *Ring-Tail*. They are seldom seen together, except in the breeding-season; which, with their different coloured plumage, has made them often taken for a distinct species. The male on the approach of any body whilst the hen is with her eggs or her young, flies about in great perplexity, and makes a harsh odd kind of noise. She lays four eggs in the recesses of the steepest precipices by the lakes, and on the ground upon *Cheviot*, among the *Ericæ*. The young being surprized in the

(f) *Pygargus*. *Bellon. Icon.* 15. *Pygargus*, f. *Albicilla Hinnularia. Will. Orn.* 31. *Raj. Av.* p. 7. n. 5. *Charlet. Av.* p. 70. n. 4. *Falco cera flava; reſtricibus albis, verſus apices nigris. Linn. Faun. Suec.* p. 19. n. 58.

nest when they are near full feathered, make a bold defence on their backs with their sharp talons and hooked beaks, as I found by an encounter I had with a pair of them in my younger days, on the north side of *Cheviot*.

These birds make great destruction of the wild ducks, and other water-fowl, that breed in the lakes, and the mountain-rivulets. They also do great mischief to the game; and of the domestic poultry they make sad havock in the spring.

5. We have the *small, brown, red-eyed Buzzard*, with a yellow *Cera* and eye-lids, and a train shorter than the wings (*g*); also the *rusty brown, yellow-eyed Honey-Buzzard*, with a black *Cera*, and a grey head (*b*), about mountainous woods and heaths.

6. The Falcon, called the *Kestrel (i)*, is not unfrequent about alpine hedges and woods, but its most favourite recess is in the solitary ruins of the old castles and towers. I have observed it in the hedges by the steep shady cliffs at *Tocket*, and at a very near distance viewed it with a particular attention to its form and colour. It is of the size of a pidgeon. The head is ele-

(*g*) *Sub-buteo, seu Hypotriorchis. Charlet. Av. p. 72. n. 10. Falco pedibus cera palpebrisque flavis, capite fusco, nucha alba, abdomine albicante maculis oblongis. Linn. Faun. Suec. p. 21. n. 64.*

(*b*) *Buteo apivorus, f. vespivorus. Will. Orn. p. 38. t. 3. Raj. Av. p. 16. n. 2. Accipiter Palumbarius. Alb. Orn. 2. p. 8. t. 8.*

(*i*) *Tinnunculus, f. Cenchris. Will. Orn. p. 50. t. 5. Raj. Av. p. 16. n. 16. Charlet. Av. 72. n. 6.*

Falco pedibus ceraque flavis; dorso rufescente; pectore maculis longitudinalibus fuscis; cauda rotundata. Linn. Faun. Suec. p. 22. n. 67.

gantly.

gantly variegated with numerous small spots of black on a grey ground; the throat whitish; the back and cover-feathers of the wings of a yellowish red or rusty brown, punctated with black towards the ends; the breast variegated with linear, and the belly with oval, black spots on a yellowish-red ground; the thighs of the same colour, with fewer spots of black; the legs mostly naked and yellow; the tail-feathers brown, in number twenty-two; the train hoary, with a broad black fillet towards the end, which is roundish.

7. The *Sparrow-Hawk* (*k*) is the most common Falcon we have. It is of the size of a small pigeon. The upper plumage is of a dusky brown, with a few white spots on the wings; the under part of the neck, the breast, and belly, white, variegated with a dark brown in transverse wavy lines; the train brown, with five transverse bars or fillets of black, the wings extending only to the middle of it. It builds in the hollows of inaccessible rocks shaded with brushwood. It lays four eggs, white, with a zone or circle of red spots at the obtuse end. It is a Falcon of great spirit. It is very destructive to partridges, and the smaller birds.

8. The Falcon, called the *Merlin* (*l*), is frequent in woods, where it breeds. It is not much larger than a blackbird. The

(*k*) *Accipiter fringillarius*. *Bellon*. Icon. 19. 6.

————— *f. recentiorum* Nifus & Sparverius. *Will*. Orn. p. 51. t. 5.
Raj. Av. p. 18. n. 2.

Falco cera viridi; *pedibus flavis*; *pectore albo undulis transverfis fuscis*; *cauda fusca nigricantibus*. *Linn*. Faun. Suec. p. 23. n. 68.

(*l*) *Æfalo*. *Charlet*. Av. p. 77. n. 5. *Smerillus*. *Turn*. Av.

beak is hooked, of a deep blue. The eyes are bright and sparkling; the iris of a hazel-colour, the pupil black. On the throat is a yellowish-white ring, encircling the head like a coronet. The whole upper part of the body is of a dusky yellowish-red ground, variegated with black and a deep greyish-blue. The breast and belly are a yellowish-white, with brown linear spots. The train is variegated with fourteen zones of black and a brownish white; only ten of these zones in the male or tarcel. The legs are yellow; the claws of a glossy black. Age, as in all other birds, alters the colours in this; the variegations on the upper part vanishing to a dusky blue. It is very destructive to the game, at which it flies with most amazing courage and celerity, giving them a mortal wound in the neck, with one instantaneous stroke.

9. We have the great ash-coloured *Sbricke* or *Butcher-Bird* (*m*) in mountainous thorny thickets, and among furz. It is of the size of a blackbird. The beak is black, hooked at the point, with a denticle on each side, as in the *Kestrel* and *Sparrow-Hawk*. The tongue is bifid or furcated at the end. The nostrils are roundish, covered with many black, short, rigid *setæ* or bristles like whiskers. About the eyes and auricles is an oblong list of black. The head, back, and wings are of a bluish-grey. The tail-feathers are tipped with white, the outer ones shortest. The throat, breast, and belly are of a paler colour than the upper part, with a few dusky spots or undulating lines on the throat. The train, legs, feet, and claws are black; the outer toe joined

(*m*) *Lanius cinereus major*. *Will. Orn.* p. 55. t. 10. *Raj. Av.* p. 18. n. 3. *Lanio AD-
DER-BIRD.* *Charlet. Av.* 72. n. 13.

Ampelis cærulefcens, *alis caudaque nigricantibus.* *Linn. Faun. Suec.* p. 68. n. 181.

at the bottom of the middle one by a membrane. It is a very timorous and shy bird, wary to escape danger, usually sitting on the bushes with its tail erect. It makes its nest of the heath and moss-herbage, and lines it with wool, and the downy parts of plants. It preys upon beetles, and their hexapod-worms, and grasshoppers. With the cruelty of a coward it seizes upon the young of other birds in the nest. It adventures also on the parents, particularly the little harmless song-birds, wantonly murdering many of them before it tastes one, which made the falconers, who sometimes trained it to take larks, &c. call it the *murdering Pie*; and the common people in *Derbyshire**, *Shropshire*, and *Cheshire* †, the *Wierangle*, from the German name *Werkangel*, i. e. the *suffocating Angel*.

10. We have the *ash-coloured Shrike*, or *Butcher-Bird* (*n*), in the same mountainous parts. It is of the size of a *Bulfinch*. The head is large, the beak black, and the tip hooked, with two angular appendages or denticles, without cases or cavities to receive them. The tongue is divided at the extremity into many parts, hairy, as is its receptacle, the palate. There are black stiff bristles about the nostrils as in the larger species. About the eyes and auricles is an oblong black list, and another above it of white. The head and rump are hoary; the middle of the back, and the middle series of the small feathers on the wings of a dusky greyish-red. The tail-feathers are blackish, spotted

* *Hill. Hist. of Birds.*

† *Charlet. Av.*

(*n*) *Lanius tertius*. *Will. Orn.* 54. *Icon mala*. *Lanius minor rufus*, f. *tertius* *ALDR.* *Raj. Av.* p. 18. *Morton's Northampt.* t. 13. f. 5. *Mor.* et, f. 6. *Tam.* *Icon opt.* *Ampelis dorso griseo macula ad oculos longitudinali.* *Linn. Faun. Suec.* p. 68. n. 18.

Lanius minor (Fœmina). *Raj. Av.* p. 19. n. 5.

at the insertion with white. The throat, breast, and sides of the body, are of a pale reddish white; the lower part of the belly white. The claws are black, and very sharp; the outer toe connected by a membrane to the middle one.

The hen resembles the great butcher-bird in colour, and has often been taken for a distinct species. The head is cinereous. The back is of the same colour, variegated with transverse lines of black. The breast and belly are whitish, tinged with yellow, in beautiful wavy lines. The tail-feathers are mostly of a uniform blackish colour. The train is margined with grey, and tipped with white. It builds in hollies, and the black and white thorn. It lays six eggs, white, with a circle of reddish-brown at the obtuse end.

11. The *Lesser Horned Owl* (*o*), is a native of our woods, and solitary desert places. It is a bird of great beauty, of the size of a wood-pigeon; the wings, when extended, measuring about three feet; the beak pretty large, hooked, and black; the tongue thick, and bifid at the extremity; the eyes large, the iris a beautiful yellow; the auricles large and handsome; the face adorned with a double circle of feathers, the exterior ones elegantly variegated with small linear spots of white, red, black, and yellowish; the interior mostly red; and where they meet, they are both edged with black; the back and wings have the same beautiful plumage, variegated with black, yellow, white, and a reddish-brown. The horns or auricles are composed of six feathers, above an inch long, edged with yellow and white, and black in the middle, like those in the wings. Six or seven

(*o*) *Otus minor, capite aurito pennis sex Otus f. Alio. Raj. Ornith. p. 100. t. 12. cum bona Icone. Otus five noctua aurita. Raj. Syn. Will. Orn. p. 64.*

black,

black, and very narrow, transverse *Areolæ* adorn the train, the intermediate spaces greyish above, and yellowish underneath. The feathers on the middle of the throat, and the breast, are black, variegated with white, and a reddish-brown. Those on the lower part of the belly, and on the legs, down to the claws, are of the same colour. The claws are large, black, sharp, and crooked; the middle toe, on the inside, formed edgewise; the outmost foretoe capable of being turned backwards, as in other owls, to answer the use of an anterior toe. It affects mostly to live and breed in hollow trees, and flies abroad in the evening. The bird here described was shot at *Asbington*, near *Morpeth*, and presented to me. It has been supposed not to be an *English* native till of late years.

12. The *Churn Owl*, or *Goatsucker* (*p*), is frequently observed and shot on our wastes and forests where it breeds. It is of the size and shape of a cuckow; the head and auricles large; the beak small, depressed at the base, the point a little crooked, soft and black; the mouth enormously wide, set round with whifkers, each composed of eight hairs or bristles. The anterior part of the head down to the back is cinereous, the middle of each feather black; the middle of the wings of a cinereous cast, the rest of the wings and back a reddish-brown, white and black, in beautiful waves, with some single larger spots, in an elegant disposition; the breast and belly adorned with short transverse *areolæ* of a pale red and black. The tail is near five inches long, composed of ten feathers, the middle ones cinereous, with very narrow, transverse black *faciæ*; broader in the rest, and the in-

(*p*) *Strix*, *Caprimulgus*, *Fur nocturnus*. *Bellon. Icon.* 28. a. *Will. Orn.* p. 70. t. 14. *Raj. Av.* p. 26. n. 1. THE NIGHT-JARR, *a continus nocte susurro*. *Charlet. Av.* p. 78. *Hirundo cauda integra, ore fetis ciliato*. *Linn. Faun. Suec.* p. 92. n. 248.

intermediate spaces cinereous, a pale red and black. The legs are short and small, feathered on the fore-side about half way, and reaching almost down to the toes, which are blackish, and the claws black, and small; the interior edge of the middle one serrated, as in the heron-species. It lives on seeds, insects, beetles, and their hexapods; and is rarely seen before the evening. The bird here described was shot in *Reeds-dale* by *Christopher Reed*, of *Chipchace*, Esq; who sent me two of them, both young ones. Its nest is frequently found in thickets, and among brushwood.

13. The *Royston-Crow* (*q*) is not unfrequent in woods, and on the sea-coast. It much delights to feed upon sea-insects, and small shell-fishes; at the opening of the latter of which it is very dexterous. It takes one up with its bill, and flies to a great height with it in the air. It then suddenly lets it fall upon the sea-rocks, where it is fractured by the fall. It thus frequently provides itself with a good fish-meal. When it is tired of a fish-diet, it retires for a while into the country, and lives upon the aurelias of insects, hexapods, and stone-fruits in the woods and hedges; and for variety, upon seed-corn, and sometimes dines on grosser food with the raven. It usually builds upon alder-trees, and lays four eggs.

14. The *Jay* (*r*) is common in our alpine woods, and deserves notice for its beautiful plumage, and active sprightliness. The head is of an elegant greyish-brown, with some linear black

(*q*) *Cornix femicinereus*. THE ROYSTON-CROW. *Charlet. Av. p. 75. n. 2.* *Cornix cinerea frugilega. Will. Orn. p. 84. t. 77. Raj. Av. p. 39. n. 4.* *Cornix capite, gula, alis, caudaque nigris, trunco cinerascente. Lin. Faun. Suec. p. 24. n. 71.*

(*r*) *Pica glandaria. Charlet. Av. p. 46. n. 2.* *Corvus variegatus, tætricusibus alarum cæruleis; lineis transversis albis nigrisque. Linn. Faun. Suec. p. 25. n. 74.*

breaks ;

streaks; the beak strong, large, and black; the tongue of the same colour, bifid at the tip; the shoulders and breast of a pale reddish-brown, tinged somewhat with carmine. Fifteen of the *remiges* or sail-feathers in the wings are covered with some short ones of a beautiful azure, black and white in alternate lines, so glossy and splendid, as to have the appearance of a rich enamel. It lives upon acorns, and both wild and garden fruits. They will come two or three together out of the wood into my little garden at *Simonburn* in the *rasp* and gooseberry-season, and can hardly be frightened away, proclaiming it, as it were, in loud clamours from tree to tree to be their own property.

15. The *Green Woodpecker* (*s*) has been observed in some of our vale-woods, but is not common. It was frequent in *Dilston-park* before the wood was cut down. It is a beautiful bird, in an elegant head-dress, a rich crimson, or vermilion, variegated with small black spots in an irregular order; the eyes bright and piercing; the pupil large, and black, with a double circle instead of an iris; the interior one of a brownish-red; the exterior white; a black list round the eyes, with a crimson spot under each. The throat, breast, and belly, are a pale green; the upper part of the neck, the back, and the small feathers on the wings, of a deeper and a finer green; some of the tail-feathers of a dusky hue, with white spots, the rump a pale yellow, or straw-colour. The tongue is round, with a bony point, dented on each side, capable of being contracted or extended, to a great length, at pleasure, by the help of two cartilages in muscular cases. It darts it with a wonderful force into the barks of trees,

(*s*) *Picus viridis*. HICKWALL. WITWALL. GREEN WOOD-PECKER. *Charlet*. Av. 93. n. 3. *Will*. Orn. 93. n. 21. *Picus viridis*, vertice coccineo. *Linn*. Faun. Suec. 28. n. 80.

where

where it pierces insects, ants, and their chrysalis, commonly called Ant's Eggs, the *coffi* or hexapod-worms, hatched from the *ova* of beetles, which it often explores on the ground. It breeds in the cavernous trunks of old trees.

16. The *great spotted Woodpecker* (*t*), is a native of the same woods. It is somewhat larger than a blackbird; the beak more than an inch long, triangular, and channelled lengthways, tapering from a strong broad base to a point; short *setæ* or bristles standing round the nostrils, black and curled. The eyes are handsome, the iris red, the pupil large and black; the tongue formed like that of the green *Picus*; the chaps streaked with white, met on each side by a transverse crimson-line from the neck in the male, but not in its mate; the interior part of the tail a bright crimson. The head is black, shaded with green; the back and exterior plumage of the wings black, the latter variegated with spots of white, and a white spot on the insertion of the wings. The bird here described was shot in *Countess's* wood upon *North Tyne*, and presented to me.

17. The *lesser spotted Woodpecker* (*u*) has been observed and shot in woods with the former. It is like it in shape, but considerably less; in the same rich plumage; the head and rump of the male of a splendid crimson, a peculiarity which the females of both

(*t*) *Picus varius major*. *Will. Orn.* 94. t. 21. *Raj. Av.* 43. 4. *Charlet. Av.* 93. n. 2. *Picus albo nigroque variegatus, vertice nigro, rectricibus tribus lateralibus utrinque albescens.* *Linn. Faun. Suec.* p. 29. n. 81.

(*u*) *Picus varius minor*. *Will. Orn.* p. 94. t. 21. *Raj. Av.* 43. n. 5. *Charlet. Av.* p. 93. n. 1.

Picus albo nigroque varius, rectricibus tribus lateralibus apice albo-variegatis. *Linn. Faun. Suec.* p. 29. n. 82.

are

are without, being only distinguished with white. The toes, the end-feathers of the tail, and the guts of all the species, are disposed alike. Two of the toes are placed behind, and two before, the lowest bones of the foretoes united. The end-feathers of the tail are all bifid, the four middle ones entirely black, strong and bending inwards, to support the body in climbing trees. The guts lie deep in the anterior part of the body, to preserve them from being hurt by the violent strokes made with the bill on trees, with the head downwards. They have this farther peculiarity, they want the *Appendices* of the blind guts. Their eggs are white. They are said to make themselves a dwelling sometimes so artfully, and the entrance so perfectly round, in a solid tree, as not to be excelled by the most skilful geometrician. Our common people call them *Pick-a-trees*, also *Rain-fowl*, from their being more loud and noisy before rain. A polite and observing nation, the old *Romans*, called them by the same name, *Pluvie Aves*, for the same reason. It is an active sprightly bird, climbing a tree with wonderful expedition and swiftness, never weary in seeking its living. The vermicular offspring of beetles, and small insects, are its favourite food. The bird here described was shot in *Dilston-park*, near *Hexham*.

18. The *Alcyon*, or *King's-fisher*, (*v*), is not unfrequent on the shady banks of our larger rivers, and deserves notice for its beauty. It weighs about an ounce and a quarter. The beak is almost two inches long, of a trigonal form, straight and sharp, and of a black colour to the corners of the mouth, which are white; the inside of the mouth yellow; the tongue short, broad, pointed, and not bifid at the tip; the eyes pretty large, and of a

(*v*). *Ispida*, *Alcyon fluviatilis*, vulgo *Piscator Regis*, THE KINGS-FISHER. *Charlet*, *Av.* p. 3. n. 13.

piercing lustre; a red spot between them and the nostrils, and another above them, succeeded by a white one, shaded with red, The crown of the head is of a deep green, with transverse lines of blue. The whole upper plumage of the neck and back, to the insertion of the tail, and of the wings, a beautiful azure, bright and splendid, beyond expression, the eye hardly able to look upon it for any length of time without being dazzled, a near attention shewing some elegant transverse striæ of a deeper tint; from the shoulders variegated with blue and green of a great lustre. The throat, breast, and belly, are a reddish-brown, on a white ground. The tail is short, not more than an inch and an half in length, composed of twelve feathers, of a deep blue, with a blackish cast. The legs and feet are short and small, black before, and red behind, as are the soles of the feet and back-toes; the outer toe of each foot adheres to the middle ones for the space of three joints; a circumstance very remarkable, and peculiar to this bird. We have it frequently on the banks of the rivers of *North* and *South Tyne*, where it burroughs, usually about half a yard under the surface of the earth, and lives upon small fishes. The banks of our other large and shady trout-streams also have its company.

19. We have the *Water-Ouzel* (*w*) in mountainous rivulets, about cataracts and water-falls, but it is not common. It is of the size of a blackbird, but of a shorter body, and thicker neck; the beak slender, straight, and sharp, about an inch long, and black; the tongue also black, small, and somewhat bifid at the tip; the eyes large, the iris of a hazel-colour; the eye-lids encircled

(*w*) *Merula aquatica*. *Will. Orn.* p. 104. t. 24. *Raj. Av.* p. 66. n. 7. *Charlet. Av.* p. 115. n. 12. *Motacilla pectore albo, corpore nigro.* *Linn. Faun. Suec.* p. 82. n. 216.

with

with white. The head and upper part of the neck are of a rusty, brownish-black. The shoulders, back and wings, a glossy black, and deep grey, variegated; the throat and breast snow-white, edged with a pale red. The tail is short, somewhat above two inches, composed of twelve feathers. The legs, feet, and claws, are black; the outer fore-toe joined at the base to the middle one. It lives upon insects. It makes its nest in the concave parts and hollows of large rocks, with clay, moss, and the deciduous leaves of trees, of a globose figure. There was lately one on the shadowy dropping rock at *Tocket-water-fall*.

20. The *Bittern* or *Bittour* (*x*) is frequent about mosses. It is very near as large as the common *Hernshaw*, the beak strong at the base, straight, convex, sharp at the edges, and gradually tapering to an acute point; the tongue triangular, and short; the mouth wide, and a black spot at each angle. The crown of the head is somewhat depressed, and adorned with black; the throat and sides of the neck a reddish-brown, variegated with black, in narrow, transverse lines; long feathers upon the neck and breast, black in the middle; the exterior part of the thighs spotted with black. The plumage of the back and wings is beautiful, being cinereous, black, and a pale red, in elegant variegations. The legs are robust, long, and naked above midway up the thighs; the toes armed with sharp claws, the middle

(*x*) *Ardea stellaris*. *Will. Orn.* p. 207. t. 50. 52. *Raj. Av.* p. 100. n. 11. *Ardea vertice nigro; pectore pallido maculis longitudinalibus nigricantibus.* *Linn. Faun. Suec.* p. 48. n. 134. *Stellaris. Asterias. THE BITTORN. Charlet. Av.* p. 110. n. 5. sequenti observatione.

“ Hoc sibi peculiare habet, quod *aspera Arteria* in ea tota continua est, *Larynx* nulla. Unde “ vox ejus incondita, cui similes illi soni dicuntur, quos *βερυκός*, vocat *ARIST.* in *PROBLEM.* “ *Sect. x.*”

one ferrated underneath, for holding fast its anguillaceous prey, and other lubricous fishes; the outer fore-toe united at the base to the middle one by a membrane. The back-claw exceeds all the rest in size and length. From a notion that it preserves the teeth, it sometimes has the honour of being set in silver for a tooth-pick. The eggs are of a greenish white, usually about four or five in number, laid in a tuft of moss, sedges, or rushes. The bird here described was shot in *Widdrington-park*, and presented to me. Most of our alpine mosses have its company. A moss to the north of *Many-Laws*, in the parish of *Carham*, is rarely without it, where it is called the *Mire-Drum*, from its singular loud note, especially in the spring, which is then its congratulatory ovation to its mate on the arrival of it, when there is a kind of resuscitation of beauty throughout all nature, and universal gladness.

21. The *ash-coloured Heron*, or *Hernshaw* (*y*), is common. It builds *gregatim* upon trees. On a farm of Sir *Harry Grey's*, by the western margin of a trout-streamlet, called *Glen*, under *Cheviot*, there is usually a fine hernery, at the vernal revolution. It is very entertaining to see the polity, the pleasures, and amusements of this pisciverous community. Some are centinels, and take their post on the side of a sunny bank, to see that no danger is near, whilst the rest of the society are at work, some in building their little temporary city, some in laying their eggs, some in attending their young, others up above the thighs in water exploring food for them, returning from the *Glen*, and other neighbouring streams, with a constant supply of fish-provisions. An universal harmony reigns among them; not a bird to be

(*y*) *Ardea cinerea major*. *Will. Orn.* p. 203. t. 49. *Raj. Av.* p. 98. n. 1. *Charlet. Av.* p. 109. n. 1. *Ardea cristata dependente*. *Linn. Faun. Succ.* p. 48, 49. n. 133.

seen but contributes its utmost to the happiness of the rest, and to the prosperity and well-being of the rising generation.

22. The *Black-Cock* (z) is a native of our alpine wastes and forests. The head is large, the eyes of a lively and piercing aspect; the eye-brows adorned with a scarlet protuberance, bright and beautiful; the ears patulous; the beak black, and somewhat curved. The whole upper plumage is black as jet, except some white on the wings, and a tinct of deep blue on the neck and back, extremely glossy and beautiful. The tail is forked, composed of sixteen feathers, black, and of an hoary white at the tips, the three exterior ones on each side long, and reflex. The legs are feathered; the toes naked, and connected to the first joint by a membrane, with a cutaneous serrated edging on each side.

The *Hen* is of so different a colour, that to a stranger she might seem a different species. She has the same scarlet eye-brows, patulous ears, and white in the wings, as the male; but the rest of her upper plumage is a yellowish-red, and grey, variegated with transverse lines of black; the breast, belly, and legs, hoary; the tail straight, and not reflex. These admired birds were formerly very frequent on our alpine commons among the *ericæ*, but the eager pursuit of sportsmen after them, and the burning of the *ericæ*, which afforded them both food and shelter, has made

(z) Tetrao f. urogallus minor. *Will. Orn.* p. 124. t. 31. *Raj. Av.* p. 53. n. 2. Tetrao remigibus secundariis a medio basin versus albis, cauda bifurca. *Linn. Faun. Suec.* p. 62. n. 168. Urogallus minor, & Gallina Corylorum. *Charlet. Av.* p. 82. non specie, sed sexuantum differunt.

Mares, BLACK-GAME, } nominantur.
Feminae & pulli, GREY-GAME, }

them

them take refuge on the most remote and solitary heaths and mountains, and even there they are become so extremely scarce, that he is reckoned very fortunate who in a whole week's search meets with a brood. They are now as rare at the better tables, as they used to be abundant. It is the opinion of many of our alpine people, that more are destroyed in the spring, when hymenæal joy makes them fearless, than at any other time, by insidious and vigilant poachers. The *Black Cock*, here described, was killed, 5 August, 1756. It weighed 44 ounces, and measured 33 inches between the tips of the wings extended.

23. The *Gor-Cock*, or *Heath-Cock* (*a*), is more frequent than the former in mountainous places. The wings are of a yellowish-red, variegated with transverse wavy lines of black; the breast and belly of the same colour, with large white spots. The beak is short and black; the nostrils covered with feathers; the eyebrows naked, and adorned with a carneous femilunar fringe of a bright scarlet, more broad than in the hen. It is also distinguished from her by white specks on the tips of the feathers at the basis of the beak, and a pretty large white spot on each side of the basis of the lower chap, and the deep unmixed yellowish-red on the throat, and upper part of the breast. In other

(*a*) *Gallina corylorum*. *Will. Orn.* 126. t. 21. *Raj. Av.* 55. n. 6. *Tetrao reatricibus cinereis punctis nigris fascia lata nigra exceptis intermediis duabus*. *Linn. Faun. Suec.* 63. n. 17.

Mas, <i>Moor-cock</i> .	}	<i>Incolis montanis.</i>
Femina, <i>Moor-hen</i> .		
Pulli, <i>Moor-pouts</i> .		

<i>Red-Game</i> .	}	<i>Aliis.</i>
<i>Gor-fowl</i> .		
<i>Gor-cock</i> .		

respects,

respects, they are pretty near of the same colour throughout; the tail not forked. The legs of both have a downy plumage, as well as those of the black game, to preserve them from being frozen and torped by the severity of the winter's frosts and snows.

24. The *Pheasant (b)*, admired for its beautiful form and plumage, and for the table, is a native of our vale-woods. The beak in the more aged is whitish, with two carneous tubercles at the base, veiling the nostrils. The iris of the eyes is a splendid yellow; round which is a considerable naked space of a bright scarlet; the plumage between them black, with a changeable glow of purple. The ears are patulous, and the feathers near them long and elevated. The crown and neck are of a changeable glossy green, deeper on the latter, the sides of which have a purple glow. The rest of the upper plumage is of a glossy black or purple, as seen in different lights. The hen is not so richly attired, being nearly of the colour of a quail. It is less frequent than formerly; owing perhaps as much to the destruction of our woods, which gave it both food and shelter, as to the unwearied pains taken by sportsmen to bring it to the table.

25. The *Grey Plover, or Stone-Plover (c)*, is frequent on our alpine heaths, about mosses; feeding, *gregatim*, in August, on

(b) Phasianus. Charlet. Av. p. 81. iii.

(c) Pluvialis cinerea, Italis *Montana*, THE GREY PLOVER, OR STONE-PLOVER. Charlet. Av. p. 113. 1. Raj. Av. p. 1. n. 3.

Tringa nigro-fusca subtus alba, rostro nigro, pedibus virescentibus. Linn. Faun. Suec. p. 57. n. 155.

the fruits of heath and moss-plants, small beetles and other insects. It is of the size of a pigeon. The head and eyes are small, the iris of a hazel colour. The beak is black, strong at the base, and obtuse at the extremity; the mouth large. The head and neck are of a greenish-grey, shaded with brown, and variegated with numerous black spots. The rest of the upper plumage is of a dark brown, tipped with a greenish-grey, with some white on the edges of the tail-feathers. The breast, belly, tail, and rump, are white. The tail is about three inches long, and variegated with transverse bars of black and white. The legs are of a greenish-grey, with transverse incisions or indentings; the claws black, small, and obtuse.

26. The *small black-breasted Whistling Plover (d)* is in considerable plenty on the wastes towards *Cumberland*. In the breeding season it deludes the boys in searching for its nest by running before them, and then taking short broken flights, alternately, till it has allured them to a great distance, when on a sudden it flies out of the reach of their observation.

27. The *green migratory Plover (e)* is frequent on mountainous heaths. It comes in the spring, and leaves us at the end of autumn. It is of the size of a pigeon. The beak is an inch long, black, furrowed at the nostrils, strong and obtuse at the points.

