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## TO CORRESPONDENTS.

WE are compelled, reluctantly, to defer the insertion of Mr. Bloxam's paper "On the British Antiquities of Warwickshire," until our next number. The length to which the article extends, (and it is far too interesting to curtail), together with the late period in the quarter the MS. was received, render the postponement unavoidable.

J. K's "Remarks on Mr. Combe's 'Constitution of Man,' with illustrations of his doctrines and its tendencies," is likewise delayed until our next publication, for similar reasons.

It is requested that all communications sent to the Editor may be directed (*Post-paid*) to the care of Mr. BARLOW, Bookseller, Bennett's-hill, Birmingham; and contributions should be sent *early* in the quarter *preceeding* that in which they are expected to appear.

The 16th number of *The Analyst* will appear on the 1st of July next.

ERRATA.—Page 70, line 4, for *fagorum* read *facorum*. In part of the impression, page 119, line 13, for *carescens* read *canescens*.

(† *The First and Second Volumes of The Analyst (with Index), in cloth boards, price 10s., and the Third Volume, price 9s., may be had of Simpkin, Marshall, & Co., London, and all other Booksellers.*

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1836.

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# THE ANALYST.

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## HISTORICAL MEMORANDA OF WIGMORE CASTLE, HEREFORDSHIRE.

BY SIR SAMUEL RUSH MEYRICK, K. H.

THAT a place which has had for its owners persons of such importance in the history of this country as Wigmore, should never have engaged the pen of any antiquary, seems truly astonishing; especially as materials are not wanting, though scattered far and wide, for this purpose. Hoping that some one more competent will throw additional light on this interesting subject, I shall endeavour, through the medium of your useful periodical, to concentrate the glimmerings that are to be met with in ancient documents.

Its original name we find to have been Wicinga-mere. Blount says,\* "This seems to be Saxon, in which language Wiggen, or Wiggend, signifies *warrior*, *ga*, or *gen*, *to go*, and *mere*, *a pool*, or *great water*; for it is supposed that rich ground below the town, now called Wigmore, was heretofore held to be undrainable." There is no necessity for such far-fetched etymology: Wicinga signifies *inhabitants*, "especially," says Somner, "those of towns and villages," which renders it synonymous with its Domesday appellation, Marestone, *i. e.* the town near the marsh.

The earliest information respecting it is, according to Camden, its being repaired by Edward the elder. This will be better comprehended by reflecting on the state of the country, which that king found on succeeding to the throne of his justly celebrated father

\* MSS. in British Museum.

Alfred the Great. That prince had been elected in preference to his brother's children; and as they were likewise passed over by the Wittena at his death, whose choice was fixed on Edward, one of them, named Ethelwold, attempted to seize the crown for himself. He not only raised an army, but allied himself with the Anglo-Danes, and defied his cousin's power. In 905, he ravaged Mercia, which comprehended that part of Herefordshire in which Wigmore is situate: but he ultimately fell in a contest in Kent. In 910, Edward, with the Mercians and West Saxons, marched into Northumbria, destroying and plundering the Anglo-Danish possessions. The following year, the northerns repaid this devastation by an irruption into Mercia: nor was the superiority of the Anglo-Saxon king, over his dangerous neighbours, fully established till the battle of Wodensfield. He now pursued the plans of protection which his father had devised, and determined to defend the frontiers of his dominions by a line of fortresses. In Mercia and Wessex, he built castles which he filled with soldiers, who were ordered, without waiting for the king or earls of the counties, to join the provincials in repelling invaders. Upon the western limits he appointed their erection at Wigmore in Herefordshire, Bridgnorth and Cherbury in Shropshire, Edesbury in Cheshire, and Stafford and Wedesborough in Staffordshire, which seem to have been chosen with great judgment. Thus the foundation of Wigmore castle is fixed to the year 912, or soon after.\*

The military policy of Edward was proved by its issue. Two Danish earls led a hostile fleet round Cornwall into the Severn, debarked, and plundered in Herefordshire, taking the bishop of Arch-enfield prisoner. The men of Hereford, Gloucester, and the nearest burghs, as the fortified places were called, defeated them, with the loss of one of their chiefs, and the brother of the other.

The next occurrence may probably be assigned to the year 1068. William the Conqueror had returned to Normandy, three months after his coronation, leaving the care of England to his favourite William Fitz Osborne, who, according to Malmsbury, first incited him to invade this country, and to Odo, his half-brother, bishop of Bayeux. The exactions of the Normans augmented the desperation of the Anglo-Saxons, until the latter broke out into revolt. He returned; but his mistrust of his new subjects calling forth his

\* In this year, says the Saxon Chronicle, died Æthelred, alderman (*i. e.* the ruling person) of Mercia; Ethelfleda, his widow, in 920, when Edward incorporated that kingdom with Wessex.

ill-humour, they formed alliances with the Welsh, the Scotch, and the Danes. It was, probably, on this occasion, that "Ralph, or Ranulph de Mortimer, who came over with the Conqueror, was sent into the marches of Wales, to encounter with Edrich, Earl of Shrewsbury, who was also Lord of Wigmore and Melenithe,\* in regard he would not submit to the Norman yoke, whom after great toil and a long siege in Wigmore castle, he at length subdued and delivered captive to the king."† This Edrich was the son of Alfricke, Earl of Mercia, who, having induced Bleddyn and Rhywallon, princes of Wales, to assist him with their forces, had ravaged the country as far as the bridge of Hereford.

England being completely subdued, in about three years from this time, William proceeded to distribute the spoils among his adherents. To William Fitz Osborne, he gave the county of Hereford, with instructions to watch and repress the Welsh;‡ and Dugdale says, "he built the castle of Estbrighoyel,|| in Gloucestershire, and the castles of Clifford, Wigmore, and Ewias in Herefordshire; but in regard he died before the general survey, there is no memorial at all left of him."§ The Rev. Mr. Duncumb, though it does not appear on what authority, asserts that those in Herefordshire he only repaired.

This heroic warrior was slain by Robert de Frison, whilst fighting in support of the claims of Ernulph, Earl of Hainhalt, to the earldom of Flanders. He had, during his lifetime, been a steadfast adherent to the Conqueror, to whom, indeed, he was nearly related, and, possessing great merit, amply justified his appointments of regius vicarius, Normanniæ dapifer et magister militum bellicosus.\*\* He was of the king's council, governor of the Isle of Wight and Winchester Castle, and chief administrator of justice throughout the North of England.†† He married Adeline, daughter of Roger de Toney, a powerful baron, and had by her three sons and three daughters. To William, the eldest, he left his ample possessions in Normandy; Ralph, the second, entered the Abbey of Cormeilles, and was shorn a monk; and Roger, the youngest, named De Bre-

\* Maelenyth was on the western side of Wigmore, being part of Radnorshire.

† Dugdale's *Baronage*, vol. i., p. 139.

‡ Orderic Vit., 521.

|| Now called Strigul castle, not in Gloucestershire, but Monmouthshire. Coxe, however, declares it to be Chepstow.

§ *Baron.*, vol. i. p. 67.

\*\* Ord. Vit., 536.

†† Harl. MS., 4046.

teuil, succeeded him in the earldom of Hereford.\* This young man, forgetful of his father's attachment to the king, had the imprudence, as well as ingratitude, to join Ralph de Gwader, Earl of Norfolk, in 1078, because he did not consent to the marriage of his sister with that nobleman. They raised a large army, in order to depose him, but, being defeated, Roger's property was confiscated, and his person confined. While in this situation, William, nobly contemning his many contumelious expressions, made offers towards a reconciliation, but his proud spirit rejected them with disdain. This conduct so exasperated the king, that he was detained in confinement until his death, and the title withheld from his sons.

On this occasion, Wigmore Castle and its lordship was bestowed on its former conqueror, Ralph de Mortimer. "It is held," says Blount, "to be one of the ancientest honours in England, and has twenty-one townships, or manors, that owe suit to the honor court; and all the land wherein these manors lie is called Wigmore land, which has two high constables, and gives name to the whole hundred." Dugdale, in his *Monasticon*, says "that Ralph built the Castle of Wigmore;" and yet, not only at page 67 of the first volume of his *Baronage* asserts, as before observed, that it was erected by William Fitz-Osborne, but again, at page 139, restates this in a more particular manner. He tells us, that that nobleman constructed it "upon a piece of waste ground, called Merestune" (Marshtown), and quotes Domesday to shew that Ralph de Mortimer was seized of it at his death.

When we reflect upon the charge given to Fitz-Osborne, to repel the Welsh, and his "very large possessions by the conqueror's gift," it seems most likely that he removed the ruins of the Saxon fortress, and erected the present castle on a new site; for the character of its remains prove it to be of the close of the eleventh century. The waste land called Meriston, is a high hill, lying between the town of Wigmore and the Welsh, on the summit of which stands this noble piece of masonry. This was the keep. A little below it are other castellated apartments of later date; and the exterior wall, which goes round the bottom of the hill, and is strengthened by a wet ditch,† is of the time of Henry III. The

\* Having the power of making laws for his own district, William Fitz-Osborne ordained that, within the county of Hereford, no knight or soldier should, for any offence, be fined above seven shillings, the general average being twenty or twenty-five; thus encouraging a military spirit, which was essential to the maintenance of a border territory.

† This is what Leland calls "a brocket sometime almost dry." Vol. vii., p. 32.

entrance tower, which is in this wall, is of a square form, the other two, seen at the same time, are one square and the other round.\*

Ralph left two sons, Hugh, married to Matilda, daughter of William Longespee, who became second baron of Wigmore, and William, by the gift of his brother, Lord of Netherley.

On the accession of Henry II., it appeared politic to destroy various castles throughout his dominions, as the contest between his mother and king Stephen had shewn how much they might aid the cause of disaffection. This measure was strongly opposed by Hugh Mortimer, and Milo, son of Roger, Earl of Gloucester; but, on the approach of Henry, with an army, they were obliged to submit. Consequently, in the year 1158, Hugh delivered up to the king the castles of Wigmore and Brugge, but the position of the former on the Welsh frontier, prevented its destruction.

Dugdale, in his *Monasticon*, relates the following particulars:—“Hugh Mortimer, a noble and great man in the reign of king Stephen, made Oliver de Merlimond his seneschal, or steward, and gave him the town of Scobbedon, and to his son Eudo, the parsonage of the church of Aylmondestree. There was then no church at Scobbedon, but only a chapel of St. Juliana, but Oliver built one there, and dedicated it to St. John Evangelist. Afterwards, the said Oliver went on a pilgrimage to St. James the Apostle, at Compostela, in Spain; and having been most charitably entertained, on his return, by the canons of St. Victor, at Paris, when he had caused his church at Scobbedon to be consecrated by Robert Betun, Bishop of Hereford,† and obtained of him the church of Rugeley, he sent to the abbot of St. Victor and obtained of him two of his canons, to whom he gave the said two churches and his lands of Ledecote, providing them a decent house, with barns and store of corn.

“Some time after, Hugh Mortimer and Oliver Merlimond disagreeing, the latter went away in the service of Milo, Earl of Hereford, and Hugh re-assumed all he had before given him and what Oliver had granted to the canons, who were thereby reduced to such straits,

\* “It is impossible,” says Mr. Gough, in his additions to Camden, “to contemplate the massive ruins of Wigmore Castle, situate on a hill in an amphitheatre of mountains, whence its owner could survey his vast estates from his square palæe, with four corner towers on a keep at the south-east corner of his double-trenched outworks, without reflecting on the instability of the grandeur of a family, whose ambition and intrigues made more than one English monarch uneasy on his throne.”

† He was bishop from the year 1131 to 1148.

that they designed to have left the place; but, the quarrel being made up, Hugh restored to Oliver all his lands, and theirs to the canons, adding, moreover, of his own, to the latter, the church of Wigmore, advancing the prior to the title of an abbot. Notwithstanding all which, he again took from the canons the town of Scobbedon, but sometime after restored it.

“There being want of water in Scobbedon, the canons moved their habitation to a place called Eye, near the river Lugg, where they had not been long before they again removed to Wigmore, and from thence to Beodune, where they built a monastery, and had a church dedicated to St. James by Robert Foliott, Bishop of Hereford, Hugh Mortimer bestowing on the canons several possessions and much plate for the altar. The church of Wigmore given by Hugh Mortimer was the present parish church\* which, though mostly of the time of Edward I., exhibits parts much anterior, especially the north wall of the nave, as it is built in what is termed herring-bone fashion. That erected at a place called Beodune was the abbey church, which, together with the monastery, was, according to the same authority, founded by Hugh Lord Mortimer in 1179. It must have been completed and consecrated within six years, as he was buried within it in 1185; and in the following year Bishop Foliott died.” Leland says, “the abbey of Wigmore is a mile beyond Wigmore town; a great abbey of white chanons, within a mile of Wigmore town and castle, in the marche ground towards Shrewsberyshire.”†

In the church of the abbey were buried the greater part of the Mortimer family, the founder and two of his descendants of the same name, Ralph, Geoffry, and John, three Rogers, and two Edmonds; all whose monuments were destroyed at the dissolution, with the church that contained them, except its walls.‡ In what is now termed the abbey grange, remained, in Mr. Blount’s time, some ancient rooms, as the abbott’s council chamber, and one which had a canopy of wainscot, under which the abbot sat; and a stack of chimneys with the arms of Mortimer thereon. A contiguous alehouse was asserted to have been the abbey prison. This abbey

\* This seems to have been ornamented by the munificence of Edward IV. as the reading desk of a line of stalls still remains, carved at that period; and, in Mr. Blount’s time, were, in the windows, the arms of Mortimer, Bohun, Montacute, and Badlesmere, in painted glass.

† Vol. v., p. 10, and iv., p. 176.

‡ Gough’s Additions to Camden.

of Augustines was valued, at the dissolution, at £267. 2s. 10d. per annum.\*

Hugh Mortimer left issue four sons, Roger, Baron Wigmore, Hugh, Lord of Chalmarsh, who married Felicia De St. Sydon, but became defunct without issue, Ralph, and Sir William de Mortimer, knight, who died unmarried, a captive abroad.

Roger is said, on Dugdale's authority, to have oppressed the canons so grievously that most of them were forced to retire to Scobbedon; but the ground of complaint was, at last, adjusted by king Henry; and Roger, before his death, confirmed his father's grants to them, and added others of his own.

Roger was twice married. He espoused first, Milisent, daughter of the Earl of Derby, and by her he had a son named Hugh, who succeeded his father in the lordship of Wigmore, but expired without issue, in the year 1227; secondly, Isabella, daughter of Henry de Newburgh, Earl of Warwick, and relict of William Ferrars, Lord of Wokeham, in the county of Rutland, by whom he had three sons, Ralph, Robert, and Philip.

Roger Mortimer died in the year 1215, the year before king John, and, as is above stated, was succeeded in his lordship of Wigmore by his eldest son Hugh, who held it till 1227, when his brother Ralph came into that possession. It was, therefore, to Roger, rather than to Ralph, that we are to attribute what Dugdale† assigns to the latter. *Mutato nomine*, then, the account runs thus. King John sent this warrior into Normandy‡ for its defence, as it had been invaded by Philippe Auguste, king of France, John having refused to do him homage for the same. The lord of Wigmore was taken prisoner, and, during his absence, the Welsh, making an irruption into Herefordshire, plundered and burnt down the monastery of Wigmore, leaving only the church standing. Now, as the pedigree in the herald's college terms Roger *fundator abbatix* de Wigmore, and his father *primus fundator*, and as Dugdale says that, before his death, Roger confirmed his father's grants and added others of his own, it appears a just inference that he repaired the ravages committed at the abbey, and bestowed on it a further endowment. His widow Isabella, imitating the piety of

\* Tanner's Not. Mon., 174.

† *Monasticon*.

‡ John eventually lost this and Guienne, whence he acquired the soubriquet of Lackland.

her late husband, built a religious house at Lechlade, and bestowed on it lands, for the good of his soul.

Hugh de Mortimer, on the accession of Henry III., adhered to that monarch, as afterwards did his brother Ralph, during his short survivorship. This Ralph espoused Gwladys,\* the daughter of Llewelyn ab Ierwerth, Prince of Wales, and Isabella his wife, daughter of King John, married in 1203. By her he had four sons—Roger, fifth Lord of Wigmore, called, by the Welsh, Roger cwta, *i. e.* short Roger; Peter; John, who became a friar, at Coventry, of the order of Friars minor; and Hugh, Lord of Chalmarsh, near Wigmore.

Dugdale observes†—“In the seventeenth of Henry III. the king requiring hostages of the barons marchers for their fidelity (the times being then troublesome), this Ralph delivered unto him Henry, the son and heir of Brian de Brampton, who was, therefore, committed to the custody of William de Stutevil.”