(d) *Pluvialis minor nigro-flavus. Rudb. pict.*

Charadrius nigro lutescente variegatus, pectore nigro. Linn. Faun. Suec. p. 57. 156.

(e) *Pluvialis viridis. Will. Orn. p. 229. t. 57. Raj. Av. p. 3. n. 7. Charlet. Av. p. 113. n. 2. migratoria est: æstate enim nulla apud nos cernitur, vere perpaucæ.*

Charadrius nigro lutescenteque variegato, pectore concolore. Linn. Faun. Suec. p. 57. n. 157.

The neck is short, and the body slender. The ground-colour of the breast and of the upper plumage is black, variegated with yellowish-green spots. The belly is white. The legs are black, long, slender, and naked for a small space above the knees. It wants the back-toe.

28. The *Dotterel* (*f*), a migratory bird, exceedingly coveted by sportsmen for the table, is an annual visitant in the spring, about the middle of April. It is of the size of a song-thrush. The beak is an inch long, straight, and black. The head is elegantly variegated with black and white spots, with a white line above the eyes. The neck and back are cinereous; the wings and breast of a yellowish-red, the belly white, the rump grey. The tail is cinereous, margined with white, composed of twelve feathers. The legs are naked for a small space above the knee, of a greenish-yellow; the claws black. It has no back-toe. It feeds, *gregatim*, upon beetles, and other insects. The bird here described was shot on the common between *Presfen* and *Carham*, near a large morass, much frequented by fen-birds. Most of the commons on *Tweed-side* have its company, particularly those of *Carham* and *Heton*.

29. The *Land-Rail*, *Corn-Crake*, or *Daker-Hen* (*g*), is frequent in our vale-meadows. It is of a slender compressed shape, and of

(*f*) *Morinellus*. *Charlet*. Av. p. 3. n. 1.

Charadrius pectore ferrugineo; linea alba transversa collum pectusque distinguente. *Linn.* Faun. Suec. p. 58. n. 158.

See Dr. *M. Lister's* Letter to Mr. *Ray*. Ph. Tr. No. 175.

(*g*) *Crex Aristotelis*. *Turn.* Av. *Charlet*. Av. p. 3. n. 3.

Ortygometra ALDR. *Will.* Orn. p. 522. t. 29. *Raj.* Av. 58. *Ortygometra alis rufo-ferrugineis*. *Linn.* Faun. Suec. p. 59. n. 162.

the quail-species, reputed their leader and guide in their migratory expeditions. It measures between the tips of the wings extended nineteen inches. The beak is short, of a livid grey colour, and furrowed on each side towards the base. The head is small; the eyes are large, the iris is reddish, and the pupil black. The plumage of the head, neck, and back, are of a bright brown, elegantly spotted with black. The wings are of a yellowish-red. The throat and breast are grey. The belly is variegated with a dark brown and white; the upper part of the thighs brown, with transverse lines of white, undulating, or wavy; the lower part naked; the legs pretty long, and of a livid colour. It is known by its note of *Crex, Crex, or Crake, Crake*, in loud and incessant repetitions. In *Italy*, it is called, *Il redelle Qualie*, The king of quails*. The quail is fourteen inches between the tips of the wings extended. The rail and it, on the approach of winter, leave us for a milder climate. The latter make the greatest part of the revenue of the bishopric of the island *Caprea*, near *Naples* †.

30. The *Mountain-Finch*, or *Brambling* (*b*), a beautiful bird, is one of our visitants in winter. It is of the size of the sky-lark. The beak is half an inch long, robust, yellow, and black at the point; the head pretty large and round; the crown a glossy yellowish-red; the rest of the head, neck, and upper part of the back, a beautiful glossy black, with a changeable cast of purple, elegantly edged with a shining yellowish-red; the

* *Ray's Ornithol.* p. 171.

† *His Topogr. Observ.* vol. 1. p. 231.

(*b*) *Fringilla montana* s. *Montifringilla*. *Will. Orn.* p. 187. t. 45. f. 5. *Fringilla montana*. *Raj. Av.* p. 88. *Fringilla alarum basi subtus flavissima*. *Linn. Faun. Suec.* p. 75. n. 198. *Montifringilla*. THE BRAMBLE, BRAMBLING, OR BRIER-FINCH; utpote *rubis sæpe infidens, eorumque fructibus victitans*. *Charlet. Av.* p. 88. n. 4.

base of the wings a gold-colour underneath, and of a yellowish-red above; the wings black, variegated in the middle with a transverse bar of white, and a yellowish-red; the white extended through the five tail-feathers. The tail is black, forked, and edged with a yellowish-red, in lighter and deeper shades. It is twelve inches between the tips of the wings extended. The bird here described was taken in a snare at *Weldon*, near *Harelow-hill*, and presented to me.

31. The *Siskin* (*i*), an elegant little song-bird appears by our river-sides, among alder-trees, about the same time as the *Brambling* or *Mountain-Finch*, in great frosts and snows. It is kept in cages about *Hexham* for its song.

32. The *Titlark* (*k*) visits us in the beginning of May, if the weather is fine, and leaves us in the beginning of September. It is considerably less than the sky-lark; measures between the tips

(*i*) *Spinus* f. *Ligurinus*, (διὰ τὸν λιγυρὸν τῆς φωνῆς, à vocis argutie,) THE SISKIN: quem GESNERUS eandem avem cum *Serino* quasi SIRENE, a vocis dulcedine, facit. Nec immerito quidem, ut ex simul collatis descriptionibus colligere est. Est rara avis, in frigidioribus regionibus non nisi rarerer apparens, nec in ANGLIA plus quam semel vel a TURNERO visa. *Charlet. Aves.* p. 87. n. 2.—*Will. Orn.* p. 192. t. 46. *Raj. Av.* p. 91. n. 1. *Fringilla* remigibus medio luteis; primis quatuor immaculatis; rectricibus duabus extimis, reliquisque apice, albis. *Linn. Faun. Suec.* p. 77. n. 203. sequenti descriptione.

“ Corpus supra cinereo-luteum, ita ut omnis penna interius cinerea, exterius lutea macula nigricante. Corpus subtus cinereo-album macula in singula penna nigricante. gula albo flavicat. remiges nigræ circa basin anterior flavæ. posterior albidæ; hinc lutea macula in ala, at primæ pennæ quatuor totæ nigræ. Rectrices luteæ apicibus nigris, sed singulæ utrinque extimæ & duæ intermediæ totæ nigræ.”

(*k*) *Alauda Pratorum*, ALDROV. *Will. Orn.* p. 150. *Raj. Av.* p. 69. n. 3. *Alauda lineola* superciliorum alba, rectricibus duabus extimis introrsum albis. *Linn. Faun. Suec.* n. 191.

of the wings extended about ten inches; the body slender, and the head small. The beak is half an inch long, slender, and sharp at the point; the tip of the tongue jagged; the iris of the eyes a hazel-colour. The upper plumage is black and a yellowish-green, with a cast of grey, in elegant variegations; the rump of a yellowish-green; the throat and belly white; the breast and sides under the wings a yellowish-white, spotted with black. The tail is near three inches long, composed of twelve feathers, variegated with a yellowish-green, brown, and white. The legs and feet are yellow. It makes its nest among brushwood and furz, of moss, straw, and horse-hair. It is a merry active bird, sings upon trees; its note like the canary bird's, but shorter, and not so variously modulated. If preserved in a cage with care, it is hardy and long-lived, not subject to colds, or cramps. In its diet, if a nestling, it must be treated like a nightingale; if an old one, like a woodlark. Its natural food in the woods are beetles, and their hexapod-worms, and other insects.

33. The *Ruticilla*, or the *small Redstart*, *Red-Tail*, *Fire-Tail*, or *Star-Finch* (1), a beautiful song-bird, entertains us all summer, and disappears on the approach of winter. The beak is black and slender, the eyes of a hazel-colour; the throat and sides of the head under the eyes black, with a white spot above the eyes; the upper plumage a bright grey; the breast, rump, and tail, red. The tail is two inches and a half long. The tongue is bifid. The legs are black. It measures nine inches between the tips of the wings extended. It makes its nest in old walls and hollow trees, and lives upon the same kind of food as the titlark.

(1) *Ruticilla*. *Will. Orn.* p. 159. *Raj. Av.* p. 78. n. 5. *Charlet. Av.* p. 97. n. 10. *Motacilla gularis nigra*, abdomine rufo, capite dorsoque cano. *Linn. Faun. Suec.* p. 84. n. 224.

It is of a timorous and shy nature, but taken young and brought up, it is very gentle and familiar; and for winter's warmth will sing in the night, as well as in the day, and learn the notes of other birds.

34. The *Golden-crowned Wren (m)*, an elegant little bird, is a summer-inhabitant of our alpine woods, and has been shot on the sea-coast in *September*, before its departure to a warmer climate. It is of the size of the common wren, but looks less from the feathers lying closer, and smoother. It is very near seven inches between the tips of the wings extended. The beak is near half an inch long, slender, straight, and black; the tongue long and bifid; the eyes encircled with white; an oblong spot of beautiful saffron-yellow extended between them from the beak beyond the crown of the head, contracted and dilated at pleasure, so as either to shew or conceal its beauty. For this singularity, the *Tuscans* call it the *Marigold-Flower*. This admired saffron-tinct is marginated with yellow and black. The sides of the neck are a glossy yellowish-green; the upper part of the neck, and back, a yellowish-green and grey, variegated; the wings black and yellow, in a neat variegation, with a narrow transverse bar of white towards the middle; the breast and belly a pale yellowish-white, with a tinge of green. The tail is an inch and a half long, grey, and edged with a yellowish-green. The legs and feet are a dusky yellow. It lives upon insects. Its smallness, and the foliage of its favourite tree the oak, make it seldom observed. The late *Francis Foster*, of *Felton*, Esq; shot one near that place, which he presented to Mrs. *Thompson* of *Northum-*

(m) *Regulus cristatus*. *Will. Orn.* p. 163. t. 41. *Raj. Av.* p. 79. n. 9. *Charlet. Av.* p. 95. n. 1. *Motacilla remigibus secundariis exteriore margine flavis, medio nigris.* *Linn. Faun. Suec.* p. 87. n. 235.

berland-street, in *Newcastle upon Tyne*, in whose possession it now is, the case well preserved.

35. The *Cross-Bill* (*n*), an uncommon extraneous bird, was shot a few years ago by *Thomas Middleton*, of *River-green*, Esq; captain of *Clifford's* fort, near *Tynemouth*, and younger brother to Sir *John Lambert Middleton*, of *Belsay*, Bart. It chiefly frequents fir-groves for the sake of the cones, on the seeds of which it feeds. For the breaking of them, its bill seems wonderfully adapted by nature in its form and strength. It breaks off the cone, holds it up with its foot, and with its bill pares off the scales, explores the seed, and picks them carefully out. It feeds also upon hemp-feed, and juniper-berries.

36. The *Hoopoe* (*o*), a curious and uncommon bird, comes to us in the spring, and leaves us in September. It weighs about three ounces. The beak is two inches and a half long, black, slender, somewhat curved, and sharp at the point; the tongue short, triangular, and tapering from a broad base to the tip. The head is adorned with a beautiful crest, composed of a double series of feathers, two inches long, extending from the beak to the anterior part of the head, raised and let fall at pleasure. They are tipped with black, partly white underneath, the rest of a yellowish-red, as is the neck. On the breast are black linear spots on a white ground, the black vanishing by age, except on the sides. The back and wing-feathers are variegated with

(*n*) *Loxia* f. *Curvirostra*; THE CROSS-BEAK, or SHELL-APPLE. *Charlet. Av.* p. 76. n. 7. cum optima Icone, p. 77. *Will. Orn.* p. 181. t. 44. *Raj. Av.* p. 86. *Coni-rofor.* *Rudbeck. Lapp.* p. 75. *Loxia* rostro forficato. *Linn. Faun. Suec.* p. 66. n. 177.

(*o*) *Upupa. Bellon. Av. Icon.* 72. a. bene. *Charlet. Av.* p. 97. cum optima Icone. *Will. Orn.* p. 100. t. 24. *Raj. Av.* p. 48. n. 6. *Linn. Faun. Suec.* p. 30. n. 85.

black

black and white alternately; the former in little spots, the latter in transverse lines. The tail is composed of ten feathers, about four inches and a half long, with a handsome white crescent on a black ground in the middle, the gibbose part being towards the rump, which is white, and the horns towards the end of the tail, to which the wings nearly extend, when closed. The eyes are small and sprightly, the iris of a hazel-colour; the lower eye-lid larger than the upper. The legs are short and slender, the outer toe at the base connected to the middle one without the help of a membrane; the claws pretty large and sharp. It wants the blind guts as well as the wood-peckers, and feeds like them on beetles and their hexapod-worms. It builds in woods, in hollow trees, and lays two eggs, of an ash-colour. It is very irregular in its motion in flying, as full of perplexity and discomposure. It sits mostly on the ground; sometimes on the willow, very solitary; using a note like its name, *Hoopoe*, in loud and quick repetitions. The bird here described was shot in the latter end of September on the sea-banks near *Chibburn*, and presented to me. Mr. *Ray* refers us to *Northumberland* and *Surrey* for it*.

Tereus is represented by *Ovid* as turned into this bird, and with his crest displayed pursuing his wife *Progne*.

“ Vertitur in Volucrum cui sunt pro vertice Cristæ

“ Protinus immodicum surgit pro cuspide rostrum

“ Nomen EPOPS Volucris, Facies armata videtur.”

For the variety and order of its plumage, its elegant and beautiful crown, renewed every winter, the *Egyptians* made it the

* *Ornithol.*

symbol of the seasons of the year, placed it near their mercurial crosses, on the head of their deities. *Orus*, the hieroglyphic of the world, had the head of one placed on the top of his staff by that superstitious nation.

37. The *white Stork* (*p*), an uncommon bird in *England*, was killed near *Chollerford-bridge* in the beginning of the year 1766, by Mr. *James Moor*, who keeps the noted good inn at that place. It is somewhat larger than our heron, the neck thicker, which makes it appear not so long; the body of the size of the domestic goose; three or four feet high when erect. The head is large, and a little depressed on the crown; the eyes also large, and of a piercing aspect; the beak long and robust, with a sharp point, of a beautiful red for the whole length. The legs and feet are of the same colour; the legs long and naked a great way up; the toes long; the claws black, of the shape of the nails of one's fingers. The plumage of the whole body is white, except the

(*p*) *Ciconia*. *Bellon*. Av. Icon. 45. a. bene. *Charlet*. Av. p. 108. n. 1. *Ciconia alba*. *Will*. Orn. p. 210. *Raj*. Av. p. 97. n. 1. *Ardea alba*, remigibus nigris. *Linn*. Faun. Suec. p. 50. n. 136. sequenti descriptione.

“*Alba* sunt caput, collum, venter, cauda. *nigræ* remiges. rostrum pedesque *rubri*. facies magna ex parte *alba*.”

Hæc avis, quàm sancta pietatis cultrix sit, erga parentes suas senectute jam marcescentes, notum est EX LEGE CICONIARUM, apud ARISTOPHANEM sæpius celebrata; quæ inde nomen traxit: quàmque flagranti amore foetus prosequatur, patet EX INCENDIO DELPHENSI quod dum describit HADRIAN. JUNIUS in BATAVIÆ Hist. cap. 17. observatum fuit, inquit, “*Ciconiam* a pabulatione reducem, cum flammis nido suo imminentes videret, conatam omnibus pullo grandiuulos, involucre tamen, eripere mediis ex ignibus; tandem desperata omni ope & quasi conclamata, passis alis in nidum se præcipitem dedisse, pullisque toto corpore oblectis incumbere visam fuisse, veluti deposita vitæ spe, ultro cum charissimis pignoribus mortem appetituram.” *Charlet*. Av. l. c.

quill

quill and the cover feathers of the wings, which are black; the tail scarce an inch long, and not seen for the wings over it. The quills are large, making excellent writing-pens. With its bill it makes an unusual kind of noise, by striking one chap against the other, in a quick and forcible manner. It feeds upon fish, frogs, and serpents, but will not meddle with toads. It is common in many parts beyond sea, in *Holland*, and *Germany*. It builds on old towers, and other buildings, and sometimes on the tops of tall truncated trees. The case of the bird killed here was fixed against the west front-wall of the inn, where it remained for a long time, with the erroneous name of that more rare bird, the *Flamingo*, put up under it in writing; a bird of quite a different figure and colour. However, this wrong name drew together crowds of people from the adjacent parts to see it, who for some time returned satisfied that they had seen the *Flamingo*, the most remarkable bird hitherto known.

I might name some other migratory *Fissipedes*, as the *Woodcock*, &c. but as they are common, I pass on to the *Palmipedes*.

1. The *Cormorant* (*a*) is frequent in our larger rivers and lakes, especially in those towards the sea. Its upper plumage is a deep olive-brown, with a changeable glow of green; the breast and belly a bright white. The beak is three inches and a half long, robust, and curved at the extremity; the upper mandible black, and serrated at the edges; the lower one compressed, and covered at the base with a naked yellow skin. The legs are strong, and armed with a kind of cancellated scales; the interior part of the claw of the middle toe serrated. It breeds upon the

(a) *Corvus aquaticus*. *Will. Orn.* p. 248. t. 63. *Raj. Av.* p. 122. n. 3. *Pelecanus subtus albicans*; *restricibus quatuordecim*. *Linn. Faun. Suec.* p. 42. n. 116.

islands of *Farn* and *Coquet*, and other solitary retreats on the sea-coast, in cavernous rocks and precipices; and sometimes upon trees, with the *Heron*. It was formerly trained in *England*, and is still in *China*, for catching fish. The bird here described was shot in *North Tyne*, near *Haughton-castle*, in 1762. It measured between the wings, extended, four feet, six inches, and from the points of the bill and the train, three feet, five inches.

2. The *lesser Cormorant*, the *Shag*, or *Crane (b)*, is frequent in the same waters with the former. It is somewhat larger than a domestic duck, measuring forty-four inches between the tips of the wings extended. The head is large, and depressed on the crown; the eyes small, and standing more forward, and lower down the head than any other known bird; the beak four inches long, straight, and slender, and of a roundish figure; the upper chap black, and curved at the point; the under one of an olive-colour, with a cast of yellow. The body is small, flat, and depressed, like the *dun-divers*. The upper plumage is a glossy black, with a changeable glow of purple and green, beyond expression beautiful, and only to be conceived by sight. The under part is brown and grey, with a black tinge under the tail, which is six inches long. The wings extend, when closed, to the base of the tail; the legs are short, broad, compressed, and feathered down to the knees; below which they have a cutaneous, cancellated armature. The interior part of the claw of the middle toe is ferrated. It breeds annually on the island of *Farn*, and in other places among the rocks on the sea-coast, but most commonly upon trees. In swimming, little more of it is to be seen than the head, erect. It is an excellent

(b) *Corvus aquaticus minor* f. *Graculus palmipes*. *Will. Orn.* p. 249. t. 63. *Raj. Av.* p. 123. *Pelecanus subtus fuscus* : *retrotrix* duodecim. *Linn. Faun. Suec.* p. 42. n. 117.

diver, and expert in getting out of danger on the sight of a gun; becoming invifible, with the fpeed of an arrow, the moment the fire flafhes in the pan.

3. The *St. Cuthbert's Duck* (c) is a beautiful native of the ifland of *Farn*, the monaftic retreat of *St. Cuthbert*, with whose name it has been honoured by thofe two eminent ornithologifts, *Mr. Ray*, and *Francis Willoughby*, Efq; who in their travels through *England*, heard of it no where but here; preferved fpecimens of the male and female being fhewn to *Mr. Ray* by *Sir William Forfter*, of *Bambrough*. They are both larger than a domeftic duck; the eyes bright and piercing; the beak of a femicylindric form, obtufe at the extremity, ferrated on the fides, with a rough membrane at the bafe, and feathers extending from the head below the noftrils. The crown of the male is black, edged behind with a changeable glow of green; the neck, breaft, back, and three fail-feathers in each wing are a bright white; the reft of the plumage jet-black, throughout. The female is grey, variegated with brown and black fspots, with a narrow tranfverfe line of white in each wing. They are remarkable for their foft plumage, and large well-flavoured eggs. In winter they frequent the large rivers. . The male here defcribed was fhot in the river *Tyne*, near *Hexham*, in a hard froft, and prefented to me.

4. The *Sheldrake*, *Bergander*, or *Burrough-Duch* (d), is alfo a native of the ifland of *Farn*. It is larger than a common duck.
The

(c) *Anas plumis moliffimis*, vulgo EIDER. *Barth. Act. i. p. 90. Worm. Muf. p. 310. Anas CUTHBERTI f. FARNENSIS. Will. Orn. p. 278. Raj. Av. p. 141. n. 3. Anas roftro femicylindrico; ungue obtufo; cera fuperne bifida rugofa. Linn. Faun. Succ. p. 33. n. 94.*

(d) *Tadorna. Bellon. Av. Will. Orn. p. 278. t. 70. Raj. Av. p. 140. n. 1. Vulpanfer. quia in cuniculorum foveis, & rupium cavernis, more vulpis, nidulatur. BERGANDER. BUR-*

The beak is short, broad, somewhat reflected, and of a deep red colour, except the nostrils, and the extremity, which are black; a carneous tubercle between the base of the upper chap and the head, oblong, and prominent. The head, and upper part of the neck, are green, with a changeable tinge of black, glossy and shining like *Satin*, at a remote view seeming entirely black; the rest of the neck a bright white; a broad fillet of a beautiful orange encompassing the upper part of the body, the shoulders and breast; the rest of the breast, and the belly a bright white, with a beautiful black list through the middle lengthways, terminated with a pale orange tinct under the tail. The wings are elegantly variegated with black and white, and the middle of the back is all white. The tail is white, mostly tipped with black. The legs and feet are of a pale carmine, and the skin so pellucid, that the course of the veins may clearly be seen through it. It is more admired for its beautiful clothing, than for the table; bearing no price for the table on account of its ungrateful taste. I have seen them brought up from the egg under a common hen at *Gloucester-hill*, near *Warkworth*, out of curiosity, and for their beauty. They were as tame and familiar, as other domestic fowls. Cavernous rocks, and clefts or cavities in the earth, are the situation it prefers to all others for breeding in. Hence it obtained the name of the *Burrough-Duck*.

5. The *Penguin (e)*, a curious and uncommon bird, was taken alive a few years ago in the island of *Farn*, and presented to the

ROUGH-DUCK. *Charlet. Av. p. 103. n. 2. Alb. Orn. p. 9. t. 94. SHELDRAKE OF BURROUGH-DUCK. Dale. Harw. App. p. 405.*

(e) *Anser magellanicus. Cluf. exot. p. 101. Anser magellanicus f. Penguin. Worm. Mus. p. 300. t. 301. Penguin nautis nostratibus dicta. Will. Orn. p. 242. t. 65. Penguin. Raj. Av. p. 118. n. 1. Leigh. Lancast. cum optima Icone. Alca rostri fulcis octo; macula alba ante oculum. Linn. Faun. Succ. p. 43. n. 119.*

late

late *John William Bacon*, Esq; of *Etherston*, with whom it grew so tame and familiar, that it would follow him with its body erect to be fed.

6. The *Coulterneb*, or *Pope* (*f*), a remarkable bird, is an annual visitant of the island of *Farn*, where it breeds. It is less than the common duck. The beak is of a different structure from the duck-kind, of a triangular form, short, broad, and compressed side-ways, curvated and sharp at the extremity, with a callous substance at the base, as in parrots. It is of two colours, cinereous towards the base, and a bright red at the point. It hath three or four transverse furrows in it. The eyes are large; the iris grey; the eye-lids armed with a black cartilage; a small carneous protuberance on the upper one, livid, and triangular; with another of the same kind on the under one, but roundish; a grey list round the eyes. The upper plumage is black, the lower one a bright white, with an elegant black fillet or collar on the throat. The wings are very short; the tail two inches long. The legs of the old ones are red; those of the younger ones, not full grown, a bright yellow; the claws a bluish-black. It wants the back-toe. Its legs are so short, and situated so far backwards, like the divers, or loons, that it is with difficulty it can take wing, without the advantage of some little eminence, a stone, or a mole-hill, which makes it often a captive if surprized upon a level ground; but it does not tamely part with its

(*f*) COULTERNEB. TOMMY NODDY. *Northumbr.* GOLDEN HEAD. BOTTLE-NOSE. *Eborac.* POPE. *Cornub.* PUPHINUS ANGLICUS. *Gesn.* Av. p. 725. *Pica marina.* *Aldr.* Orn. 1. 19. t. 37. *Alb.* Orn. 2. p. 73. t. 78, 79. *Anas artica.* *Cluf.* exot. p. 104. *Olear.* Mus. t. 15. f. 5. *Worm.* Mus. p. 302. *Will.* Orn. p. 244. t. 65. *Raj.* Av. p. 120. *Alca rostri sulcis quatuor, oculorum regione temporibusque albis.* *Linn.* Faun. Suec. p. 42. n. 118.

liberty,

liberty, giving many severe strokes with its sharp beak and claws. When it is once on the wing, it skims with great celerity on the surface of the water. It puts itself to little trouble in providing a nest to breed in, being content with any subterrene cavity, but seems best pleased with a rabbit-burrough, turning the poor animal out of its own tenement by force, if not deserted before its arrival. The legs are larger than those of a duck, of a reddish colour. It lays only one at a time, and so on to the fifth. They leave us in *August*, and return in the beginning or middle of *May*. Such of the young as are not able to fly, they leave behind to shift for themselves.

7. The *Guillimet* (*g*) breeds annually on the steep cliffs of the island of *Farn*. It measures between the tips of the wings, extended, thirty inches. The beak is near three inches long, black, straight, and sharp at the point, with a small denticle near it, hanging over the under chap, when the mouth is shut. The whole upper plumage is a cinereous-black, the under one white. It lays very large eggs, above three inches long, sharp at one end, and blunt at the other, of a bluish-green, some of them streaked with black.

8. The *Razor-Bill* (*b*), is another of the *Farn*-island visitants in the summer. It is less than the common duck; between the

(*g*) GUILLIMET. SEA-HEN. *Northumbr. Dunelm.* SCOUT. *Eborac.* GUILLIM. *Cumbr.* KIDDAW. *Cornub.*

(*b*) *Alca*. Worm. Mus. p. 363. *Will. Orn.* p. 243. t. 64. f. 1. t. 65. f. 2. *Alca hoieri.* *Raj.* Av. p. 119. *Alb.* Orn. 3. p. 90. t. 95. *Alca rostri fulcis quatuor; linea utrinque alba a rostro ad oculos.* *Linn. Faun. Suec.* p. 43. n. 120. *THE AUK.* *Northumbr. Dunelm. Eborac.* RAZOR-BILL. *Dorcest. MURRE.* *Cornub.*

tips of the wings, extended, twenty-six inches. The beak is two inches long, black, compressed side-ways, curved at the point; a deep furrow above the nostrils, and between it and the base a short plumage, as soft as velvet; two more deep furrows below that, transverse, and white; and another faint one near the extremity. The mouth is a bright yellow within, like the *Coulteneb's*; a white list descending from each side of the head to the angles; the upper part of the throat reddish, the rest of the under plumage a bright white; the upper one black. It and the *Coulteneb*, and *Guillemet*, are constant companions, their wings, tails, legs, and feet, all formed alike, for swimming, and skimming upon the surface of the water, and not for high flights, or for walking; all wanting the back-toe; all leaving and visiting again their favourite island of *Farn* about the same time; all laying but one large egg, unless stolen from them; those of this bird two inches and three quarters long, white, with black spots, the smaller ends not so sharp as those of the *Guillemet*. They make no nest, but lay them on the ledges of the bare rocks. They are well tasted, and much esteemed, particularly those of the *Auk*.

Nor untrembling canst thou see
 How from a scraggy rock, whose prominence
 Half o'er shades th' ocean, hardy men
 Fearless of dashing waves do gather them.

The common sea-birds breed on the same cliffs in great numbers*. I had the curiosity about twenty years ago to visit this famous bird-island, towards the middle of *July*, when there is the greatest shew of birds and eggs, and saw the latter lie as thick upon the rocks, and among the marine herbage, as represented

* See *Ray's select Remains*. Itin. ii. p. 181, to p. 185.

by *Holingshead* †, and *Leland* ‡. The birds on being disturbed, rise, as it were, in battalia, and darken the very air, except the *Coulternebs*, and the beautiful *Sheldrakes*, *Cuthbert-Ducks*, and *Cormorants*, which take refuge in their subterrene or cavernous retreats, if they can reach them.

9. The *Golden Eye* (*i*), so called from the iris of the eyes, being of a beautiful yellow, like burnished gold; and called by the *Italians*, *Quattro Ocbii*, i. e. four eyes, from a round white spot at each angle of the beak, is not unfrequent about the *Farn-islands* and on the sea-coast. It is short, and thick bodied; the head large, of a changeable colour, according to the lights it is viewed in, black, purple, and a grass-green, glossy and shining, like silk. The neck is short, of a silvery white, as are the shoulders, breast and belly. The wings are black and white, variegated in a remarkable manner; the middle feathers white, and the exterior and interior ones black, both in the cover and the sail-feathers. The lower part of the back is black; the tail of the same colour, three inches and a half long, composed of sixteen feathers. The legs are short and robust; of a deep yellow. It measures between the tips of the wings, extended, twenty-seven inches. The bird here described was shot on the sea-coast, near *Druridge*, and presented to me.

10. The *Bernacle* (*k*) is frequent near the river *Tweed*, and *Holy Island*, in winter. It is considerably smaller than a goose,

† Hol. Chro. Vol. 1.

‡ Lel. Itin. Vol. 6. p. 60.

(*i*) Glaucion. Glaucus. *Bellon.* Av. Icon. 33. 6. Glaucion *BELLONII.* *Aldr.* Or. 1. 13. c. 38. *Will.* Orn. p. 281. *Anas oculorum iridibus flavis; capite griseo; collari albo.* *Linn.* Faun. Suec. p. 37. n. 104.

(*k*) *Anser SCOTICUS* versus *Bernicla*. *Bernicla* s. *Bernacla.* *Will.* Orn. p. 274. *Raj.* Av. p. 137. *Bernicla.* *BERNACLE.* *SCOTCH-GOOSE.* *CLAKE-GOOSE.* *Charlet.* Av. p. 103. n. 4. *Anas capite colloque nigris.* *Linn.* Faun. Suec. p. 32. n. 91.

and

and larger than a duck. The beak is short, broad and black. The plumage of the head, neck, and lower part of the thighs, is black; the belly cinereous; the back variegated with black and grey; the tail-feathers a dark grey; the short plumage of the wings, white, black, and cinereous, in alternate variegations. The tail is black. The back-toe is short, and slender. The case of one stuft was shewn Mr. Ray, at Sir William Forster's, of *Bambrough* *.

11. The *Soland Goose* (*l*) is often shot in autumn in its way southward from *Scotland*, on the commons near the *Tweed* and *Till*, and sometimes in winter, both there and on the sea-coast, and in other parts of the country. It is as large as a common heath-goose, six feet between the tips of the wings extended. The beak is long, straight, somewhat curved at the extremity, dentated on each side, and of a deep cinereous colour. The mouth is black within. The plumage, when full-grown, is all over a bright white, except the *Remiges* or tail-feathers, which are black for the space of sixteen inches. The crown, and upper part of the neck, turn yellow with age. The tail is about seven inches long. The legs are feathered down to the knees, and black below; the claw of the middle toe broad, and serrated on the inside. It hath four fore-toes, all palmated. The back-plumage of the young ones is variegated with black and white. The bird here described was shot at *Keeper-Shield*, near *Haughton-castle*, in the great snow in *March*, 1763, and presented to me.

12. The *Wild Goose* (*m*), in its periodical flights southwards in autumn from the fens in the north of *Scotland*, where it breeds,

* *Ray's Topograph. Observat. Vol. 1. p. 15.*

(*l*) *Anser Bassanus. SOLAND-GOOSE. Charlet. Av. p. 100.*

(*m*) *Anser cinereus ferus, torque inter oculos & rostrum albo. Rudbeck. pict. Anas cinerea; fronte alba. Linn. Faun. Suec. p. 33. n. 92.*

often alights on the commons near the *Tweed* and *Till*; the whole corpse encamping, as it were, till their strength is renewed by rest and food. We have some of them also in winter on the same heaths, and on the sea-coast. It is of the size of a domestic heath-goose, not fed in the grounds of better culture. The beak is above two inches long, dentated on the sides, black at the tip, and towards the base, and of a saffron-colour in the middle. The eyes are large, with a white line under them. The whole upper plumage is grey; the under one white, with a cast of grey on the breast. The legs and breast are of a saffron-colour, and the claws black. The order observed by them in their long flights is very curious, rank and file, like that of *Virgil's* cranes*.

13. In frosts and snows of a long continuance, the stately *Swan* (*n*) sometimes repairs for refuge to the rivers *Tweed* and *Till*, and there receives from the sportsman the untimely fate it would escape.

* *Æn.* ix.

(*n*) *Cygnus*, *Cygnus*. *Bellon.* Av. Icon. 30. a. *bene.* *Cygnus ferus.* *Will.* Orn. p. 212. *Raj.* Av. p. 136. n. 2. *Anas rostro semicylindrico*; *cera flava*; *corpore albo.* *Linn.* Faun. Succ. p. 31. n. 88.

WILD SWAN, ELK, or HOOPER. *Dale.* *Harw.* App. p. 403.

C H A P. X.
OF INSECTS AND REPTILES.

INSECTS and Reptiles are numerous, and might fill a volume. I shall only take notice of such as are most remarkable for their beauty and curiosity, and shall point out in my way their culinary, medical, tinctorial, and other uses.

1. In warm summers, the *white and scarlet Aranea* or *Spider (a)*, is not unfrequent in gardens. The legs are moderately long, white, and pellucid; the anterior articulations black. The under part of the body is of a sulphur-yellow. The upper part is white, sometimes yellowish, with a coronated circle on the back of a bright and beautiful scarlet, and within it an oblong line of a bright brown. I have often observed it in my garden at *Simonburn*.

2. The *dark grey and gold-yellow Spider (b)* is sometimes about old walls, and ruinous buildings. It is moderately large. The
under

(a) *Araneus albicans corona coccinea in albo ovali*. *List. Aran.* 51. f. 12. *Raj. Inf.* p. 24. n. 12. *Araneus hortensis albus ferto dorsali cinnabarino-rubro*. *Frisch. Germ.* 10. p. 6. t. 4. *Aranea abdomine flavo; annulo ovali dorsali rubro*. *Linn. Faun. Suec.* p. 354. n. 1227.

(b) *Araneus parvus subrufus inauratus, ipsa alvi apice infuscata, levipes*. *List. Aran.* p. 85. t. 30. *Araneus truncorum albo nigroque varius*. *Frisch. Germ.* 10. p. 16. t. 14.

under part of the body is of a rhomboidal or depressed shape, roundish towards the *anus*; of a very dark grey, elegantly variegated with a gold-yellow. The upper part is adorned with the same variegations, in beautiful wavy streaks lengthways. The legs expand transversely, at distances, variegated with the same colours, in beautiful alternate rings or circles. I met with this here described under a large coal-cinder on a stone-wall at the *Roman* station of *Caerworrán*. I have had these two many years in spirits.

3. The *subglobose yellow Spider, with black spots (c)*, is not unfrequent in tinned hollies, and other close headed shrubs, in gardens. The thorax is of a pale yellow, with a streak of black on each side; the rest of the body of a pale or greenish yellow, elegantly spotted with black. The female sits over her *ova* in a loose net of her own weaving, and though timorous at other times, with difficulty is then made to move, and shun danger. I met with this here described in the head of a variegated holly.

These little creatures are patterns and models of industry, and curious reticular works, excelling sometimes the finest *gawz*; furnished with materials out of the store-house of their own bodies; bestowed by nature to enable them to get their living, and with which both gloves and stockings have been made by the *French* virtuosi*.

Aranea abdomine rhomboide depresso, pedibus transversaliter extensis variegatis. Linn. Faun. Suec. p. 351. n. 1217.

(c) *Araneus viridis, cauda nigris punctis utrinque ad marginem superne notata, ipso ano croceo. Lifi. Aran. p. 34. f. 5. Raj. Inf. p. 20. n. 8. Aranea pallida; abdomine subglobofo flavo; punctis quibusdam nigris. Linn. Faun. Suec. p. 353. n. 1224.*

* *Reaumer. Inf.*

4. The *scarlet Aranea, Tant*, or *Lady-Bug* (*d*) is often seen in gardens and fields, walking abroad out of the earth among the plants and herbage on a bright day.

5. The *Hornet* (*e*) is rarely seen with us, except in a very hot summer. It is a formidable, but beautiful *apis*; the colours a bright yellow, red, and green, and black; the *thorax* black, and some of the rings or circles elegantly pectinated. A large commonwealth of them was discovered in the hollow of an oak-tree, by the very brink of *North Tyne*, in *Brome-haugh*, near *Chipchace*, in the year 1762, a remarkable hot summer; and on the 30th of *August* a period was put to it by suffocation with lighted straw, for the sake of seeing their mechanical skill in the structure of their combs. They were six in number; one of the outer combs measuring twenty-one inches in circumference, the middle comb nineteen inches and a half; the other combs gradually less; the waxen cells extremely thin and fine, elegantly variegated with a light and deep brown; many of them measuring an inch and an half in depth; those in the least outer comb empty; a numerous vermicular generation in all the rest, covered at the top with a thin film of a pearl-colour, round and prominent, glossy and shining, like polished pearls. So many ranges of combs, constructed with so much beauty, and with the art of the nicest geometrician, is a surprising spectacle! So noble a

(*d*) *Araneus exiguus coccineus* vulgo ANGLICE a TANT dictus. *List. Aran.* 100. f. 38. *Raj. Inf.* p. 41. n. 38. *Araneus ANGLICUS coccineus minimus.* *Petiv. Mus.* p. 65. n. 701. *Acarus terrestris ruber*; abdomine depresso. *Linn. Faun. Suec.* n. 348. n. 1200.

(*e*) *Crabro. Charlet.* *Inf.* p. 38, 39. n. 5. cum bona descriptione. *Swamm. bibl.* t. 26. f. 9. *Apis thorace nigro*; antice rufo immaculato abdominis incisuris puncto nigro duplici contiguo. *Linn. Faun. Suec.* n. 988.

piece of architecture cannot be viewed, or reviewed, without admiration, and a profound reverence of that Being who is the fountain of wisdom. I am obliged for this curiosity to my respectful friend, *Christopher Reed*, of *Chipchace*, Esq; who first discovered it, and was present with me to see it carefully taken out by his servants.

6. The *blue and gold-yellow Apis (f)* is sometimes about broken clay-banks or scars, by waters, and old ruinous buildings, in warm places, but is not common. It is superior to all the bee-tribe for beauty. It is smaller than the common bee, the *thorax* and the head blue, very splendid, with a small tinct of green, the body yellow, like burnished gold for lustre, the wings brown, the antennæ black, with twelve articulations; the last segment of the body but one, and the *thorax* dentated behind. It stings like the common bee.

7. The *small black and yellow Apis (g)* is frequent in gardens, and about old houses. It is a small, but beautiful insect, of the *wasp*-kind; the *thorax*, head, and antennæ black; four of the articulations or segments of the body of the same colour, with annular golden *fasciæ*, glossy and splendid. Though it is so small, it will assault and kill a common domestic fly three or four times as large as itself, and drag it with ease to its recess.

(f) *Vespa argillacea variegata f. superbe colorata. Frisch. Germ. 9. p. 19. t. 10. f. 1. Apis parietina nitida, collari cæruleo, abdomine aureo. Linn. Act. Upf. 1736. p. 28. n. 5. Apis nitida; thorace viridi cæruleo, abdomine inaurato. Faun. Succ. p. 302. n. 1004.*

(g) *Apis nigra; tibiis ferrugineis, abdomine maculis utrinque quatuor flavescens. Linn. Faun. Succ. p. 303. n. 1011.*

8. The

8. The *small black Apis* (*b*) is not uncommon in gardens. It is about half the size of a pismire. It inferts its ova by terebration on the stems and branches of garden-roses, in a *patella*-like form, which, when they are in *vermiculo*, are filed by the famous naturalist, Dr. *Lister*, the *English Kermes*, for giving a rich scarlet or purple dye, without the extraneous aid of an acid to fix it †.

9. The *large bluish-black and yellow Libella* (*i*) is frequent by brooks and rivers in June and July. It is a beautiful insect. The face is of a bright yellow, with two narrow transverse lines of black, and one larger of black on the upper part. The *scutellum* is black, with golden specks. The wings are of a yellowish-white, transparent, and full of nerves. The body is thick and cylindric, of a bluish-black on the upper part, and yellow underneath; the two colours meeting on the sides in elegant denticulations.

10, 11, 12. The *bluish-green Libella* with *yellowish-brown wings* (*k*); the *Mazerine-blue Libella*, with *bluish-black wings* (*l*); the *green Li-*

(*b*) *Apis niger minimus hortensis*.

† *Ph. Tr.* No. 73.

(*i*) *Libella maxima*, abdomine brevior latioreque cæruleo. *Raj. Inf.* p. 49. n. 5. *Et, Libella maxima*, abdomine brevior, & crassior, latioreque cæruleo. *Ejusd.* p. 140. *Libellula thorace viridi nitido; lineis flavis, alis pallidis, abdomine nigro. Linn. Faun. Suec.* p. 231. n. 768.

Vulgo DRAGON-FLY, ADDER-BOLT.

(*k*) *Libella media*, corpore e viridi cærulescente, alis fulvescentibus absque maculis. *Raj. Inf.* p. 50. n. 11. *Libellula corpore sericeo nitido; alis luteo fuscis; margine immaculatis. Linn. Faun. Suec.* p. 227. n. 756.

(*l*) *Libella media*, corpore cæruleo, alis fere totis ex cæruleo nigricantibus. *Raj. Inf.* p. 50. n. 10. *Libellula corpore cæruleo nitido; alis viridi-cærulescentibus; apice fuscis; margine immaculatis. Linn. Faun. Suec.* p. 229. n. 757. *Vulgo.* PEACOCK'S NECK.

bella

bella with yellowish-brown wings, with a white spot at each of the apices (*m*), are common by shadowy running streams in the warm summer-months, with many others of considerable beauty.

They are generated under water, enclosed in a membrane. Their flight is stately. Their bodies are composed of rings to give celerity to their motion.

13. The *small black Elater*, with black antennæ, and a red thorax (*n*), is only seen with us in warm summers. It is adorned with a beautiful red lunulated spot on the back, turned towards the head; the exterior wings bluish, and striated.

14. The *black Elater*, with a splendid yellowish-green on the exterior wings and thorax (*o*). The antennæ of the male are curiously pectinated. The wings of the female are more tinged with green, and the thorax with yellow, which is the difference of colour between them.

The *Elaters* are stingless and harmless, sprightly and active insects, of a nimble wing; and delight much to rest on a dry wall, on the sides of pales, or a tree, in the sun-shine.

(*m*) *Libella media*, corpore viridi, alis fulvescentibus maculis parvis albis prope extremum angulum. *Raj. Inf.* p. 51. n. 12. *Libellula* corpore viridi-cæruleo; alis subfuscis; puncto marginali albo. *Linn. Faun. Suec.* p. 228. n. 758. *Hæc præcedentis fœmina.* Id.

(*n*) *Attelabus oblongus niger*, collari testaceo. *Linn. Act. Ups.* 1736. p. 19. n. 3. *Elater niger*, thorace rubro. *Faun. Suec.* p. 185. n. 576.

(*o*) *Scarabæus nigro-virens* corniculis altero tantum versu pectinatis. (*Maf.*) *M. Lister. loq.* p. 387. n. 19. *mut. t. 17. t. 14. maf. & f. 14. fœmina.* *Notopeda nigro-ænea*, antennis simplicibus. *Linn. Act. Ups.* 1736. p. 15. n. 3. *Elater fusco-viridi-æneus.* *Faun. Suec.* p. 184. n. 575.

15. The

15. The *orange-yellow and white Butterfly* (*p*) is frequent in warm shady vales in May and June. The head, antennæ, and body, are of a lead-colour; the upper wings white to the middle, succeeded by a beautiful bright orange on both sides to the margin, which is decorated with an olive-green and white, alternately. The under wings are white above, and elegantly marbled and variegated underneath with a sea-green and white. It is one of our first *Butterfly*-visitants in the spring, making its appearance in *May*.

16. The small *sky-blue Butterfly* (*q*) usually appears in the latter end of *May*, or beginning of *June*, in warm vales. It is a beautiful insect, of a nimble wing. The head, antennæ, and body are a dark grey; the wings externally a sky-blue, edged with a narrow white fringe; and adorned underneath with numerous little eyes, black, circled with white, variegated near the margin with spots of orange, on a bright olive-ground.

(*p*) *Papilio minor alba*, alis exterioribus albis macula insigni crocea splendentibus, inferioribus superne albis, subtus viridi colore variegatis. *Raj. Inf.* p. 115. n. 6. *Papilio albus* subtus viridi colore marmoreatus f. maculis croceis ornatus. *Petiv. Mus.* p. 33. n. 306. *Papilio hexapus*; alis rotundatis integerrimis; secundariis viridi-nebulosis; primoribus lunula nigra. *Linn. Faun. Suec.* p. 245. n. 801. *AURORA. ibid.*

(*q*) *Papilio parva*, alis superne purpuro-cæruleis, subtus cinereis: maculis nigris circulo purpurascente cinctis, punctisque nigris pulchre depictis. *Raj. Inf.* p. 131. n. 11. *Papiliunculus cæruleus*, ocellis plurimis subtus eleganter adpersus. *Petiv. Mus.* p. 34. n. 318. *Et, Gaz. ejusd.* p. 55. t. 35. f. 1. *Papilio alis oculatis cyaneum cælestem spirantibus. Merr. Pin.* p. 144. *Papilio hexapus*; alis rotundatis integerrimis cæruleis; subtus ocellis numerosis. *Linn. Faun. Suec.* p. 246. n. 803. *ARGUS oculatus. ibid. ULTRAMARINE BUTTERFLY. Wilks. Inf.* t. 3. f. 2.

17. The *gold-yellow and brown Butterfly* (*r*) is frequent in shady mountainous pastures in July and August. The upper wings are of a bright gold-yellow, elegantly waved with a dark brown; a beautiful eye, white, with broad circles of black near the tips; four of the same kind, but smaller, near the extremities of the under ones; which are bordered with narrow semicircular lines of black, a yellowish-brown, and a pale yellow. It delights much to rest on dry banks, stones, and rocks.

18. The *small yellowish-red Butterfly, with black spots* (*s*), appears in shady vales and pastures, in the latter end of *May*, or the beginning of *June*. The body and antennæ are black; the upper wings of a yellowish-red, glossy and splendid, like a rich *sattin*, spotted with black, and edged with a deep brown; the under wings of a dark chestnut-colour, with a narrow border of a bright yellowish-red, elegantly spotted with black at the extremities.

19. The *large stately Butterfly, called The Admiral* (*t*), is a visitant of gardens and fields in the harvest months. It measures between
the

(*r*) *Papilio media*, alis fulvo f. rufo & nigricante colore variis cum ocello prope extimum angulum alarum exteriorem. *Raj. Inf.* p. 123. n. 15. *Papilio oculatus* ex aureo et fusco marmoratus. *Petiv. Mus.* p. 34. n. 312. *Papilio* ultima parte alæ exterioris clypeolo nigro, quem medium punctum eburneum ornat decorata. *Merret. Pin.* p. 198. n. 10. *Papilio tetrapus*; alis rotundatis fusco-nebulosis; primariis sequi-ocello, secundariis quinque ocellis. *Linn. Faun. Suec.* p. 238. n. 785.

(*s*) *Papilio parva*, alis exterioribus circa margines nigricantibus, media parte rufis, ferici instar splendentibus, maculis longis nigris pictis. *Raj. Inf.* p. 125. n. 20. *Papilio minor aureus* ex nigro permaculatus. *Petiv. Mus.* p. 34. n. 317. *Papilio hexapus*; alis rotundatis fulvis; utrinque punctis nigris. *Linn. Faun. Suec.* p. 247. n. 807.

(*t*) *Papilio major nigrescens*, alis maculis rubris & albis pulchre illustratis. *Petiv. Mus.* p. 35. n. 327. *Papilio tetrapus*; alis denticulatis nigris alboque maculatis; omnibus fascia arcuata

the tips of the wings, extended, three inches. The body, and exterior parts of the wings are black, glossy and shining, like velvet; irregular bright white spots of different sizes near the tips of both the upper wings; a broad line of a deep beautiful scarlet through the middle of each, met by a broader of the same colour from the extreme margin of the under ones, which is distinguished by an elegant series of small round black spots, and a little pectinated at the edges. From this irregular circle of bright scarlet, on a black velvet-ground, it obtained the name of the Admiral. I have observed it in my own garden to have a particular liking to the yellow *Martagon*-lilly, of a strong fox-like scent, to which it would always return after frequent interruptions, on one of which I caught this here described under a fine net.

The *Eruca* is adorned with small points of white on a black ground, with small streaks of a pale red on the sides, indented above the holders, which are bristled. The chrysalis is cinereous. Both it and the *Eruca* sometimes vary in colour.

20. The *tortoise-shell Butterfly* (*u*) is not unfrequent in alpine woods and shady pastures, in July and August. I have also observed it in gardens.

arcuata coccinea. Linn. Faun. Suec. p. 235. n. 777. *List.* Goed. p. 10. f. 4. *Raj.* Inf. p. 126. *Albin.* Inf. *Wilkes.* Inf. t. 2. f. 3. & t. 7. f. 5.

(*u*) *Papilio urticariam referens major, alis amplioribus, quam Ulmariam vocitare soliti fumus.* *Raj.* Inf. p. 118. n. 2. *Et, Eruca mediæ magnitudinis, corpore e cinereo nigricante, spinulis raris in quolibet annulo ramosis fulvis.* *Ejusd.* p. 306. n. 14. *Papilio testudinarius major.* *Petiv.* Mus. p. 34. n. 315. *Papilio tetrapus; alis angulatis fulvis nigro maculatis; primariis punctis quatuor nigris.* Linn. Faun. Suec. p. 232. n. 773. *List.* Goed. 5. f. 3. *Albin.* Inf. 56.

21. The *lesser tortoise-shell Butterfly* (*v*) is frequent in fields and gardens. It measures between the tips of the wings, extended, two inches. The body is black, the fore-parts of both the upper wings variegated with streaks of black and a pale yellow alternately, terminated by a white speck; three black spots below, on a red ground, with a beautiful bright brown next the body; the red at the extremities bordered with a black list, with a series of indented specks in it of a sky-blue, succeeded by another black one, edged on both sides with a light yellow, in an elegant pectinated form. It frequently out-lives the winter by concealing itself in private recesses, where neither winds or rains can hurt it.

The *Eruca* is of a deep olive-colour on the upper part, a series of black spots down the middle, one on each joint; the sides edged with a pale yellow line; underneath another series of black spots, smaller, on a light hair-coloured ground; the holders bristled. The chrysalis is a reddish-brown.

22. The *tortoise-shell Butterfly, with lacinated wings* (*w*), is not unfrequent in vale-meadows, and gardens, in August.

(*v*) *Papilio urticaria vulgatissima, rufo, nigro, cæruleo, & albo coloribus varia. Raj. Inf. p. 117. n. 1. Papilio testudinarius minor. List. Goed. 3. f. 2. Papilio tetrapus; alis angulatis fulvis nigro-maculatis; primariis punctis tribus nigris. Linn. Faun. Suec. p. 233. n. 774. List. Goed. 3. f. 2. Albin. Inf. 4. f. 6.*

(*w*) *Papilio ulmarie similis, sed minor; alis laciniatis; interioribus linea alba incurva notatis. Raj. Inf. p. 118. n. 3. Papilio testudinarius, alis laceris. Petiv. Mus. Papilio alis laciniatis. Albin. Inf. t. 4. f. 5. Papilio tetrapus; alis angulatis fulvis nigro maculatis; secundariis v. albo notatis. Linn. Faun. Suec. p. 234. n. 775.*

23. The *peacock's-eye Butterfly* (*x*), called by a curious foreigner, The *Queen of Butterflies**, is often seen in fields and gardens in the warm summer-months, and, in cold ones, in close retreats. It measures between the tips of the wings, extended, somewhat more than three inches. The body is a fine brown. The edges of the upper ones next the head marbled with streaks of black and a straw-colour, with a large and beautiful eye or moon near the tip of each; a large eye or moon on each of the under wings, the extremities adorned with a beautiful brown, and pectinated. From the resemblance of these eyes or moons to those on the *Peacock's* tail, it had its name of The *Peacock's Eye*.

The *Eruca* is adorned with numerous minute specks of white on a black ground; the head jet-black; the holders a light brown, and bristled; the chrysalis a pale green.

MOTHS of considerable beauty are sometimes observed with us in warm summers. They are distinguished from *Butterflies* by their *Antennæ*, which are attenuated to a point; those of *Butterflies* being clavated. There is another generical distinction in a species of them more remarkable. The crown and face resemble those of an owl; with a thick plumage on their legs. They are *lucifugæ*. They fly abroad only in the evening and still silence of the night, not seen in the day, unless disturbed in their recesses.

(*x*) *Oculus Pavonis*. *List.* Goed. p. 1. f. 1. *Papilio elegantissima ad urticariam accedens, singulis alis maculis oculos imitantibus.* *Raj.* Inf. p. 122. n. 13. *Papilio oculus Pavonis dictus.* *Petiv.* Mus. p. 34. n. 3'4. *Albin.* Inf. t. 3. f. 4. *Wilkes.* Inf. t. 1. f. 4. *Papilio tetrapus; alis angulatis fulvis nigro maculatis; omnibus ocello cæruleo-variegato.* *Linn.* Faun. Suec. p. 234. n. 776.

* *Regina omnium.* *Mouffet.* Inf. lat. p. 92. f. *infim.*

24. The

24. The large and beautiful moth, called the *Bee-Tiger* (*y*), was taken some years ago in one of the rooms at *Felton-hall*, in October. It is now in the collection of Mrs. *Thompson*, in *Northumberland-street*, in *Newcastle upon Tyne*.

25. The *white, black, and yellow Moth* (*z*) is frequent in gardens and hedges in the beginning of summer. The upper wings are elegantly variegated with a bright yellow and black, in spots and waves, on a white ground; the under wings white, spotted with black; the body of a bright yellow, with black spots.

The *Eruca* is bristled, as black as jet, with elegant circles of a bright yellow. It usually lives all winter in secure and warm retreats, and in the spring ventures abroad into gardens, and regales on the tender buds of gooseberry and currant-trees. I have found it wandering on the tops of our mountains in summer, ravaging the blossoms of the *Erica* and *Vaccinia*. The *Chrysalis* is of the same colour, very handsome.

The moth here described, appeared in June, from a chrysalis in my study-window, making its way out of a straw-coloured silky clue at the obtuse end. It was assaulted on its first appearance by an insidious and furious spider, and preserved by my accidentally seeing it, after it had made a better defence than

(*y*) *Wilkes*. Inf. t. 12. f. 1.

(*z*) *Phalæna media*, alis amplis albis, maculis crebris nigris & lineis transversis luteis variis. *Raj*. Inf. p. 178. n. 14. *Eruca geometrica*, pulchre variegata, grossulariis depascens. *Pet. Mus.* p. 4. n. 7. *List.* *Goed.* p. 25. f. 9. *Phalæna feticornis spirilinguis*; alis patentibus albis; maculis inæqualibus nigris plurimis. *Linn.* Faun. Suec. p. 263. n. 849. GREAT MAGPYE-MOTH. *Wilkes*. Inf. t. 11. f. 6.

could

could well have been expected in its weak and feeble state, before its moist wings were dry and unfolded. In about half an hour after, it was vigorous and sprightly, and seemed by its motions to exult under its resuscitation from its reptile state to a volant one, capable of surveying by gentle flights every beautiful vegetable, and regaling on their velvet buds and blossoms.

26. The *small, beautiful, red and dark brown Moth (a)* is frequent in vale-meadows, in June and July. The head, antennæ, and body are black. The under wings are of a deep beautiful red, with a narrow edging of a dark brown. The upper wings are of a fine umbre-brown, with a beautiful streak of deep red on each of them, lengthways, near the edges, with two orbicular spots of red at the tips. I caught this here described on the south side of the vicarage-garden at *Haltwiesel*.

The *Eruca* is of a deep orange-colour, with circles of black. It lives on the *Ragwort*. The chrysalis is of the same colour.

27. The *gold-yellow and brown Moth (b)* is not unfrequent in gardens. It is exceedingly beautiful; the plumage of the face of a

(a) *Phalæna media*, alis exterioribus colore nigro & sanguineo variis, extimo duntaxat margine nigro. *Raj. Inf.* p. 168. n. 26. *Phalæna umbrica*, linea maculisque sanguineis. *Petiv. Gaz.* p. 52. t. 33. f. 6. *Papilio Jacobææ*. *Derham. Physico-theol.* l. 8. c. 6. n. 6. *List. Goed.* p. 134. f. 54. *Albin. Inf.* t. 34. f. H. G. *Phalæna feticornis spirilinguis*; alis superioribus fuscis: linea punctisque duobus rubris; inferioribus rubris. *Linn. Faun. Suec.* p. 268. n. 869.

(b) *Phalæna media*, alis exterioribus duplici area transversa viridi-aurata ferici instar splendente insignibus. *Raj. Inf.* p. 182. *Merian. Europ.* v. 1. p. 14. t. 39. *Phalæna feticornis spirilinguis*; alis deflexis nebulosis; fascia una alterave aurea. *Linn. Faun. Suec.* p. 270. n. 875.

gold

gold colour; the crown a light brown; the upper wings a glossy yellow, like burnished gold, shaded in the middle and at the extremities with brown. I found this, here described, under an edging of *wild thyme* in a border of my garden at *Simonburn*.

28. The *white Moth*, with *black spots (c)*, is frequent among willows in plantations, near houses. The face and crown are white; the wings of the same colour, adorned with small black spots; the upper part of the body spotted with black, on a pale yellow ground.

The *Eruca* is spotted with black, on a dark brown ground, like a *Leopard*; a small yellow spot on each joint; the holders black, bristled, and edged with red. The chrysalis is a dark red, shaded with black.

29. A large *white and yellow Moth (d)* is frequent in gardens. It measures between the tips of the wings, extended, two inches and a half. The face and crown are a yellowish-brown; the body a bright grey; the wings white, glossy like satin, edged with a light yellow.