Roger was born in the year 1231, and, as Dugdale observes, was firmly attached to Henry III., in opposition to his rebellious barons, being a great instrument in their subjection and establishing him upon the throne. It was, probably, he who raised the exterior wall, or, at any rate, made some of the additions to the castle of Wigmore; for having rescued Prince Edward from his imprisonment in Hereford castle, to which he had been consigned by Simon de Montfort, Earl of Leicester, commander-in-chief of the barons, after his surrender at the battle of Lewes in 1264, he was conveyed for safety to that fortress. The plan of his escape was well contrived. It is said that the prince was desired to request the indulgence of horse-exercise, and that, on one occasion, outstripping his attendants, he was met by one of the Croft family, from Croft castle, near Wigmore, who held a fresh horse, by previous arrangement, which, Edward mounting, galloped off to the strong-hold of Roger Mortimer. The prince's gratitude was evinced after his accession, as, by a statute passed in the 18th year of his reign, he granted, to Wigmore lordship, privileges which almost amounted to *jura regalia*, the power of life and death being included; and tradition asserts that to the arms of the Croft family he added one of the lions of England, in commemoration of the event, which is still borne by the descendants.

\* This young lady could not have been above twelve years old when Henry III. succeeded to the throne, and twenty-six at her marriage.

† *Baron.*, vol. i., p. 140, c. 2.

This induced the Earl of Leicester to take advantage of his influence with Llewelyn ab Gruffydd, Prince of Wales, and induce him to commence his attacks on all who were in opposition to the rebellious barons, with an army amounting, according to Hume, to the number of 30,000 men; and thus, in 1263, he ravaged with fire and sword, among others, the possessions of Roger Mortimer. The efforts of this nobleman alone, though made with much judgment and gallantry, were insufficient to repel him, and it was not until reinforcements arrived under Prince Edward, that the Welsh were driven back to their fastnesses. Llewelyn, however, renewed his attacks in the following year, not only instigated by, but assisted with English forces under Simon and Henry de Montford; and it was not until the battle of Evesham, in 1265, that a decisive victory put an end to such devastations.

Roger Mortimer married Matilda, eldest daughter of William de Braiose by Eva, fifth daughter and heiress of William Marshal, Earl of Pembroke, and by her had five sons and one daughter. Sir Ralph, his eldest, died during the lifetime of his father; Edmund, who became Lord of Wigmore; Roger, Lord of Chirk, who married Lucy, daughter and heiress of Sir William Le Wafre, knight; Sir William de Mortimer, knight, afterwards Canon of Wigmore, from whom, according to one account, are descended the barons of Richard's castle, he having received several estates, according to the custom of arms, from his mother;\* Sir Geoffrey, who died before his father; and Margaret, the wife of Robert de Vere, Earl of Oxford.

Richard's castle came into possession of a branch of the Mortimer family, from a marriage with the heiress of Hugh, and the surviving sister of Elias de Say, and her husband was Robert de Mortimer, who held twenty-three knights' fees from the honor of the castle of Ewias. He was the son of Robert, second son of Hugh, Lord Mortimer, and, therefore, cousin of Roger, whose history has just been given.†

\* Pedigree in the College of Arms. This does not, however, appear quite correct.

† Sir H. Nicolas, in his notes to *The Siege of Caerlaverock*, gives a different descent. He says, "In the reign of Henry II., Robert de Mortimer, younger son of Hugh, second Baron Mortimer, by the tenure of Wigmore castle, acquired Richard's castle, in Shropshire, by marrying Margery, the daughter and heiress of Hugh de Say. His grandson, Robert de Mortimer, by Joyce, the daughter and heiress of William le Zouche, had issue Hugh, his son and heir, who succeeded his father in his lands in 1287;" and "with whom the male line failed," one of his daughters and coheiresses marrying Sir Richard Talbot, in which family Richard's castle was vested. I have preferred the pedigree in the College of Arms.

The Mortimers were among the Lords Marchers, who claimed the right of finding spears of silver to support the queen's canopy on all coronations ; and they exercised this privilege when Eleanor, the queen of Henry III. was crowned.

Edmund Mortimer, Baron of Wigmore, succeeded his father, Roger, and was present at the decisive battle near Built, in the year 1282, the 10th of Edward I., at which Llewelyn ab Gruffydd, the Prince of Wales, was slain, but not by him, as the Rev. J. Duncumb, in his *History of Herefordshire*, asserts—but by Sir Adam de Francton, an English knight.\* On the contrary, Edmund was severely wounded in that encounter ; and being conveyed to the castle of Wigmore, there died. At this period, according to Dugdale, he was seven-and-twenty years of age. He married Margaret, daughter of the Lord William de Fendles, in Spain, cousin of Eleanor, queen of King Edward I. By her he had seven children, who, being minors, appear to have been under the guardianship of their uncle Roger,† as he was called upon to perform the military services immediately after the death of his brother. Their names were, Roger ; Matilda, married to Theobald de Verdun, lord of a moiety of Ludlow ; Johanna, a nun of the Priory of Lingbroke ; John, killed in a tournament at Worcester, and there buried in the Cathedral ; Hugh, rector of Old Radnor ; Walter, rector of Kingsland, in the Vale of Wigmore ; and Edmund, rector of Hodnet, and treasurer of the cathedral church of York.

Sir Harris Nicolas has been so indefatigable in his researches respecting the uncle Roger, in his notes to the siege of Caerlaverock, that I shall not hesitate to avail myself of their ample results. In March, 1283, he was summoned to attend, with horse and arms, against the Welsh. Three years after, he obtained a charter of free warren in his lordships of Sawarden, Winterton, Hampton, and others, in Herefordshire and Shropshire ; he was, also, possessed of the lordship of Chirk, in Denbighshire, the castle of which, according to Camden, he erected, and of which, from its importance, says Sir Harris Nicolas, he was generally described. That territory is said to have fallen into his hands in no very creditable manner, for

\* *Hen. De Knyghton*, p. 2464.

† Edward Rowe More, in his enumeration of the knights who fought under Edward I., mentions this Roger de Mortymer:—"les armes de Mortymer en le escuchon un lion de pourpre ; Sir John de M., les armes de Mortymer, en le escuchon un santour de goules. Sir Henri de Mortymer, barre de ore de goules, le chef palee les armes geronne a un escuchon d'argent ; which last are those on the seal of Edmund de Mortimer."—See *Vet. Mon.*, vol. i., pl. xxx.

the wardship of Llewelyn, younger son of Gruffydd ab Madoc, lord of Powys, to whom the lordships of Chirk and Nantheudwy belonged, having been entrusted to this baron,\* his ward suddenly disappeared in the night, and Mortimer obtained a grant of the lands. On the 16th of July, fifteenth of Edward I., 1287, he was directed to raise four hundred foot-soldiers to march against Rhys ab Mareddydd, a South Wales chieftain: and on the 14th of November, was enjoined to reside on his demesnes until the rebellion of that individual was quelled. Three years after, Mortimer was commanded to answer relative to jurisdiction in the barony of Haverford West, and in 1292 he accordingly appeared. He held certain lands of the Earl of Hereford. The year after, he was in the expedition into France, when he was appointed governor of Burgh sur mer, anciently called Mont-Auban, in that kingdom. He was summoned, on the 14th of June, 1294, to be at Portsmouth on the 1st of the ensuing September, there to join the expedition into France; and he received letters of protection that year, in consequence of being in the king's service in Gascony; and, for the same cause, he and his tenants were exempted from the payment of any part of the tenth then granted to the crown. He was again in Gascony to the 26th of September, 1297, and, in 1298, commanded to be at Carlisle at Easter, with horse and arms, in the record of which he is styled a baron. In the same year he was a commissioner of array in Landecho, Moghelan, and La Pole.† In the twenty-seventh of Edward I. he was summoned to Parliament, and in 1299 was again ordered to be at Carlisle, to serve against the Scots. The heraldic poem informs us that he was at the siege of Caerlaverock, in June, 1300.

Epnis Rogier de Mortimer  
 Ki desa mer et de la mer  
 A porte quel part ke ait ale  
 L'eseu barree au chief pale  
 E les cornieres gironnees  
 De or et de azur enlumines  
 O le escucheon vuidie de ermine  
 Ovec les autres se achemine

And then Roger de Mortimer  
 Who, on both sides the sea,  
 Has borne, wherever he went,  
 A shield barry with a chief paly,  
 And its corners gyronny,  
 Emblazoned with gold and blue,  
 With the escutcheon voided of ermine.  
 He proceeded with the others,

\* See Yorke's Royal Tribes of Wales for a full account of this affair, p. 62, 63. The Earl of Warren, to whom Llewelyn's brother was placed in wardship, by king Edward, equally made away with that youth, and shared his possessions with the king. Tradition says, they were both drowned, at night-time, in the Dee.

† Query—Llandeilo, Machynllaeth, and Welsh Pool?

Car il et li devant nomes	For he and the before-named
Au fils le roy furent comes	Were appointed the king's son
De son frein guieur et gardein.	To conduct and to guard.

At this time he must have been about forty years of age, and the poem confirms Dugdale's statement that he was then in the retinue of the Prince of Wales. It is recorded, in the wardrobe accounts, that he received his winter's fee of £6. 13s. 4d. in the same year, and they give the following particulars:—

Domino Rogero de Mortuo Mari, baneretto pro vadiis suis, duorum militum et xiiii scutiferorum suorum xxviii die Julii, quo die equi sui fuerunt appreciati, usque xxix diem Augusti, utroque computato per xxxiiii dies, xxxvi. *li.* vi. s. Eidem pro expensis oris sui et unius militis sui, a ix die Julii, quo die venit ad curiam apud Karlaverok, usque xxviii diem ejusdem mensis, quo die equi sui fuerunt appreciati, primo die computato et non ultimo per xix dies, per quos fuit in cur et extra rotulum hospicii, præcipienti per diem vj. s. per statutum factum apud Sanctum Albanum de hospicio *lv.* xiv. s. per compositum factum cum eodem apud Lincoln' xx die Feb' anno xxix. Summa xlii. *li.*\*

In the baron's letter to the pope, dated Lincoln, 29th of February, 1301, Roger Mortimer is styled lord of Penketlyn, one of the manors which he held of Humphrey de Boun, Earl of Hereford, which, probably, is Pengethly, in that county. He was summoned to the Scottish wars in 1301 and 1302, and was present in the parliament held at Carlisle, in January, 1304; on the 5th of April in which year, he was ordered to attend at Westminster, to determine upon the aid to be granted to king Edward, on knighting his eldest son.†

Soon after this time, Mortimer swerved from the fidelity which had hitherto marked his conduct, as, in the thirty-fifth, that is, the last year of the reign of Edward I., he and some other peers were accused of having quitted the king's service in Scotland, and gone beyond the sea; in consequence of which, orders were issued to the escheator of the crown on each side of the Trent, dated 15th of November, 1306, directing them to seize their lands and chattels.

\* These accounts notice Hugh de Mortymer, banneret of Richard's castle, and Dominus Willielmus de Mortymer, brother of Robert. The arms of Hugh de Mortymer were gules two bars vair.

† Ashmole, *History of the Order of the Garter*, says that Roger de Mortimer and Roger his son (probably Roger his nephew), were knighted in the thirty-fourth of Edward I.

But, upon the accession of Edward II., he was restored to favour, and constituted the king's lieutenant and justice of Wales, having all the castles of the principality committed to his charge. In the second year of Edward II. he was made governor of Beaumaris castle, in the isle of Anglesey, and two years after, of Blaynleveng\* and Dinas. In 1308 and 1310 he was again in the wars of Scotland, and in 1314 he petitioned that he might be allowed the expenses he incurred, when justice of Wales, in raising a force to repel the attack which Sir Griffith de la Pole made on the castle of Pole, on which occasion he had expended altogether £332. 19s. 2d. In the same year he set forth that he held the land of Gruffydd, son of Madoc ab Gruffydd, and prayed to be allowed to retain the same during his minority.

Early in the ninth of Edward II., he was one of the manucaptors for Hugh le Despenser, who was accused of having assaulted and drawn blood from Sir John de Roos, in the cathedral court of York, in the presence of the king and parliament. In the tenth of Edward II., Mortimer was constituted justice of North Wales, and in the following year was ordered to provide one hundred men out of his lordships of Blaynleveng and Talgarth, in Brecknockshire, and two hundred out of his territory of Lanledu,† for the wars of Scotland. He was again in arms against the Scots in the twelfth and thirteenth, and £100 were assigned for his services therein; and he had been appointed governor of the castle of Buelt, in Brecknockshire. On the 28th of March, 1321, he was commanded to attend at Gloucester, to devise how the insurrection in Wales might be suppressed, and he was, consequently, again made justice of Wales.

Having taken an active part against the Despensers, the favorites of the young monarch, he exposed himself to Edward's enmity; and two records are extant which, though from immediately opposite parties, tend equally to prove the unenviable situation in which he was placed. In this very year, he and his nephew joined the Earl of Hereford against the Spencers, and, having entered and burnt the town of Bridgnorth, in Shropshire, his Majesty declared them and other barons to have forfeited their lands. About the same time, the commonalty of North and South Wales petitioned the crown, praying that, as Mons. Roger de Mortimer the nephew, and Mons. Roger de Mortimer the uncle, who had the custody of

\* Blaenllyvni, in Brecknockshire.

† Query—the proper name?

Wales, had risen against the king and seized his castles, they might not be pardoned for their offences; which apparent act of loyalty was, in all probability, dictated by a hope of revenge. He was never summoned to parliament after this period, though, in the first year of Edward III., he and his nephew had restored to them all their forfeited lands: all the proceedings in the sixteenth of Edward II. were reversed. In the fourth year of Edward III. he is styled, in a writ from the king, "his justice of Wales, or his lieutenant and chamberlain in the parts of North Wales;" by which titles he had been described two years before. "Hence," observes Sir Harris Nicolas, "the assertion of Leland, that he died in the tower of London, to which his nephew, the lord of Mortimer, and himself were committed, by Edward II., is proved to be erroneous; nor is the statement of other writers, that he died there on the 3rd of August, 1336, much more probable, as it is evident he continued to hold his Welsh offices until 1330. He may have fallen into disgrace at that time, when all authentic accounts of him cease, and perhaps died in the Tower a few years after, but it is positive that he was living in 1336, when he was nearly eighty."\* The pedigree in the College of Arms says, as has been observed, that he married Lucy, daughter and heiress of Sir William le Wafre, knight, and does not mark any issue; Sir Harris Nicolas, on the contrary, asserts that she was "daughter and heiress of Sir Robert de Wasse, knight, by whom he is said to have had issue Roger, who left a son, John de Mortimer; but neither of them ranked as barons of the realm."

The earliest period at which Roger Lord Mortimer, of Wigmore, makes his appearance on the page of history, is when he was appointed to treat with the Earl of Lancaster, relative to the political dissensions which then agitated the realm;† the next, when he joined the barons against the king's favorites, the Despensers. In the year 1323, these noblemen, in their violent proceedings against those who had become their enemies, confiscated the property of Adam de Orleton, bishop of Hereford, as an alleged supporter of Mortimer, and he, being described as a man of great worldly sagacity, endeavoured to revive the party of the barons. They found the royal favour still unattainable, except through these favorites,

\* I have given this biography, with very little alteration, on the authority of Sir Harris Nicolas, of whom it is but justice to remark that, in genealogical research, no man has shewn more assiduity, accuracy, and discrimination, as all his publications testify.

† Nicolas's *Siege of Caerlaverock*, note, p. 263.

so that it was remarked that England had three kings, instead of one.\* The favourites ventured to abridge the luxuries of the queen, and, finding the king's preference given to them, she at once felt hatred and contempt for her husband, as well as for them. She was advised, by Orleton, to seek occasion of going to France, and plan the destruction of the Despensers. In 1325 Mortimer escaped from the Tower, according to Henry de Blandford,† in the following manner. In the middle of a stormy night, having lulled his keepers by a banquet in which a soporific was administered, finding the chamber door secured by many fastenings, he broke through the wall into the kitchen; he got out at the top of that, and, by cords, so arranged as to answer the purpose of a ladder, previously provided by his friends, he descended, reached the Thames, obtained a boat, and, sailing boldly out to sea, landed on the continent. Having proceeded to the queen in France, he joined her councils, and so ingratiated himself as to be suspected of an improper intimacy. Be that as it may, for the future one destiny seemed to guide both. She levied an army of Hainaulters and Germans, placing the count of Hainault and Lord Mortimer at their head, and, sailing adventurously to England, she landed, about Michaelmas, at Orwell, in Suffolk. The clergy and the barons eagerly joined her forces in all parts, and followed the retreating ministers. The elder Despenser fled to Bristol Castle, and the younger took Edward with him to Chepstow and thence embarked, in the hopes of reaching Lundy isle. But adverse winds drove the latter to the coast of Glamorganshire, and they were forced to take shelter in the Abbey of Neath. The queen's pursuit was uninterrupted. She advanced to Gloucester, and thence to Bristol, where the elder Despenser surrendered on her summons. He was first tortured,—such was the barbarity of the age,—and then put to death. Thence she marched to Hereford. For better security, the king and his favourite had quitted the doubtful sanctuary of Neath Abbey for the strength afforded by Llanstephan Castle, at the mouth of the Towy, in Caermarthenshire. She despatched the Earl of Leicester, some Welsh nobles, and a body of marchers, in pursuit of them. Here they were taken, and conveyed to Hereford,‡ where the younger Despenser was executed “with the loathsome ceremonies,” says Mr. Turner, “which then accompanied

\* Moor, 597.