30. The *silvery-grey, brown and yellow Moth (e)*, is frequent by the sides of groves and gardens. It measures between the tips
of

(c) *Papilio alis depresso albis, punctis nigris, ventre quinque punctorum. Linn. Act. Upsl. 1736. p. 124. n. 59. Phalæna peccinicornis elinguis; alis deflexis albidis; punctis nigris, abdomine ordinibus quinque punctorum. Fauna Suec. p. 254. n. 823. Lijf. Goed. p. 210. t. 93. Albin. Inf. t. 21. f. 30.*

(d) *Phalæna alis albis ad marginem flavis ferici splendore, ventre griseo, capite subfulvo.*

(e) *Phalæna obsoleta cinerea, alas corpori velut circumvolvens, pedes primores longa & densa lanugine hirsutos antrorsum longissime porrigens. Raj. Inf. p. 186. n. 8. Lijf. Goed.*

of the wings, extended, three inches; the face broad and round, of a light yellow, with three beautiful circles of brown and yellow alternately; a silvery plume on the head, erect; the body a straw-colour with black circles. The upper wings are a silvery grey; three transverse wavy lines towards the head, brown and yellow, alternately; a large space of a beautiful straw-colour towards the extremities, with three irregular wavy circles of brown and yellow, in an alternate order, extremely elegant. The legs are feathered down to the very ends, like those of a dove; the feathers long, and as white as snow. This, here described, was found under the foliage of some wild plants at *Chipchace*, and presented to me by Mrs. *Reed*.

The *Eruca* is a gay little creature; the face black, with a narrow forked line of white; a lunar circle of red on the crown; the holders black and bristled; the upper part of the body striated with longitudinal lines of black and a pale yellow, with transverse ones of red; a series of shining black spots on the joints, on each side. The foliage of the willow is its favourite retirement and food. The chrysalis is red, shaded with black.

31. The *brown and gold-yellow Moth (f)* is not unfrequent in gardens, under weeds. It measures between the tips of the wings, extended,

Goed. p. 192. t. 80. *Phalæna pectinicornis elinguis villosissima cinerea; alis exterioribus lineolis obsoletis nigris maculaque duplici pallida.* *Linn. Faun. Suec. p. 256. n. 829.*
 BUFF-TIPPED MOTH. *Wilkes. Inf. t. 6. f. 7.*

(f) *Papilio major, alis prælongis; exterioribus vel rufis vel ex cinereo nigricantibus; interioribus fulvis cum fascia lata nigra prope imum marginem.* *Raj. Inf. p. 237. n. 18.* *Papilio major, cum exterioribus alis fuscis, internis aureis nigra linea fimbriatis.* *Merret. Pin. p. 198. List. Goed. p. 114. f. 41.* *Papilio alis depressis griseis, obscure maculatis, inferioribus*

extended, somewhat more than three inches. The upper wings are a dark brown; the under-ones a bright gold-yellow, with a broad streak of black near the extreme margin.

32. The *brown, white, and red Moth (g)*, is also frequent under the leaves of garden-plants. It measures, between the tips of wings, extended, three inches and a half; the face broad and round, of a dark brown, edged with a circle of red. The head is adorned with a dark brown plume; the upper wings marbled with white, and a dark brown; the under ones red, with black spots; the body red, with circles of black; the plumage of the legs of the same colours, in rings or circles.

The *Eruca* is large, and bristled; the upper part black; the sides, and *setæ*, or bristles, next the head, an orange-colour; a series of white spots on each joint. It is frequent in gardens, and has an extraordinary affection for table-sallads, and kitchen-greens. If at any time it is in danger, it rolls itself up into an orbicular form, with the bristles erect, and as soon as its first fright is over, it makes the best of its way to some shady recess for safety. The prickly covering is given it by our wise creator to deter birds from preying upon it. The *chrysalis* is red, with a deep shade of black.

rrioribus flavis, margine nigro. *Linn. Act. Upf.* 1736. p. 124. n. 60. *Phalæna feticornis spirilinguis*; alis incumbentibus; exterioribus cæcis nebulosis; inferioribus luteis, fascia atra marginali. *Faun. Suec.* p. 268. n. 870. *Albin. Inf.* 72. f. C. D.

(g) *Phalæna major*, alis amplis oblongis albicante & fusco coloribus pulchre variegatis, interioribus rutilis cum maculis nigris. *Raj. Inf.* p. 151. n. 3. *List. Goed.* p. 219. f. 99. *Phalæna pectinicornis elinguis*; alis deflexis; superioribus fuscis; rivulis albis; inferioribus purpureis; punctis sex nigris. *Linn. Faun. Suec.* p. 252. n. 820. *Albin. Inf.* t. 20. f. C. D. GREAT TIGER-MOTH, *Wilkes. Inf.* t. 6. f. 7.

33. The beautiful *white* and *blue* Moth (*b*) is sometimes observed by the sides of moist groves, and near hedges, under the shade of willows, and other aquatic trees, but is not common. It measures between the tips of the wings, extended, three inches: The face and head are large, covered with a thick and beautiful plumage, white, spotted with a deep blue. The upper wings from the insertion to the middle are elegantly marbled with the same colours; and from the middle to the extremities of a bright grey, pellucid, and full of nerves of a straw-colour, somewhat prominent. The under wings are also a bright grey, transparent, and full of the same kind of nerves. The body is adorned with broad circles of a deep blue and white, alternately, intersected by two blue longitudinal lines; the plumage raised, and looking like the fringed margin of a rich robe. The legs are adorned with long bright white feathers to the very tips, and with a series of deep blue spots. The blue vanishes into a black, and the white into a grey colour, by being exposed to rains and weather, which are as injurious to the beauty of this fair part of the creation, as to an *Anemone*, a *Ranunculus*, an *Auricula*, or other admired flowers in gardens. I have therefore given descriptions of such only, whose plumage and colouring were in their native gaiety, in their full beauty and perfection, without blemishes. I met with this moth in *July*, 1761, among some tall herbage by the side of the grove, on the left hand, within the gate, in going to *Nunwick-Hall*.

(*b*) *Phalæna major pulcherrima*, alis amplis; exterioribus cinereis maculis & lineis elegantè depictis. *Raj.* Inf. p. 153. n. 5. *List.* Goed. p. 59. t. 20. n. 6. c. *Phalæna pectinicornis elinguis*; alis deflexis albidis diaphanis; vasis obscuris. *Linn.* Faun. Suec. p. 252. n. 819. *VINULA*, *ibid.* *Albin.* Inf. t. 11. f. 15. *PUSS-MOTH.* *Wilkes.* Inf. t. 12. f. 2.

The *Eruca*, for its majestic form, and beautiful colours, is called *The Beau* *. The belly and sides are a yellowish green, parted by a longitudinal line of deep purple, with a series of small, oblong, white spots, one on each joint, in a regular order, and a short series of small round eyes above it, and more irregular; a deep purple, circled with white, one larger than the rest, and standing lower. The upper part, from the head to the tail, is of a bluish-green, with bright white spots, like a beautiful mantle, or cloak loosely cast over it, with a graceful ease, edged with purple and white, seeming as if fastened under the first pair of holders, and with two large purple spots at each angle or corner of the head, and a smaller on the most prominent and elevated part of the neck, contracted, and held up, as it were, to shew the beauties underneath. An elegant broad golden circle is round the face; a deep velvet-rose colour within, a short narrow line of black down the middle, with an edging of yellow. The forefeet are black, elegantly spotted with white. The tail is long, and forked, with the same variegations to the middle, and of a rose-colour to the extremities. It protrudes and draws in its *tortoise*-like head at pleasure, under its rose-coloured embroidered veil. If molested, or provoked, it instantly shews its resentment by unsheathing a pair of scarlet points at its tail, which, when touched, are soft, and seem not designed to do mischief. So that it is as harmless, as it is beautiful. The foliage of the willow, and poplar, are its favourite refuge and food. The *chrysalis* is large, red, and shaded with black.

Vagipennia, or insects with *case-wings*, of beauty or curiosity, are not observed with us in any great variety.

* *Eruca bicauda elegantissima*, VINULA dicta. *Raj. Inf. l. c. n. 3.* Vide, *Albin. l. c.*

34. The *chestnut-brown Beetle*, or *Hedge-Chafer* (*i*), in very warm summers appears in shady vales, by the sides of brooks and streamlets, and sometimes is heard buzzing against the windows of our houses,—*Alis tonans*. Hence it is called by the *French*, *Aliton*. The *Elytra*, or case-wings, are a chestnut-brown, the lateral segments of the wings white, the *thorax* hairy, the tail curved. By the direction of Providence, *Chafers* were frequently a scourge to the *Jewish* nation, disrobing the trees and fields of their verdure, blossoms and fruits, leaving desolation and destruction behind them*. They appeared in formidable numbers in *Ireland* in a hot summer, and committed great ravages †. Their *Erucae* are frequently as destructive. Whole meadows and corn-fields were destroyed by them in *Suffolk*, in 1747. The decrease of rookeries in that country was thought to be the occasion of it; those hexapods being the favourite food of rooks, which they search after with indefatigable pains ‡. The many rookeries with us is partly the reason why we have so few *Chafers*, even in the hottest summers; seldom more than one or a pair being seen at a time.

35. The *small Beetle with red Elytrae, and a black head and thorax* (*k*); is frequent in woods.

(*i*) *Scarabæus arboreus vulgaris major*. *Raj. Inf.* p. 104. n. 1. *Scarabæus arboreus major castaneus*. *Petiv. Gaz.* p. 29. t. 19. f. 2. *Scarabæus maximus rufus urhopigio deorsum inflexo*. *List. loqu.* p. 379. n. 1. *mut.* t. 18. f. 16. *List. Goed.* p. 265. f. iii. *Scarabæus testaceus*; thorace villoso; abdominis incisuris lateralibus albis; cauda inflexa. *Linn. Faun. Succ.* p. 130. n. 345. *Albin. Inf.* t. 60.

* *Prophet. Nahum.* c. 3. v. 16, 17. † *Ph. Tr.* No. 234.

‡ ————— No. 484. Vol. 44. Par. 2. 1747.

(*k*) *Scarabæus capite thoraceque nigro; antennis elytrisque rubris*. *Linn. Faun. Succ.* p. 134. n. 355. *Scarabæus parvus niger, elytris antennisque rubris*. *Act. Upf.* 1736. p. 16. n. 5.

36. The

36. The *small, green, purple, and gold-yellow horned Beetle (l)*, is sometimes, but rarely, on heaths and mountainous pastures, in June and July, in warm summers. The head, face, thorax, belly, and legs, are of a beautiful purple, bright and shining, like silk. The *Elytræ* are of a grass-green, elegantly spotted with a gold-yellow. The clavated *Antennæ* or horns, and the eyes, are a glossy black; the latter full and prominent. I met with this here described in the rectory-den at *Simonburn*, in a remarkable warm summer. I have since observed it on *Wark-common*, among the heath, near *Woodley-Sheels*, in *Tynedale*, in July.

37. The beautiful insect of the Scarab or Beetle-kind, called *The Henbane-Cimex (m)*, from its favourite plant the *Henbane*, is frequent under its foliage in the latter end of May. The head is black, with a red spot in the center. The *thorax* and *scutellum* are variegated with red and black; the *elytræ* are red, with two black spots in the middle; the wings under them are brown; the *antennæ* and legs black; the trunk composed of four joints.

(l) *Curculio parvus splendide viridis. Petiv. Gaz. p. 77. n. 6. Scarabæus nasicornis purpureo-auratus. Frisch. Germ. 12. p. 17. t. 8. Curculio cæruleo-viridis nitens; antennis atris. Linn. Faun. Suec. p. 157. n. 456. sequenti bona descriptione.*

“ Est e mediæ magnitudinis speciebus hic curculio. Totus capite, thorace, rostro, elytris, abdomine, pedibus, cæruleo-viridi-inauratus seu sericeo nitidissimus. versus posteriora admodum obtusus. Totum corpus punctis minutissimis excavatis perfusum. oculi & antennæ solæ nigræ; harum infimus articulus reliquis nullo modo longior est, ut in reliquis. clavatæ tamen sunt antennæ, ut in congeneribus. hic minime salit.”

(m) *Cimex sylvestris minor, corpore oblongo, angusto, colore desuper rubro nigris maculis picto. Raj. Inf. p. 55. Cimex miniatus nigris maculis notatus hyosciamo fere gaudens. List. loq. p. 39. n. 39. mut. t. 31. f. 21. Cimex hyosciamoides ruber, maculis nigris. Pet. Gaz. t. 66. f. 2. Cimex oblongus rubro nigroque variegatus, alis fuscis immaculatis. Linn. Faun. Suec. p. 208. n. 665.*

The *ova* of this elegant little insect are tinctorial, and yield an exquisite vermilion, not volatile and fugitive, but fixed and permanent, equal to *cocheneil*, even when assisted with an acid salt. They are oblong, and first of a light orange, and afterwards of a deeper colour, as the young come to maturity, which are not vermicular, but come forth perfect *cimices*. The tinctorial virtue is the richest when the *ova* have acquired their full orange-colour. Urinous salts and alcalies change it from a vivid crimson to an obscure colour, between a violet and a purple.

38. The *small Scarab*, called *the Death Watch (n)*, is frequent among dust, and in decayed rotten wood, lonely and retired. It is one of the smallest of the *Vagipennis*, of a dark brown, with irregular light brown spots, the belly plicated, and the wings under the cases pellucid, like other beetles, the helmet turned up, as is supposed, for hearing; the upper lip hard and shining. By its regular pulsations, like the ticking of a watch, it sometimes surprises those that are strangers to its nature and properties, who fancy its beating portends a family-change, and the shortening of the thread of life. Put into a box, it may be heard and seen in the act of pulsation, with a small proboscis, against the side of it; for food, more probably, than for hymenæal pleasure, as some have fancied.

Reptiles furnished with shells, as the *land, pond, and river-cochleæ*, are found in considerable numbers.

39. In winter, the *great Garden-Cochlea (o)*, is usually seen hanging in clusters in the cavities of the rocks at the *Hermitage*, near
Wark-

(n) *Scarabæus galeatus Pulsator*.

(o) *Cochlea citrina* aut *leucophæa*, non raro unicolor, interdum tamen unica, interdum etiam duabus, aut tribus, aut quatuor, plerumque vero quinque fasciis pullis distincta.

Warkworth. It is of a chefnut-colour, marbled with yellow, with broad *fasciæ* or belts, and five convolutions. A thin pellucid film ferves for an *operculum* at the mouth to keep out the cold, made by the little creature with the same materials that it makes and repairs its pretty dwelling, the gluten out of its own body. Statuaries and china-menders pierce it to get the *sanies*, which they mix with whites of eggs, and quick-lime, and grind all together, as we do paint, till they are incorporated, and fit for use. Fractured marble, and china, are put together with the greatest expedition and firmness with this composition. The statuary, the pictorist, and medallist, also apply the *sanies* of this reptile to their molds, before they take off the impressions with wax, making the waxen figures come off with more ease, and with a finer skin.

40. Under the fallen leaves and mosses, upon old shadowy stone-walls, topped with earth, the elegant *little torcular Cochlea* (*p*) is not unfrequent. I met with it in considerable plenty on one at *Simonburn*, opposite to St. *Mungo's* Well, on the north side of the rivulet. It is straight, and slender, half an inch long, mucronated, with eight convolutions, of a bright chefnut-colour. The lubricous, cornuted tenant within is a dark grey.

List. Angl. p. 116. t. 2. f. 3. Cochlea interdum unicolor, interdum variegata, item variis fasciis depicta. Ejusd. Hist. Conchyl. t. 1. n. 54. Cochlea vulgaris, testa variegata. Petiv. Mus. 5. n. 14. Cochlea testa utrinque convexa flava; fascia subfolitaria fusca, labro reflexo. Linn. Faun. Suec. p. 370. n. 1294.

(*p*) Buccinum alterum pellucidum subflavum, intra fenas spiras mucronatum. *List. Angl. p. 124. t. 1. f. 11. Cochlea testa oblonga obtusa, rictu rotundo, spiris octo, decem, duodecim. Linn. Act. Upf. 1736. p. 41. n. 20. Cochlea testa pellucida oblonga, spiris decim sinistrorsis, apertura subrotunda. Faun. Suec. p. 372. n. 1300.*

41. In winter, under stones, near the banks of alpine brooks, and in summer, in moist places, *the small, depressed, umbilicated Cochlea (q)*, is often observed. It is half an inch broad, with four wreaths or convolutions; of a light brown colour, and pellucid; the apex prominent on the upper part; a small round cavity, or *umbilicum*, underneath. The little animal carries it upright in crawling, and is itself of a fine blue colour, tinged with white. It is the favourite food of the *Song-Thrush*, which takes it out of the shell with great dexterity, by breaking it at the apex.

42. The *large fresh-water Turbo, with six wreaths (r)*, is plentiful in *Shilden-lake*, near *Corbridge*. It is two inches long, with six wreaths; of a light brown colour, and pellucid; the *operculum* large, oval, and testaceous. The horns of the *limax* inhabiting it are two, mucronated, and sometimes branched like those of a deer; two small black spots standing at their base, which are its two eyes; and behind them two small auditorial or branched apertures.

(q) *Cochlea pulla sylvatica, spiris in aciem depressis. List. Angl. p. 126. t. 2. f. 14. Cochlea nostra umbilicata pulla. Ejsd. Hist. i. p. 29. f. 62. Planorbis terrestris ANGLICUS, umbilico minore, margine acuto. Pet. Mus. p. 69. n. 734. Cochlea testa convexa subtus perforata, spira acuta. Linn. Act. Upf. 1736. p. 40. n. 9. Cochlea testa utrinque convexa subtus perforata, spira acuta, apertura ovata transversali. Faun. Suec. p. 371. n. 1298.*

(r) *Buccinum longum, sex spirarum, omnium & maximum & productius subflavum pellucidum in tenue acumen ex amplissima basi mucronatum. List. Angl. p. 137. t. 2. f. 21. Buccinum subflavum pellucidum sex orbium, clavicula admodum tenui productiore. Ejsd. Hist. 2. t. 123. f. 21. Buccinum fluviatile nostras oblongum majus. Pet. Mus. p. 82. n. 805. Cochlea testa producta cuminata opaca, anfractibus senis subangulatis, apertura ovata. Linn. Faun. Suec. p. 374. n. 1310.*

43. The *small fresh-water Turbo*, with five wreaths (*s*), is not uncommon. I met with it in the bottom of a spring under my garden at *Simonburn*, in great numbers. It is half an inch long, with five wreaths; the mouth small, and oval. It is covered with a thin argillaceous kind of crust, which is not easily taken off; the *operculum* rough, and testaceous. The horns of the *limax* belonging to it are very small and short.

44. In the same lake is the *Turbo* with four wreaths, a remarkable large mouth, and a short acute apex (*t*). It is an inch long, and half an inch broad; of a light brown colour, pellucid, with four wreaths. The *limax* within is yellowish; the two horns short, broad, and mucronated; two small black punctules at their base, which are its eyes.

45. In the pond behind the rectory-house at *Simonburn* the *small Turbo* with three wreaths (*u*) is plentiful. It is half an inch long,

(*s*) *Cochlea parva subflava, intra quinque spiras finita. Cochlea palustris, testæ hiatus rotundo contracto; spiris laxis. Linn. Act. Ups. 1736. p. 41. n. 16. Cochlea testa oblonga obtusa; anfractibus quatuor laxis cinereis opacis; apertura subovata. Faun. Suec. p. 376. n. 1313.*

(*t*) *Buccinum pellucidum flavum, quatuor spirarum, mucrone amplissimo, testæ apertura omnium maxima. List. Angl. p. 139. t. 2. f. 23. Buccinum subflavum pellucidum, quatuor orbium, ore amplissimo, mucrone acuto. Ejusd. Hist. 2. t. 123. f. 32. Buccinum fluviatile pellucidum subflavum, quatuor spirarum, mucrone acuto, testæ apertura patentissima. Ejusd. Exerc. 2. p. 54. Buccinum fluviatile nostras breve. Petiv. Mus. p. 83. n. 807. Cochlea testa diaphana, anfractibus quatuor, mucrone acuto brevissimo, apertura acutissima. Linn. Faun. Suec. p. 376. n. 1315.*

(*u*) *Buccinum subflavum pellucidum, trium spirarum. List. Angl. p. 140. Buccinum subflavum pellucidum trium orbium. Ejusd. Hist. 2. t. 123. f. 23. Cochlea testa membranacea subflava oblonga, mucrone obtuso, anfractibus tribus. Linn. Faun. Suec. p. 377. n. 1317.*

with

with three wreaths; the *operculum* large, and oval; the apex very small, and more obtuse than the last; of a yellowish-brown, sometimes tinged with white, and pellucid. The horns of the *limax* inhabiting it are short, broad, and mucronated.

46. I met with the *depressed, orbicular, fresh-water Cochlea, with four wreaths (v)*, in great numbers, in a small piece of water, in a meadow on the banks of *North-Tyne*, called *Brome-Haugh*, near *Chipchace*. It hath four elegant wreaths or convolutions, of a blackish-brown. The *limax* inhabiting it is of a tawney black, with two reddish horns. In warm, pleasant weather, it sails about on the surface of the water with its shell erect, very much resembling the *Sea-Nautilus* in its motion. It is the only one of the *aquatic Cochleæ* that will yield a fluid on an injection of a grain of salt, pepper, or ginger, into its mouth, or by laceration, or piercing. The fluid it gives is a fine scarlet, but of so fugitive a nature, that no acid or astringent has hitherto been found sufficient to preserve the elegance of its tinct, and from turning to an unpleasant rusty hue.

Naked amphibious reptiles, whose lungs are so formed that they can live for some time under water, as well as upon land, are less common with us than in the southern counties.

47. The *Viper (w)* is sometimes observed at the roots of trees in woods, and among rocks on warm heaths, and under hedges.

An

(v) *Cochlea fusca*, altera parte planior & limbo insignita quatuor spirarum. *List. Angl.* p. 145. t. 2. f. 27. *Cochlea fusca*, limbo circumscripta. *Ejusd. Hist.* 2. t. 138. f. 42. *Planorbis minor fluviatilis*, acie acuta. *Petiv. Gaz.* p. 16. t. 10. f. 11. *Cochlea teste plana fusca*, supra concava, anfractibus quatuor, margine prominulo. *Linn. Faun. Suec.* p. 373. n. 1306.

(w) *Vipera*. *Bellon. Itin. Clus.* 123. *Raj. Quadr.* p. 285. *Charlet. Inf.* p. 32. n. 1. *Vipera ANGLICA fusca*, dorso linea undulata nigricante conspicua. *Pet. Mus.* p. 17. n. 103.

An oil made of it, applied externally, and fallad-oil taken internally, have been found by experience to be an effectual remedy against its poison.

48. The *Blind Worm* (*x*), so called from its being erroneously thought to have no eyes, is more frequent than the viper, on warm sunny banks, in pastures and gardens.

49. The *Water-Salamander*, or *Water-Lizard* (*y*), is not uncommon in ponds, and ditches. It is remarkable for the transparency of its skin and vessels. In its body are two long *Sacculi aërii*, on which the blood-vessels are curiously ramified. The circulation of the blood may be seen by a microscope as plainly as water running in a river, and more rapidly than any common stream*.

50. The *green Lizard* (*z*) is often observed upon rocks at the bottom of the *erica*.

Anguis cinerea, macula dorfi fusca longitudinali dentata. *Linn. Act. Upsl.* 1736. p. 11. n. 2.
Anguis scutis abdominalibus cxliv, squamis caudæ xxxix. *Faun. Suec.* p. 97. n. 257.

(*x*) *Cæcilia*. *Raj. quadr.* p. 289. *Cæcilia*, Typhlos. *Charlet. Inf.* p. 33. n. 10. *Cæcilia* ANGLICA cinerea squamis parvis mollibus compactis. *Petiv. Mus.* p. 17. n. 10. *Anguis* squamis abdominis caudæque cxxx. *Linn. Faun. Suec.* p. 96. n. 258. LONG WORM. *Lancestr.* LONG CRIPPLE. *Cornubiens.* DEAF ADDER.

(*y*) *Salamandra aquatica*. *Raj. quadr.* p. 273. *Charlet. quadr.* p. 28. n. 9. *Lacerta aquatica* major mas f. verrucis albis adspersis membranula ferrata in dorso extante. *Petiv. Mus.* p. 18. n. 3. *Lacerta* pedibus inermibus fissis, manibus tetradactylis, plantis pentadactylis, cauda ancipiti. *Linn. Faun. Suec.* p. 95. n. 256.

* *Pb. Tr.* No. 177.

(*z*) *Lacerta viridis*. *Charlet. quadr.* p. 28. n. 2. *Linn. Faun. Suec.* p. 95. n. 255.

Marine Insects are frequent among the sea-rocks, and on the shores, after high spring-tides, and storms.

51. The *small Sea-Star*, with *thirteen* obtuse rays, of a reddish brown colour (*a*), has been found among the rocks at *Newbiggen*. I have one with fourteen rays, or arms, of the same colour, from the shore of the bishopric of *Durham*.

52. The *Sea-Star* with *five rays* (*b*) is common among the sea-rocks at *Hartley*, and among many other rocks on the coast.

The *Sea-Stars* move in all directions. They have the power of fixing themselves to any thing at pleasure with their claspers or tentacula, which serve also for instruments to get their living. When they have found their prey, they inclose it in their arms, as in a net, and convey it with great dexterity to the mouth, which is in the center.

53. The *large loco-motive Sea-Nettle*, or *Medusa* (*c*), which floats on the waves, is often cast on shore by the tides. I have seen it in great abundance on the sands between *Creswell* and *Druridge*. It looks like a mass of jelly, orbiculated and convex, whitish and semipellucid, plain underneath, with an echinated circle, adorned with whitish-brown radii. There are several varieties of it †.

(a) *Stella marina* minor radiis tridecim latiusculis, asperis, obtusis.

(b) *Asterias* radiis quinque latiusculis asperis. *Linn. Faun. Suec.* p. 367. n. 1285.

(c) *Medusa* orbiculi margine fedecies emarginato. *Linn. Faun. Suec.* p. 368. n. 1286.

† See *Borlase's Nat. Hist. of Cornwall*, p. 356, 357.

SEA-BLEBS. *Lancestr. Dr. Leigh's Lancashire*, p. 133.

54. The *small red Sea-Nettle* (*d*) is frequent on the sea-rocks, and pebbles, to which it fixes itself with its clasps as firm as a limpet, in a convex form. It opens and expands itself like an *anemone*, or a flower of the composite order, of various tincts. It hath a conic protuberance in the center, which is the mouth. The leaf-like fibres are the tentacula or feelers with which it explores its food, and by its contractile power encloses it as in a net, like the *Sea-Aspers*. Some of them are of a crimson colour at the time of their expansion, and others of a dark red; all of a dull obscure red colour at the time of their being contracted, and at rest. I had great pleasure in observing them unfold their beauties, and method of subsisting on the rocks, at *Hartley*, near *Seaton-Delaval*, 23 August, 1762, in company with Sir *John Hussy Delaval*, Bart. and his brother, *Edward Delaval*, Esq; F. R. S.

One was in the narrow *sinus* of a rock, adhering to one side of it; the exterior colour a dark red; the numerous feelers of a lively ash-colour, in continual motion towards several very small limpets and muscles round it, as if feeding upon them.

Another was fixed to the end of a pebble, of a crimson colour in its expansion, the central protuberance having three different shades, a light and a deep orange and red.

There was also one affixed to a large rock of a beautiful red rose-colour, encircled at the edge with little oblong tubercles of a bright Azure. A small limpet being placed near it, and in a few minutes touching it with its horns, it seized upon it instantly

(*d*) *Urtica rubra Saxo innata. Aldrovandi Tab. de Zoophytis, No. vii.*

Urtica rubra. Rondelet. lib. xvii. c. xvii.

with its exploratory feelers, holding it fast. The mouth, or small central cone or protuberance, opened into three serrated valves, to which some of the feelers kept continually moving from the limpet, using them in the manner of fingers; at length being satisfied, it let it go, and by a gradual contraction shut up all its beauties. The limpet looked a little shrivelled, as if it had lost some of its juices, but no lacerations could be discovered by the naked eye.

The *Sea-Nettles* have their name from the disagreeable tingling they cause in the hand on touching them. They are said to taste like pepper †. They were received into the *Roman* cookery ‡.

† *M. List.* Annotat. in *Apicium Cælium* de Arte coquinaria. l. 4. c. 2. p. 107.

‡ ————— Mihi festa Luce coquatur URTICA: *Perf.* Sat. vi.

C H A P. XI.

O F F I S H E S.

1. **W**HALES are rare in our seas. A *sperma-ceti-whale* (a) was cast on shore about twenty years ago at *Hauxley*, near *Warkwarth*. It was fifty-four feet long, and thirty-six feet broad; the breadth of the tail fifteen feet; the teeth about forty-two, large, solid, and white, fixed in a double series in the lower jaw; the *fistula* or spout in the neck.

Another of the same kind was found dead at sea, about forty-four years ago, by the fishermen of *Cresswell*, who towed it on shore with their boats; the head and tail in a wasting state; the jaw-bone sixteen feet long; the nostril at this time serving for a spout to a well at *Blackmore-Hall*. This whale affords the true *sperma ceti*, which is nothing else but the liquid fat, thoroughly refined by art, the head yielding the purest and best, and the greatest quantity*.

(a) Cete admirabile aliud. *Clus. Exot.* l. 6. c. 17. Cete *Will. Pisc.* 41. Cetus dentatus. *Charlet. Pisc.* p. 47. n. 3. Cetus, *Offic. Dale. Pharm.* p. 379. Balæna major, inferiore tantum maxilla dentata, macrocephala, bipennis. *Raj. Syn. Pisc.* 15. Balæna macrocephala, quæ binas tantum pinnas laterales habet. *Sibb. Phal.* 12. Catodon fistula in cervice. *Artedi. gen.* 79. *Syn.* 108. *Linn. Faun. Suec.* p. 98. n. 262. PARMACITY-WHALE. POT-WALL-FISH. *Dale. Harw. App.* p. 413. n. 6. SPERMA-CETI-WHALE. *Charlet. l. c.*

* See the curious and ingenious Essay on the Natural History of WHALES, by the Hon. Paul Dudley, Esq; Ph. Tr. No. 387.

2. The

2. The *Grampus*, *Bottle-nose*, or *Great Porpefs* (*b*), is sometimes observed on the coast. Sixty-three of them came on shore at *Shorestone*, 29th July, 1734, about noon; sixty of which were between fourteen and nineteen feet long, and the other three about eight feet. They were all alive when they came on shore, and made a hideous noise, but were soon killed by the country people, who removed them one by one, with six oxen and two horses, and made about ten pounds by their blubber. The same kind of noise was heard in the sea the night before by the shepherds in the fields, when it is supposed they were sensible of their distress in shoal-water. The *maxillæ* of this large fish are armed with teeth, above and below. It hath a *ffistula* or spout in the middle of the head, and three fins. It is a great enemy to the whale, and pursues it with fury. There is sometimes a fierce engagement, for several hours, between it and the shark, called *Vulpecula*, or *Sea-Fox*; a fish of great agility and subtilty, which watches his rising to the surface of the water to breathe, and then gives him many a severe stroke with his tail, with such force and dexterity, that the *Cornish* call it, The Thresher.

3. The *lesser Porpefs* (*c*) is frequent under the promontories, and in the deep bays, upon the sea-coast; many of them sporting
some-

(*b*) *Orca*. *Rondelet. Pisc. i. p. 483. Will. Pisc. p. 40. Raj. Syn. Pisc. p. 10. Charlet. Pisc. p. 47. n. 5. Dale. Harw. App. p. 412. n. 5. Balæna minor utraque maxilla dentata, Orca dicta. Sibb. Phal. 6. Delphinus rostro sursum repando dentibus latis ferratis. Artedi. Gen. 76. Syn. 105. Linn. Faun. Suec. p. 100. n. 267. Borlase's CORNWALL, t. 27. f. 1. GRAMPUS. NORTH CAPER. Dale. l. c. BOTTLE-NOSE. Northumbr.*

(*c*) *Phocæna*. *Rond. de Pisc. i. p. 473. Will. Pisc. p. 31. t. A. f. 2. Phocæna vel Delphinus septentrionalium. Ephem. Germ. An. 3. p. 25. Dal. Harw. App. p. 419. n. 3. Delphinus corpore subconiformi, dorso lato, rostro subacuto. Artedi. Gen. 75. Syn. 104. Linn. Faun. Suec. p. 99. n. 266. Borlase's CORNWALL, t. 27. f. 2.*

sometimes together on the surface of the waves, rolling and tumbling like a parcel of swine. Hence it is generally called, A Sea-Swine. It is large and coniform; the fistula or water-spout in the middle of the head, with six lesser apertures about the *rostrum*; the *maxilla* or jaws wide, furnished with an *apparatus* of teeth, forty-eight on each side, standing in a row like little blunt pegs; the tongue dentated at the edges, of an equal breadth to the very extremity, tied down to the bottom of the mouth along the middle. The *rostrum* is long and muscular, to enable it to get its living by digging up the sand at the bottom of the sea. The *anguilla de arena*, or sand-eel, is its favourite food. Its structure, on dissection, appears very much like that of quadrupeds. The fibrous fat under the skin seems to be designed for the preservation of the blood in a warm and tepid state, and to detain its finest and subtlest parts from evaporation. Both the *phocæna* and the *whale* are remarkable for the particular position of their tails, not standing erect perpendicularly to the plane of the horizon, but lying parallel to it, to facilitate their ascent to the surface of the water, by a jerk, for respiration, to balance their bodies for swimming, as the anterior fins do in other fishes, or the hinder legs of quadrupeds.

4. An exotic and singular-coloured *Shark (d)*, was taken in a salmon-net at the *Ostium* of the *Tweed*, a little above the bridge, in *September*, 1757. It was six feet long, and of a greenish colour; the mouth armed with teeth, large, and formidable. The

“Sunt proculdubio longe plures hujus ordinis pisces in mari occidentali & septentrionali, quorum notitia nos fugit, cum raro capiuntur, & mortui solo vulgo observentur & negligantur.” *Linn. Obs.* l. c.

(d) *Lamia. Charlet. Pisc.* p. 12. n. 7.

fisher-

fishermen, on first hauling the net, were in rapturous expectation of an extraordinary and unusual draught of salmon, but on drawing it near to the shore, great was their consternation and surprize on the sight of this dangerous creature, which made the water fly about their ears to a prodigious height. It is supposed to have followed the *East India* fleet to *Edenburgh-Frith*, and to have directed its course southwards, in forward and eager pursuit after the salmon. When the *Shark* is thus intent upon his prey, his teeth are erect, but at other times they lie flat. Two or three pilot-fishes are for the most part with him, in the quality of *Gustatores*, commonly tasting his food before him. He has also some other small fishes which bear him company, with transverse folds on the head and back, clinging close to his sides, waiting for such morsels as he shall let fall from his mouth.

5. That remarkable fish, the *Rana Piscatrix*, or *Frog-Fish*, *Toad-Fish*, or *Sea-Devil* (*e*), was found alive on the shore near *Cresswell*, deserted by the tides, in the beginning of the year 1763. It was four feet and a half long. It is a fish of a terrible aspect; the head more than equal in size to the rest of the body, the mouth bearded, exceedingly wide; a triple irregular series of teeth in the jaws, fauces, and root of the tongue, turned inwards for holding its prey. The eyes are on the top of the head, very large. Near the extremity of the rostrum, are two long, slender bodies, like *tentacula*; also three short ones on the back, and many short fleshy pinnules on the sides. With these it is said to explore and allure its prey, by vibrating them at pleasure. It hath some protuberant appendages about the rostrum, the eyes, and other parts of the head. It hath two ventral fins, standing near

(*e*) *Rana Piscatrix*. *Charlet. Pisc.* p. 11. n. 4. cum *Icone optima & dissectione*, p. 74. *Will. Pisc.* p. 85. t. E. 1. *Salv. Hist. Aquat.* p. 140. *Dale. Harw. App.* p. 422. n. 4.

together, each consisting of five rays, thick, fleshy, and of a pale reddish colour. The tail is large, not forked at the end. The viscera of this fish were taken out, and the case distended and dried, to shew its interior structure; in which state it makes a most extraordinary and uncommon appearance: the dreadful apparatus of teeth, the large gills, and the transverse bone-like cartilages, being all in view, and wonderful to the beholder. It was presented to me, together with a small one, by my respectful friend, *Edward Cook*, of *Blackmore-Hall*, Esq; who assures me it is not unfrequent on that part of the coast.

6. The *Wolf-Fish* is sometimes taken by the fishermen of *Holy-Island* (*f*). It is a singular made fish. The head is large and depressed; the mouth prodigiously wide; a vast number of large and strong teeth in the jaws, on the palate, and deep in the fauces. The eyes are on the top of the head, large and prominent, of a fierce aspect. The nostrils have each a double aperture. The body is of a compressed shape, of a greyish-brown colour, elegantly variegated with black on the sides, transversely. In handling it is as lubricous and slippery as an eel. It hath no ventral fins. The back-fin is very long, extending almost to the tail; the pectoral fins large and rounded; the *pinna ani* long and low; the tail of a square figure. It is a bold voracious fish, destroying in an instant what it lays hold on with its frightful

(*f*) *Lupus marinus*. *Charlet*. *Pisc.* p. 31. n. 2. sequenti observatione.

“ Mire vorax mordaxque animal est, & dentibus suis terribile. Anchoram enim si præhendat mordicus, sonum edit & strepitum, & vestigia conspicua relinquit. Ex dentibus ejus molaribus fingere solent Gemmarii fraudulentum Lapidem Bufonios, & magno pretio vendere.”

teeth;

teeth; which, when found fossil, make the gems called *Lapides Buffonii* *.

7. The *Lump-Fish*, *Sea-Owl*, or *Cockpaddle* (*g*), is frequent on the coast, especially at *Cresswell* and *Holy-Island*. It is a well tasted fish, but of a clumsy figure. The head and mouth are moderately large; the eyes small, and covered with a cuticle; the jaws and fauces armed with a great number of small sharp teeth. The back is elevated, the belly flat. It hath a triple series of reflex, sharp, prickles on the sides, and as many on the back. It is of a beautiful colour, variegated with black, a pale red and whitish. The ventral fins are connected at the ends, and are of a funnel-like shape; by the help of which it holds itself fast in storms to the bottom of the sea, and to rocks. There is an anatomy of it by *Dr. Tyson* in *Willughby's Ichthyology*.

8. We have also the *Pogge* (*h*), a singular shaped little fish, about six inches long; of an octangular figure to the hinder end of the back-fin, and from thence to the tail hexangular. The whole body is covered with bone-like scales, which being raised or elevated in the middle through the whole length, give it those peculiar angulated figures.

* *Merret. Pin.*

(*g*) *Lumpus ANGLORUM*. *Charlet. Pisc.* p. 12. n. 8. *Will. Pisc.* p. 208. *Raj. Syn. Pisc.* p. 77. *Lepus marinus nostras, orbis species. Schonf. Ichth.* p. 4. *Cyclopterus. Artedi. gen.* 62. *Syn.* 87. *Linn. Faun. Suec.* p. 103. n. 275. *Hill. Nat. Hist. Anim.* p. 292, 293. **LUMP-FISH. SEA-OWL. COCK-PADDLE.** *Dale. Harw. App.* p. 430. n. 4.

(*h*) *Cataphractus. Schonf.* p. 3. t. 3. *Charlet. Pisc.* p. 35. *Will. Pisc.* p. 211. *Raj. Syn. Pisc.* p. 77. **THE POGGE.** *Dale. Harw. App.* p. 430. n. 5.

9. The

9. The *Cat-Fish* (*i*), so called from the likeness of its whiskers upon the upper lip to those of a *cat*, is sometimes taken by our fishermen. The fins are poisonous.

10. The *Dracunculus*, or *Sea-Dragon* (*k*), is frequently taken. It is of an irregular and uncomely form, armed with spines, the sides of a yellowish-olive colour, streaked with black, cross-ways.

11. The *Weever* (*l*) is frequently taken from five to eight inches by the fishermen of *North Shields*. The head is large, and somewhat compressed; the eyes situated near each other at the top of it; the iris a bright yellow; a large and robust spine near the *operculum* of the gills; the dorsal fins poisonous, raised and concealed at pleasure, in a deep furrow, by which it is enabled to do the greater mischief.

12. One of those remarkable fishes, called the *Basse* (*m*), approaching the figure of a salmon, of a deep blackish colour on the back, and of a silvery white on the belly, was taken near *Cresswell*, and brought to me. It is a firm well-tasted fish.

(*i*) CAT-FISH. *Leigh's LANCASHIRE*. p. 146. with a good Icon, by *Sturt*.

(*k*) *Dracunculus*. *Borlase's CORNWALL*, p. 270. t. 26. f. 10, 11.

(*l*) *Draco marinus* I. *Draco* f. *Araneus piscis*. *Salv. Pisc.* p. 71. *Draco marinus* f. *Araneus*. *Rond. Pisc.* p. 77. *Draco* f. *Araneus* PLINII. *Will. Pisc.* p. 288. *Araneus*. *Charlet. Pisc.* p. 29. n. 9. *cum bona descriptione*. *Trachinus maxilla inferiore longiore; cirrhis destituta*. *Arledi. gen.* 42. *Syn.* 70. *Linn. Faun. Suec.* p. 105. n. 282. *VIVER. Gallis. WEAVER. Anglis.*——*Borlase's CORNWALL*, p. 270. t. 26. f. 3.

(*m*) *Lupus*. *Will. Pisc. Raj. Syn. Pisc. Perca. BASSE. Hill. Pisc.*

13. At the *ostium* of the river *Tyne*, the *Sturgeon* (*n*) has been sometimes taken.

14. That valuable fish, the *Afellus major*, or *Cod-Fish* (*o*), is taken in great quantities in our seas. It preys upon young crabs, lobsters, herrings, &c. to which it is very destructive.

15. The *Ling* (*p*), a more delicate tasted fish than the former, and more valued, is frequently taken. The annual exports of both to *London* are usually very considerable, besides our home-consumption.

16. The *Haddock* (*q*), a most desirable fish, is taken in such abundance, as to furnish all tables, and to reward the toil of the hardy fishermen.

17. The

(*n*) *Sturio* f. *Silurus*. *Salv.* Pisc. p. 113. t. 102. *Sturio*. *Charlet.* Pisc. p. 32. *Will.* Pisc. p. 239. *Raj.* Syn. Pisc. p. 112. *Accipenser.* *Rond.* Pisc. i. p. 410. *Accipenser* corpore tuberculis spinosis aspero. *Artedi.* gen. 65. Syn. 91. *Linn.* Faun. Suec. p. 101. n. 271.

(*o*) *Afellus major.* *Charlet.* Pisc. p. 2. n. 1. *Will.* Pisc. p. 165. *Raj.* Syn. Pisc. p. 53. *Molva.* *Rond.* Pisc. p. 280. *Gadus dorso tripterygio, ore cirrato, cauda subæquali; radio primo spinoso.* *Artedi.* Syn. 35. *Linn.* Faun. Suec. p. 111. n. 295. COD-FISH. KEELING. *Dale.* *Harw.* App. p. 427.

(*p*) *Afinus varius.* *Rond.* Pisc. (*quia dorsum habet cinereum multis maculis nigris conspersum*). *Molva major.* *Charlet.* Pisc. p. 3. n. 6. *Afellus varius.* *Ionst.* Pisc. t. 46. f. 4. *Afellus varius & striatus.* *Sconf.* Icht. p. 19. *Will.* Pisc. p. 172. *Raj.* Syn. Pisc. p. 57. *Gadus dorso tripterygio, ore cirrato, colore vario, maxilla superiore longiore, cauda æquali.* *Artedi.* gen. 28. Syn. 35. Sp. 63. *Linn.* Faun. Suec. p. 110. n. 294.

(*q*) *Onos* f. *Afinus.* *Turn.* Epist. ad *GESN.* *Will.* Pisc. p. 170. *Raj.* Syn. Pisc. p. 55. *Eglefinus tertia Afellorum species.* *Gesn.* Pisc. p. 86. *Bellon.* de *Aquat.* p. 126. *Afellus minor.*

17. The *Whiting* (*r*), a soft, but well tasted fish, is less plentiful than the *Haddock*. There are two small bones in the head much used in making artificial flowers, and their pendulous narrow foliage.

18. *Whiting-Pout* (*s*) is often taken. It is less esteemed than the whiting. It is a short, broad fish, rarely growing longer than nine inches, or broader than three.

19. The *Coal-Fish* (*t*) is taken plentifully near the sea-rocks. It is nearly of the shape and size of a *Whiting*, a dusky yellow on a black ground, in an elegant variegation; the mouth large, and armed with numerous white teeth; the lateral line straight, very broad, and white.

20. The *Whiting-Pollack* (*u*) is taken in abundance with the former, from eight to thirteen inches; the mouth also large, and

minor. *Scoen.* *Ichth.* p. 18. Tertia Afellorum species. *Rond.* de Pisc. i. p. 277. *Gadus cirratus albicans*, maxilla superiore longiore, cauda sub-bifido. *Artedi.* Spec. 64. *Linn.* *Faun. Suec.* p. 111. n. 297. HADDOCK. ST. PETER'S FISH. *Dale.* *Harw.* p. 428. n. 5.

(*r*) *Afellus minor* & *mollis*. *Charlet.* *Pisc.* p. 3. n. 2. *Afellus mollis major* f. *albus*. *Will.* *Pisc.* p. 170. *Raj.* *Syn. Pisc.* p. 55. *Afellus candidus*. *Schonf.* *Ichth.* p. 17. *Gadus dorso tripterygio*, ore imberbi, corpore albo, maxilla superiore longiore. *Artedi.* gen. 19. *Syn.* 34. Sp. 62. *Linn.* *Faun. Suec.* p. 110. n. 294.

(*s*) *Afellus barbatus*. *Charlet.* *Pisc.* p. 3. n. 5. *Afellus mollis latus*. *Will.* *Pisc.* App. p. 22. t. L. mem. 1. n. 4. *Raj.* *Syn. Pisc.* p. 55. WHITING-POUT. *Dale.* *Harw.* p. 428. n. 4.

(*t*) *Afellus niger* f. *mollis nigricans*. *Charlet.* *Pisc.* p. 3. n. 3. A POLLOCK. *Cornub.* COAL-SAY. *Northumb.* COAL-FISH. COAL-WHITING. *Charlet.* l. c.

(*u*) *Afellus virescens*. *Scoen.* *Ichth.* p. 20. *Raj.* *Syn. Pisc.* p. 53. *Gadus dorso tripterygio*, ore imberbi, dorso virescente. *Linn.* *Faun. Suec.* p. 111. n. 296. WHITING-POLLACK. *Dale.* *Harw.* p. 428. n. 2. ROCK PODLER. *Northumb.*

armed

armed with numerous sharp teeth; the lateral line of a dusky hue, broad and crooked. They are both soft, and of a watry taste. They afford good diversion with a hook and line, taking a bait greedily; the angler either sitting or standing upon a rock, on a serene cloudy day, usually taking great numbers, in the space of a few hours.

21. That beautiful and admired fish, the *Mackrel* (*v*), is sometimes taken, but not often. In the year 1762, which was a remarkable dry summer, even to the destruction of our herbage, we had them pretty plentifully in all our better markets.

22. The valuable and justly esteemed fish, the *Herring* (*w*), is an annual visitant of our northern coast, and is sometimes taken in great numbers, but not enough for export.

23. We have the *Turbot* (*x*), the most firm and delicate tasted fish of all the flat cartilaginous species, with which not only our own, but many of the *London-tables*, are often supplied.

(*v*) *Scomber*. *Charlet*. Pisc. p. 27. n. 4. *Schonef*. Icht. p. 66. *Will*. Pisc. p. 181. Tab. M. 111. *Raj*. Syn. Pisc. p. 58. *Scombrus*. *Salv*. Pisco. p. 241. t. 239. *Scomber* pinnulis quinque in extremo dorso, spina brevi ad anum. *Artedi*. gen. 30. Syn. 48. Sp. 68. *Scomber* radiis pectoralium viginti, dorsalium duodecim. *Linn*. Faun. Suec. p. 107. n. 287.

(*w*) *Halec*. *Charlet*. Pisc. p. 4. *Harengus*. *Rond*. Pisc. p. 222. *Schonef*. Icht. p. 36. *Will*. Pisc. p. 219. Tab. P. 1. *Raj*. Syn. Pisc. p. 103. *Clupea*, maxilla inferiore longiore, maculis nigris carens. *Artedi*. gen. 7. Syn. 14. Sp. 37. *Linn*. Faun. Suec. p. 120. n. 315.

(*x*) *Rhombus*. (*a figura quadrata, cujus latera sunt omnia æqualia, anguli vero obliqui*). *Charlet*. Pisc. p. 30. n. 11. *Rhombus* maximus asper non squamosus. *Will*. Pisc. p. 94. Tab. F. 11. *Raj*. Syn. Pisc. p. 31. *Pleuronestes* oculis a sinistra, corpore aspero. *Artedi*. gen. 18. Syn. 32. *Linn*. Faun. Suec. p. 112. n. 298. *TURBOT*. *BRETT*. *Dale*. *Harw*. p. 423. n. 1.

24. The *Holibut* (*y*), of a dusky green colour, larger, longer bodied, and not so square as the *Turbot*, is sometimes taken and sold for it.

25. The *Pearl* (*z*), a pretty large fish, is frequently taken, and sold for the *Holibut*; though it is not so thick and well grown, nor so firm and well tasted.

26. That excellent fish, the *Sole* (*a*), is taken pretty plentifully.

27, 28. We have also the *Plaïse* (*b*) and the *Flounder* (*c*) in great abundance both on the coast, and at the *ostia* of our larger rivers.

29. The

(*y*) *Passer BRITANNICUS*. *Charlet*. Pisc. p. 26. n. 6. *Hyppoglossus*. *Rond*. Pisc. p. 325. *Will*. Pisc. p. 99. Tab. F. 6. *Raj*. Syn. Pisc. p. 33. *Pleuronectes oculis a dextris, totus glaber*. *Artedi*. gen. 17. Syn. 31. *Linn*. Faun. Suec. p. 113. n. 302. HOLYBUT. TURBUT. *Dale*. *Harw*. p. 424.

(*z*) *Rhombus squamofus*. *Charlet*. Pisc. p. 26. n. 3. *Rhombus non aculeatus squamofus*. *Will*. Pisc. p. 95. Tab. F. 1. *Raj*. Syn. Pisc. p. 31. PEARL. PRIL. LUG-A-LEAF. *Dale*. *Harw*. p. 423. n. 2.

(*a*) *Solea*. *Charlet*. Pisc. p. 26. n. 1. *Buglossus vel solea*. *Rond*. Pisc. p. 320. *Will*. Pisc. p. 100. Tab. F. 7. *Raj*. Syn. Pisc. p. 33. *Pleuronectes oblongus, maxilla superiore longiore, squamis utrinque aspersis*. *Artedi*. gen. 18. Syn. 32. *Linn*. Faun. Suec. p. 112. n. 299.

(*b*) *Passer lævis*. *Charlet*. p. 29. n. 1. *Plateffa*. *Rond*. Pisc. p. 316. *Will*. Pisc. p. 96. Tab. F. *Raj*. Syn. Pisc. p. 31. *Pleuronectes oculis & tuberculis sex a dextra capitis, lateribus glabris spina ad anum*. *Artedi*. gen. 17. Syn. 30. *Pleuronectes utrinque glaber, tuberculis sex a dextra capitis*. *Artedi*. Sp. 57. *Linn*. Faun. Suec. p. 113. n. 301. PLAISE. *Dale*. *Harw*. p. 423. n. 3.

(*c*) *Passer niger*. *Charlet*. Pisc. p. 26. n. 4. *Passer fluviatilis, vulgo Flesus BELLONII*. *Will*. Pisc. p. 98. Tab. F. 5. *Raj*. Syn. Pisc. p. 37. *Pleuronectes linea laterali aspera, spinulis*

29. The *Thornback* (*d*) is taken in great abundance. The small younger sort, usually called *Maids*, are most esteemed.

30. The admired fish, the *Gar-fish*, or *Needle-fish* (*e*) is taken plentifully near *Budle*. Its retirement is in the sands at ebb-tides. On their reflux it swims about with great alertness, regaling itself not only with the sweets of liberty, but with food. The flesh is extremely white, and of a delicate taste, like the *Mackrell's*. The bones are green. Hence it is called by our fishermen, the *Green Bone*.

31. The *Sand-Eel* (*f*) is taken in great abundance in the sea-sands; the largest at *Budle*, and near *Crafter*. It leads the same kind of life as the *Gar-fish*, and shews as much joy on the returning tides.

32. In

spinulis ad radices pinnarum a latere oculato. *Artedi*. Sp. 39. Pleuronectes oculis a dextris, linea laterali aspera, spinulis supine ad radices pinnarum, dentibus obtusis. *Artedi*. gen. 17. Syn. 31. *Linn.* Faun. Suec. p. 112. n. 300. FLOUNDER. FLUKE. *Dale. Harw.* p. 423, 424. n. 5.

(*d*) *Raja clavata*. *Rond.* Pisc. p. i. 353. *Charlet.* Pisc. p. 11. n. 6. *Will.* Pisc. p. 74. *Raj.* Syn. Pisc. p. 26. *Raja. Salv.* Pisc. p. 149. *Dale. Pharm.* p. 378. *Raja aculeata*, dentibus tuberculosis cartilagine transversa in ventre. *Artedi*. gen. 71. Syn. 99. Sp. 103. *Linn.* Faun. Suec. p. 100. n. 268. THORNBAC. *Dale. Harw.* p. 422. n. 3.

(*e*) *Acus. Salv.* Pisc. p. 68. *Charlet.* Pisc. p. 16. n. 20. *Acus prima species.* *Rond.* Pisc. i. p. 227. *Acus major.* *Bellon.* p. 163. *Acus ARISTOTELIS species altera major.* *Wiu.* Pisc. p. 159. *Raj.* Syn. Pisc. p. 46. *Syngnathus corpore medio heptagono, cauda pinnata.* *Artedi.* gen. 1. Syn. 2. Sp. 2. *Linn.* Faun. Suec. p. 126. n. 335. NEEDLE-FISH. HORN-FISH. GAR-FISH. *Charlet.* l. c. GREEN-BONE. *Northumbr.*

(*f*) *Sandilz ANGLORUM.* *Aldr.* Pisc. p. 252. *Piscis SANDILZ dictus.* *Salv.* Pisc. p. 70. t. 69. *Anguilla de Arena.* *Charlet.* Pisc. p. 27. n. 1. *Ammodytes GESNERI.* *Will.* Pisc. p. 113. Tab. G. male. *Raj.* Syn. Pisc. p. 38. *Ammodytes.* *Artedi.* gen. 16. Syn. 29.

32. In high tides, in the latter end of *May* and beginning of *June*, the *Cuttle-Fish* (*g*), is frequently brought on shore with the sea-weeds. It is furnished with ten horns, with which it rows itself in the water, as with oars; and when in any danger it escapes by discolouring the water with an inky liquor. Hence it is called by some the ink-fish; and from one half of it being invested with a membrane, like a leg within a stocking, it is called by others, the *Hose* or *Stocking-Fish*. Its substance seems to be a kind of pulp. It has only one bone, and that in the back; used by silversmiths in burnishing plate. It has spots on the back, somewhat resembling those of a trout.

33. Of our *Fresh-Water-Fishes*, the *Salmon* (*b*) is the most valuable. It is so plentiful in the *Tweed*, that the annual export of that single article from *Berwick* is very considerable. It is frequent in all our other rivers towards the sea, in the *Ahn*, *Coquet*, and *Tyne*, but the *Tweed*-salmon has the preference. It is recorded of an alderman at *Newcastle*, *Francis Anderson*, Esq; that dropping his gold-seal-ring from his finger into the *Tyne*, as he was leaning over the bridge, it was found in the belly of a *Salmon*, bought in the market by one of his own servants.. It is now in the possession of Mr. *Edward Anderson*, his descendant, a merchant of that

Sp. 55. *Linn. Faun. Suec.* p. 114. n. 303. SAND-EELS. LAUNCES. *Dale. Harw.* p. 426. n. 4.

(*g*) *Sepia. Charlet. Pisc.* p. 51. n. 2. *Salv. Pisc.* p. 165. *Rond. i.* p. 498. *Dale. Pharm.* p. 361. *Linn. Faun. Suec.* p. 366. n. 1281. CUTTLE-FISH. *Charlet. l. c.* INK-FISH. HOSE OR STOCKING-FISH. *Leigh's LANCASHIRE*, with a good Icon, by *Sturt*.

(*b*) *Salmo nobilis. Schonef. Icht.* p. 64. *Salmo. Rond. Pisc.* p. 167. *Salv. Pisc.* p. 100. *Charlet. Pisc.* p. 31. n. 1. *Will. Pisc.* p. 189. *Raj. Syn. Pisc.* p. 63. *Salmo rostro infra inferiorem maxillam sæpe prominente. Artedi. gen. 11. Syn. 22. Sp. 48. Linn. Faun. Suec.* p. 115. n. 306.

corpo-

corporation. The impresson is that of *Solomon* and the queen of *Sheba*. On the inside, just under the signet, the alderman had the effigies of a salmon engraved, with the initial letters of his name on each side, as a memorial of so extraordinary an accident, similar to what is told of *Polycrates*, king of *Samos*, by *Herodotus* *.

34. The *Salmon-Trout* (*i*) is taken in great plenty in the same rivers with the salmon.

35. The *Whitling-Trout* (*k*), of a long and compressed form, is taken in the *Till* and *Tweed* from ten to twenty inches. It is the most admired of all the trout-species, the flesh as red as a *Salmon's*.

36. The *Aller-Trout* (*l*), usually large and well grown, is frequent in the deep holes of our retired and shady brooks, under the roots of the *Aller*, or *Alder-tree*, from which it has its name.

37. There is a small trout in our alpine rivulets, usually called, *The Rackrider* (*m*), of great esteem; the flesh white, but exceed-

* *Bourne's Hist. Newcastle upon Tyne.* p. 132.

(*i*) *Trutta Taurina*, apud nos in NORTHUMBRIA, ab insigni magnitudine. *Turn. Epist.* ad *GRSN. Charlet. Pisc.* p. 36. n. 2. *Trutta Salmonata. Will. Pisc.* p. 193. *Raj. Pisc.* p. 63. *Salmo latus*, maculis rubris nigrisque, cauda æquali. *Artedi. gen.* 12. *Syn.* 24. *Sp.* 51. *Salmo maculis nigris brunneo cinctis; pinna pectorali punctis sex. Linn. Faun.-Suec.* p. 116. p. 308.

(*k*) *Trutta*, WHITLING, dicta, *Northumbr.*

(*l*) *Trutta ALLERFANG* dicta, *Northumbr.* *TURN. Epist.* prædicta.