† p. 84.

‡ So Duncumb, *Hist. Hereford*, p. 83; but Sharon Turner, in his *Hist. of England*, vol. ii., p. 122, says at Neath Abbey.

treason." The king was conveyed to Ledbury, and thence to Kenilworth Castle; he was made to resign his crown to his son, and committed to the care of the Earl of Leicester. He was afterwards delivered to two knights, who conveyed him first to Corfe Castle, and then to Bristol. Some disposition to liberate him occasioned his removal, in the night-time, to Berkeley Castle, where he was ultimately cruelly put to death.

A council of regency, composed of twelve distinguished persons, was assembled, to conduct the affairs of state; but the queen and Mortimer struggled to monopolize the chief power of the administration. One of the first acts of the government was to confer on Lord Mortimer the title of the Earl of March. He had chosen this, in consequence of its having once been in his wife's family; for he had married Johanna, one of the daughters and heiresses of Sir Peter Genevill, knight, son of Geoffry de Genevill, lord of Vaucolaur, of Tryon, and many other places, and of Johanna, his wife, Countess de la March.\* The magnificent and ostentatious disposition of this nobleman contributed to give the young king a love of chivalry and romantic praise that made it fashionable among his subjects. A desire of emulating the fame of the renowned Arthur, incited him to keep a round table of knights and hold a tournament, at his castle of Wigmore, in imitation of this favourite hero of romance.† He became "proude beyonde measur." Even "Gefrey Mortimer, the (third) sunne, let caul his father, for pride, King of Foly."‡ Indeed, the conduct of the Earl of March and the queen caused so much discontent, that an attempt was made to overawe it, by the arrest of Edmund, Earl of Kent, the king's uncle, who was accused, on a fabricated charge of treason, condemned, and executed. The king's visible dissatisfaction emboldened some to inform him that the Earl of March was implicated in his father's murder. He was now eighteen, the age at which the royal minority terminates. The queen and Mortimer were in the castle of Nottingham, guarded by their military friends; Edward, by connivance of the governor, was admitted secretly at night with a few determined followers, led by Sir William Montacute, through a subterraneous passage. Sir Hugh Trumpington was on guard, and being, as Leland says, "redy to resiste the taking of Mortimer, was slayne and braynid with a mace, by one of Mon-

\* Pedigree in the College of Arms.

† Leland's *Collectanea*, vol. ii., p. 476. Avesbury, p. 7.

‡ Leland's *Collect.*, vol. ii., p. 476.

tacite's company." He was, nevertheless, seized in his bed-room and secured, notwithstanding "he had ix score knightes at his retinew," and sent, with Sir Simon Bereford, to the tower.\* It was in the year 1330 that he was arraigned before the peers in parliament, convicted, and executed.

The Earl of March had issue by his Countess four sons and seven daughters, viz. : Edmund, who succeeded to his titles of Earls of March and Lord of Wigmore; Sir Roger de Mortimer, knight; Geffry, Earl of Jubinensis or Juyllenensis and Lord of Cowyke, bestowed on him by Joan, wife of Peter de Geneville, daughter and heiress of the Count de la March; John, killed in a tournament at Shrewsbury; Margaret, wife of Thomas Fitzmaurice, Lord of Berkeley; Catherine,† wife of Thomas Beauchamp, Earl of Warwick; Johanna, married to the Lord James de Audeley; Agnes, who espoused Laurence (or John)‡ de Hastings, Earl of Pembroke; Matilda, wife of John, son and heir of John de Charleton, lord of Pool, or Powys, Castle; Blanch, the spouse of the Lord Peter de Grandison; and Beatrice, the wife of Edward, son and heir of Thomas de Brotherton, Earl Marshall, and, after his death, of the Lord Thomas de Breose.

On the claim of Edward III. to the crown of France, the Earl of March obtained a reversal of the sentence against his father, and was one of the nobles who attended immediately on the person of the king at the memorable battle of Crecy, in 1346. He died at Rover, in Burgundy, in the year 1359. By his wife Elizabeth, one of the daughters and heiresses of Bartholemew, Lord De Badlesmere, the rich lord of Leeds and other lordships, he had Roger de Mortimer, third Earl of March, K. G., and John, who died in his childhood. This Roger espoused Philippa, daughter of William Montacute, Earl of Salisbury, K. G. She died in the year 1381. By her will, dated 21st of November, three years antecedent, she bequeaths to the Abbey of Wigmore her best vestment with three copes, which belonged to her chapel; and to her son Edmond a

\* Ibid, p. 477.

† She died in the year 1369.

‡ So says the pedigree in the College of Arms, but most authorities prefer Laurence. He died in 1348, and soon after she married John de Hakclut, a Herefordshire gentleman, who, in the twenty-ninth of Edward III., obtained from the king a grant of the custody of the town and castle of Pembroke and other lands, to himself and his wife Agnes, during the minority of John de Hastings, Earl of Pembroke, her son by her first husband. She died 25th of July, 1368.—Dugdale, vol. i., p. 577.

bed and a gold ring, with a piece of the true cross with this legend—In nomine Patris et Filio et Spiritûs Sancti: Amen; and “which I charge him, on my blessing, to keep.” Likewise, a cup of silver with an escutcheon of the arms of Mortimer.\*

Roger left a son, Edmond, who became fourth Earl of March, and, having married Philippa, the only daughter and heiress of Lionel, Duke of Clarence, third son of king Edward III., became, in her right, Earl of Ulster. He was born on Candlemas eve, February 1st, 1351, and was much distinguished in his time. In the third year of Richard II., A. D. 1380, he was appointed the king’s lieutenant in Ireland, but died, at Cork, on Friday, the feast of St. John the Evangelist, on the 27th of December, in the following year.† The introduction of some portion of his will may be allowed, on account of its historical tendency.

“Edmond, Earl of March and Ulster, Lord of Wigmore, at Denbigh, May 1, 1380. My body to be buried with the body of my wife,—on whom God have mercy!—in the church of the abbey of Wigmore, on the left of the high altar; and we charge our executors that they allow no excessive expense at our funeral, but only five tapers of wax, which, after our funeral, we will, be distributed to the parish churches in the neighbourhood of the said abbey, for the use of the Holy Sacrament. We will, after the payment of our debts, first, that Roger, son of John de Mortimer, be paid £500, for which we are bound by Statute Merchant. To the church of the abbey of Wigmore £1000, to be employed according to the directions of my most honoured lady and mother, and of my executors, and under the superintendence of the Bishop of Hereford for the time being, and of Sir John de Byshopeston, Mons. Peter de la Mars, Sir William Ford, Sir Walter de Colmpton, and Hugh de Boraston. To the said abbey of Wigmore, a large cross of gold set with stones, with a relique of the cross of our Lord, a bone of St. Richard the Confessor, bishop of Chichester,‡ and the finger of St. Thomas de Cantelowe,§ bishop of Hereford, and the reliques of St. Thomas, bishop of Canterbury.|| To our most honoured lady and mother —. To Roger, our son and heir, the cup of gold, with a cover called bênesonne, and our sword garnished with gold,

\* *Testamenta Vetusta*, vol. i.

† Dugdale, vol. i., p. 149.

‡ Richard de la Wich, bishop of Chichester from 1245 to 1253, and was canonized.

§ Cantelupe, bishop of Hereford from 1275 to 1282, afterwards canonized.

|| St. Thomas á Becket; murdered in the time of Henry II.

which belonged to the good king Edward, with God's blessing and ours; and we will, that after the decease of our said son, the afore-said cup, sword, and a large horn of gold, remain to his next heir, and after him to his heirs for ever. Also, our large bed of black satin, embroidered with white lions and gold roses, with escutcheons of the arms of Mortimer and Ulster; also, a silver salt-cellar, in the shape of a dog, and our best gold horn, with the belt; and if our said son die before he is of full age, and without heirs of his body, then we will, that the said things remain to our son Edmond, with the like conditions. To our said son Edmond, three hundred marks of land. To our daughter Elizabeth, a salt-cellar, in the shape of a dog, a gold cup, and two hundred pearls. To our daughter Philippa, a coronet of gold, with stones, and two hundred pearls," &c.

The issue of Edmond was, Roger, fifth Earl of March and second Earl of Ulster; Sir Edmond de Mortimer; Elizabeth, wife of Henry, eldest son and heir of Henry de Percy, Earl of Northumberland; and Philippa, married first to John de Hastings, Earl of Pembroke; next, to Richard, Earl of Arundel; and thirdly, to the Lord John de St. John; all of whom are spoken of in his will.

Of this Roger, an historian attached to the family has furnished some particulars in a MS. entitled *Prioratûs de Wygmore fundationis et fundatorum historia*.\* He was born at Usk, in Monmouthshire, 11th of April, 1374, and baptised, on the following Sunday, by William Courtney, Bishop of Hereford; his sponsors being Roger Cradock, Bishop of Llandaff, Thomas Horton, Abbot of Gloucester, and the Prioress of Usk. His father dying at Cork, during his government of Ireland, in 1381, left him a minor, under the legal guardianship of Richard II. The minions of the court immediately applied to be admitted into the profits of his estates during his minority, and the king too readily consented to the request, and angrily dismissed his honest chancellor, Sir Richard Scroope, who had opposed them.† The trust was afterwards, for a pecuniary consideration, vested in more responsible persons;‡ and those into whose hands it fell do not appear to have abused it. When Roger Mortimer came of age, he found that his rights had been duly respected, according to the provisions of the

\* Quoted by Dugdale in his *Monasticon*, vol. i., p. 228.

† Walsingham.

‡ The joint farmers who held his estates were, the Earls of Arundel, Warwick, and Northumberland.—Cot. Lib., MS. Titus, B. xi., f. 7.

great charter of the land ; his castles and mansions were in good repair ; his manors and farms were well stocked with cattle and all the requisites of husbandry, and he had 20,000 marks in his treasury. Such was his hereditary rank and consequence that, in case Richard should die without issue, he was nearest to the throne ; and, in provision for an occurrence of that nature, the parliament of 1385 nominated him heir presumptive to the crown.\* Six months after his father's decease, fifth of Richard II., he was appointed lieutenant of Ireland. He had been originally betrothed to the daughter of the Earl of Arundel, but the king, at the interposition of his own mother, the princess Joan,† set aside the match in favour of her grand-daughter Eleanor, daughter of Thomas Holand, Earl of Kent. The character of Roger Mortimer, as given by the aforesaid historian, forms an ample comment upon the epithet "courtois," applied to him, in the French metrical poem, by Creton, respecting the deposition of Richard II.‡ "He was distinguished for the qualities held in estimation at that time—a stout tourneyer, a famous speaker, a costly feaster, a bounteous giver, in conversation affable and jocose, in beauty and form surpassing his fellows." His splendid mode of living, his liberal and cheerful disposition, were sure passports to the regard of his sovereign, and had been, probably, modelled from his own example. In the seventeenth of Richard II. Mortimer, then in his twentieth year, accompanied the first expedition into Ireland, having in his retinue one hundred men at arms, of which two were bannerets and eight knights, two hundred archers on horseback, and four hundred archers on foot. Richard, hastily returning to England, left the inexperienced youth to govern that turbulent island. He had, however, competent advisers under him, if he would have listened to their councils—as Lord Lovel, Sir John Stanley, Sir John Sandes, Sir Ralph Cheyney, and others. In the nineteenth of Richard II., he had an especial commission and lieutenancy for the province of Ulster, Connaught, and Meath : and, in the next year, he was instituted, once more, lieutenant of that whole realm. He was summoned to attend the parliament at Shrewsbury, at which he appeared at the head of a crowd of retainers, clad chiefly, at his own expense, in white and crimson, with great pomp and pagean-

\* Leland, *Collect.*, vol. ii., p. 481.

† Called the fair maid of Kent.

‡ See a translation of this, with most learned notes, by my worthy friend the Rev. John Webb, of Tretire, one of which is copied verbatim in the text above.—*Archeol.*, vol. xx.

try.\* He had a cause, at that time, pending with the Earl of Salisbury, respecting the right to the town and castle of Denbigh; and when he had succeeded in his suit he returned to his government. It was a post of as much trouble as dignity, and demanded a steadier hand. "For," adds the same chronicler, "Roger, warlike and renowned as he was, and fortunate in his undertakings, and fair, was yet most dissolute and remiss in matters of religion." Like his sovereign, he neglected the prudential representations of older persons; and his rash and resolute spirit brought him to an untimely end. In a conflict, at Kinles, with the sept of O'Brien, his ungovernable impetuosity hurried him foremost upon the enemy; and, as he had advanced beyond the succour of his own soldiers, and was disguised in the habit of an Irish horseman, he was slain and torn in pieces by the savage natives, whose behaviour towards a fallen enemy, says Froissart,† was excessively ferocious.

Leland‡ says—"and ther, at a castel of his, he lay at that tyme, and there cam on hym a greate multitude of wild Irisch men, to assault hym; and he, issuyng out, fought manfully, and ther was hewen to peaces." The disguise before-mentioned would but ill accord with the sally thus described, but rather with Otterbourne's account,|| that he was riding unarmed and unattended. Yet to that we can scarce give credence. Perhaps the truth lies in the account of another MS.,§ which affirms that he went to the "rescue" of some lands that had been left to him by his mother, which his father had been obliged to reconquer before. The Irish costume might be deemed useful on such an occasion, and it is much more likely that the ravages of the natives would be directed against unprotected lands than a fortified castle.

His limbs were gathered together, sent to Wales, and thence carried to his castle of Wigmore, whence they were taken to the abbey founded by his ancestors, and, with due solemnity, interred.

This Earl of March married, as has been said, Eleanor, eldest daughter and heiress of Thomas de Holand, Earl of Kent, and his wife Philippa, daughter of Richard, Earl of Arundel, who after-

\* This is one proof, among several, that the colours of the livery were not always those of the blazon in the armorial bearings, as generally imagined.

† xi., c. 24, and the *Vita Regis Ricardi*, ii., p. 127.

‡ *Collect.*, vol. ii., p. 481.

|| p. 197.

§ In the library of the Society of Antiquarians, 87—21. See also Dugdale's *Baronage*, p. 149. The MS. Titus xi., f. 5—6, in the Cotton Library at the British Museum.

wards espoused Edward Charlton, Earl of Powys. By her he had two sons and two daughters:—Edmund, sixth Earl of March and third of Ulster, who died without issue, but had married Anne, daughter of the Earl of Stafford, by his wife, the daughter of Thomas de Woodstock, Duke of Gloucester; and Roger, who died without issue; Ann, who became the heiress of her brother Edmund; and Eleanor, the wife of Hugh, eldest son of Hugh de Courtney, Earl of Devon, and who likewise expired without descendants.

In 1399, the year in which Richard II. was deposed, Edmund Earl of March, was but seven years of age, and Henry of Lancaster, who became king, as he was next heir to the throne, kept him and his brother out of the way of public transactions. He placed them in the castle of Windsor after his accession, and gave them in ward to his son Henry, Prince of Wales.\*

In 1402, the formidable insurrection of Owain Glyndwr† took place. That valiant chieftain committed devastation promiscuously, in order to distract attention, and, among the rest, ravaged the estate of the young Earl of March. Sir Edmund Mortimer, his uncle, led out the retainers of the family, and gave the Welsh troops battle; but he was defeated, and himself made prisoner. Walsingham, Hall, Stowe, Dugdale, Rapin, Hume, and others, have uniformly asserted that it was Edmond, Earl of March, who was captured. Pennant, Coxe, Malone, and Ellis, have all noticed this as an error; but the historian of Herefordshire‡ says, not only that the uncle was taken, but “the earl himself, who had been allowed to retire to his castle of Wigmore, and who, although a mere boy, took the field with his followers, fell into Glyndwr’s hands, and was carried into Wales, where Henry, who equally hated and dreaded all the family of March, permitted him to remain in captivity.” He adds, “every circumstance seems to shew that this conflict took place in the neighbourhood of Wigmore;” and, according to Dugdale,§ it was fought on a mountain called Brynglas,

\* Dugdale’s *Baronage*, i., 151.

† Dugdale says, *ibid*, p. 716, that he had been esquire to the Earl of Arundel. He held, however, this office to Richard II. and, Pennant says was knighted by him before his deposition.—*Tour in Wales*, p. 304. Gwilym ab Tudyr was another esquire retained by Richard, at a pension of £10.—*Calend. Rol. Pat.*, p. 234. He and his brother Rhys Ddu became generals under Owain.

‡ Duncomb, vol. i., p. 86.

§ *Bar.*, i., p. 150.

near Knighton, in Maelienydd, about eight miles off, on the 12th of June, in this year.

Whilst in confinement, Sir Edmond found that the king took no measures for his enlargement; and, indignant at this neglect, he was easily prevailed on to join in a league with Owain. It seems probable that the Earl of March had fallen into Glyndwr's hands, as he tempted Mortimer with dethroning Henry, and giving to his nephew the crown; which might have endangered his life if still in the king's custody. A letter from Sir Edmond to his tenants, published by Sir Henry Ellis, seems to confirm this inference, though the editor has only contended therefrom that it was the uncle, and not the nephew, who was in captivity.\* It may be thus Englished. "Very dear and well-beloved—I greet you much, and make known to you that Oweyn Glyndor has raised a quarrel, of which the object is, if king Richard be alive, to restore him to his crown; and if not, that my honoured nephew, who is the right heir to the said crown, shall be king of England, and that the said Oweyn will assert his right in Wales. And I, seeing and considering that the said quarrel is good and reasonable, have consented to join in it, and to aid and maintain it, and, by the grace of God, to a good end: Amen. I ardently hope, and from my heart, that you will support and enable me to bring this struggle of mine to a successful issue. I have, moreover, to inform you that the lordships of Mellenyth, Werthrenion, Rhaidr, Cwmydauddwr, Arwystli, Keveillioe, and Kaereynon, are lately come into our possession; wherefore I, moreover, entreat you that you will forbear making inroad into my said lands, or to do any damage to my said tenantry; and that you furnish them with provisions, at a certain reasonable price, as you would wish that I should treat you: and, upon this point, be pleased to send me an answer. Very dear and well-beloved—God give you grace to prosper in your beginnings, and to arrive at a happy issue. Written at Mellenyth, the 14th day of December. Esmon Mortemer. To my very dear and well-beloved M. John Greyndor, Howell Vaughan, and all the gentles and commons of Radnor and Presteign."

This arrangement appears to have been made before the Percies had applied to Owain, but in the middle of the following year a tripartite indenture of partition of the kingdom seems to have

\* In his valuable publication entitled "Letters illustrative of English History." The original is in the Cotton Library of the British Museum, Cloep. F. iii., fol. 122—6, and in the French language.

been agreed upon, and the power of Henry induced Mortimer to acquiesce in the new arrangement, notwithstanding his nephew's rights were thus considerably abridged. Owain seems, on both occasions, to have displayed great diplomatic talent; and had the plan been better executed, Henry might have been hurled from his throne. The following, taken from a MS. chronicle,\* were evidently the words of the treaty:—"1403 Hoc anno Comes Northumbriæ fecit legiam et confederationem et amicitiam cum Owino Glendor et Edmundo de Mortuo mari, filio quondam Edmundi Comitum Marchiæ in certis articulis continentibus formam quæ sequitur et tenorem. Primo quod iidem domini Owinus, Comes, et Edmundus erunt amodo ad invicem conjuncti, confederati, uniti et ligati vinculo veri fœderis et veræ amicitia, certæque et bonæ unionis. Iterum quod quilibet ipsorum dominorum honorem et commodum alio volet et prosequetur, ac etiam procurabit dampnaque et gravamina quæ ad unius ipsorum notitiam devenierit, per quoscumque alicui ipsorum inferenda, impedient bona fide. Quilibet quoque ipsorum apud alium aget et faciet ea omnia et singula quæ per bonos, veros, et fidos amicos, bonis, veris et fidis amicis agi et fieri debent et pertinent fraude et dolo cessantibus, quibuscumque. Item si et quoties aliquis ipsorum dominorum sciverit vel cognoverit aliquid gravaminis sive dampni procurari sive ymaginari per quoscumque contra alium, ipse aliis quam citius commode fieri poterit, ea significabit, et ipsos de et super hoc adjuvabit, ut adversus malicias hujusmodi, prout et visum fuerit, sibi valeat providere. Solliciti quoque erunt quilibet ipsorum dominorum impedire dampna et gravamina prædicta bonâ fide. Item quilibet ipsorum dominorum in tempore necessitatis, prout decet, juxta posse, alium adjuvabit. Item si disponente Deo apparent præfatis dominis ex processu temporis, quod ipsi sunt eadem personæ de quibus propheta loquiter, inter quos regimen Britannia Majoris dividi debeat et partiri, tunc ipsi laborabunt et quilibet ipsorum laborabit juxta posse, quod id ad effectum efficaciter perducat. Quilibet quoque ipsorum contentus erit portione regni prædicti sibi ut infra scribitur limitata, absque ulteriori exactione seu superioritate quacumque, ymmo quilibet ipsorum in portione hujusmodi sibi limitata æquali libertate gaudebit. Item inter eosdem dominos unanimiter conventum et concordatum existit quod præfatus Owinus et heredes sui habeant totam Cambriam sive Walliam sub finibus, limitibus, et bundis infrascriptis, a Leogrea

\* Sloane lib., Brit. Mus., 1776, fol. 426.

quæ vulgariter Angliam nuncupatur,\* divisam; viz., a mari Sabrino sicut flumen Sabrinum ducit de mari, descendendo usque ad borealem portam civitatis Wigorniaë, et a porta illa directe usque ad arbores fraxineas in lingua Cambriensi sive Wallensi Onnene Margion vulgariter nuncupatas, quæ in alta via de Bridgenorth ad Kynvar ducente crescunt, deinde directe per altam viam, quæ vetus sive antiqua via vulgariter nuncupatur, usque ad caput sive ortum fluminis de Trent, deinde directe usque ad caput sive ad ortum fluminis Meuse vulgariter nuncupati, deinde sicut illud flumen ad mare ducit descendendo infra fines, limites et bundas, suprascriptas. Et præfatus Comes Northumbriæ habeat sibi et hæredibus suis comitatus infra scriptas, viz., Northumbr., Westmorland, Lancast., Ebor, Lincolniam, Notyngam, Derb., Stafford, Leycestr., Northampton, Warwic, et Norffolch. Et dominus Edmundus habeat totum residuum tocius Angliæ integre sibi et successoribus suis.† Item quod pugna, riota, seu discordia inter duos dominorum ipsorum quod absit, oriatur, tunc tertius ipsorum dominorum, convocato ad se bono et fideli consilio, discordiam, riotam, seu pugnam hujusmodi debite reformabit; cujus laudo sive sententiæ discordante hujusmodi obedire tenebuntur. Fideles quoque erunt ad defendendum regnum contra omnes homines, salvo juramento ex parte præfati Domini Owini illustrissimo principi Domino Karolo Dei gratia Francorum regi,‡ in ligea et confederatione inter ipsos initis et factis præstito. Et ut prædicta omnia et singula bene et fideliter observentur, ipsi Domini Owinus, Comes et Edmundus ad sacrum corpus dominicum quod perseverant jam contemplans et ad sancta Dei Evangelia per cosdem corporaliter tacta jurarunt præmissa, omnia et singula, sicut posse eorum, inviolabiliter observare, et sigilla sua alternatim præsentibus in testimonium apponi fecerunt."

This was signed at the house of the Archdeacon of Bangor. Thus the Severn, the Trent, and the Mersey, were to comprise Owain's territory; while the Percies were to have, not only all that was north of Trent, but Leicestershire, Northamptonshire, Warwickshire, and even Norfolk. Sir Edmund Mortimer was to get the remainder; and we may be amused at the superstition of the age, that these great personages conceived themselves to be the parties

\* From this and subsequent passages, as well as from Owain being first mentioned, the treaty seems to have been drawn up by one of his retinue.

† The claim of the young Earl of March seems thus to have been entirely overlooked. It could not be otherwise, as he was entitled to the whole; but Owain perceived the selfishness of the uncle.

‡ Charles VI.

prophesied, by Merlin, as those among whom the kingdom was to be divided.

The battle of Shrewsbury, fought on the 21st of July, 1403, disconcerted all these plans; and, what appears strange, we find Sir Hugh Mortimer among the slain on the part of the king, and the subsequent defeat of Glyndwr and death of Northumberland, who was slain in battle, occasioned the termination of hostilities.

Notwithstanding this depression of the fortunes of the Mortimers, there remained, in England, a party who still cherished hopes of triumphing over the proud house of Lancaster. Acts of severity towards the priesthood, and the resumption of some grants to the church, powerfully increased the numbers of the disaffected; and the release of the young Earl of March and his brother became an object, as it was a pretext, for their perpetual conspiracies. The widow of Lord Le Despenser, who had been executed at Bristol, entered into their plans, and formed a scheme to liberate the youths. She procured false keys to their apartments in Windsor castle, and succeeded in conveying them out of prison; but they were recaptured before they could reach Wigmore. She was arrested, and declared her brother, the Duke of York, to be implicated in the plot. He denied the charge, and she offered to prove it by her champion in battle. The king, however, at once seized his estates and cast him into prison. The unfortunate blacksmith, who made no discovery, alone suffered the penalty of death.

[To be concluded in our next number.]

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## ON THE NATURAL HISTORY OF THE NIGHTINGALE,

(*Philomela lusciniæ*,—Swainson;)

BY EDWARD BLYTH, ESQ., TOOTING, SURREY.\*

*Arrival of the British summer birds of passage.*—To those who love to contemplate the fair face of Nature, and notice with delight

\* The following remarks (here somewhat condensed,) on the general character of the song of the Nightingale, upon its habits and affinities, with directions as to the mode of treating it in confinement; together with a disquisition upon its migration, on the nature of the migratory instinct, and various other particulars relative to the elucidation of the causes of its peculiar summer distribution, were read, by the author, before THE WORCESTERSHIRE NATURAL HISTORY SOCIETY.

the return of spring—who mark with joy the progress made by every lengthening day, and hail each vernal flower as it opens—who can be happy because the landscape smiles around, and the howl of the tempest and the whistling of the winter winds have yielded to the soft genial breath, to the bright warm sunshine of a “merrie Aprile morn”—to those who can rejoice in Nature’s holiday, and can stoop to derive instruction and pleasure from observing the various every-day beings that surround us, to whom volumes of wisdom lie open in every weed—to the true lovers of Nature, in whose ardent bosoms every advance of the opening season kindles a new pleasurable emotion, and awakens a fresh delightful reminiscence—the arrival of our summer birds of passage, as gradually, one after another, they are announced by their cheerful melody resounding through the woods and glades, from garden and from grove—constitute a sort of epoch in the youthful year: till then, the sunbeams are regarded but as wintry smiles, and the fragrant breath of spring is feared as the precursor of a storm.

*Order in which the more conspicuous species make their appearance.*—First, upon some balmy morning, when the thrilling Larks, on high, attune the very skies to harmony, and the deep, full melody of the Blackbird, and broken music of the Thrush, reverberate through the leafless woods, and the yellow vernal butterflies are first seen disporting in the sunshine—when the primrose and odorous violet begin to dot the banks, and the budding willows already shew their yellow green—suddenly, a loud cheering note, the lively animated flourish of the gay Blackcap, sounds from a bare spray again repeated and again, and the monotonous continued cry of the wee Chiffchaff, echoing from afar, proclaim at length that summer is indeed at hand, and already is triumphant in the south.

Already on the open downs the Wheatear is seen hopping over the glebe, and a cloud of Sand-Martins are sporting about the stream; the joyous, laughing peal of the little Willow-Wren soon is warbled from the furze, the sailing Tree Pipit descends, singing, from the lofty elm, and the Wryneck repeats his call from the gnarled stump: and now the Redstart chaunts his lay from the tip-top of some high pinnacle; the welcome Cuckoo-cry is heard, and a solitary Swallow skims before us across the meadow. The earlier trees have half put forth their leaves, and the teeming earth is fragrant with refreshing rain.

*The Nightingale.*—Then soon, upon a soft, bright morning, when the fruit-trees are arrayed in purest white, and diamond drops—memorials of the passing shower—hang sparkling in the sunshine,

high over all the warbling of the grove, a louder, more distinct, and more articulate song is heard, in broken and detached staves; now gently stealing on the ear in low, soft, swelling music; now loudly shaking, thrilling, piping, rattling,—exulting in the mazziness of sound; now dwelling slowly over each lengthened note, and anon rolling, with inimitable perspicuity and rapidity, through most complicated passages. At times, we hardly can conceive it to be the voice of a bird, and wonder what strange sound now steals upon us; and then, perhaps, we again are lost in increasing amazement, when at length we behold the little throat whence issues so incomparable a flow of loud and varied melody.

*General character of its song.*—The characteristic trait of the Nightingale's song consists in his very superior powers of execution. He has an endless variety of inimitable rolls and quavers, all of which are delivered with a perspicuity and richness of tone quite peculiar to himself. No verbal description, however, will convey a definite idea of the musical powers of this bird; he must be heard to be duly appreciated. His singular, clear, piping notes, contrasted with bold shakes, and long-continued, quick, distinct repetitions of a monosyllabic sound, are wholly and entirely unlike the songs of every other British bird, nor can they be mistaken for any other; (a few notes of some Canaries, perhaps, approaching nearest to them). Loud, and interrupted by frequent pauses, like the broken stanzas of the Thrush, his various notes are in general more continuously connected, and each separately is dwelt upon more repeatedly, than in that bird. As he is the finest, so, when in full song, he is the loudest minstrel of the wood, to whose powerful music all the rest are a mere accompaniment; and in the silent midnight, when nought else breaks the calm and universal stillness that prevails—save, perhaps, a cold, chilly breeze, at intervals, rustling through the dry, dead leaves, that, curled up and crisp, still loosely attach to the vigorous and sturdy bushes of oak—his clear, soft, plaintive swells, loud shakes, and sudden cadences, re-echoed all around by other rival songsters of his race, form a soft, witching concert from the moonlit woods, that stirs and elevates the very soul to harmony.

*Illustrated, in some degree, by a comparison of it with those of other birds.*—The Nightingale's song invariably improves upon acquaintance. At first, all are surprised by it—astonished at the volume of his voice—and some hardly know even whether to like it; so different does it prove from what they had expected. To resort again to comparison, it may be said to be delivered somewhat in the

manner of the Wood Lark's lay ; yet each note—save one or two—are extremely different. Some few of the clear, silvery, dulcet warblings of that charming songster, are, indeed, fully equal to any of those of the Nightingale ; but, altogether, its song is inferior, being too much uttered in a single plaintive key. The Nightingale has no flourishing liquid melody, like the pure sweet note of the Blackcap, nor does he try to emulate the rich, deep, flute-like music of the Blackbird and Garden Warbler ; but he excites our admiration by the wonderful variety of his tones, by that perfect command and compass of his rich and powerful voice, which enables him, without seeming effort, to articulate the most delicate and complex passages ; he moves our wonder—"by the infinitude of resources of his incomparable organ—brilliant bursts, lively, delicate trills, volleys of rapid notes whose distinctness equals their volubility ; an internal, dull murmur—not itself pleasing to the ear, but very fit to enhance the brilliancy of the more agreeable strains ; sudden and rapid runs, articulated with strength, and even a tasteful ruggedness,—plaintive accents, and tender cadences."\* No difficult combination of sound would seem too much for him—for a few short weeks he literally overflows with song ; the woods by night are vocal with his melody, and he leads the band of feathered choristers by day.

*Supposed difficulty of studying the Nightingale's wild habits.*—It is observed, by an able and very eloquent writer of the present day, that, "from their retiring disposition, the habits of Nightingales, in a state of nature, must always be to a very considerable extent conjectural ; because, instead of being able to follow them in the details of their history, it is not very easy to see the same individual twice." Now, I am by no means disposed to accede, altogether, to this remark of Mr. Mudie ; and, in fact, it will not apply even where the birds are plentiful, much less where the species is comparatively rare. My endeavour, therefore, in the present essay, will be, to treat very fully, and in detail, of all that relates to Philomel as a British bird ; hoping that, in my attempts to elucidate completely, and in all its bearings, the natural history of this celebrated songster, I may not be considered tedious, prolix, or verbose.

*Its general expression and attitude, and mode of progression on the ground.*—I have already endeavoured to describe the character and style of its delightful music—the quality for which, in all ages,

\* Buffon.

it has ever been the theme of poets, and the delight of all those who have music in their souls ; and I have introduced it, as the song itself comes into notice, as a sort of climax to the development of the vernal season. Of the colours and specific characters of the bird, we have, at present, no occasion to treat minutely. Its form is very similar to that of a Robin, though rather larger, and longer in all its proportions ; and its common attitude and general expression are also much the same as in that bird. As observed upon the ground, where it finds the greater portion of its subsistence, its manner of progression exactly resembles that of the Thrush tribe, and very much that of the Robin, moving about by regular, deliberate hops, with its plumage generally much puffed, and the tail mostly raised higher than the points of its wings ; now and then this is jerked, at which time a deep *tack* is sometimes uttered, which, as Bechstein remarks, may be exactly imitated by smacking the tongue : this note is always expressive of satisfaction and pleasure, and is sure to be uttered on the occasion of finding a favourite morsel. It is, in general, an extremely quiet, sedentary species, retiring very much from observation, and, in confinement, will often sit for hours together upon its perch, with its plumage puffed, and resting on one leg, though, at times, it is sufficiently active.