(*m*) SHOTE. *Cornub.* RACKRIDER. *Northumbr.*

ingly well tasted. It is the smallest of all the trout species, seldom more than six inches.

38. In the same stony rivulets is the best *common* trout (*n*), where it is frequently taken from ten to near twenty inches. Those that feed in waters with muddy bottoms are least esteemed, and are commonly called *Moss-trouts*; their flesh tasting of the turbid muddy stream they live in; the colour of their flesh white; their backs of a tawny black hue.

39. In *North Tyne*, above *Bellingham*, the *Pike* (*o*) is often taken three feet long. It is frequent in some of our other rivers, and in the larger lakes.

40. In the rivers *Bramish* and *Till*, the *Perch* (*p*) is often taken from twelve to sixteen inches.

41. The *Leuciscus*, or *Dar* (*q*), is frequently taken in the river *Tyne* from seven to nine inches long, and sometimes longer. It

(*n*) *Trutta fluviatilis vulgaris*. *Charlet*. Pisc. p. 36. n. 1. *Trutta fluviatilis*. *Rond*. Pisc. ii. p. 169. *Will*. Pisc. p. 199. *Raj*. Syn. Pisc. p. 65. *Salmo maxilla inferiore longiore, maculis rubris*. *Artedi*. gen. 12. Syn. 23. Sp. 51. *Linn*. Faun. Suec. p. 117. n. 309.

(*o*) *Lucius*. *Rond*. Pisc. ii. p. 188. *Salv*. Hist. p. 95. *Will*. Pisc. p. 239. Tab. P. 5. *Raj*. Syn. Pisc. p. 112. *Charlet*. Pisc. p. 42. n. 7. *Esox rostro plagioplateo*. *Artedi*. gen. 14. Syn. 26. Sp. 53. *Linn*. Faun. Suec. p. 114. n. 304. PIKE. *minores*, PICKARELLS. *Charlet*. l. c. *Dale*. *Harw*. p. 433. n. 5.

(*p*) *Perca*. *Rond*. Pisc. ii. p. 196. *Perca major*. *Charlet*. Pisc. p. 41. n. 2. *Perca fluviatilis*. *Salv*. Pisc. p. 226. *Will*. Pisc. p. 291. Tab. S. 13. *Raj*. Syn. Pisc. p. 112. *Perca lineis utrinque sex nigris, pinnis ventralibus rubris*. *Artedi*. gen. 39. Syn. 66. Sp. 74. *Perca pinnis dorsalibus distinctis; secunda radiis sedecim*. *Linn*. Faun. Suec. p. 106. n. 284. PERCH. *Charlet*. l. c.

(*q*) *Albicilla*. *Bellen*. Pisc. *Leuciscus*. THE DAR. *Charlet*. Pisc. p. 37. n. 7.

is a pretty fish, of a slender roundish body; the mouth small; the iris of the eyes silvery; the head of an obscure olive tinge; the scales large, in an elegant imbricated order.

42. The *Chub* or *Chevin* (*r*) is frequent in the river *Tyne*, in large holes under the trunks of trees, where it grows to a good size, sometimes to the length of twelve inches. The scales are large, angular, and beautiful; the fins bluish; the iris of the eyes silvery, tinged with yellow.

43. The *Roch* (*s*) is taken in some of our lakes from six to nine inches. Within the jaws are five teeth; the lateral line bending towards the belly; the scales large, silvery on the sides, in a regular imbricated order.

44. That admired little fish, the *Smelt* (*t*), is taken in great abundance in the *Tyne*, and in our other rivers towards the sea.

45. The *River-Eel* (*u*) is frequently taken from two to three feet long in our alpine stony rivers; not so gross and corpulent as

(*r*) *Cephalus Fluviatilis*. *Will. Pisc. Raj. Syn. Pisc. Capito fluviatilis*. CHUB, CHEVIN. POLLARD. *Charlet. Pisc. p. 37.*

(*s*) *Rutilus f. Rubellus. fluviatilis. Charlet. Pisc. p. 39. n. 20. Will. Pisc. p. 262. Raj. Pisc. p. 122. Cyprinus iride pinnisque ventris ac ani plerumque rubentibus. Artedi. gen. 3. Syn. 10. Sp. 10. Cyprinus pinnae ani radiis duodecim rubicundis. Linn. Faun. Suec. p. 124. n. 329.*

(*t*) *Eperlanus. Rond. Pisc. ii. p. 196. Charlet. Pisc. p. 34. Will. Pisc. p. 202. Tab. N. 6. n. 4. Raj. Syn. Pisc. p. 66. Osmerus radiis pinnae ani septendecim. Artedi. gen. 10. Syn. 21. Linn. Faun. Suec. p. 118. n. 311.*

(*u*) *Anguilla. Rond. Pisc. ii. p. 198. Salv. Pisc. p. 65. Charlet. Pisc. p. 34. Will. Pisc. p. 109. Raj. Syn. Pisc. p. 37. Muræna unicolor, maxilla longiore. Artedi. gen. 24. Syn. 39. Spec. 66. Linn. Faun. Suec. p. 109. n. 290.*

those

those that feed in muddy waters, but better tasted, and of a brighter colour. Under its exterior lubricous coat, it has a scaly vestment, very curious, constituted of oblong and round balls, some reticulated, and finely pencilled, but so small as to require to be viewed with a microscope.

46. The *Lamprey-Eel* (*v*) is frequently taken in our larger rivers towards the sea. It has a series of seven roundish apertures on each side of the head, downwards, which are of the same use as gills in other fishes.

1. Of our *marine crustaceous Shell-Fishes*, the most valuable is the *Lobster* (*w*). It is taken in such plenty, that the annual export usually amounts from 1200 *l.* to 1500 *l.* of those that are taken between *Newbiggen* and *Newton* by the sea, exclusive of such as are taken at *Holy-Island*, which annually amount to a considerable sum; as I am assured by *John Cresswell*, of *Cresswell*, Esq; who has for some years past paid those sums by the order of a *London-fishmonger*, *Mr. Kittermaster*, on whose account all the most valuable sea-fishes on this coast are taken and shipped off for *London*, which makes them often difficult to be had at home, and rarities at our tables.

(*v*) *Lampetra*. *Rond. Pisc.* p. 378. *Will. Pifs.* p. 105. *Tab. G. II. Raj. Syn. Pisc.* p. 35. *Charlet. Pisc.* p. 34. n. 3. *Salv. Pisc.* p. 63.

(*w*) *Astacus marinus*. *Charlet. Pisc.* p. 55, 56. *Astacus*, *Offic. Dale. Pharm.* p. 367. *Cancer macrourus*; rostro lateribus dentato, basi supra dente duplici. *Linn. Faun. Suec.* p. 358. n. 1248.

2. The

2. The *Sea-Crab* (*x*) is taken in great abundance; many of them very large.

3. The *great subglobose Echinus*, or *Sea-Egg* (*y*), is frequently taken with the fish in it by the *Lobster-fishermen* of *Newton*, near *Embleton*. The shells are of different colours; some red, and others purple, in lighter and deeper shades. I had one of a fine purple, with white striæ on the joints, and so large as to hold near a quart of water. The spines are white, slender, and short, not above half a finger's length. The progressive motion of the fish is by turning or rolling itself upon its spines in the ocean. It is no sooner dead, or out of water for a small space, than its spiny armour drops off. It was a great favourite at table among the antients, and was called *The Ovum*, or *Egg*. The flesh is divided into five equal parts. It is eaten at the *Turkish* tables with pepper and vinegar, at the time of the full moon, when it is turgid, and esteemed a delicacy.

4. The depressed cordate *Echinus*, or *Sea-Egg* (*z*), is very plentiful on the coast near *Alnmouth* and *Holy-Island*. On the south side of the river at *Alnmouth*, great numbers of empty shells are brought on shore by the tides in tempestuous weather, mostly about *Michaelmas*; some of them with their short slender *setæ* or bristles on;

(*x*) *Cancer marinus*. *Charlet*. Pisc. p. 57. *Cancer*, *Offic. Dale*. Pharm. p. 368. *Cancer brachyurus*; *manuum digitis atris*. *Linn. Faun. Suec.* p. 357. n. 1244.

(*y*) *Echinus ex altera parte planus, ex altera subsphæricus, purpurascens, aculeorum vestigiis parum eminentibus*. *Anglicè*, A SEA URCHIN. *List. Angl.* p. 169. t. 3. f. 18. *Append.* p. 27.

Dr. Shaw's Travels, p. 260.

(*z*) *Echinus minor angulosus, ex utraque parte compressus*. *List. Angl. Append.* p. 28. t. 1. f. 13. *Echinus marinus depressè cordatus*. *Borlase's Cornwall*, t. 28. f. 28.

others polished by the sea, of a bright white, with a double series of small apertures, and elegant *striae* and *papillae*.

The *Echini* keep the *deep* waters, near the *shores* *.

1. Of the *harder marine Shell-Fishes*, the most valuable is the *Oyster*; the common sort; usually large, and of an excellent taste; such as would have pleased the nicest *Roman* palate.

————— *Circæis nata* forent, an
Lucrinum ad Saxum, Rutupinoquæ edita Fundo
 OSTREA.— *Juv. Sat. iv.*

They are on a bank belonging to the Right Honourable the Earl of *Tankerville*.

2. The *small Rock-Oyster (a)*, a delicate tasted oyster, is frequent among our northern sea-rocks.

3. The common *Pectunculus*, or *Cockle (b)*, is found in great abundance in the mud and sands at *Budle*, near *Belford*, very large, and of an excellent taste. The shells are of various colours, a pale blue, a deep blue, with white bands or fillets; also white, with blue fillets, tinged with a sea-green; others with orange-fillets on a bright white ground, in lighter and deeper shades. Great numbers of them may be gathered on *Ross-links*, polished by the sea.

* ECHINUS equora celent. *Hor. Epist. L. i. Ep. 15.* Et semel aspecti Littus dicebat
 ECHINI. *Juv. Sat. iv.*

(a) *Ostrea parva saxatilis. List. Angl. t. 4. f. 26.*

(b) *Id. t. 5. f. 34.*

4. The *large, high-beaked Pectunculus*, or *Cockle (c)*, is not unfrequent in the same sands.

5. The *slender, smooth Chama (d)*, is often observed at the *ostium* of the river *Coquet*, and on the sea-shore, among the sea-weeds, after high tides; where I have frequently gathered them, with the fish in them. The shell is white, tender, and pellucid; the fish like that of a cockle, and well tasted.

6. The *thick, white, striated Chama (e)*, is frequent on *Ross-links*. I have observed it also on the sea-shore, near *Embleton*, and *Warkworth*. The striæ are transverse and irregular; the interior extreme margin tinged with blue.

7. The *Sea-Muscle (f)* is plentiful on the sea-rocks near *Alnmouth*, and many other places. The fish pickled is esteemed at some tables preferable to a pickled oyster. Our fishermen use it to bait their hooks. Some of the shells are streaked with black on a light olive-ground.

8. The *pearl-coloured Solen (g)* is plentiful in the sands at *Budle*, and may be taken without any trouble in the night with a lan-

(c) *Pectunculus maximus*, at minus concavus; plurimis minutioribus et parum eminentibus striis donatus, rostro acuto, minusque incurvata. *List. Angl.* p. 187. t. 5. f. 32.

(d) *Concha tenuis*, subrotunda, omnium minime cava, cardinis medio sinu et amplo pyriformi. *Id.* t. 4. f. 23.

(e) *Concha crassa*, ex altera parte compressa, ex altera subrotunda. *Id.* t. 4. f. 24.

(f) *Mytilus Marinus saxatilis*. *Id.* t. 4. f. 28.

(g) *Concha fusca*, longissima, angustissimaquæ, musculo ad cardinem nigro; quibusdam *Solen* dicta. *List. Angl.* p. 192. t. 5. f. 37. *Append.* p. 34, 35.

thorn and a candle, after the high spring-tides, about the full moon, especially in February and March, when they may be easily seen with one end erect above the sands. The shells are usually from six to seven inches and a half long, and one broad; open at both ends; the exterior *cuticula*, or covering, when first taken, brown, with a tinge of yellow, which shrivels and falls off after the fish is dead, and exposed to the sun. This fish is a *tethys*, cartilagenous, and glabiated, with small auricles, or ears, and four *tentacula*; white, or of a cream-colour; in great esteem at the table in some places, under proper culinary management, but only used with us as a bait.

9. The *orange and white Solen* is found in the same sands. It is in all respects like the last, except the colour, which is a deep orange and white, in transverse fillets, in alternate variegations.

10. The *long and broad Conch-Shell*, with alternate fillets of yellow, carmine and white, in a beautiful variegation (*b*), is frequent on the shore near *Ross-links*, with the common yellow ones.

11. The *long and broad Conch*, with yellow, dark brown, and light and deep blue fillets, is found on the same shore. The fish is much esteemed in some places.

12. The *large, round, thick, and tawney Conch* (*i*), is frequent on the whole coast. The investient *cuticula* is a black-tawney, which

(*b*) *Concha tenuis, longa, lataque, in meliis cardinibus cavitate quadam pyriformi insignita. Id. t. 4. f. 19. Hen-Fish. Hantoniens.*

(*i*) *Conchà è maximis, admodum crassa, rotunda, ex nigro refuscens. List. Angl. p. 173. t. 4. f. 22.*

shrivels and falls off after it has been for some time exposed to the sun and the weather, and shews its interior chestnut-hue. They may be gathered from the size of a small cockle to that of a pretty large scallop. The fish is well tasted. The judicious and admired *Mantuan*, in his System of Husbandry, recommends the putting conch-shells, rough and equalid, under the roots of new planted trees, to drain the water from them. They also answer a higher use. Their alkaline salts destroy the acidities of the earth, forward vegetation, warm and strengthen the fibres, give a fine bark, and vigour and health to trees. He might have this advantage in his eye, though he does not mention it.

Squales in Conchas.

VIRG. GEO. 2. v. 348.

13. The *white, wry-beaked, striated Conch (k)*, is frequent on the shore near *Ross-links*. The shell is strong and thick; the striæ deep, transverse, and irregular; the interior extreme margin ferrated.

14. The *thick Orange and white striated Conch* is sometimes observed and gathered on the same shore. The furrows are white, transverse, and horizontal, parallel to the margin; the ridges a deep orange, with intermediate smaller ones of a bright white, very beautiful.

15, 16, 17. The *small, smooth Conch with red and white Fillets*, and the *small smooth Conch with bright yellow and white Fillets*, are frequent on the shores near *Druridge* and *Holy-Island*; also the *small, smooth, white Conch, tinged with red*. They are strong and thick shells for their size, not bigger than a small bean.

(k) *Curvirostrum Sulcis five Striis transversis profundè insignitum.*

18, 19, 20. The *Tellina* with *Purple, yellow, and white Fillets*, and the *Rose-coloured Tellina* with *white Fillets*, also the *white Tellina* with *Pearl-coloured Fillets*, are frequent on the shores near *Warkworth, Embleton, Ross-Links, and Holy-Island*. The shells have a high natural polish; those of the two last extremely light and tender, finely formed for making small artificial flowers.

I have gathered most of these *Bivalve* shells with the fishes in them. They inhumate themselves in the *Sands* at ebb-tides, and on their reflux open their valves for food and pleasure.

21. Those remarkable bivalves, the *Pholades*, which inhumate themselves in *Stones*, and live a recluse hermit-kind of life, are frequently brought on shore in high spring-tides and storms, both with and without their stony habitations. Some of the stones are large, ponderous, very hard, and of a livid colour. I have observed great numbers of them among the rocks at *Hartley, Blyth, and Alnmouth*; with both the large, white, striated, and the small and slender, *Pholades*, in them, and other kinds. The *Italians* call the stones, *Balle di Saffo*, and the fish, *Ballare*, or *Dattili de Mare*. The fishermen of *Ancona* take the stones up at sea, where they find them in great plenty, and keep them in the harbour, to have the fish ready for the table. It is of a grateful taste, and valued next to a scallop, or an oyster*.

Pectinated Bivalves, or Scallops, with the fish in them, are rarely observed on our coast. Single valves, both with equal and unequal ears, and others with ears so short, as hardly to be perceivable, are sometimes found on the shores.

* *Ray's Topogr. Observ. Vol. 1. p. 323.*

22. I met with the *white-ribbed Pecten* or *Scallop*, spotted with *red*, on the shore of *Holy-Island*. It is two inches and a half long, and as many broad.

23. On the shore at *Rofs-Links*, I found the *white and purple ribbed Pecten*; two inches long, and as many broad, beautifully marbled and variegated with purple and white (l).

24. In a *Creek*, on the south side of the *Ostium* of the river *Aln*, I met with the *brown echinated Scallop* an inch and three quarters long, and an inch and an half broad (m).

25. From the same place, I had the *Snow-white and bright red Pecten*, with short ears; an inch and a quarter long, and somewhat above an inch broad.

26. The *light yellow and purple ribbed Pecten* is frequent on the shore near *Warkworth*. It is of a beautiful yellow, elegantly marbled with a deep purple.

27, 28, 29. The *deep, glossy, purple Pecten*, the *bright red echinated Pecten*, the *pale red Pecten*, *variegated with purple and white*, are frequent on the same shore.

30. From the shore at *Rofs-Links*, I met with a valve of the *white ribbed Pectunculus*, or *Cockle*; a strong and beautiful shell, with a double series of longitudinal striæ; thirteen *striae* very

(l) *Pecten altis Striis albo-purpureis transversè variegatis insignis.*—*Borlase's Cornwall*, p. 278. t. 28. f. 22.

(m) *Pectunculus echinatus.* Ibid. f. 19.

deep, and as many small narrow ones down the middle of each ridge; three other small ones crossing them, circular and wavy.

31, 32, 33. The common *Univalve Shell-Fishes*, the *Nerite* (*n*), the small *Turbines* (*o*), the *Patellæ* or the *Mammillares* (*p*), are numerous upon our shores; the two former well tasted and wholesome, when boiled, and frequently sold for the table on the more southern coasts; the other only used by the fishermen to bait their hooks. The *Nerite*-shells are some of them a pale red, and others yellow. Some of the *Turbines* are white, striated with purple; and others a dark brown, striated with white; the apices of some short, and obtuse; others acuminate. The *Patellæ* are of various sizes, shapes, and colours; some flattish, some high-topped or coniform; some blue and pellucid on the exterior surface, with fine capillary *Radii* from the vertex to the margin, and of a pearl-colour within; some with acute rays, filleted without with blue and white alternately, and of a glossy *Satin*-white within; some white, with red and purple fillets, dotted; some red and orange externally, and white within; some with more sharp and acute *Radii*, with a sharp apex, brown without, and powdered with white; within, striated with blue, yellow, and red; resembling the pips of some beautiful *Auriculæ*.

34. The small purple *Murex*, *Turbo*, or *Whelk*, yielding a purple *Sanies*, is in great abundance among the sea-rocks. The *British* ladies antiently marked their linen with the purple *Sanies* or juice

(*n*) WINKLES. *Hantzians*.

(*o*) WHELKS. *Iisdem*.

(*p*) LIMPETS. }
 PAP-SHELLS. } *List. Angl. p. 195. t. 5. f. 40.*
 FLITHERS. }

found

found in it, in a white vein next the head of the fish, lying transversely in a cleft or furrow. It is fetched out with the stiff point of a horse-hair pencil, short, and tapering, the shell being first broke, the mouth downward, with a smart stroke of a hammer, on a piece of firm smooth wood, taking care not to bruise the fish. Our northern historian, *Bede*, mentions it, in words that express its beauty and duration. There are, says he, on the *English* shores an abundance of the *Cochleæ* which yield a scarlet dye. Its beautiful tinge neither fades by the heat of the sun, or by the weather, but the older it is, the more rich and elegant*.

35, 36, 37. The large, thick, *Buccinum*, or *Whelk* (*q*) and the thin wide-mouthed *Buccinum*, or *Whelk* (*r*), with seven volutæ, and transverse wavy striæ, are frequent on the shores near *Rofs-Links*, and *Holy-Island*; also the narrow-mouthed *Buccinum* or *Whelk*, with eight wreaths (*s*). The *Whelk*-fish, boiled, or roasted, is hard and firm, and much esteemed at some tables for its agreeable taste. The *Hermet* or *Soldier-Crab** often makes choice of the smaller empty shells for its retreat and habitation, closing the aperture with its forcipated claw. The grey, narrow-mouthed *Balanus*, a multivalve, is often found upon them, many together; the fish in it called a *Triton*, the body of it oblong, the rostrum spiral at

* Sunt Cochleæ satis superque abundantes, quibus tinctura coccinei coloris conficitur. Cujus rubor pulcherrimus nullo unquam solis ardore, nulla valet pluviarum injuria pallescere; sed quo vetustior, eo solet esse vetustior. Hist. Eccles. Edit. Opt. L. 1. C. 1. p. 277.

(*q*) *Buccinum* crassum refuscens, striatum et undatum. *M. List. Hist. Animal. Angl.* p. 156. Tab. 3. Fig. 2.

(*r*) *Buccinum* tenue, leve, striatum et undatum. *Ibid.* p. 157. Tab. 3. Fig. 3.

(*s*) *Buccinum* angustius, tenuitèr, admodum striatum, octo minimum spirarum.—*Ibid.* Fig. 4.

the mouth, with fourteen tentacula, twelve of them cheliform (*t*). Almost all the stones on the south side of the river at *Alnmouth* are covered with this *Balanus*, also many of the *Patelle* on the shores.

38. Of the *small Trochus*, or striated papillaceous top-shell, with five *Volutæ* (*u*), I have gathered a quart or two at a time, with the fishes in them, at ebb-tides among the sea-rocks, near *Embleton*. The investient *Cuticula* of the shell is brown, and very rough. When polished by the collision of the sands and tides; it is of a beautiful pearl-colour, with brown striæ, transverse, and wavy.

39, 40, 41. The *Trochus with six Volutæ*, and an acuminate apex (*v*); the small striated *Nun* or *Venus-Shell* (*w*); and the very small depressed orbicular *Cochlea*, are frequently brought on shore empty; the first most rare and most beautiful, with red spots on a pearl-coloured ground; the second often gathered on the shores near *Embleton*, and at *Holy-Island*; the last, with only one wreath, is found in great numbers on the foliage of submarine plants.

The fresh-water shell-fishes, the *Mytuli fluviatiles*, or *River-Muscles*, are plentiful in most of our rivers.

(*t*) *Balanus cinereus*, velut è senis laminis striatis compositus, ipso vertice altera testâ, bifida, rhomboide ocluso. *Lisf. Angl.* p. 196. t. 5. f. 41. *Balanus* ore contracto cinereus. *Borlase's Cornwall*, p. 278. t. 28. f. 29, 30.

(*u*) *Trochus* crebris striis fuscis, et transverse et undatim dispositis, donatus. *Lisf. Angl.* t. 3. f. 15.

(*v*) *Trochus* albidus, maculis rubentibus, distinctus, sex minimum spirarum. *Id.* p. 166. t. 3. f. 14.

(*w*) *Concha Veneris* minima nullis maculis insignita. *Borlase's Cornwall*, p. 277. t. 28. f. 13.

42. Of the *Mytilus major margariferus*, or great Pearl-Muscle (x), I have gathered very large ones in the *Tweed*, the *Aln*, and *North and South Tyne*; some of those of the *Tweed* and the *Tyne* wrinkled, twisted, or bunched, which are noted for having the best pearls, but it was never my fortune, to find any in them. The *British* pearl was a lure for the *Roman* eagle, and was esteemed by *Julius Cæsar* as a reward for his victories*. Venerable *Bede*, our countryman, takes notice of them, and gives them high encomiums for their beauty: their colours various; a maiden-blush, purple, and some emulating a gem, the glowing *Jacinth*, but most of them white †. Their origin is ascribed to the same cause as the stone in animals, from some of which stones have been taken like seed-pearl, smooth and shining like burnished gold; the external coat preserving its brightness in spirit of vinegar, and as difficult to be dissolved in it as true pearls ‡.

43. The *small Muscle* (y) is frequent with the former in the same rivers; the shells broad and slender.

44. The *long slender Muscle* (z) is found in great abundance in the *Tyne* and the *Aln*, where I have often observed it, with its valves open, near the banks, on a fine sunny day (a)

(x) *List. Angl. Append. t. 1. f. 1.*

* *Tacitus, in vita Agricola.*

† Sunt musculæ, quibus inclusam sæpe margaritam, omnis quidem coloris, optimam inveniunt, id est, et rubicundi, et purpurei, et *Jacintini*, et *Prasini*, sed maxime candidi.

Bed. Hist. Eccles. L. 1. C. 1. Edit. Opt.

‡ Dr. *Johnston's* Letter to *M. Lister*, Ph. Tr. No. 101. Dr. *Widelius's* Observat. 245. p. 439. in the German Philosophic *Ephemerides* for the Year 1672.

(y) *List. Angl. App. t. 1. f. 2.*

(z) *Id. App. t. 1. f. 3.*

(a) *List. Angl. t. 2. f. 31.*

45. The *small round Muscle (b)* is less frequent than the rest. I found some of them in a piece of water at *Brome-Haugh*, near *Chipchace*, with the *depressed orbiculated Cochlea*. It is of a globose figure, of the size of a small hazel-nut, and of a dark olive hue.

The exterior coat of the *Mytuli*, and other shells, may be easily taken off by boiling in any strong *Lixivium*, or lye, and their interior beauty seen in all their pearly splendor, fit for either curious flower, or grotto-works, or for medical uses. The interior pearly substance of the *Mytuli*, reduced to powder, is of equal esteem in medicine with crabs eyes or pearls.

(b) *Id.* App. t. 1. f. 5.

C H A P. XII.
OF QUADRUPEDS.

THE most valuable of all our domestic animals are our sheep. Our mountains and hills are almost covered with them. The largest, with the finest wool, are on the hills of *Floddon*, and by the rivers *Till*, and *Tweed*; a species without horns, of the middle size, between those of *Scotland* and *Yorkshire*. The *Flemish* manufacturers always preferred our *English* wool to the foreign; and our ancestors provided wise and good laws against its exportation, and coming into their hands. King Edward III. in the second year of his reign, procured an act to be passed in his parliament at *Westminster*, that it should be all made into cloath at home, that manufacturers should be invited from abroad, proper places assigned them to live and work in, with great privileges and immunities, and good wages and salaries allowed them till they were properly settled, in a prosperous thriving way*.

Notwithstanding this wise and good law, foreigners found means to have our wool from our northern borders, probably by the agency of the *Flemish* merchants then settled at *Berwick* upon *Tweed*. It is recorded to have been excellent combing-wool. In later times, some good estates are said to have been got by sending it abroad.

Lewis XIV. the glory of *France*, was the first distinguished patron and encourager of the woolen trade in that kingdom.

* Statutes at large, 2 K. Edward III.

The place fixed upon for a cloath-manufacture was *Languedoc*, where it was carried on with vigour, by a royal fund established for that purpose, after the example of our great King *Edward III.* Cloath, in *Lewis's* time, was made from about 9 s. to 10 s. a *French* ell. It has since that period been made at that and other places in *France* of a greater fineness, from 10 s. to 14 s. an ell, and upwards; much like our *Gloucestershire*-cloaths, 7 quarters wide.

Various trials and experiments have been made both in *France* and *Flanders* to have wool as fine and as good as our's, for the fabric of their cloaths and stuffs. All their efforts have proved ineffectual, owing, as is thought, to the herbage, and the night-air in winter. The wool of *English* sheep carried over, and fed upon their best herbage, has been better the first year, but afterwards grew worse and worse, like their own. This was tried on the best ground between *Dunkirk*, and *Graveling*, in *France*, and by a nobleman * at *Belisle*, in *Flanders*, twenty miles from *Mentz*. The only way in *Flanders* of keeping the wool of their own sheep from degenerating, is by housing them in the night, in winter. The shepherd has a moveable house, drawn at pleasure on two wheels after the sheep, being their companion, with his little dog, night and day.

Those people then, and other foreigners, having no fine combing-wool of their own, how come they by it for their numerous manufactures, which cannot be carried on without it? This question is fittest to be resolved by those, in whose power alone it is to provide a remedy, and to secure to *Britain* this its indigenous treasure, preferable to all the mines of *India*, which, if

* Prince *Deloign*.

enjoyed in its full extent, would keep our artificers in the various branches of the woolen trade from leaving with regret their mother-country for bread, and seeking it among strangers, our natural enemies.

Great improvements have been made of late years in the breed of our sheep, by changing the males, sowing grass-seeds, &c. Combing-wool is now to be had in most parts of the country, very good, long, and soft, fit to make all sorts of the finer stuffs and hose; also some short, and very fine, fit for making cloath, commonly used with *Spanish* wool, to strengthen the chain or warp. It is generally bought for the woolen manufactures at *Leeds* and *Halifax*, in *Yorkshire*. It must be acknowledged, indeed, that the best of our wool is inferior to some in *Leicestershire*, and in the south marshes of *Lincolnshire*, which is reputed the longest and best combing-wool in *England*, remarkably fine and soft, of a beautiful gloss, chiefly used in making *Norwich*-crapes, bombazines, &c. The coarse wool of our own growth is usually made into bays for export, of which there has been for sometime a manufacture at *Hexham*, and another lately established at *Haltwessel*, in a flourishing prosperous way.