*Pugnacity and rivalry of song.*—The Nightingale is at all seasons a solitary and pugnacious bird, each selecting a little district to itself, and attacking all of its own species that invade its territory ; in this, reminding us of the Robin Redbreast, to which it is somewhat allied—indeed, sufficiently so to breed with it in confinement. It also resembles that bird in the habit of two or three often singing against each other ; not warbling simultaneously, in the manner of Linnets and others, but each replying to another's strains. M. Bechstein observes of them, in confinement, that “ some Nightingales dislike being in the window, and prefer a dark corner of the room ; others like the light and the sun. \* \* \* Some will sing only when they are alone, while others like to perform alternately with a neighbour ; but they never sing so loud and well when there are many together in the same room. Perhaps jealousy is the chief cause of this,” [or rather, I would say, they dislike being interrupted.] “ On these occasions,” he continues, “ the first that begins generally maintains the superiority ; the others sing only when he stops, and this but seldom, or in an under tone. Some are so sulky that they will not sing at all, and, from their silence, are occasionally mistaken for females, and dismissed the room ; but no sooner do they find themselves alone, than they sing aloud.”

*Evinces no hostility to birds of any other species.*—Like Robins, and most other birds nearly allied to the latter, two Nightingales of the same sex can never be kept together in a single cage (excepting when very young), or one would soon destroy the other. Yet I have often kept them in the same cage with birds of various other species, to the presence of which they are quite indifferent. “A Nightingale,” observes the Hon. and Rev. W. Herbert, “which had lived two years in a cage full of birds, in perfect amity with them, and even suffered the common Wrens to jump and rub themselves on its back, instantly attacked, in the most violent manner, another Nightingale which was placed in the cage.” Like Robins, they frequently fight very desperate battles when one intrudes a little upon another’s territory.

*Its periods of arrival and departure.*—The Nightingale is heard mostly, for the first time, in the neighbourhood of London, about the 14th of April; sometimes a few days earlier, but that is the day upon which those who make a trade of catching them depend on their arrival. I have generally first heard them about the 17th. In *The Naturalist’s Calendar*, of White, of Selborne, the period of their first appearance is extended from the first of April to the same day of the following month.\* They depart in September, I have reason to believe singly, and not in families, as is stated by Bechstein. It would be contrary to the whole tenor of the Nightingale’s habits to assemble even in small societies, and at variance, also, with those of the birds to which it is most allied. In Italy, they are said to arrive in March, and depart in November; from which, at first sight, we might be naturally led to infer, with M. Bechstein, that they proceed, by slow journeys, overland, though I do not believe this to be the case, for reasons it will be more convenient to mention when I come to treat more particularly on the nature of the migratory instinct.

*Has been noticed, in the south of England, on New Year’s day.*—A few very rare instances have been recorded of this bird remaining through the winter, in the southern counties of England. The poet Cowper addresses some stanzas “To the Nightingale, which the author heard singing on New Year’s day, 1792;” and Mr. Newman, in *The Magazine of Natural History*, relates that, “On December 12th, either 1823 or 1824, he heard the Nightingale singing clearly and distinctly, although not very loudly, at Godalming, Surrey;” and he remarks that, in the same neighbourhood,

\* This depends very much on the state of the moon.

he has "frequently seen the Nightingale in October, and once in November." This species, in a state of captivity, as is the case with those other of our migrant songsters which *do not* undergo a moulting in the spring, usually begin to sing about Christmas, or a little after; so that, if it ever do continue in this country through the whole winter, it is difficult to conceive how its melody should escape notice during the earlier months of the year: certainly, in the cage, it never sings more delightfully than at this period.

*The males of most migratory birds arrive sooner, and depart later in the season, than the other sex.*—It is all but an universal law among migratory land birds, for the male to arrive several days before the other sex, and to depart later in the autumn: in other words, male birds would appear, in general, to be more susceptible of the influence of heat, and female birds of that of cold. Not that I consider that change of temperature is, by any means, the ultimate cause of birds seasonably shifting their habitations, nor is it, in all cases, even an element in the mystery, for the Swift and the adult Cuckoo retire southward at the very hottest period of the year, and when their food, also, is apparently most abundant. Still it is a predisposing cause, which tends to increase the force—and to accelerate the period—of that periodical migrative impulse which would certainly be evinced in due time, even were the temperature to continue the same; as the above-named cases of certain species leaving us during the heats of summer attest sufficiently.

*Supposed cause of this.*—Male birds appear for the most part to be considerably more lively, and sprightly, than their mates, fonder of exposing themselves in the sunshine, and may possibly, on this account, be sooner affected by the influence of that luminary; while the females, on the other hand, are in general much more hidling in their habits, and living more in the shade, may probably, for this reason, be sooner chilled by the cold air of autumn, and more tardily excited by the genial influence of a vernal sun, than if they kept less to the covert. It is a fact extremely well known to bird-catchers and others, that the arrival of the male Nightingale precedes invariably that of the other sex by full ten days or a fortnight; and they cease to capture them from the period when the hen birds first make their appearance.

*The Nightingale's period and time of singing.*—The bursting forth of this species into full song is affected chiefly by the weather, for they very much dislike cold winds, though they seem to be quite indifferent about rain: if the weather prove favourable, they sing out immediately on their arrival in the woods. Then is the time

to hear them to most advantage, for the song slackens, at least, is only delivered at intervals, after they have paired. Towards the close of May, it is heard gradually less and less frequent, till it ceases altogether; and, in general, it is continued for a longer period by night than by day. They sing much more frequently at midnight, than in the evening; about eight or nine o'clock not a single Nightingale will, perhaps, be heard, when, an hour or two afterwards, all is music. A correspondent who has minutely studied the habits of this species, in Derbyshire, Mr. Neville Wood, thus accurately writes me word upon this subject. "Clear moonlight nights are very favourable to the song. In dark and windy nights you never can be sure of hearing it; although even heavy and continued rain does not appear to disturb it in the least. Sometimes, however, on these unmusical nights, the shutting of an adjoining gate, the striking of a church clock, the passing of carriages, and even the walking of passengers on the hard road, will frequently induce it to commence its melody, notwithstanding its original intention of taking a night's repose. Sometimes when my friends had come on purpose to hear the Nightingale in my neighbourhood, it would remain obstinately silent, and my friends were obliged to depart disappointed. At length, however, I hit on an expedient which seldom failed—the whistling in imitation of its strains. I one night started a Ring Pigeon close to where the Nightingale was singing, without the latter seeming at all alarmed; but if, on the contrary, I happened to make a very slight rustling among the dead leaves lying on all sides, it would instantly discontinue its song."

*Its enemies.*—This, of course, arose from the Nightingale's instinctive fear of Weasels, and other small beasts of prey, which, it is probable, led on by their keen sense of smelling, not unfrequently attempt to pounce upon the hen bird when she is sitting; and, indeed, Nightingales, finding their chief subsistence on the ground, must be very much exposed to the attacks of enemies of this kind, and are no doubt always upon the alert to avoid them; the dry fallen leaves, among which they chiefly reside, giving notice, by a rustling sound, of the very lightest footsteps that approach. Throughout all animated nature, the chances of the prey are balanced with a wonderful degree of nicety against those of the preyer; and the same unobtrusive, retiring, habits, which endanger this species to become the prey of small carnivorous quadrupeds, also exempt it, on the other hand, from the attacks of most predatory birds.

*It ceases to sing a little before Midsummer.*—The music of the Nightingale is rarely heard after the first, or, at most, the second, week in June; but it appears, from Montagu's experiments, that if the hen bird be taken from her nest, the male will resume his song, and will continue to sing till very late in the summer, or until his notes have attracted another mate. From this, therefore, it follows, that the Nightingale does not lose his power of voice at Midsummer, as some have stated; and we might consequently infer, with Mr. Knapp, that the true reason of this bird always ceasing its melody at this period is, that his time is now wholly occupied in procuring food for his young family; but, as it is well known that caged Nightingales, which have no nestlings to provide for, invariably discontinue their song at precisely the same time with the wild birds, we must, of course, endeavour to assign some other cause for its silence. Probably the change which then takes place in its whole system, preparatory to the autumnal renovation of plumage, affects the Nightingale more immediately than most other birds, and requires the exciting cause of being in want of a mate to counteract it; yet I am aware of no species which, in general, moults more easily than this, and, in confinement, none suffer less during this change.

*May be closely approached when singing.*—When the Nightingale is singing, concealed in a bush, he will not suffer himself to be approached too near, and, though he does not immediately fly, he ceases to sing, and signifies his displeasure by a peculiar harsh croak (resembling the sound *carre*, pronounced with a rolling of the *r's*); and if, upon his repeating this three or four times, the intruder should not retire, he flies, or, sometimes, merely hops circuitously along the ground, to another bush; still, if we advance very gently, so that he may not be startled (and he will thus often permit of a closer approach than the generality of our singing birds), he will sometimes shew himself, and sing loudly, within a couple of yards of the spectator, when the considerable dilatation of his throat will be very obvious, and when it is impossible not to admire the lightness and elegance of his form and movements, and the amazingly long hops which, with effortless ease, he takes from bough to bough.

*Both sexes utter a plaintive cry when any one is near the nest.*—After the young are hatched, should any person approach their nest, the parent Nightingales are extremely clamorous, uttering a loud and very plaintive monotonous cry (resembling *hweep*), and repeating, at intervals, their usual harsh croak, so well known in places where these birds abound. The nest is, however, most exceedingly

difficult to discover, the colour of the eggs, and also of the young birds, being exactly that of the ground, or rather of the decayed leaves, among which, under covert of a thick bush, it is most usually concealed.

*Courtship.*—As is the case with most other feathered musicians, the male Nightingale first establishes himself in some convenient and suitable spot; and the wandering females are attracted to him by the melody of his voice; both sexes (as I will presently shew), in all probability returning, for the most part, to the exact locality they had left the previous autumn: so that, likely enough, the very same pair not unfrequently proceed again together with the business of nidification.

*Nidification.*—The nest is composed externally of decayed leaves, similar to those which cover the ground around it, and which appear to have been laid on wet, that they might adhere the better together. The specimen now before me, is thus of a tolerably compact structure; but sometimes they are very frail. It is lined, first, generally, with skeleton leaves, which most writers seem to have mistaken for small rootlets, and over these is laid a little dry grass, and, sometimes, horse-hair. The eggs are from four to six in number, (and, not unfrequently, these are not all hatched), of a greenish brown colour, which is sometimes broken into small spots, which are of course darker upon a lighter ground, and are thickest at the large end. They vary considerably in size. About fourteen days are required to hatch them, and the young are, in their first plumage, mottled, and not very unlike a young Robin; each feather of the upper parts having a pale spot at the tip, and those of the under being edged with black. They never breed more than once in the season; and when a nest is discovered much later than the usual time, some accident must have certainly happened to a former brood.

*Site of the Nest.*—Bechstein, a rather celebrated German writer in this department of natural history, but who studied the habits of birds more as observed under the restraints of captivity than as free denizens of the groves and hedges, describes the Nightingale's nest to be "built in a grove or orchard, among a heap of branches, or on a thorn bush, or the trunk of a tree surrounded by briars; or even on the ground, where it may be hidden by tall grass, or thick bushes." The last mentioned is the only situation whereon I have ever known it to be placed, nor can I find a single British author who corroborates the former part of this account. The nest is hardly, in fact, sufficiently coherent to be placed elsewhere than on

the ground, or on some equally solid foundation. Still, I think that it is as well just to mention the foregoing passage in M. Bechstein's work, as this author is, in general, extremely accurate in what he advances.

*The Nightingale has bred in confinement.*—There have been some instances recorded of the Nightingale breeding in captivity; and I have been informed, by a friend whose veracity is not to be questioned, that himself once succeeded in pairing a Nightingale with a female Redbreast, which latter produced four eggs, but unfortunately died egg-bound, when about to lay a fifth. It is a pity that these eggs were not placed under some other bird, as the hybrids would have been extremely interesting, in more points of view than one.

*Moult.*—This species moults its plumage but once in the year, towards the close of summer; and the young (as in all other *dentirostral* birds)\* sheds all its first feathers, with the exception of the wing and tail primaries, very soon after leaving the nest, assuming the garb and appearance of the adult bird some time before it quits us for a warmer region.

*Its Song, as in the Thrush genus, is not wholly innate.*—It is a fact, very well worthy of remark, that young Nightingales, reared from the nest, or caught before they leave us in the autumn, (unless brought up under an old bird), are never known to display the splendid musical attainments of those which come over in the spring; which proves that, in this particular species, the song is for the most part acquired, rather than innate; as is also the case with the different Thrushes,—those which are brought up in cities, where they cannot hear their free brethren, never repeating the true wild notes of their kind, but intermingling with such notes as they do sing, a variety of strange noises which they hear from the street. Accordingly, it has been observed by Mr. Sweet, (and I could mention many instances in corroboration,) that “a young Nightingale is apt to catch all that it hears, and to be deficient of many of the ordinary notes of its species. I had one,” he relates, “for three years, and it never sang a stave worth listening to,—the year before last I turned it out, [he should have stated at what season of the year, but I should opine towards the close of summer], and it continued in the gardens round the house until it left the

\* The Muffin, (*Mecistura vulgaris*), and the Bearded Pinnock, (*Calamophilus biarmicus*), are in so far exceptions to this generalization, that they shed, during the first autumn, the primary feathers of the tail, but not those of the wings.

country in autumn: it returned to the same place the following spring, where I recognised it by its bad song; and it remained in the neighbourhood all the summer, and bred up a nest of young ones." From this, I think we may fairly infer that the song of a Nightingale is formed during the first winter, and cannot be improved afterwards.

*Some female birds occasionally sing.*—Mr. Sweet continues—"A female that I had also been keeping for six years, to see if she would breed, I also turned out along with him; but whether she came back and was partner in the nest, I cannot say, as I had no mark to know her by. This female I kept four years, and it never attempted to sing; the fifth year it sang frequently, a pretty, soft, Nightingale's note. I have found this to be the case with several female birds; they do not sing till they become aged: but it is not an unexceptionable rule, as I have had a female Willow Wren that sang when quite young." The Nightingale quits the nest very early (as is the case with most other ground-building birds), and both sexes warble to themselves, even before their tails have grown to the full length. The young females generally continue to do this, but in a weaker and more unconnected way than the young males, till the following spring, when they gradually leave off *recording*, as this sort of singing is termed, by amateurs.

*Longevity.*—M. Bechstein observes of the male Nightingale, in confinement, that "after they have reached six years, they begin to sing less frequently and long, with less brilliancy and ornament. "It is then," he continues, "better to set them at liberty, in the month of May. The open air often invigorates them so much, that they regain their song, in all its force and beauty." I question very much, however, how M. Bechstein contrived to identify his birds; for, in my opinion, a caged Nightingale set at liberty, in the month of May, would, to a certainty, proceed northward; and the alteration in the song, it will be noticed, tends rather to corroborate this view of the subject. The same author asserts that a Nightingale may, by proper management, be kept in confinement fifteen years; and he mentions one instance of an individual having attained the age of twenty-five years, in captivity.

*Food.*—The food of the Nightingale consists almost entirely of insects and their larvæ, and, towards the end of the season, they eat elder-berries, and sometimes currants, which, like Robins, they swallow whole; but they never attack larger fruit, nor will they touch it in confinement, if placed in the cage. Their subsistence is chiefly sought for upon the ground, where they devour a considera-

ble number of the grubs of beetles, which they find among the decayed leaves ; also, large moths and ground spiders, together with the smaller ground beetles ; and they are fond of most species of smooth caterpillars, though some they refuse (as that of the common magpie moth, *Abraxas glossulariata*) ; as also every sort of hairy one. Small earth-worms, too, they will readily feed on in the wild state, and, in pursuit of them, are easily attracted by turning up a little ground ; but, like the Robin, they will very seldom touch these in confinement, which would imply that they only resorted to them in default of finding food more to their taste. In confinement, their most favourite morsel is a house spider, or the grub of a beetle ; and they are greedily fond of large-bodied moths, which latter, after knocking about and beating off the wings, they swallow whole. They always snap instantly at every fly that comes within the precincts of their cage.

*Distribution.*—This bird is rather partially distributed over the country, being only found upon the chalky, gravelly, sandy, and, sometimes, upon the clayey, soils ; frequenting the richer wooded districts, more particularly when these fringe the banks of rivulets or canals ; not that it affects watery situations, like the Reedlings, (or aquatic warblers), for it is found at every distance from them, but is merely attracted by their greater luxuriance of vegetation. It avoids alike both the rocky country and the fen, and though abounding in the woods, shrubberies, and along large double hedges, in the south-eastern counties, it is rarely found so far west as Devonshire, or to the northward of Doncaster, in Yorkshire ; although on the continent, it is said to occur plentifully in Sweden, and in the northern parts of Germany.

*May be influenced, in some degree, by peculiarities of food.*—The cause of this restriction has always been considered obscure ; and not improbably it is, in some instances, complex. Montagu observed that the young were chiefly fed upon a kind of small, green caterpillar (perhaps, as Selby remarks, that of a *Tenthredo*), but he does not particularize the species : and it is possible that these may feed only upon some plant, which is limited to certain soils or situations, or which, at most, may occur only upon particular sedimentary strata. We want, however, some further observation on this subject, in different and distant localities wherein the bird is found ; the which, at any rate, might tend to elucidate any minor and local difficulties that may occur anywhere concerning its partial range, and would, probably enough, furnish the clue towards explaining, at once, why any districts are

avoided, which may be situate within the general boundaries of its summer distribution.

*It is not, as some have supposed, confined to the localities where the cowslip grows.*—It has indeed been suggested, that the Nightingale may possibly not be found in any part but where cowslips grow plentifully; and, with respect to Devonshire and Cornwall, this coincidence is, as Montagu observes, just, but fails in certain localities near London, where (as in the extensive woods of Norwood and Dulwich) this bird is extremely plentiful, but the cowslip is not found; while, on the other hand, in the vicinity of York, where cowslips are, I am told, plentiful in the extreme, the Nightingale never visits; so that there is evidently no connexion in the matter, which indeed might have been expected, *prima facie*, the one being a bird of the woods, and the other, properly, a plant of the open meadow.

*Appears to migrate almost due north or south.*—There may probably be some suitable districts from which this bird is excluded, on account of the route which leads to them being, perhaps, cut off by a mountain or other impediment, while a fertile tract of country, on either side, tends further to make them diverge from a direct course. Others, as the wooded vallies of Devonshire, Wales, Ireland, and the greater part of Scotland, are unquestionably situate beyond their regular line of migration: for I am prepared to shew (at least so far as all the data I have been able to collect will bear me out) that, in its migrative flights, the Nightingale hardly deviates from a meridian; which, being conceded, together with the fact that it everywhere avoids both the rocky and the marshy lands, it will be found that all the seeming anomalies, as yet recorded, displayed throughout the whole extent of the Nightingale's apparently partial summer range, may be satisfactorily accounted for. We have now only to discover what peculiarity of food excludes it from those sylvan districts which are situate over the rocks of igneous, or (as some term them) primary, formation.

*Supposed route of most of the summer birds of passage.*—The following will, I think, appear to be, in all probability, the common route of the Nightingale, and, indeed, of the great majority of the short-winged summer birds of passage which visit the British islands. They would seem, in the first instance, to cross from Africa into Spain, to pass chiefly through the eastern provinces of that kingdom (being kept in this direction by the continuous mountain chains, which, for the most part, run north-east and south-west); then to penetrate through France, having surmounted some

of the passes of the Pyrenees, and many, perhaps, coasting along just to the interior of the shores of the Bay of Biscay ; these latter continuing their course overland, from about Rochelle, till they arrive at the channel, which, in consequence, they must cross, chiefly at its narrower, or eastern limits ; being even on this account less likely, when making for our shores, to be borne away by adverse winds, and distributed much to the westward of the point from which they took their departure, than those species which are more discursive in their seasonal journeys, and of which many individuals appear to cross from the westernmost extremity of Brittany. Admitting, then, this to be the route of the Nightingales which traverse the eastern parts of Spain, and that, as appears most probable, these deviate but a very little indeed, either to the right or left, we are by no means surprised to find that this bird is unknown in Le Bugey, and other districts of the south-east of France, and we are prepared to hear of its not occurring in the west of Brittany, and (excepting as an occasional straggler) to the westward of at most the third degree of longitude in the British islands. It is to be regretted that good local continental *faunas* are, at present, so rare, and difficult of access, and that, accordingly, we have as yet so very few data for determining, in a satisfactory manner, the exact routes, and consequently the precise geographical range, of our numerous migratory birds.

*General distribution of the summer migrant birds over the British islands.*—We are not, however, by any means, hence to infer, of all the species, that their migrations take place so nearly in a meridional line as those of the Nightingale ; for some of them, as many of the Warblers, appear to follow, pretty closely, the course of rivers, along the different vallies ; while others, as the common Wheatear, seem everywhere to frequent more the upland grounds, each pursuing, thus, the range of its particular haunts, so long as this does not too much interfere with its direct route. Of their general distribution in our own islands, I think it probable (as we have already seen) that by far the greater number cross over at the narrower portion of the British channel ; and that, afterwards, when arrived upon our shores, the less discursive kinds (indeed, the majority of them all) continue their course northward, rather than disperse towards the west ; so that all are commonest in the south-eastern counties, while a few species hardly visit at all, or very sparingly, the extreme west of England, and the south of Ireland : those, indeed, that do, being in all probability the individuals that had crossed over from Brittany, a district which I more than suspect is never,

or but very partially, if at all, towards the eastward, visited by the Nightingale. I can at least state confidently, from inquiries on the spot, that this bird is quite unknown in the Channel islands, Jersey, Guernsey, &c. ; which are, besides, of a geological structure adverse to its taking up in them its abode.

*Range of the Nightingale over Europe.*—Nightingales have been observed, by Sonnini and others, to winter, in considerable numbers, in the thickets of the Egyptian delta ; and we consequently find them, in summer, distributed over most suitable districts of the east of Europe, and part of Asia. Those that visit Germany probably ascend by Sicily and the Italian peninsula, and not a few, perhaps, along Sardinia and Corsica ; some of which latter, arriving on the western shore of the gulf of Genoa, may be those which visit above Nantua, in France, to the south of which town they are said not to be found. Many species of migratory birds, also, disperse themselves over Spain (that is to say, over the central and western provinces of that peninsula), apparently surmounting, or perhaps arriving to the westward of, those obstacles which had caused others to deviate a little to the eastward ; and it is highly probable that no inconsiderable number which attempt annually to wing their way over the turbulent Bay of Biscay, perish in the Atlantic ; the weary, exhausted state of the different Swallows, which were noticed, by Mr. Couch, to arrive on our Cornish coast, indicating how fatiguing and severe a journey this had proved, even to them ; for there can be no doubt that these had accomplished it, as also the Alpine Swifts which have been observed in Ireland. This opinion is, indeed, considerably strengthened by the fact, of two or three species of short-winged migratory birds being almost peculiar to Spain and Portugal.

*Small birds require a favorable gale of wind, to enable them to traverse a wide extent of sea.*—In this little essay, in order to explain satisfactorily whatever I may have occasion to advance, it will be as well, perhaps, to adduce, as I proceed, some authorities by way of corroboration. To those persons who may not have attended much to the facts concerning the migratory journeys of birds, a variety of apparent contradictions arise continually ; and I may be reasonably asked that, while Fieldfares, and Redwings, and even tiny Goldcrests, are known to arrive, by thousands, upon our shores, having evidently winged their way across from the Scandinavian peninsula, how is it that even the rapid and powerfully-winged Swallow tribes, are but just able to reach England from the northern coast of Spain ? while again, on the other hand, we find in-

stances of the American *Coccyzus*, and even the Whitewinged Crossbill, traversing the whole breadth of the Atlantic ocean. The fact is, that even the most feeble flyers are enabled to cross a very wide extent of sea, when borne along by a favourable gale of wind; while, at the same time, the most powerfully-winged of the smaller birds require some assistance of this kind, when they perform a long journey. American species are only observed upon our shores after high winds from the west; and the amazingly extensive flight of Goldcrests, of which Mr. Selby witnessed the arrival upon our Northumbrian coast, he states to have been, "after a very severe gale, from the north-west." Quails have been described always to delay their migratory flights till the wind was propitious; and, indeed, there can be very few individuals but must have often noticed with what rapidity a bird is borne along upon a windy day.

*They rise over the highest European mountain chains.*—Again, I have had occasion to speak of birds being turned out of their course by a chain of mountains, and also of their having accomplished a passage over the Pyrenees. They, undoubtedly, may deviate a little from a direct route, when a line of ridges presents itself to them diagonally; but when a chain latitudinally impedes their progress, they are known to cross the very highest of the European mountain barriers. On this subject, M. Temminck observes, even of the short-winged Grebes, and other species which, as he says, "are unprovided with powerful means of flight. The Divers, the Grebes, and other fresh-water fowl, which seldom fly far when occupied with the cares of pairing and breeding, are," he relates, "endowed with wonderful powers for this action. Their flight is vigorous and long sustained; and they rise even above the high mountains, for it is not rare to find individuals of these species on the lakes of the Alps, where the waders and web-footed kinds are often killed."

*They return, year after year, to the same spot.*—Another very general law among migratory birds, but which appears to have been hitherto but little known to most who have written on the subject, is, for them to return, year after year, to the spot where they first took up their abode, and, in most cases, to the place where they were brought up, (but of this I shall speak presently); of the truth of which any one may be convinced who will take the trouble of procuring a few live swallows in autumn, securely fastening some shreds of ribband to their feet, and letting them fly; when some of them (at least), which have met with no mishap during the interim, will be observed to reappear the following spring, with the

shreds still attached to them. Of course these should not be affixed to the birds in too conspicuous a manner, or curiosity will very probably impel some person to shoot them. It is an experiment which has been very often tried, and formerly with a view to ascertain whether the swallow tribes passed the winter at the bottom of pools, the shreds having been previously tinged with water-colours, which immersion in water would have washed away. That the Nightingale thus returns to its former locality, a passage, which I have already quoted from Mr. Sweet's writings will attest sufficiently.\* It can also be shewn, from various recorded facts, (as the cases which are related by Bewick, in his account of the Woodcock, as well as from other similar ones which might be adduced), that migratory birds likewise revisit, annually, the exact same winter quarters; and although Redwings, and Snowflakes, and other species which pass the winter so far north as in the British islands, may sometimes, by severe weather, be compelled to proceed farther to the south, it does not hence follow but that, in regions where the climate is more settled, our various summer visitants may have a regular winter home, from which they never wander.

*Reasons why they should do so.*—We naturally enough inquire why this should be, and what definite purpose can this serve in the economy of nature, since nothing is ordained in vain? The answer is sufficiently obvious: that locality in which a brood of migrant birds were reared and brought up one season, will mostly be adapted for the same purpose another; and the same district wherein a sufficient supply of food and other requisites was obtainable throughout one winter, will also, in all probability, furnish an equal supply during the next.

[To be concluded in our next number.]

\* Since writing the above, I have been informed of a lame Redstart which was noticed to return for *sixteen* years to the same garden. The following fact is also interesting, as *proving* that the hens also return to their former locality. "Flycatchers," observes the author of a little work on Migration, 1814, "I have known to build eight, nine, and even ten years successively, in a certain crevice of an old wall, not far from my dwelling. Apprehending that it was the same bird which annually and invariably visited the spot, curiosity prompted me to try an experiment, which put the matter out of doubt. When an opportunity offered, I took the female, cut off the extremity of the upper mandible of the bill, and with a knife made several perspicuous marks on its claws: this done, I set her at liberty: the succeeding spring the same bird returned, with the distinguishing marks I had given it, which was at once satisfactory. The point of the bill that was cut off was so very inconsiderable, that the loss of it could hardly be perceptible to the bird, and could not be, in any way, detrimental to its feeding.

## ON THE EFFECTS OF CERTAIN MENTAL AND BODILY STATES UPON THE IMAGINATION.\*

BY LANGSTON PARKER, ESQ.

### II.—THE IMAGINATION OF DREAMERS.

IN my first lecture, I considered the Imagination in the general phenomena of its actions in the waking state, and its modification, in that state, by certain agents, of which we found the most powerful to be solitude, study, wine, and opium. The Imagination is, likewise, most powerfully modified in the condition in which I then considered it, by disease: but this was too exclusively a medical subject to merit much attention in this series of discourses, and, in addition to this, it will demand some portion of my attention when speaking of the Imagination of the insane. This lecture leads me to the history of the Imagination during sleep, as it is displayed to us in the phenomena of dreaming, and the modifications of this faculty, in that state, by certain agents—such as disease, diet, moral causes, the passions, wine, and opium. There are visions that arise without sleep; but, generally speaking, dreaming is confined to this state. “Waking dreams are merely the effects of unbridled Imagination, from which none of us are altogether exempt.”† This faculty, when exercised under common circumstances, is kept in strict subordination to the judgment, which guides and restrains us in its flights, and never, for a moment, permits us to suppose that the fictions it calls forth are realities. But when this sway of the reasoning power is shaken off—when the spirit mounts upwards, unfettered and alone, and we forget that the sights revealed to us are merely illusive visions—then, and then only, are we assailed by waking dreams.

“The train of ideas which fill the mind at this time, depend much upon the age, situation, and character, of the individual. If he pine ardently after wealth, his mind is, probably, filled with visions of grandeur and opulence; and the hallucination is so great, that he supposes these things to be in his actual possession.”‡ If he be young, and burn with the fire of genius, all obstacles give way before him; he creates new systems, remodels old ones, gives fresh colouring to truth: whilst Fame, with her olive crown, is seen, in

\* The following is the second of a series of Lectures delivered at the Birmingham Philosophical Institution, by the author.

† Macnish, *The Philosophy of Sleep*, Glasgow, 1830.

‡ Macnish, *op. cit.*

perspective, through the deep vista of coming years, waiting to reward him with a crown as unstable and powerless as the vision which created it. "Whatever emotion prevails has a character of extravagance: we see everything through the serene atmosphere of the Imagination, and imbue the most trite circumstances with poetical colouring. The aspect which things assume, bears a strong resemblance to that impressed upon them by ordinary dreams. They are equally full of pathos and beauty, and only differ in this, that, verging continually on the limits of exaggeration, they seldom exceed possibility."\*

Dreaming is, however, generally limited to the sleeping state. General or complete sleep is a species of temporary death: the continuance of the functions of the organic life, of respiration, circulation, and a few others, merely indicate that the man thus influenced is still an inhabitant of earth. The whole of those actions which constitute the pride and pleasure of our existence, are extinct during complete sleep. The life of relation, as it has been termed by physiologists—the mind and the senses—for this period actually cease to live; they are not in action, and their action alone constitutes their being. Complete sleep is, comparatively, a rare condition of our animal existence, and is only compatible with the most perfect mental and bodily health, or with that state in which both have been exhausted by continued or intense fatigue.† The body may

\* Macnish, *op. cit.*—The waking dream is not inaptly illustrated by Sir W. Scott, in the description which the White Maid of Avenel gives of herself to the Monk, Eustace:

"'Twixt a waking thought and a sleeping dream,  
A form that men spy,  
With the half-shut eye," &c.—*The Monastery.*

Also by Thomson, in *The Castle of Indolence*:

"A pleasing land of drowsy-head it was,  
Of dreams that wave before the half-shut eye."

Wordsworth's ballad of *The Reverie of Poor Susan*, is a light, but perfect, illustration of this mood of the Imagination. See his *Lyrical Ballads*.

† Shakspeare well describes the perfect or complete sleep of fatigue and mental health, *i. e.* a mind free from all anxiety, care, and guilt: the first in the words of Claudio, in *Measure for Measure*:

"As fast locked up in sleep as guiltless labour,  
When it lies starkly in the traveller's bones:"

the second, in the address of Brutus to his page, Lucius, in *Julius Caesar*:

"The honey heavy dew of slumber;  
Thou hast no figures nor no phantasies,  
Which busy care draws in the brains of men;  
Therefore thou sleep'st so sound."

sleep without the mind—one sense may be in action, and the remainder chained in the fetters of undisturbed repose. The memory may be active, the imagination dormant; the latter may be “girdling the earth,” whilst the former, together with the judgment, have left the mind governed by the fancy alone. The latter is by far the most ordinary state during sleep. The Imagination being endowed with tenfold life and power, whilst, it should seem, the remaining faculties have given up the peculiarities of their existence for a time, in order to concentrate the whole mental force in the brilliancy and vigour of the Imagination.

Byron, with his usual characteristics of poetical beauty and mental or physical truth, has admirably depicted this activity of the Imagination during sleep :

“ Sleep hath its own world,  
 A boundary between the things misnamed  
 Death and existence : Sleep hath its own world,  
 And a wide realm of wild reality :  
 And dreams, in their development, have breath,  
 And tears, and tortures, and the touch of joy :  
 They leave a weight upon our waking thoughts,  
 They take a weight from off our waking toils ;  
 They do divide our being ; they become  
 A portion of ourselves, as of our time,  
 And look like heralds of eternity ;  
 They pass like spirits of the past—they speak  
 Like sybils of the future ; they have power—  
 The tyranny of pleasure and of pain ;  
 They make us what we were not—what they will,  
 And shake us with the vision that ’s gone by,  
 The dread of vanish’d shadows.—Are they so ?  
 Is not the past all shadow ? What are they ?  
 Creations of the mind ? The mind can make  
 Substance, and people shadows of its own  
 With beings brighter than have been, and give  
 A breath to forms which can outlive all flesh.”\*

To remark upon one idea in this most beautiful passage. It does not appear that the mind has the power of creation—of forming things actually new from materials of its own production. The Imagination, which, if creation there be, possesses solely the creative power, does, indeed, form scenes which have never before existed ; but the materials of these scenes are derived, as I have before stated, from objects which have been presented to the mind through the

\* *The Dream.*

medium of the sense of vision. Fancy is engendered in the eye ; “ by gazing fed.” So sings the poet—so reasons the psychologist. The three great powers of mind are, the Memory, the Imagination, and the Judgment. They exist in nature ; no reasoning is necessary to prove their existence or their phenomena. We remember what we have seen—we judge of its beauty or deformity—or we invest the fading recollection with attributes which it did not originally or naturally possess. In the waking state, these three faculties are all active, and the rational man is the result of the just balance of power which is exercised by each. A man would be miserable were he all Memory, mad were he all Imagination, and a bore were he all Judgment.