Considerable quantities both of our coarser and finer wool is kept at home by private families for their own cloathing, of their own manufacture; who value it the more for being of their own growth and fabric. Weavers are in few places more plentiful than here. Some of them are very ingenious, making carpets of an exceeding good pattern and figure, also linens of all kinds, not inferior to the *Scotch* or *Irish*. They are kept in employ by the same families, whose whole cloathing is of their own manufacture, woolen and linen, spinning both themselves.

Some

Some persons of better fashion employ their leisure in spinning woolen-stuffs for the use of their little offspring, on a small machine of brass, invented by a mechanic on the *Scotch* borders; of a simple construction, consisting only of a wheel, a handle to turn it round, and two arms to fix it to the breast.

Our *Oxen*, in the north-east, and east part of the county, are remarkable for being large and well-made, and are usually sold for a great price.

Horses of strength and size for service were rare in the north till the year 1435, when a fine sort were imported from *Hungary* into *Scotland*, by the order of the *Scotch* king, the accomplished *James I.* educated at the *English* court; whereby the *English* borderers were furnished with a martial and handsome race, *Equi volucres*; their horses before being only like our alpine hobbies, *Segnipedes*, not roused by the warrior's or the hunter's horn.

The most beautiful of all our wild gregarious animals are the *Red-Deer*; become very scarce by the eager pursuit of sportsmen, and others, after them; but seldom seen, except in the forest of *Knares-dale*, where I have seen about five or six in company, never more. The moment they behold any of the human species, they are struck with terror, and fly like lightning to some secure and experienced retreat for refuge. One of them commonly stands sentinel, and alarms the rest on the approach of any danger. A fawn sometimes has the misfortune of being taken by surprize in its slumbers, and by kind usage becomes tame and familiar.

By

By the good laws made for the preservation of these fine creatures by our ancestors, they lived in a state of security and ease. The dogs were restrained from disturbing them, by being expeditated. For neglecting this excision, the men of *Northumberland* were fined, 14 K. *Henry II.* They were not excused doing this office till the general disforefing of chaces and parks, 9 K. *Henry III.* 1225. That king, in the 30th year of his reign, 1246, caused severe laws to be enacted for the punishment of robbers of forests, parks, and warrens; making it imprisonment for a year and a day, besides the forfeiture of three years value of the convict's estate, two parts to be paid to the king, and one to the person injured, allowing a small portion for the prisoner's support, not to be released under the number of twelve fureties for his future honesty, all answerable for his conduct. Deer being stolen, an inquisition was made by the king's writ, and if any one was taken in the act without it, the penalties were the same, and if killed in the pursuit, there was no law, appeal, or remedy, for his death †.

The forests of antient note in this county, were

The forest of *Cheviot.*

The forest of *Rothbury.*

The forest of *Reed's-dale.*

The forest of *Eresdon*, near *Long Horsley.*

The forest of *Lowes*; its antient name *Loughs*, from the number of loughs or lakes in it †.

The forest of *Allen-dale.*

The forest of *Knarefdale.*

† *Stat. de Ann.* 30 K. *Hen.* III.

† *Lel. Itin.* Vol. 7. p. 6.

These forests were all antiently stored with red deer. There were near 6000 head of deer, red, roe, and fallow, in the forests and parks of the right honourable the Earl of *Northumberland*, in the northern counties, 4 *Henry VIII.* 1512; according to an account given by his Majesty's commissioners; and at the same time there were red deer in his Lordship's forest of *Rothbury*.

In the park of the right honourable the Earl of *Tankerville*, at *Chillingham*, there is a species of wild white cattle, of a diminutive size; said to have been first brought from the Highlands of *Scotland*, but at what particular time cannot be remembered. A female, with a calf at her foot, is not to be approached without danger. No sooner are people seen in the park, than fired with jealousy for the safety of her little one, she runs with terror and destruction in her looks to meet them, and the rest of the herd fly to her assistance, with the same wrathful countenances, threatening vengeance to the forward intruders. When one of them is killed for the table, it is usually with a gun by surprize, as the *Americans* kill their wild bulls and cows on the continent; there being no other safe way of doing it; the whole troop on the least alarm coming to the defence and rescue of an injured companion, in a bold and irregular charge.

Hares with us have been as plentiful as in most counties, but they are like to be as scarce as the admired birds of our heaths and mountains, the *Gor* and *Grey*; unless our young sportsmen would have more regard to their preservation, and their own pleasure, and not hunt them down annually, like wolves and bears, to be extirpated without mercy. The consideration of their own healths, promoted by the exercise of the chace, should prevail with them, methinks, prudently to save, and not in a

preci-

precipitate fury of desire destroy an useful and innocent race of beings, intended by providence to give us both food and pleasure, and some part of our ornamenta and necessary cloathing, for the pitiful and brutal ambition only of boasting among their companions of their killing their twenty, their thirty, and their forty brace, in a season. Savage and inhuman butchery! Away with it from *Northumberland*. Let posterity enjoy the same blessings, so contributive to health, as our forefathers have done, with moderation.

The *Badger*, which has various names assigned it (*a*), is frequent in the woods, and by the sides of rivers, in our alpine vales. It is a fierce creature in its own defence, but otherwise is very harmless. It provides itself a subterrene dwelling, and lives upon insects, reptiles, and the smaller tribes of wild animals. It lives peaceably and retired in the neighbourhood of tame ones, and for that reason is seldom disturbed, except by the young people for the sake of making trial of its courage with some of their house-dogs of noted ferocity, but some of them often have occasion to repent of the experiment, losing perhaps a favourite or a valuable dog or two in the combat before it is killed, or made to submit; and sometimes one of their sportive company receiving a terrible wound in the leg by a bite of the incensed and injured creature, which usually strikes to the bone with its obtuse, striated teeth, with difficulty to be removed, but by its death. It is of the size, and pretty much of the shape,

(*a*) *Meles Gesn.* quadr. p. 686. *Taxus Charlet.* quadr. p. 18. n. 6. *Taxus f. Meles Raj.* quadr. p. 185. *Meles unguibus anticis longissimis. Linn. Syst. Nat.* 37. *Faun. Suec.* p. 6. n. 15.

BADGER. BROCK. *Charlet.* l. c. PATE. GREY. *quibusdam.*

of some of our shepherd's dogs, small; its cheeks tumid, owing to the strong muscles about its mouth, which give it a power to bite so terribly; its ears short and round; its natural cloathing a coarse bristly hair, of a mixed colour, chiefly a dark grey, except the head, which from the crown down the face has a broad stripe of white, and below that another of black, extended farther than the eyes, nearly to the neck, with a whitish border underneath, which makes the head-attire very comely and agreeable.

The *Marten* (*b*) is another of our mountain and wood-inhabitants, near houses. It lives upon birds, mice and other small animals. The late humane and much esteemed *Edward Charlerton*, of *Reeds-mouth*, Esq; had a young one, taken in his neighbourhood, which by kind treatment grew as tame and familiar as his other house-animals, and continued with him two years, brisk and lively, till he parted with it to a friend. It is much esteemed for its fine fur, a deep brown, with a shade of black, bright and glossy. For shape it is as long, but slenderer, than one of our common house-cats, with shorter legs, a little peaked head, long hazel-eyes, short ears, and whiskers at the mouth; the tail as long as the whole body, very bushy, with long, thick hair; the throat whitish.

The *Putorius*, or *Pole-Cat* (*c*), makes its residence in stony hillocks, thickets, and furz, near villages and farm-houses. It is

(*b*) *Martes*. *Gesn. quadr.* p. 151. *Charlet. quadr.* p. 20. n. 6. *Martes* aliis *Foyna*. *Raj. quadr.* p. 200. *Mustela fulvo-nigricans*, gula pallida. *Linna. Faun. Suec.* p. 3. n. 7. MARTEN. MARTERN. *Charlet.* l. c.

(*c*) *Putorius*. *Gesn. quadr.* p. 767. *Charlet. quadr.* p. 20. n. 5. *Raj. quadr.* p. 199. *Mustela flavescens nigricans*, ore albo, collari flavescens. *Linna. Faun. Suec.* p. 3. n. 8. POLCAT. *Charlet.* l. c.

usually

usually called, The Fou'mart, i. e. The Foul-mart, from its intolerable scent ; owing to a foetid matter, formed in two glands, near the *Anus*. Its favourite food is small birds, and poultry, or their eggs, when it can get at them, and when it cannot, is content to make a meal of mice, and other small animals that fall in its way, but commonly is too successful in its thievish adventures in farm-yards. It is less than the *Marten*, and its fur of little value.

The *Ermine*, or *White Weasel* (*d*), is not unfrequently seen in winter, in our alpine vales, near houses, and farm-yards. It feeds upon mice, and lives in luxury when it can meet with the eggs of poultry. When it appears abroad, it is said to preface snow. On the authority and observation of the judicious Dr. *Richardson*, of *Bierley*, in *Yorkshire*, it is affirmed to change its colour from brown to white about the beginning of *November*, and from white to brown in the beginning of *March*. I have seen it before snow-storms in the middle of winter. Its fur-cloathing was then snow-white, glossy, and beautiful ; for which it is much valued.

Besides these animals, there are two others of an amphibious nature, living at pleasure on land, or in the water, the *Otter*, and *Sea-Calf*, both in great abundance.

The *Otter* (*e*) has its habitation under-ground, like the *Beaver*, which it somewhat resembles, on the shady banks of our larger

(*d*) *Mustela candida* f. *Animal Ermineum recentiorum*. *Raj. quadr.* p. 198. *Hermelinus*. *Charlet. quadr.* p. 70. n. 2. *Mustela alpina candida*. *Wagn. Helv.* p. 180. f. *Linn. Faun. Suec.* p. 3, 4. ERMIN. *Charlet. l. c.*

(*e*) *Lutra*. *Charlet. quadr.* p. 18. n. 8. *Raj. quadr.* p. 187. *Lutra* f. *itis omnibus aequalibus*. *Linn. Syst. Nat.* 36. *Faun. Suec.* p. 4. n. 10. OTTER. *Charlet. l. c.*

rivers, in which, and in our alpine lakes, it makes great destruction of the more valuable fishes, living in luxury, and like a glutton, on salmon, pike, and trout, feeding often only on the shoulders of the salmon, and leaving the rest for less dainty palates. In the deep waters it pursues them with a surprising celerity, and with an almost never-failing success. It is a creature of a grim aspect, having large and fierce eyes, and whiskers between the nose and mouth; the ears short and round, not in the upper part of the forehead, as in other animals, but on the confines of the neck; the legs short and strong; the feet broad, and connected by a membrane; a sharp claw in each toe; the tail long, and very bushy; the general cloathing of the fur a chestnut-brown, with a slight tinct of grey, pretty glossy.

The sea-calf (*f*) in the warm summer-months often leaves the sea to sleep upon the sea-rocks at the *Farn*-islands, and other rocks near *Berwick* upon *Tweed*, where they are often killed for the sake of their skins for horse-furniture, and other uses. To sleep in security, and to prevent danger by surprize, one of them usually stands centinel to give the rest notice, and if attacked, defend themselves with an extraordinary courage, casting stones by the help of their hinder-legs with a surprizing violence, and sometimes at a great distance, upon the assailants. Being in less fear of women than men, they often fall by the hands of men attired like women. There is one very great peculiarity in its structure, being the only viviparous quadruped known to be without exterior ears; its ears being only two small apertures.

(*f*) *Phoca s. vitulus marinus*. *Gesn. aqu.* p. 702. *Raj. quadr.* p. 189. *Vitulus marinus*. *Rond. Pisc.* i. p. 453. *Phoca*. *Charlet. Pisc.* p. 48, 49. n. 6. *Phoca dentibus caninis tectis*. *Linn. Syst. Nat.* 36. *Faun. Suec.* p. 4. n. II. SEAL. SEA-CALF. *Charlet. l. c.* SEA-HOUND. *Lancestr.* LEIGH'S LANCASHIRE, with a good Icon, by *Sturt*.

C H A P. XIII.

OF EMINENT MEN, NATIVES OF
NORTHUMBERLAND.

TO educate and form the souls of men to greatness, to raise in them a passion for glory, for arms, for arts; to inspire them with a resolution to *adorn, as well as possess the earth*; to provoke them to cast away the fordid love of *self*, that grand enemy to virtue, to religion, to our country; I shall lay before them such a portion of *Northumberland* merit, as has come to my knowledge, whether it be found in great captains, great scholars, great patrons of learning, of trades, and of rural and domestic arts.

And, first, I shall mention such as were great *captains*. *Northumberland*-heroism has been much celebrated in our *British* annals, wherein the inhabitants stand early distinguished under the stile of *Armis ferocissimi* (a), whose leaders were as eminent for their bravery, as their quality; among whom, not the least immortalized in fame, is

Sir *John Copeland*, of *Copeland*, by *Wooler*, and captain of *Roxbrough-Castle*, in *Scotland*, stiled by way of eminence in our histo-

(a) *Camden*.

ries, *The valiant Esquire of Northumberland*. In the reign of K. *Edward III.* 1340, he gave the *Scots* such a drubbing, for their depredations on the borders, as made them both venerate and dread his courage. He was at the battle of *Nevil's Cross*, near *Durham*, Oct. 17th, 1346, in the same reign, where he encountered their valiant King *David*, and carried him off in triumph from the field to his castle of *Roxbrough*, attended by only eight of his servants. Many jewels were found on his royal prisoner, and among the rest, the holy cross of *Holyrood-House*, which he wore from a vain hope, that it would make him invincible (a). His ransom cost *Scotland* 100,000 marks sterling by a treaty, dated 3d *October*, 1357, at *Berwick upon Tweed* (b); the surprize of that town by his nephew, *Robert Steuart*, provoking the *English* to raise it from 90,000 marks to that sum. Sir *John* was made a Knight Banneret for this exploit by his sovereign, King *Edward*; and had 500 *l. per annum* settled upon him and his heirs for ever; the patent dated at *Eltham*, 20th *January*, 1347 (c).

Famous also are the names of Sir *Ralph Grey*, of *Heton*; of Sir *William Lisle*, of *Felton*; of *Thomas Carr*, of *Etall*; and of Sir *John Forster*, of *Bambrough*.

Sir *Ralph Grey* was Knight of the most noble Order of the Garter, captain of *Wark-Castle* upon *Tweed*, and also of the castle of *Roxbrough* in *Scotland*, which, in the 4th of K. *Henry VI.* 1436, he defended against an army of 30,000 resolute *Scotchmen*, headed by their sove-

(a) *Hol. Chron.* vol. 1. p. 240-1. And, vol. 11. p. 375. *Barns's Hist. of K. Edward III.* l. 1. c. 17.

(b) *Rym. Fæd.* vol. v. p. 46. 56. 59. 61. *Acta Regia*, vol. 1. 8vo. p. 309. 315. 368.

(c) *Hol. Chron.* vol. 11. p. 376. *Rym. Fæd.* vol. v. p. 542. *Acta Regia*, vol. 1. 8vo. p. 309. 1313.

reign K. *James I.* and constrained them to raise the siege (*d*). He afterwards suffered for his loyalty and faithfulness to his pious master after the fatal battle of *Hexham-field*, being then captain of *Bambrough-Castle* (*e*).

Sir *William Lisle* was captain of *Wark-Castle* in the 5th of K. *Henry VIII.* 1523, and with a handful of men, forced the *Scotch* and *French*, to the number of 2 or 3000, under the command of a *French* General, the Duke of *Albany*, who assaulted it with very heavy ordnance, and had entered it, to retire with shame and precipitation, after the loss of 300 men killed, besides such as died of their wounds, and were drowned in the *Tweed* (*f*).

Thomas Carr, Esq; was captain of the same castle, and was one of those valiant gentlemen who, in the 2d of K. *Edward VI.* 1548, with 200 men, passed in the night to the relief and succour of their countrymen in the town of *Haddington*, which obliged the enemy to retreat from before it (*g*).

Sir *John Forster* was made a Knight Banneret in the 1st of K. *Edward VI.* 1547, for his valour; and made a fine figure in an engagement with the *Scots* in 1557, on the borders, near *Chewiot*, coming off with victory, after receiving some glorious wounds; and having a horse shot under him. By his courage and address he suppressed the rebellion in *Northumberland*, in the reign of

(*d*) *Hol. Chron.* vol. 11. p. 1615.

(*e*) ————— p. 666, 667.

(*f*) ————— p. 881, 882.

(*g*) ————— p. 994.

Queen *Elizabeth*, 1569, being then the Lord Warden of the Middle Marches (*b*).

To these *military*, let me add those brave *naval* commanders, Sir *Ralph* and *George Delaval*, and Sir *Chaloner Ogle*.

Sir *Ralph*, as a branch of the house *Delaval*, claims a place here. He was named after his father, to whose house General *Lesley* retired by leave from *Cromwell*, after the fatal battle of *Worcester*. He entered very young into the navy, and at the revolution was captain of the *York*, a third rate man of war. King *William*, from the great opinion he had of his merit, conferred upon him the honour of knighthood, and made him rear-admiral of the blue, and afterwards vice-admiral of the red, and, as such, had a signal share in the glorious victory over the *French* off *Cape Barfleur*, May 19th, 1692, so admirably described by himself in the following letter to the Earl of *Nottingham*, from on board the *Royal Sovereign*, near *Cherbourg*, May 22d, which is the best portrait of him, and shews him to have been both a noble commander, a fine gentleman, and a good Christian.

“ I believe it my duty to acquaint you, that on the one and
 “ twentieth instant, admiral *Ruffel* having made the signal for the
 “ fleet to cut their cables, I observed the *French* to be forced from
 “ the race of *Alderney* (where they anchored) to the eastward;
 “ and finding, that some of them endeavoured for the bay of *Cher-*
 “ *bourg*, I stood in for that place, where I found three three-
 “ decked ships of the enemies, but so close to the shore, and within
 “ some rocks, that it was not safe for me to attempt them, till I

(*b*) *Hol. Chron.* vol. 1. p. 361, 397.

“ had informed myself of the road ; they being hawled into the
 “ shoal-water, I immediately took my boats, and founded within
 “ gun-shot of them ; which they endeavoured to prevent by fir-
 “ ing at us. And, that no time might be lost, I went immedi-
 “ ately on board *The St. Albans*, where, for the encouragement
 “ of the seamen, I hoisted my flag ; and, having ordered *The Ruby*,
 “ with two fire-ships to attend me, I stood in with them, leaving
 “ the great ship without, as drawing too much water. But
 “ coming very near, they galled us so extremely, and finding the
 “ fire-ships could not get in, I judged it best to retreat without
 “ shot, and there anchored : and immediately called all the cap-
 “ tains, where it was resolved to attempt them in the morning,
 “ with all the third and fourth rates, and fire-ships. But, after
 “ drawing them into four fathom and a half of water, I found
 “ we could not do our business, the water being shoal ; upon
 “ which, I ordered three fire-ships to prepare themselves, to at-
 “ tempt the burning them, going myself with all the barges
 “ and tenders to take them up, if, by the enemies shot, they
 “ should miscarry. Indeed, I may say, and I hope without
 “ vanity, the service was warm ; yet, God be praised, so effec-
 “ tually performed, that, notwithstanding all their shot, both
 “ from their ships and forts, two of our fire-ships had good suc-
 “ cess, by burning them ; the other, by an unfortunate shot, set
 “ on fire, being just going on board the enemy ; indeed, so brave
 “ was the attempt, that I think they can never be sufficiently
 “ rewarded ; and I doubt not, but their Majesties will do them
 “ right.

“ The third *French* ship being run a-shore, and observing the
 “ people on board to go on shore by boats-full, I ordered *the St.*
 “ *Albans* and *Reserve*, and others, to fire upon her, judging it
 “ might cause them to quit her ; and after having battered her

“ for some time, I observed she made no resistance; I took all
 “ the boats armed, and went aboard her; I found abundance of
 “ men on board, and several wounded; but no officers; and
 “ having caused all the people, as well those who were wound-
 “ ed, as others, to be taken out, I set her on fire; and, had I
 “ not had timely notice by my scouts, that thirty ships were
 “ standing with us, had sent all the *French* on shore, who are
 “ now very troublesome to me. The ships we saw, proved to be
 “ Sir *John Ashby*, and the *Dutch* coming from the westward: we
 “ are proceeding together to the eastward to *La Hogue*, where I
 “ am informed, three or four of the enemy’s ships are; and;
 “ if so, I hope God will give us good success: I expect to find
 “ the admiral to-morrow, where, I hope to hear he has destroyed
 “ some of the enemy’s ships, having left him in chase of them
 “ last night, standing to the eastward, and pretty near them, as
 “ I judged. My Lord, I hope you will excuse me, if I presume
 “ to pray you will use your interest with the queen, that a re-
 “ ward may be given to the three captains of the fire-ships, and
 “ several of the others, for greater zeal, and greater bravery, I
 “ never saw: I pray your excuse for being thus tedious and par-
 “ ticular. Pray God preserve their Majesties, and that their arms
 “ may be ever crowned with success by sea and land, shall be the
 “ prayers and endeavours of, &c.

P. S. “ Captain *Heath* burnt *Tourville’s* ship, *The Royal Sun*, which
 “ was the most difficult; Captain *Greenway* burnt the other, called
 “ *The Conquerant*; *The Admirable* was burnt by our boats; Captain
 “ *Fowles* attempted *The Royal Sun*, but was set on fire by the
 “ enemy’s shot, he deserves as well as the others”. (i)

(i) *Cent. of the Royal Navy*, &c. vol. 4. p. 287.

The most deserving persons are generally the objects of envy: By its malignancy, the officers concerned in this gallant action were neither encouraged nor promoted. Sir *Ralph* himself, against the inclination of his sovereign, was afterwards stripped of all his employments. But those shafts which struck him out of these, could not wither his laurels. His laurels, those honours gained in the service of his country, continued to adorn his brows, in their full bloom and vigour, shone superior to the acrimony of the times, attending him in his private as well as public life, and consecrating him to immortal fame. Retired thus, and thus revered, he lived the remainder of his time, about nine years, upon his own estate, which was very considerable. He died in *January* 1707, and was interred in *Westminster-Abbey*, with a solemnity suitable to his merit.

George Delaval, of *Delaval*, Esq; had a genius not only for arms, but the cabinet. He was appointed by her Majesty *Queen Anne*, envoy extraordinary to the King of *Portugal*, in the room of the Earl of *Galway*, whilst he was only a captain of a man of war, on the 11th of *Oct.* 1710, and on the 14th of *December* following, he was sent ambassador plenipotentiary to the Emperor of *Morocco*, with instructions to treat for horses and provisions, for the confederate army in *Spain*. He was raised for his services to the high rank of admiral. He was killed by a fall from an unruly horse, as he was riding out to divert himself after dinner, near his house, *June* 22d 1723.

Sir *Chaloner Ogle*, Knt. was born at *Kirkley* by the river *Pont*, and was a younger brother of the late Dr. *Ogle*, a physician at *Newcastle upon Tyne*. Being destined to try his fortune in his majesty's navy, he was very early advanced by his personal merit and

and courage to the command of the *Swallow Man of War*, wherein he took *Roberts*, the famous pirate, on the coast of *Africa*, Feb. 5th 1722; whose story, and Captain *Ogle's* taking him, is thus described by the ingenious Mr. *Campbell* in his naval history of King *George I.* whose relation I prefer to the brave captain's in his letter to the Lords of the Admiralty, his pen not having the politure of his sword.

“ There was among the pirates, on the coast of *Africa*, one
 “ *Roberts*, a man whose parts deserved better employment; he
 “ was an able seaman, and a good commander, and had with
 “ him two very stout ships, one commanded by himself, of 40
 “ guns, and one hundred and fifty-two men; the other of 30
 “ guns, and one hundred and thirty-two men; and to com-
 “ plete his squadron, he soon added a third, of 24 guns, and 90
 “ men.

“ Captain *Ogle* was in *The Swallow*, and was cruising off Cape
 “ *Lopez*, when he had intelligence of *Roberts's* being not far from
 “ him, of whom he went immediately in search, and soon after
 “ discovered them in a very commodious bay, where the biggest
 “ and the least ship were upon the heel, scrubbing. Captain
 “ *Ogle* taking in his lower tire of guns, and lying at a distance,
 “ *Roberts* took him for a merchant-man, and immediately ordered
 “ his consort, *Skyrm*, to slip his cable, and run out after him.
 “ Captain *Ogle* crowded all the sail he could to decoy the pirate,
 “ to such a distance, that his consorts might not hear the guns,
 “ and then suddenly tacked, run out his lower tire, and gave the
 “ pirate a broadside, by which their Captain, *Skyrm*, was killed;
 “ which so discouraged his crew, that after a brisk engagement,
 “ which lasted about an hour and a half, they surrendered.

“ Captain

“ Captain *Ogle* returned then to the bay, hoisting the king’s colours, under the pirate’s black flag with a death’s head in it. This prudent stratagem, had the desired effect; for the pirates, seeing the black flag uppermost, concluded the king’s ship had been taken, and came out full of joy to congratulate their consort on the victory. This joy of theirs was, however, of no long continuance, for Captain *Ogle* gave them a very warm reception; and though *Roberts* fought with the utmost bravery, for near two hours, yet being then killed, the courage of his men immediately funk, and both ships yielded”. (k)

For this service, Captain *Ogle* was knighted in *May* following, 1723, and afterwards rose to the highest stations in the navy; being appointed rear-admiral of the blue in *July*, 1739; rear-admiral of the red in *March*, 1742; vice-admiral of the blue in *August*, 1743; admiral of the blue in *June*, 1744; admiral of the white in *July*, 1747; and admiral and commander in chief of his Majesty’s fleet, on the death of Sir *John Norris*. As he was a brave commander himself, and owed his own advancement chiefly to his merit, so he was usually forward to distinguish it in others, and promote it. To him we are indebted for discerning it in a nephew of the late Colonel *Bladen*, commissioner of trade, and late owner of the estate of *Barmore* in this county, and raising him to the command of the *Flamborough Man of War* at *Jamaica*, his commission bearing date *March* 20th 1733. This was the present great admiral, Sir *Edward Hawke*, Knight of the *Bath*, whose courage and conduct has contributed so much to the glory of the *British* arms by sea, that his Majesty has settled 2000*l.* per annum. on him for his own life, and the lives of his two sons.

(k) *Campb.* vol. 4. p. 471, 472, 473.

Sir *Chaloner* died in *April*, 1750; and in *July*, 1751, Lady *Ogle*, his widow, married Lord *Kingston*, an *Irish* peer.

Such are the great *Captains* which do honour to *Northumberland*! May we never want such to command our fleets and armies, and to chastise the enemies of *Britain*!

Secondly, of great scholars. In this number must be included those two eminent physicians, *William Turner*, and *Thomas Gibson*, cotemporaries, and both born at *Morpeth*.

William Turner, A. M. and M. D. received his first academical education at *Christ's College*, in *Cambridge*. His tutor was the learned *George Folbery*, S. T. P. preceptor to the Duke of *Richmond*, brother to King *Edward VI*. He was elected fellow of *Pembroke-hall*, of which his tutor was then master, who died in 1540. His countryman, Bishop *Ridley*, was then fellow of the same college; between whom there was a great intimacy and friendship; both strenuous advocates for the dawning reformation. On the happy accession of King *Edward VI*. to the throne, Dr. *Turner* retired from his college to the court, accepting of the offer of being domestic physician to the Protector, the Duke of *Somerset*; with whom he was in such esteem, that he was promoted to the deanery of *Wells*, being a divine as well as a physician. In the beginning of the next reign, he exposed himself to the resentment of Bishop *Gardiner*, by writing a book, intitled, *The hunting of the Romish fox*. The bishop cast him into prison. By some means or other he got out, and escaped the vengeance of that bloody prelate, by crossing the seas. He took refuge in *Germany*, where he lived genteely by practising physic. On the death of Queen *Mary*, he returned with joy to his mother-country, and was resettled in his deanery.

He

He was author of two books of Natural History; one of birds, and the other of botany. The first is a comment upon *Pliny* and *Aristotle*, upon birds, with a particular and curious account of the birds observed by him in *Northumberland*. It is thus characterized by Dr. Merret, in his *Pinax*—*Mole parvum, sed judicio majorem*. It is a very scarce book. It is in *Latin*, in a neat stile; published 33 King *Henry VIII.* 1544, and inscribed to *Edward Prince of Wales*.

His book of botany was printed, 5 King *Edward VI.* 1551, under the title of—An *English* herbal, with cuts, folio. It is said to be the first of that title published in *England*. Such plants as he observed in his exile, in *Germany*, are included in it, as well as those of his own country; and those that are scarce or curious in his native county of *Northumberland*, he does not forget to mention, and their place of growth. It is in the stile of that age, and in the old black letter; some of the cuts expressive enough of the plants, though done upon wood. It is not so scarce as his book of birds.

In *Gesner*, there is also an account of the river and sea-fishes observed by him in *Northumberland*, presented to that learned author, his correspondent. It is much valued, being generally cited by the most learned *Ichthiologists* of later times.

He died, 7th *July*, 1598; and was interred under a monument, in *St. Olave's* church, in *Hart-street*, *London* (1).

Thomas Gibson is not behind his countryman, *Dr. Turner*, in medical and literary fame. *Bale* bestows on him great encomiums,

(1) *Carter's Hist. of Cambridge.*

declaring, that he performed *Ægritudinûm fanationes incredibiles*, incredible cures of diseases; and that it would be a great felicity to mankind to have so valuable a life prolonged, which he sincerely wished (*m*). His private studies were directed much the same way with his brother *Turner's*, forwarding with zeal both the reformation and the medical art, writing many theological tracts, and a botanical piece, on the nature of herbs. The precise time of his death is not known. He was alive in the last year of *Queen Mary*.