“ In proportion as these several faculties sleep, or are kept awake, during the continuance of a dream, in that proportion will the dream be reasonable or frantic, remembered or forgotten.

“ If there is any faculty in mental man that never sleeps, it is that volatile thing the Imagination. The sedate and sober constitution of the Judgment, easily disposes it to rest ; and as to the Memory, it records in silence, and is active only when it is called upon.”\* If in dreaming, the mental faculties are all awake, and the mind, as a whole, in action, the dream is so probable, so like an event of the waking state, that it excites no wonder, calls for no comment, and is soon forgotten ; but if either the Memory or the Imagination be at work, the dream is sure to make a powerful impression, since the vividness with which the mental faculties separately act is so much stronger during sleep than when awake.

Numerous theories have been devised to account for the phenomena of dreams. Democritus supposed that the body threw off from its surface an impalpable and invisible resemblance of itself, and that these shadows assaulted, or intruded themselves upon, the mind during sleep, thus producing dreams. This species of exhalation was supposed not to be confined to man, but to be extended to the whole animal and vegetable kingdoms, and the whole realm of nature. Lucretius, and the philosophers of his time, likewise supported this theory, which was the prevailing dogma of the schools, with reference to the causes of dreams. This opinion must have been very ancient, since we find it the prevailing one in the time of Homer. When this poet, in the second book of the *Iliad*, describes Jupiter as influencing the mind of Agamemnon, to induce him to

\* Clio Rickman, *Essay on Dreams*, London, *Universal Magazine*, May, 1810. A paper thoroughly original, and of great merit.

lead the Greeks to battle, he does not represent him as disposing the monarch's mind by any exertion of supernatural power, but dispatches the shadow of Nestor to present itself to his mind in a dream:

“ Swift as the word, the vain illusion fled,  
Descends, and hovers o'er Atrides' head,  
Clothed in the figure of the Pylian sage,  
Renown'd for wisdom, and rever'd for age ;  
Around his temples spreads his golden wing—  
And thus the flattering dream deceives the king.”

The imagination of the poet is exercised in strict subservience to the philosophical theories of his day, which were revived in the schools of the Epicureans.\*

It is strange, that at so late a period as that in which Baxter, the

\* The theory of Lucretius, which was compounded from those of Epicurus and Democritus, is extremely curious and speculative. Dreams and spectral illusions were both explained by it, as being produced by

“ Forms that, like pellicles, when once thrown off  
Clear from the surface of whate'er exists,  
Float unrestrained through æther. Fearful these,  
Oft through the day, when obvious to the sense ;  
But chief at midnight, when in dreams we view  
Dire shapes and apparitions, from the light  
Shut out for ever ; and each languid limb  
With horror gaunt convulsing in its sleep.”

Consistently with the doctrine of the perpetual emanation of pellicles, or images from every existing object, this philosopher supposed that such kinds of images are incessantly thrown forth also from the corpses of the dead, after their interment: but so thin is the membrane ejected, that it passes with as much ease and as little injury through the surrounding coffin and superincumbent earth or marble, as light passes through glass. In the day-time we are generally prevented from noticing these floating forms, by the more forcible and direct assault of the images of bodies that immediately surround us, which attract our notice in a superior degree: occasionally, however, when we are abstracted from the noise and bustle of the world in solitude and quiet, the eye, or the mind itself—to which the eye is only the avenue, becomes sensible of their presence: and it was upon this principle that Cassius accounted to Brutus for the apparition that stood before him in his tent, previous to the battle of Pharsalia. In the silence of midnight and of sleep, we are still more susceptible of these impulses: the eye is, it is true, at this period, closed, and all is darkness around us; but, for the very reason that this filmy emanation is capable of piercing through the coffin and sepulchre in which the corse is confined that ejects it, is it capable, also, of insinuating itself through all the pores of the body, till it reach and stimulate the very soul itself, without the exercise of its external organs of sense. From these ideal circumstances were deduced and developed all the phenomena of dreams.—Lucretius, *De Rerum Naturâ*; translated, with copious notes and illustrations, by J. M. Good, M. D. London, 1805.

divine, flourished and wrote, when Philosophy, though not clothed with her present simplicity of beauty, had discarded the grotesque and fanciful garb with which the schools had arrayed her, should advance and endeavour to sustain an opinion which is equally whimsical and to the full as untrue. He supposed, likewise, in his book entitled *The World of Spirits*, that spiritual beings were the active agents, the abettors and supporters of all the extravagancies of the sleeping dreamer.

“Dreams are nothing more than the media through which Imagination unfolds the ample stores of her richly decorated empire; and in proportion to the vigour of that faculty in any individual is the luxuriance of the visions which pass before his eyes in sleep.”\*

There are no limits to the extravagancies of those visions sometimes called into birth by the vivid exercise of Imagination.—Contrasted with them, the wildest fictions of Rabelais, Ariosto, or Dante sink into absolute probabilities. “I remember dreaming, on one occasion,” says the modern Pythagorean, “that I possessed ubiquity, twenty resemblances of myself appearing in as many different places in the same room, and each being so thoroughly possessed by my own mind, that I could not ascertain which of them was myself and which my resemblance.”

At another time, he dreamed that he was converted into a pillar of stone, which reared its head in the midst of a desert, where it stood for ages, till generation after generation melted away before it. Even in this state, though unconscious of possessing organs of sense or being anything else than a mass of lifeless stone, he saw every object around—the mountains growing bald with age—the forest trees drooping in decay; and he heard whatever sounds nature is in the habit of producing—such as the thunder peal breaking over his naked head, the winds howling past him, or the ceaseless murmur of streams. At last he also waxed old and began to crumble into dust, whilst the moss and ivy accumulated upon him, and stamped him with the aspect of hoar antiquity. In dreams, the judgment is an absolute nullity; it takes no cognizance of circumstance, but leaves them all at the disposal of the giddy fancy. One of the most remarkable defects of judgment, in dreams, appears to be the utter inability to appreciate, with the least possible approach to truth, the lapse of time. Dr. Gregory mentions a gentleman

\* Macnish, *op. cit.*—These visions are not, however, altogether governed by the whim or caprice of the fancy; but are regulated in the pleasing or terrific shapes which they assume, by certain states of body and mind which I shall presently more particularly allude to.

who, after sleeping in a damp place, was, for a long time, liable to a feeling of suffocation whenever he slept in a lying posture; and this was always accompanied by a dream of a skeleton, which grasped him violently by the throat. He could sleep in a sitting posture without any uneasy feeling, and, after trying various experiments, he at last had a sentinel placed beside him, with orders to awake him immediately he sank down. On one occasion he was attacked by the skeleton, and a severe and long struggle ensued before he awoke. On finding fault with his attendant for allowing him to be so long in a state of suffering, he was assured that he had not lain an instant, but had been awakened the moment he began to sink. This person ultimately recovered from his distressing state. Another gentleman dreamt that he crossed the Atlantic, and spent a fortnight in America. In embarking, on his return, he fell into the sea, and having awoke with the fright, found he had been asleep ten minutes.\* Similar to these relations was the alleged dream of the prophet of Mecca, who fancied himself transported, by the angel Gabriel, to the world of spirits, through which he wandered for years, and was initiated into the mysteries of heaven and hell; when awaking, he found that the pitcher which had fallen from his hand as he dropt asleep, had not then reached the ground. The uncontrolled Imagination of our dreams carries us to worlds and elements our waking thoughts never conceived, and peoples each with its appropriate inhabitants. We are carried to heaven, and ravished with the harmony of angelic music—we are plunged in Hades, and tormented with penal fire. We ride the blast with the “bonny nightmare,” or revel in the caverns and secrets of deep waters. Clarence’s account of his dream is a masterly description of this. It will be recollected that his Imagination plunged him into the “tumbling billows of the main”—

“ And then methought what pain it was to drown,  
 What dreadful noise of waters in my ears !  
 What sights of ugly death within mine eyes !  
 I thought I saw a thousand fearful wrecks ;  
 A thousand men that fishes gnaw’d upon ;  
 Wedges of gold, great anchors, heaps of pearl,  
 Inestimable stores, unvalued jewels :  
 Some lay in dead men’s skulls ; and in those holes

\* Many cases illustrating this point, of the inability of the judgment to appreciate the lapse of time during sleep, will be found in Dr. Abercrombie’s work *On the Intellectual Powers*, in Dugald Stewart’s *Philosophy of the Human Mind*, and elsewhere.

Where eyes did once inhabit, there were crept,  
 As 't were in scorn of eyes, reflecting gems,  
 That woo'd the slimy bottom of the deep,  
 And mock'd the dead bones that lay scattered by.\*

Although the Imagination, in dreams, is perfectly free and unfettered, yet it is easily directed into certain channels by circumstances over which it has no controul. Bodily sensations, or pains, and our prevailing habits, tastes and pursuits, influence, in a marked degree, the character of the imagination of our dreams. "A gentleman having occasion, in consequence of indisposition, to apply a bottle of hot water to his feet, dreamed that he was climbing the sides of Mount Etna during an eruption, and that the volcanic fire had rendered the heat of the ground almost insupportable. The Imagination of another, to whose head a blister was applied, transported him to the woods of Canada, and placed him under the scalping knife of the Indians. If the bed-clothes happen to slip up and we get chilled, we are, in imagination, wandering illimitable steeps, destitute, homeless, and naked: if the feet slip over the edge of the bed, we are falling from some dreadful precipice into the unfathomable gulph below."†

What Dugald Stewart‡ has called our previous habits of association, direct the Imagination into a sort of beaten path, which has been travelled by our waking thoughts, and which is, consequently, not altogether new to our dreams. This previous habit of association is nothing more than the customary train of thought into which the mind most generally falls, and to which it is led by our prevailing inclination, study, or business. Thus—

"The stag-hounds, weary with the chace,  
 Lay stretched upon the rushy floor,  
 And urge, in dreams, the forest chace,  
 From Teviot-stone to Eskdale Moor."§

"From this cause the miser dreams of wealth, the lover of his mistress, the musician of melody, the philosopher of science, the merchant of trade, and the debtor of duns and bailiffs. In like manner, a choleric man is often passionate in his sleep; a vicious

\* *Richard III.*

† Macnish, Chap. 6.

‡ See his *Elements of the Philosophy of the Human Mind*, Chap. 5, Part 1, Sec. 5.

§ Sir W. Scott, *Lay of the Last Minstrel*.

man's mind is filled with wicked actions; a virtuous man's with deeds of benevolence; and a humourist's with ridiculous ideas."\*

This metaphysical truth doubtless suggested to Shakspeare part of Mercutio's inimitable description of Queen Mab.†

It appears perfectly natural that the mental faculty which is active during sleep should recur to the prevailing ideas of the mind in the waking state, when the mind preserved its due balance of power. Neither is it strange that the Imagination, when unfettered by the judgment, should, in accordance with the character of its being, tinge these ideas with unnatural and gorgeous colouring. The mind being fixed intently upon a single train of thought, which is only interrupted by repose, resumes her reasoning when any of her faculties escape from the thralldom of sleep, with this modification, that, as one power or faculty—generally the Imagination—is alone active in dreaming, the conclusions which it draws from the same premises are occasionally, and frequently, diametrically opposite to truth.

It has not yet been ascertained, and in fact we are but in the very threshold of the inquiry, what are the effects produced by different states of the body upon the mind. That disease of body affects, in a marked degree, the mental operations during the waking state, is a fact well known to all, and the influence is not removed during sleep. I have before stated that perfect sleep—that in which the whole of the mental operations are annihilated—is an attendant only on the most perfect bodily and mental health. There may be here mentioned, however, in addition to this, a peculiar condition of constitution; for it appears dependant upon the combined condition of both mind and body, in which dreaming never takes place. Cleon, the friend of Plutarch, Thrasymēdes, and others, never dreamed during the course of a long life. Similar instances have been recorded by Locke and Aristotle, where dreaming never took place till a certain period, and then was produced by an assignable cause. A gentleman, whose case is men-

\* Macnish, *op. cit.*

† *Romeo and Juliet*.—The same ideas are very finely expressed in an Italian tragedy, termed *The Aciripanta* :

“ Whilst the fond scenes that daily sway the man  
And fill the spirit, haunt him still in sleep,  
When dreams the huntsman, punctual, of the chase,  
The warrior pants for combat.

So

\* \* \* \* \*

\* \* \* \* \* with the winds,

Strives the vain mariner, each adverse wave

Bearing him farther from the fancied port.”

tioned by Locke, never dreamt till he had a fever ; a second, never except when indisposed. It is extremely probable, though I do not advance it as a positive truth, that we never dream but in a state of bodily indisposition. The state of our health is hardly the same two hours together ; the infinitely various modifications which this undergoes can never be appreciated by us, but may be ascertained, in some measure, by the variable state of the mind. We are troubled with ennui, listless and unhappy we know not why, and again are cheerful, gay, and merry, and are just as ignorant of the cause. The variation in the condition of the body is, in a great measure, the origin of this ; and the extension of this influence to sleep, the cause of the greater part of the phenomena of our dreams. A remark of Aristotle's tends materially to confirm this view of the subject ; he says that persons who never dream till they are grown up are generally liable, soon after their first experience of the kind, to a change in the bodily constitution terminating in disease or death.\* It is plain that here, as in the case of the gentleman who never dreamt except when indisposed, that the dream was solely produced by variation in the state of the body, indicating an approach to, or an actual state of, disease. Where disease is confirmed, the Imagination of our dreams is at once powerfully modified by it. The sudden starts from sleep, which attend the approach of fever, are produced, doubtless, from unpleasant dreams. We are hurried along upon the blast, and plunged into caverns of infinite space and chaotic gloom ; we are rocked to giddiness in the whirlpool ; appalled with sounds so tremendous that they appear to be produced by nothing less than the universal wreck of matter ; and plunged thousands of feet down precipices, into the boiling cataracts below. These mental images are produced by, and strictly dependant upon, a morbid state of body, and are in strict relation to the degree or danger of that state. The visions, indeed, which occur in a state of fever are highly distressing ; the mind is vehemently hurried on from one train of ideas to another, and participates in the painful activity of the system. If, from any cause, we chance to be relieved from the physical suffering occasioning such dreams, the dreams themselves wear away, or are succeeded by others of a more pleasing description. Thus, if perspiration succeed to feverish heat, the

\* Silimachus informs us that the epidemic fever of Rome was ushered in by dreams of the most frightful character ; and Sylvius Deleboe, who describes the epidemic which raged at Leyden, in 1669, states that, previous to each paroxysm of fever, the patient fell asleep, and suffered a severe attack of nightmare.

person who, during the continuance of the latter, fancied himself on the brink of a volcano, or broiled beneath an African sun, is transported to some refreshing stream, and enjoys precisely the pleasure which such a transition would produce did it actually take place.\* The most distressing dreams to which we are subject are, perhaps, those known by the name of night-mare; an imaginative state of mental suffering depending upon error or excess in diet, or an actual state of disease. This affection, termed *Ephialtes*, by the Greeks, and *Incubus*, or *Succubus*, by the Romans, was, in the ages of superstition, supposed to result from the actual visit of a fiend, who, by the torments he inflicted during sleep, wished to obtain from the individual visited some concessions to the rulers of the kingdom of eternal night. It is nothing more, however, than a painful dream, produced by a temporary or permanent state of bodily disease. Some people are much more prone to incubus than others. Those whose digestion is healthy, whose minds are at ease, and who go supperless to bed, will be seldom troubled with it.

“Those, again, who keep late hours, study hard, eat heavy suppers, or are subject to bile, acid, or hypochondria, are almost sure to be, more or less, its victims. There are particular kinds of food which, in some persons, pretty constantly lead to the same result; such as cheese, cucumbers, almonds, and other substances difficult of digestion. Hildesheim remarks, that he who wishes to know what night-mare is, must eat chestnuts before going to sleep and drink feculent wine after them.”† The dreams produced by night-mare are the very acme of human ill, and the consummation of all human suffering. They are a thousand times more frightful than the fabled visions of necromancy, and transcend in horror all the

\* Macnish, *op. cit.* The hydropic dreams of seas, lakes, and rivers—his Imagination wafts him to the sandy desert, and there, thirsty as he is, cheats him with the deceitful mirage. Thus La Vega, in his dream of Salicio—

“ I dreamt, beneath the summer beam,  
 Along where Tagus winds his stream,  
 My playful flock I led to drink,  
 And spend the noontide o'er his brink.  
 I reached it, but his wonted bed  
 Saw, with surprise, the stream had fled,  
 Parched up with thirst, I followed still,  
 Thro' its new course, the wayward rill:  
 I follow'd on, but still my lip  
 Th' illusive wave could never sip

In this manner are the distressing sensations which disease produces in our dreams continually aggravated by phantoms of promising alleviation, which only give additional poignancy to whatever miseries we may feel.