Next to these two celebrated physicians and reformers, I must name those two learned prelates, *Nicholas Ridley*, D. D. Bishop of *London*, and *George Carleton*, D. D. Bishop of *Chichester*; also the eloquent, loyal, and pious *Richard Holdsworth*, D. D. master of *Emanuel College*, in *Cambridge*, &c. *Valentine Cary*, D. D. bishop of *Exeter*; and that great orientalist, *Robert Calvering*, L. L. D. bishop of *Peterborough*.

Nicholas Ridley, D. D. bishop of *London*, in whom the pious King *Edward VI.* so much delighted, was born in *Haltwiesel*-parish, and was brother to *John Ridley*, of *Wall-Town*, and to *Hugh Ridley*, of *Untbank*, Esqrs. and cousin to *Nicholas Ridley*, of *Willimotefwick-castle*, Esq; mentioned by *Camden* (*n*). The free grammar-school of *Newcastle* upon *Tyne* had the honour of giving him his first education, and *Pembroke-hall* in *Cambridge* of compleating it; the latter famous for religion and learning, being stiled in the Royal Grants—"The noble, and renowned, and most precious college, "wonderfully shining among all places in the univerfity;"—and

(*m*) *Bal. Scriptor. Britan. Centur. ix. 1559.*

(*n*) *Camden's Britannia.*

by Queen *Elizabeth*, on passing by the college-door, honoured with that venerable and endearing expression, worthy of a princess,—“ O antient and religious house !” Usually called, *Collegium Episcopale*, from the number of learned and eminent prelates educated in it. In this college he was first admitted scholar; and, after taking his degree as batchelor of arts, was elected fellow in 1524. His literary fame and merit was so great, as to procure him the love and careffes of both universities. *Cambridge* strove to keep him, *Oxford* to transplant him, by making him an offer of a vacant fellowship in *University-college*, which he declined. In 1525, he took his master's degree, and made a short tour to *France*, visiting the learned in the university of *Paris*. He was chosen proctor at *Cambridge* in 1534; and, taking his degree of batchelor of divinity, he was made their chaplain, and one of their public readers. Honours and preferments came now thick upon him. Archbishop *Cranmer* presented him to the vicarage of *Herne* in *East-Kent*, gave him a prebend in his church of *Canterbury*, and got him made chaplain to K. *Henry VIII*. *Pembroke-hall* chose him for their master, 1540, when he took his degree of Dr. of Divinity; and, about 1543, they presented him to the living of *Sobam* in the diocese of *Norwich*. His patron, the archbishop, procured him a prebend in the church of *Westminster*. King *Edward VI*. in the first year of his reign, 1547, preferred him to the See of *Rocheſter*. In 1550, he translated him to the See of *London*. A little before his death, he nominated him to the See of *Durham*, to which the ensuing troubles prevented his being consecrated. His royal patron died *July 6th*, 1553; and he himself ascended from an episcopal, to a celestial throne, by a glorious martyrdom, *Oct. 6th*, 1555, in the 3d of Queen *Mary*, after the sum of ten thousand pounds had been offered for his life, by his kinsman, the Lord *Dacres*. He was of a low stature,

but of a great soul; endowed with all the graces and accomplishments that adorn the priesthood, such as recommended him to be one of the compilers of our most excellent liturgy. God had blest him with a graceful elocution, an excellent judgment, a happy memory, and a wonderful courage, which he employed zealously in his service. In his private college, the sacred writings were so much his study, that he had a great part of them by heart. In his pulpit, with a becoming zeal, and just indignation, he rebuked vice in all its forms, and opposed it with the magnanimity of a truly christian bishop, neither overawed by the sound of titles, nor the pomp of great names, preferring the conscientious discharge of his duty before either the smiles or frowns of men. Ill customs he would break through with a resolution rarely to be met with, disdaining to accept his bishoprick of *Rockester*, but on terms that do him honour. His clergy he regarded, in reality, as his own family, and cherished the lowest with a tenderness becoming his order. When he found humble and modest merit under the pressures of the world, he himself would look upon it with the affection of a *gardener* on a neglected *vine*, and offer his hand for its weak and feeble tendrils to climb by, and flourish under the influence of his kinder sun. The most pressing solicitations from men in power, could not prevail with him to withhold his patronage from suffering virtue. He had a noble feeling for distress. He would join in no measures with the court to the prejudice of learning and learned men. Our countrymen of *Clare-Hall*, of whom it was then full, had reason to love him, for abhorring and defeating a scheme, calculated by sacrilegious men, for their ruin; who, not content with the deprædations they had already made in the church, with a shameless brow attempted to lay both religion and learning under the greatest discouragements, to aggrandize themselves.

His

His care for the poor was no less, than his care for lettered and oppressed virtue. The *London*-poor were more immediately under his eye, for whom he procured an ample support. The method he took to do it in, I shall give in the words of the ingenious author of his life, the Reverend Mr. *Downes*, though I might do it in his own, from his farewell-letter, preserved among many others of his, in a curious and valuable collection of letters of the martyrs, printed by *Day*, in 4to. 1564 (o).

“In the beginning of the year 1553, Bishop *Ridley* preached
 “before the king, who began to decay apace, at *Westminster*. The
 “subject he chose to discourse upon, was charity; and he, in
 “very moving and affecting terms, pressed the king to take care,
 “that a constant and settled maintenance should be provided for
 “the poor. This discourse made so great an impression on the
 “young king, that he sent for the bishop; and after he had
 “commanded him to sit down, and be covered, returned him
 “his hearty thanks for his good exhortation; and desired him to
 “communicate to him his opinion, what would be the best expe-
 “dient, effectually to bring to pass so great and good a design.
 “the bishop was very much pleased to find the king’s inclina-
 “tions so forward; and with tears of joy, told him, that the
 “*London*-poor, by reason of their numbers, stood in need of his
 “more immediate concern; and that he would therefore advise
 “him, to order letters to be wrote to the Lord-Mayor and Alder-
 “men, to take this affair into consideration, and project a scheme
 “for the relief of the poor, who swarmed in great numbers

(o) In this letter he takes his leave of all his near relations, addresses them all by name, also *Cambridge*, the place of his education, the college he was of, and the several places to which he was preferred. It contains a most moving and affecting recognition of the most material passages of his own life.

“about

“ about the city. The king approved of this advice, and ordered
“ letters to this effect, to be forthwith dispatched, before he
“ would permit the bishop to go out of his presence.

“ Bishop *Ridley*, furnished with these letters and instructions,
“ delivered them to Sir *Richard Dobbs*, then lord-mayor of *London*;
“ who immediately called together as many of the aldermen
“ and common-council, as were thought fit to be advised with
“ in the present business; and not only with great earnestness
“ pleaded the cause of the poor, and pressed them to a forward
“ zeal in this affair; but introduced Bishop *Ridley* into the council-
“ chamber of the city, to be their advocate, and to guide and
“ assist himself and his brethren in their councils. After divers
“ consultations, they resolved, that a general contribution should
“ be made by all the wealthy citizens, to the advancement of a
“ work, so highly conducive to the public good. To this end
“ they were summoned to their respective parish-churches, and
“ there by the lord-mayor, the several aldermen, and other grave
“ citizens, exhorted to contribute generously and bountifully
“ to this noble design; and they were urged to it the more ear-
“ nestly, by setting before them the many great advantages that
“ the city would reap, if the poor were removed out of their
“ streets, lanes, and alleys, and bestowed and provided for in
“ proper hospitals. It was therefore moved, that every man
“ should signify, what he would give towards the building and
“ finishing such hospitals; and how much they would contri-
“ bute weekly toward their maintenance, until they were sup-
“ plied by more liberal endowments. The motion was readily
“ accepted; every man subscribed according to his ability, and
“ books were kept in every ward of the city, in which the sums,
“ each person subscribed, were set down; which books, when
“ the

“the contributions were finished, being delivered to the mayor,
“were by him put into the hands of the king’s commissioners.

“In the scheme drawn up for the relief of the poor, they
“were ranged under three divisions: in the first were placed the
“poor distressed orphans; in the second, the sick, the lame, and
“infected; in the third, the lazy and licentious vagabonds. For
“the orphans, *Christ’s Hospital* was provided, where they were
“furnished with necessaries, brought up in a virtuous and reli-
“gious manner, and fitted for some honest business. The hospi-
“tals of *St. Thomas* in *Southwark*, and *St. Bartholomew* in *West-*
“*Smithfield*, were appointed for the reception of the wounded,
“sick, impotent, and maimed: and the king gave his palace of
“*Bridewell*, erected by *Henry VIII.* for the reception of vagabonds,
“sturdy beggars, and strumpets; where they were to receive due
“correction, and be kept to hard labour. For the better endow-
“ment of this, and the other hospitals, and to furnish them
“with a competent maintenance, the king dissolved the hospital
“in the *Savoy*, for the support of pilgrims and travellers; but
“which was now employed to most scandalous uses, and made
“a shelter for lewd and lazy persons, and the harbour of thieves
“and vagabonds: and he gave their lands, amounting to six
“hundred pounds *per annum*, and all their furniture, to the city
“of *London*, for the maintenance of these new foundations.” (p)

Such was the piety and charity of this great prelate. He was
justly the admiration of the age he lived in, and will ever reflect
a lustre upon this his native land, and be considered as one, who
had a godlike dignity and elevation of soul, superior to all the

(p) *Lives of the Compilers of the Liturgy of the Church of England*, by the Reverend
Mr. *Downes*.

transitory grandeur of this world. There is an excellent print of him in *Mezzotinto* by the ingenious Mr. *Houffon*, in Mr. *Rolt's* history of the principal reformers.

George Carleton, D.D. Bishop of *Chichester*, was born at *Norham-castle* by *Tweed-side*, of which his father was captain; and sent his son to *Houghton le Spring*, near *Durham*, to be educated with other young gentlemen under the eye and care of the famous *Bernard Gilpin*; who, like the sun, cherished with his light all ranks and degrees of men, as well within his parish, as out of it; and, like that great luminary also, did not shine only within the small limits of a country-parish, but let it spread, many times at the peril of his own life, through lands covered with darkness and error, letting the world see the beauty and loveliness of a good life by the heavenly splendor of his own. Inspired by the divinity, as it were, of his example, Bishop *Carleton*, had all the graces that are charming in a divine, was the admiration, not only of his own college of *Merton*, in *Oxford*, but also of that university, and of the synod of *Dort*, to which he was sent, with three other eminent clergymen, by King *James I.* He wrote the life of his dear friend, Mr. *Gilpin*, in elegant *Latin* (*q*), and some other pieces (*r*). He died, 1 *K. Charles I.*

Richard Holdsworth, S. T. P. was born at *Newcastle upon Tyne*. He was named after his father, a clergyman, who, after a good school-education, sent him to *St. John's college*, in *Cambridge*. He

(*q*) *Vita Bernardi Gilpini, a Geo. Carletono conscripta, 4to. Lond. 1628.*

Inter Collectanea Gul. Batefi, 4to. Lond. 1681.

(*r*) One, intitled, A thankful Remembrance of God's Mercy: another, intitled, A Confutation of Judicial Astrology.

was incorporated at *Oxford*, 15th July, 1617. He was eminent for his learning in both universities. He was made chaplain to Sir *Henry Hobart*, Lord Chief Justice of the Common Pleas. His Lordship presented him to a living in the west-riding of *Yorkshire*, which he exchanged for the rectory of *St. Peter le Poor*, in *London*, in 1623, or 1624 (*s*). Here he exerted every faculty of his soul for the good of his people, even at the peril of his own life, not deserting them in the dangerous sickness in 1625, attending them with his prayers, his counsel, his charity, and like a faithful steward and physician, administering to all their necessities, withholding no consolation from them in his power. He filled and adorned some of the highest stations; was chosen, without any solicitation, divinity-professor at *Gresham-college* in 1630 (*t*); made archdeacon of *Huntingdon*, 12th *January*, 1633, on the death of *Dr. Owen Gwyn* (*u*); and was at *St. Peter le Poor*, when the general return was made for churchwardens, in 1636 (*v*). He was elected master of *Emanuel college*, in *Cambridge*, in 1637; also *Margaret*-professor of that university by an universal suffrage; their vice-chancellor for three years together, 1640, 1641, 1642 (*w*). About the latter end of the year 1643, he had a grant of the deanery of *Worcester*, after declining the acceptance of the bishoprick of *Bristol*. In 1644, he was turned out of all his preferments by the parliament (*x*), and committed prisoner to *Ely*-

(*s*) *Stripe's Edit. of Stow's Survey*, fol. vol. 2. Append. p. 24.

(*t*) *Ibid.*

(*u*) *Mercur. Rust.* p. 247.

(*v*) *Ibid.* p. 257.

(*w*) *Le Neve's Fasti*, p. 438.

(*x*) *Ibid.*

house (*y*), for his loyalty and steady principles. His irreproachable life appearing in evidence for him, he regained his liberty. The discharge of his duty being nearer his heart, than the fears of death, and being as little afraid of the frowns of men, as of the approach and peril of a stern disease, or the dishonours of poverty, he vindicated the doctrines of the church of *England*; with an eloquence and force that exposed him again to the resentment of his adversaries, who ordered him into custody, and shut him up for three or four years in the tower (*z*); with this remarkable, but honourable declaration in his favour,—“ That “ if he was permitted to preach, he would undo all that they “ had done.” (*a*) To the cruelty of imprisonment and sequestration, they added that of plunder. He was very dear to the king, who desired to have him with him under his confinement both at *Holmby-house*, and the *Isle of Wight*, but was denied that favour by his enemies, being only permitted to see him at *Hampton-court*. His majesty’s death afflicted him more than all the other severities of his fortune, whom he survived but a few months, dying in *August*, in the same year, at the age of fifty-eight. He was interred in his own church of *St. Peter le Poor*; on the south-east side, where a mural monument was erected to his memory, with the following inscription, drawn by his friend, Bishop *Brownrigg*, of *Exeter* (*b*).

(*y*) *Le Neve’s Fasti*, p. 238.

(*z*) *Stripe’s Append. to Stow’s Survey*.

(*a*) *Walker’s Suffering of the Clergy*, Part 2. p. 79.

(*b*) Bp. *Kennet’s Histor. Regist.* p. 572-3.

Fasti Oxoniens. vol. 1. col. 828.

P. M. S.

RICHARDUS HOLDSWORTH S. Theol.

Doctor, Verbi divini Præco omnium

Attestatione eximius. S. Scripturæ in Collegio

Grefhamiensi per multos Annos Interpres

celeberrimus. Collegii Emanuelis in

Academia Cantabrigiensi Præfectus. Ejusdem

Academiae per tres Annos continuos Pro-

Cancellarius exoptissimus, ad Cathedram

Theologicam per Dom. Margaritam Richmondiae

Comitissam institutam, et per Mortem summi

Theologi D. Wardi nuper destitutam, unanimi

Theologorum suffragio evocatus. Archidiaconus

Hungtoniensis, et Ecclesiae Wigorniensis

Decanus meritissimus. Sanctæ Doctrinæ in

Ecclesia Anglicana stabilitæ cordatus

Assertor, Divitiarum pius contemptor,

Elemosinarum quotidianus Largitor: Toto

Vitæ instituto sanctus et severus. Ex morbo

tandem, quem assiduis studendi et concionandi

Laboribus contraxit, æger decubuit, et in

Hac Ecclesia quam per xxvii Annos religio-

sissime administravit Mortalitatæ Exuvias

in Spe beatæ Resurrectionis piè deposuit

Mensis sextilis viceffimo secundo

Anno { Domini MDCXLIX.
Ætatis suæ LVIII.

Mementote Præpositorum vestrorum, qui

vobis locuti sunt Verbum Dei, quorum

incitamenti Fidem, contemplantes quis

fuerit Exitus Conversationes eorum. Heb. xiii. 7.

Valentine Cary, D. D. Bishop of *Exeter*, was born at *Berwick upon Tweed*, and descended from the *Carys*, Barons of *Hunsdon*. He was twice fellow of *St. John's* college, and intermediately of *Christ's* college, in *Cambridge*, of which he was warden. He was vice-chancellor of that university in 1612; rector of *Epping*, in *Essex*, and afterwards of *Toft*, in *Cambridgeshire*; Dean of *St. Pauls*; and for his genteel and polite breeding, and excellent learning, was, at length, preferred to the See of *Exeter*. To the poor of that city, when visited with the great sickness, he extended his charity with a liberal hand. He died in 1626; and was interred under a plain stone in the cathedral of *St. Pauls*. A sepulchral memorial was also erected for him in his cathedral of *Exeter* (c).

Robert Calvering, L. L. D. Bishop of *Peterborough*, noted for his skill in the oriental languages, was born in *Newcastle upon Tyne*, and descended from the *Claverings* of *Till-mouth*, a branch of the house of *Calleley* (d). He was made the King's *Hebrew* professor at *Oxford*, 12th May, 1715; to which a canonry of *Christ's* church in that university is annexed. He was preferred to the bishoprick of *Landaff*, and the deanery of *Hereford*, 31st August, 1724; and translated to the bishoprick of *Peterborough* on the death of *Dr. White Kennet*, in January 1728-9; holding his professorship, and his living of *Marsh*, in *Buckinghamshire*, in *commendam*. He died in July, 1747.

Thirdly, of great Patrons of Learning. The most eminent patron of learning is *Robert Woodlark*, D. D. He was born in *Northum-*

(c) *Stow's Survey of London*, p. 776.

Fuller's Worthies, p. 305.

Parker's Gift of Cambridge, p. 125.

(d) *Collins's English Baron*. vol. iii. p. 298.

berland, but at what place is not precisely known. By licence from K. Edward IV. 1459, he founded St. Catherine's-hall, in Cambridge, for a master, and three fellows. He was then provost of King's college, to which he was appointed, 17th May, 1452. He was chancellor of that university in 1459, and 1462. The living of *Kingston* being vacant; he was presented to it by the college-trustees, *Thomas Rotherham* and *Walter Field*. He resigned it, 11th May, 1458; and, 3d April, 1460, he also resigned the free-chapel of *Wittleford-bridge*. He was preferred to the rectory of *Coton*, 1471; and of *Fulburne St. Vigarius*, 1473.

Fourthly, of great Patrons of Trades. The first deserving our notice, is *Roger Thornton*, the Elder, of *Newcastle upon Tyne*; and next, a gentleman now living, *Sir John Hufsey Delaval*, Baronet.

Roger Thornton, Esq; was born at *Witton-castle*, by the river *Font*, as attested by a celebrated antiquary (e). He was bred a merchant at *Newcastle*, and is the most eminent patron on record, for a private man, of that corporation; to whom they stand obliged for the *Town-Court*, since rebuilt, and many other instances of public spirit and generosity. His estate, great for those times, 800 marks per annum (f), was frugally and wisely managed, to encourage public and private industry, and to felicitate society by acts of beneficence and charity. He died, 3d January, 1429; and was interred in *All-Saints* church, in *Newcastle*, by the altar, on the south side, opposite to the vestry.

Sir John Hufsey Delaval, Baronet, is the greatest instance of public spirit in the encouragement of commerce, that this part of the world hath produced; who at his own private expence made

(e) *Lel. Itin.* vol. 6. p. 56.

(f) *Idem.*

a commodious harbour at *Hartley*, by cutting a canal through a solid rock, 900 feet long, 54 feet deep, and 30 feet broad; employing about 500 men till it was finished. On *Tuesday*, 20th *March*, 1764, two ships failed in, with full sails, for the first time; and on *Thursday*, 22 *March*, the *Warkworth*, a vessel carrying 13 keels of coals, failed out; being the first that did so after it was opened.

Fifthly, of the patrons of rural and domestic arts. It is with pleasure I can mention, without offence to other gentlemen, *Robert Fenwick*, of *Lemington*, near *Alnwick*, Esq; who, for his laudable ambition of *Planting*, hath received a just mark of distinction from an honourable society, the society for the encouragement of arts; being presented with a *Gold Medal*, 1764, for having planted 4100 *Scotch firs*.

END of the FIRST VOLUME.

TYPOGRAPHICAL ERRATA.

Vol. I.

- PREFACE. Page 8. *for hands hath, read, hand hath.*
- CHAP. II. p. 25. *for sympathy, read symphony.*
- CHAP. III. p. 39. *for Dentritæ, read Dendritæ.*
- CHAP. VI. p. 101. at the bottom (*a*), *for turba, read turbo.*
- CHAP. VII. p. 118. at the bottom (*b*), *for curio, read corio.*
- CHAP. VIII. p. 140. *for nigra, read nigro.*
- p. 154. at the bottom (*p*), *for serrata, read serrato.*
- p. 158. *for Segill, read Seghill.*
- p. 160. at the bottom (*x*), *for inæquatis, read inæqualibus.*
- p. 169. at the bottom (*s*), *for verticilis, read verticillis.*
- p. 175. at the bottom (*s*), *for sublatis, read subulatis.*
- p. 181. at the bottom (*c*), *for pertinent, read pertinet.*
- p. 195. at the bottom (*f*), *for folioliorum, read foliorum.*
- ib. p. 195. at the bottom (*b*), *for variestas, read varietas.*
- p. 196. at the bottom (*i*), *for Vall. read Vaill.*
- p. 213. *for Gottenburgh-professor, read Gettingen-professor.*
- p. 229. no note of interrogation after roundish, but a full stop.
- p. 276, 278, 279. *for Flora Angelica, read Flora Anglica.*
- 278. at the bottom (*q*), *for uteis, read luteis.*
- p. 297. at the bottom (*l*), *for fungus cent. v. p. 7. t. 14. read Fungus porosus autumnalis viscidus. Buxbaum. cent. v. t. 14.*
- p. 300. at the bottom (*q*), *for locelluloso, read celluloso.*
- p. 303. *for bicellate, read bicollate.*
- CHAP. IX. p. 329. *for I wants, read It wants.*
- CHAP. XI. p. 394. at the bottom *, *for seme, read senel.*

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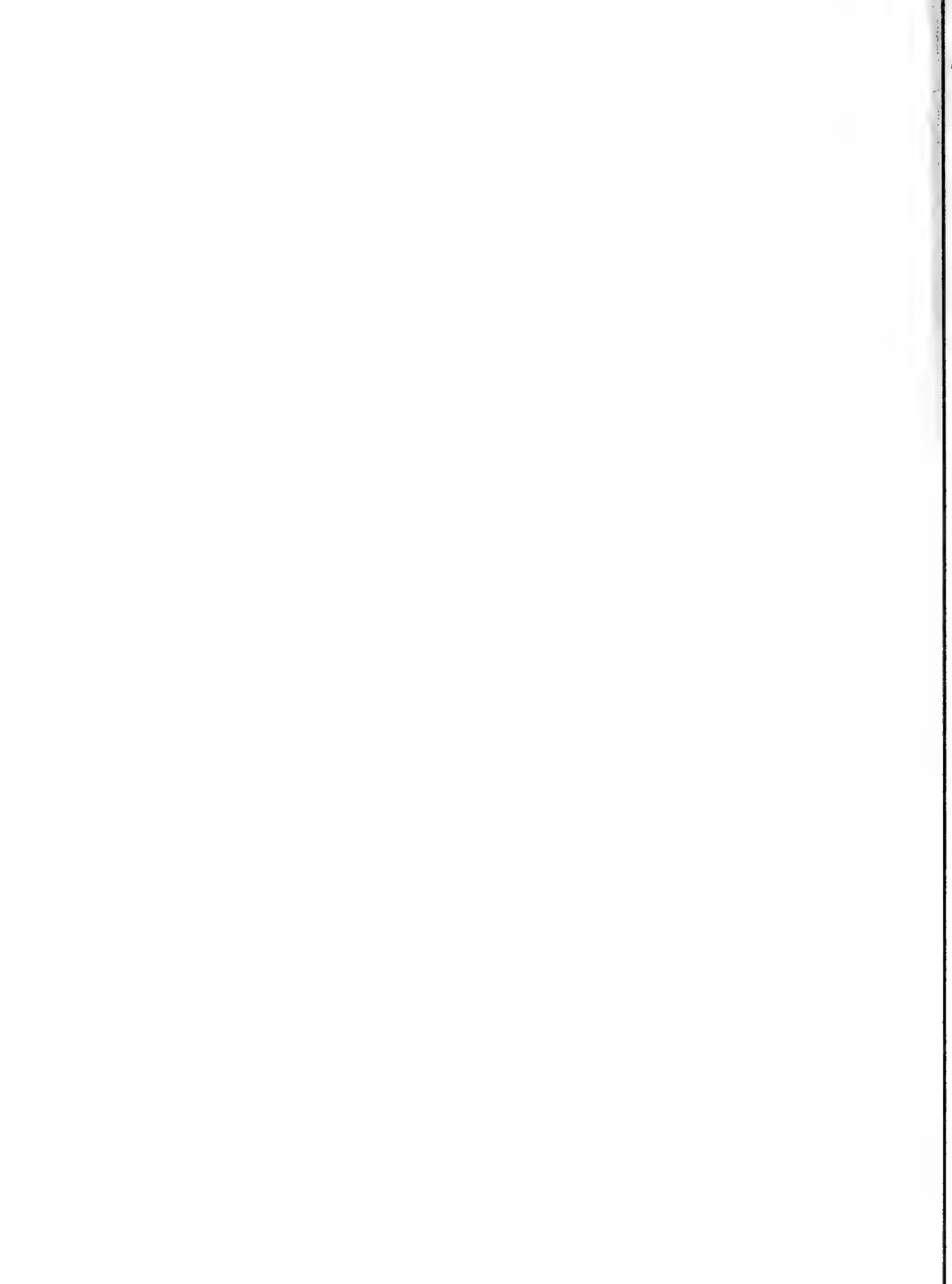
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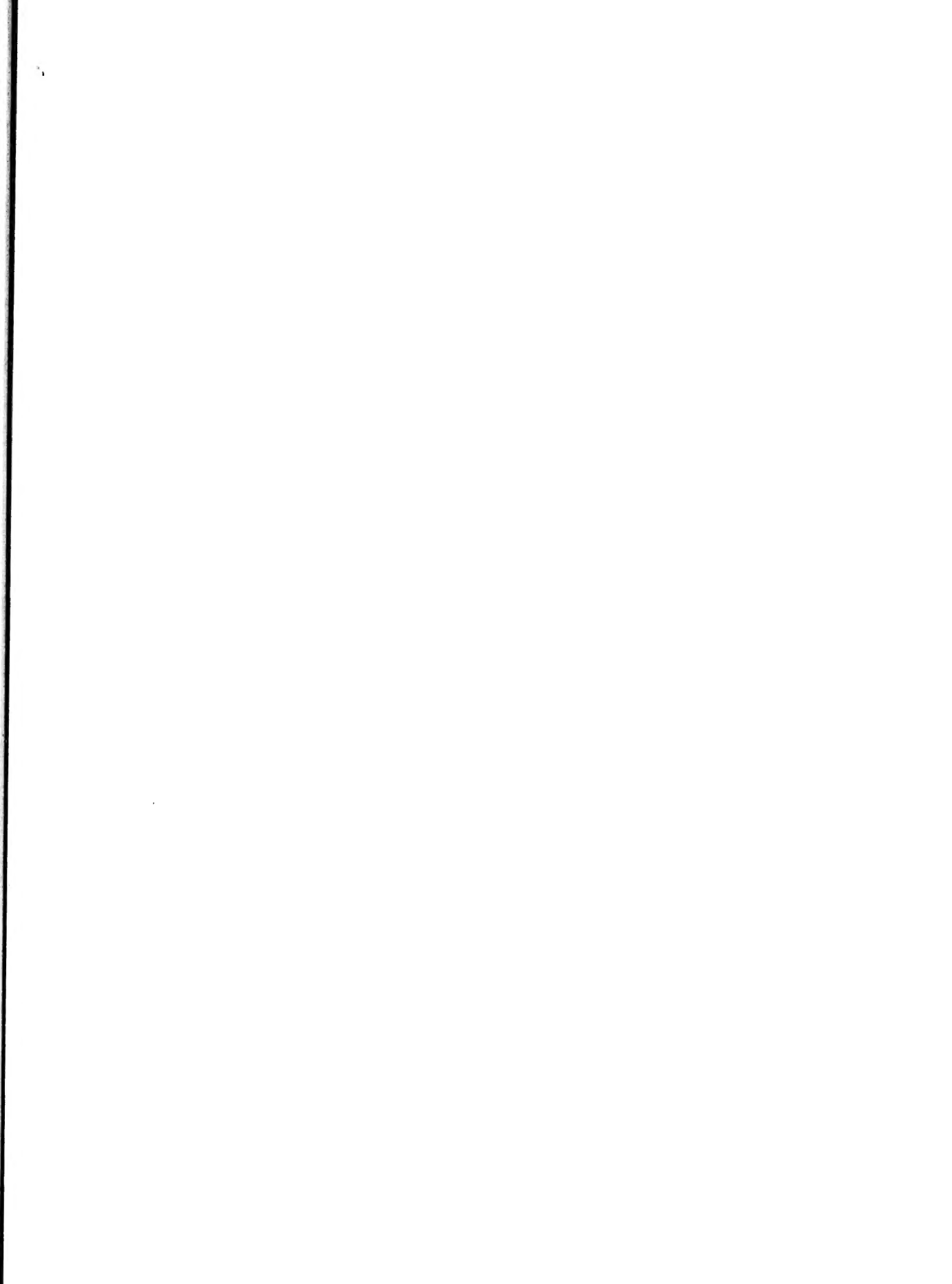
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