† *Philosophy of Sleep.*

descriptions and pictures of history, poetry, or romance : Spencer's Cave of Despair ; Dante's appalling picture, or Ugolino and his famished offspring ; Laocöon and his sons, pressed in the folds, and strangled with the pressure, of the mighty serpents ; the tortures of Isaac Orobio, in the cells of the Spanish Inquisition, do not exceed, and frequently do not equal, the agonies of the labourer under nightmare. The state of mind and feeling at the time of the invasion of night-mare, tends materially to increase or modify the scenes and horrors which it produces : if we have been harassed by care, depressed by grief ; if we have been watching the sick-bed of a parent, or mourn the loss of lover, friend, or wife, such feelings or persons will mingle with the inexpressibly horrible nature of these dreams. I remember the case of a gentleman who experienced an attack of night-mare soon after the death of his wife, produced by supping at a late hour of some unwholesome food. She died soon after their marriage, the attachment preceding which had been long and ardent. He imagined that she was restored to him from the dead, and, like the Eurydice of Orpheus, was not tainted by the damps or dishonours of the grave—the demon of Corruption had not dared to lay a finger upon her sainted form, but she was, to his imagination, gay and blooming as she first appeared to him, a fair-haired girl, sporting among the flowers her hand had planted, whose beauty was immeasurably inferior to her own : he clasped the delightful vision to his bosom, and once more dwelt in an elysium of earthly happiness which, alas ! was soon to be shadowed by the phantoms of icy despair. Suddenly, by one of those strange changes which are peculiar to the phenomena of our dreams, he was stretched upon the bed, and the phantom of his deceased wife seated upon his breast : her beauty began to fade, the skin to peel and turn blue, the lip lost its vermilion, and the eye its lustre, and he laboured in an agony of terror to throw from his body the lifeless corse, which, with a weight like that of Ossa and Pelion, appeared to be pressing him through the earth to her own clay tenement.

A lady, during a period of convalescence from alarming disease, had an attack of night-mare. Her Imagination carried her to a gloomy vault, fathoms below the surface of the earth. Here, inclosed by walls of adamant, completely cut off from the sights and sounds of earth, she was incarcerated ; and so deep was her living grave, that the mole and the earth-worm never descended to its level : here she was to wrestle with death ; the phantom assaulted her in shape of a skeleton, wound his bony arms round her

neck, and hugged her to suffocation. Then followed the struggle for life, the sense of utter inability to escape, and the toil and horror of unearthly warfare.

The modifications which night-mare assumes are infinite; but one passion is never absent—that of utter, incomprehensible dread. “Sometimes the sufferer is buried beneath overwhelming rocks, which crush him on all sides, but still leave him with a miserable consciousness of his situation: sometimes he is involved in the coils of a horrid, slimy monster, whose eyes have the phosphorescent glare of the sepulchre, and whose breath is poisonous as the marsh of Serna. Every thing horrible, disgusting, or terrific in the physical or moral world, is brought before him in fearful array; he is hissed at by serpents, tortured by demons, stunned by the hollow voices and chilled by the cold touch of apparitions; a mighty stone is laid upon his breast, and crushes him to the ground in helpless agony; bulls and tigers pursue his palsied footsteps; the unearthly shrieks of hags, witches, and fiends float around him. In whatever situation he may be placed, he feels superlatively wretched; he is Ixion, working for ages at his wheel; he is Sisyphus, rolling his eternal stone; he is stretched upon the iron bed of Procrustes; he is prostrated, by inevitable destiny, beneath the approaching wheels of the car of Jagernaut. At one moment he may have the consciousness of a malignant demon being at his side; then, to shun the sight of so alarming an object, he will close his eyes—but still the fearful being makes its presence known, for its icy breath is felt diffusing itself over his visage, and he knows that he is face to face with a fiend; if he look up, he beholds horrid eyes glaring on him, and an aspect of despair grinning at him with more than hellish malice; or, what is most common, he may have the idea of a monstrous hag squatted upon his breast, mute, motionless, and malignant—an incarnation of the Evil Spirit, whose intolerable weight crushes the breath out of his body, and whose fixed, deadly, and incessant stare petrifies him with horror, and makes his very existence insufferable.”\*

In the earlier ages of the history of philosophy, when the greater part of the occurrences which the systems then in vogue could not explain were attributed to the agency of demons, fauns, and satyrs; when the Platonic philosophy was the order of the day, the incubus, or night-mare, attracted much attention, and called forth the ingenuity of all the theorists of the age. But as that kind of sci-

\* Macnish, *op. cit.*, ch. 9, p. 125, 126.

ence advanced which was based on the profound aphorism of Bacon—as nature was observed and facts recorded—the speculations of the Platonists melted, like the composition of their spirits, into thin air, and a knowledge that was real, tangible, and useful, began to shed her pale but steady light, and gradually to disperse the mists and vanities of philosophy and physic. As I have said, incubus was supposed to be produced by the visits of fiends of various grades and orders, angels good, bad, and indifferent; and according to the mild or aggravated form of the attack was the rank or malignancy of the ghostly visitant. Much curious information on this subject may be found in the works of Aristotle, Plato, Pliny, and Paracelsus, with a host of other names who, in their day, supported, illustrated, and defended, the speculations to which I have alluded.

Popular superstition, although based in ignorance of the laws which regulate and produce the phenomena of natural events, is nevertheless directed, floating as it is upon a sea of error, by the tenets of some philosophic school, and it is not till every link in the chain of arguments supporting the doctrines of such schools has been repeatedly examined and proved unsound, that the system is at length abandoned for some new sect, whose opinions, perhaps, merely gain novelty and renown from their being totally opposed to those of the declining system, on whose ruin they are built. The illustration of this point would furnish much useful information, and form a subject of extreme novelty and interest, both in astronomy, medicine, and metaphysics. The doctrines promulgated by Plato are, even at this distant period of time, after a lapse of twenty-one centuries, not altogether exploded; and two centuries ago, they swayed certain sects with a full confidence of their immutable truth. It is strange, at that advanced period of philosophical inquiry—for such in some respects it certainly was—that we should find the Platonists accusing those men of atheism, who imputed the phenomena of dreams, spectres, and incubi to mere melancholy and the workings of a disturbed fancy. These Platonists were a party in science, who, like the physicians of the days of Charles II., dreaded all change—who were willing to clothe truth in a robe of mist and darkness, merely because she should not shed the lustre of her effulgent brightness upon the deformity of the ridiculous and distorted being in whom they were attempting to preserve a sickly existence by the crude and unnatural food with which they nourished her. The ideas of the Platonists were revived, with slight modifications, by the writers upon witchcraft, in the 15th and 16th centuries—by Wierus, Remigius, and others. A class of dreams,

termed *Δυχανθρώποι* by the learned, but by the German vulgar, *were-wolf*, and by the French, *loups-garous*, were supposed by these writers to be the causes of night-mare. By a compact with the fiend, men acquired the power of leaving their own body and entering into that of any animal they might choose, and, in this form, of repairing to the sleeping couch of the dreamer. Space will not permit me to pursue the train of argument by which the reality of these metamorphoses was supposed to be effected. I merely notice the conclusion of a writer of this period, who sums up his reasoning by saying that "it is more natural to suppose that they were thus transformed, than that the affection was a mere delusion of fancy."

The "squab fiend," however, and her night-mare, are things created, by disease or disorder, from the chaos of a disturbed fancy. If the food be lighter, and in less quantity, these visions will not disturb us; we shall sleep in peace; no dreams will harass us, except those of the most pleasing character. I am persuaded that, by paying attention to the phenomena of our dreams, much useful information might be obtained with regard to the state of our health individually. Some persons whose minds are active dream habitually, others never do so. If, in the former, the dreams change their character, and become unpleasant, we may attempt to elucidate their cause by reviewing the state of mind, the mode of living, and the occurrences of the past day; if these differ not from the usual routine, we may suspect some lurking bodily ailment, some incipient state of trivial or serious disorder. If, in the second instance, we begin to dream, and cannot trace any error in diet, or mental impression, to which the dream can be referred, we may take the dream as a silent, but sure, monitor of some lurking, but concealed, enemy within. This attention would be making a good use even of dreams, those giddy children of an idle brain, to most persons, appear to arise without any cause, to which prophetic power is frequently attributed, and which, in individuals of weak minds, render their nights miserable, and their days cheerless. Dreams do not arise without some cause; they may occasionally occur, and baffle all our soothsaying to unravel them, but in a vast majority of instances the state of the body calls up the phantoms, and the previous bias of the mind gives it its peculiar character, attributes, and tendency.

All violent mental excitement produces a corresponding affection of body, though this sympathetic disorder may be modified in a variety of ways, according to the constitution of the person in whom

it takes place. So intimate, however, are the connexions of mind and body, so inseparable is "*la physique*" from "*la morale*," that one cannot be unhinged, even in the minutest particular, without impairing that healthy harmony which we could wish might always connect our mental and corporeal constitutions. These data are strictly applicable to those phenomena of dreaming which yet remain to be noticed ; and I am extremely sorry that my limits will oblige me to pass many of these facts unnoticed, and to omit many illustrations of a highly interesting character.

I cannot, however, omit referring to two classes of causes modifying the phenomena of our dreams. The first of these illustrates the change produced in the mind, during sleep, by the action of agents upon the body ; and the second that state of mind continued in sleep, which is produced by causes originally affecting it in the waking state. Opium is the most powerful of the first class of causes ; and though only one author in the whole range of general or scientific literature well illustrates this kind of dream, and this author so well known, I cannot omit referring to him, since the nature of the dreams is so extraordinary, and the language in which they are related so powerful, and possessed of so much striking poetic beauty. The dreams to which I am about to refer were caused by an indulgence in opium, which had been persevered in for four years ; the delights of which indulgence were dearly paid for by the pains which succeeded : and, of all pains, those are the most acute, and shadow the soul with the deepest gloom, which follow, or are the consequence of, an inebriated and long-continued paroxysm of pleasure. It is a curious thing in the history of the phenomena of mind, to witness the effect which the previous bias of that mind excited in deepening the scenes of horror exhibited in the dreams of the opium eater, when even its constitution was so changed, by the immoderate use of his darling but pernicious drug. "The causes of my horror lie deep," says he, "and some of them must be common to others. Southern Asia, in general, is the seat of awful images and associations. As the cradle of the human race, it would alone have a dim and reverential feeling connected with it. But there are other reasons. No man can pretend that the wild, barbarous, and capricious superstitions of Africa, or of savage tribes elsewhere, affect him in the way that he is affected by the ancient, monumental, cruel, and elaborate religions of Hindostan. The mere antiquity of Asiatic things, their institutions, histories, modes of faith, is so impressive, that to me the vast age of the race and name overpowers the sense of youth in the individual. A young

Chinese appears to me an antediluvian man renewed. Even Englishmen, though not bred in any knowledge of such institutions, cannot but shudder at the mystic sublimity of castes that have flowed apart and refused to mix through such immemorial tracts of time; nor can any man fail to be awed by the mere names of the Ganges and Euphrates. It contributes much to these feelings, that Southern Asia is, and has been for thousands of years, that part of the earth most swarming with human life; the great "*officina gentium*." Man is a weed in those regions. The vast empires, also, into which the enormous population of Asia has always been cast, give a further sublimity to all oriental thoughts and images. In China, besides what it has in common with the rest of this quarter of the earth, I am terrified by the modes of life, by the manners, the barrier of utter abhorrence and want of sympathy, placed between us by feelings deeper than I can analyse. I could sooner live with lunatics, or brute animals. All this, and much more than I can say, or have time to say, the reader must enter into, before he can comprehend the unimaginable horror which my dreams of oriental imagery and mythological torture impressed upon me. Under the connecting feeling of tropical heat and vertical sun-lights, I brought together all creatures, birds, beasts, reptiles, all trees and plants, usages and appearances, that are found in all tropical regions, and assembled them together in China or Hindostan. From kindred feelings, I soon brought Egypt and her gods under the same law. I was stared at, hooted at, grinned at, chattered at, by monkeys, by paroquets, by cockatoos. I ran into pagodas, and was fixed for centuries at the summit, or in secret rooms; I was the idol; I was the priest; I was worshipped; I was sacrificed. I fled from the wrath of Brahma, through all the forests of Asia; Vishnoo hated me; Seeva laid wait for me. I came suddenly upon Isis and Osiris. I had done a deed, they said, which the Ibis and the Crocodile trembled at. I was buried, for a thousand years, in stone coffins, with mummies and sphinxes, in narrow chambers, at the heart of eternal pyramids. I was kissed with cancerous kisses, and laid confounded with all unutterably slimy things, amongst reeds and Nilotic mud."\*

\* *Confessions of an English Opium Eater*, p. 169, London, 1823. The whole of these dreams are worthy of attention; they form, in the language of the author, an "iliad of woes." If the pleasures of an Imagination excited by opium, detailed in the first Lecture, should have induced any one to adopt so baneful a practice, as that of opium eating, which the Editor of the *Cheltenham Journal* seems to fear, let them be warned in time to discontinue a habit which, in the sequel, will be productive of a load of mental misery and will render night and day alike wretched.

I might pursue this narrative to a much greater extent, and at every step light upon some new scene of amazement and horror. The want of judgment of the lapse of time, which is peculiar to dreaming generally, is immeasurably increased by opium. Seconds become hours, minutes days, and days centuries. And this, from my own experience, I can more particularly allude to, after having taken it, as I have done, some few times in the course of my life, for the relief of bodily anguish. The mind then becomes, as it were, disembodied, and roams through scenes it has before visited, which seem to expand before it into primeval magnitude; time appears to grow with space, and becomes so extended that we are unable to waste it. This, during pleasurable dreams, is a perfect extacy; but when we come, like the opium eater, to be buried alive, with a perfect consciousness of existence, and a sense of the unutterable horror of our state, we may well enter into his feelings when the day chased away his dreams, and he wept for joy, as his awaking once more enabled him to controul the tyrannical power of his Imagination.

The passions, modifying as they do in a most important manner the constitution of the mind, exercise a powerful influence upon the imagination of our dreams. Love, joy, hope, and those of a kindred character, exalt and refine its ideas, and give a brighter and more pleasing hue to all objects viewed by the mind when thus influenced. And as these clothe natural objects and moral impressions with a garb of beauty; so their opposites, remorse, fear, shame, sorrow, disappointed love, and hope deferred, make the heart sick, darken the intellectual faculties, and soon impair the body.

Whatever may be the torture the mind undergoes during the day, from these sources, night occasionally restores its tranquillity, and once more fills it with delight: but though these visions are for a time pleasing, and lead us to the very verge of long-lost happiness, some demon dashes the cup from our lip, fate interposes, physical obstacles arise, and we are separated by an impassable barrier from the haven which hope created, and the dwelling which love made home. These phantoms of our dreams, like the wierd sisters, "hold the word of promise to the ear, but break it to the hope." These were the dreams of the unfortunate Eloise—

"When at the close of each sad sorrowing day,  
Fancy restored what vengeance snatch'd away."

Of this character, varied indeed in the melancholy and terrific imagery which attended them, were the dreams of Dido for the loss

of *Æneas*, so beautifully described by Virgil; of Sardanapalus, dreading the loss and destruction of his Assyrian empire, and the extinction of the line of Nimrod; of Rachel Baker; of Helen Mc. Dougal, and others.\* The beautiful illustrations which have been given by Juvenal, Lucretius, Byron, and Pope, of this mood of the Imagination, are the truths of philosophy conveyed to the understanding and rendered more pleasing by the poetic garb in which they are arrayed. They are admired by most readers for their beauty of language; but they carry an instruction which, if we value the happiness of bodily health, of mental power, of a good night and a peaceful day, should hardly be passed over as the mere effusions of a brilliant fancy. Much of the pleasure of our existence depends upon the due regulation of the Imagination. Half our evils are imaginary, and more than half our good ideal; we heighten the colouring and deepen the shade of both one and the other.

The mind, like the body, only continues its existence from the action of repeated stimuli upon it; and were we unexcited by hope, desire, or love, had we no object to attain, no reverse to fear, or nothing to call into action our mental faculties, the mind would become cut off from external nature, like the body deprived of its

\* Sometimes the dreams in which the passions are concerned are of a more pleasing character than those just referred to; we are occasionally, under these circumstances, transported to the society of those long dead, and to scenes which we thought faded from the memory for ever. It is a singular fact that dreams of the dead are seldom, if ever, accompanied by terror or surprise; and in these states the friend of our youth, the wife of our bosom, the child of our affection, is restored; and the exquisite pleasure of these dreams throws sometimes a halo of pleasure around us for days after they have occurred. "The slumberer, in these states, supposes himself enjoying the companionship of those who were dearer to him than life,—

' He hears their voice in dreams,  
Upon him softly call,  
Like echo of the mountain-stream,  
Or distant water-fall;  
He sees their form as when  
They were a living thing,  
And blossomed in the eyes of men,  
Like any flower of spring.'

and the pleasure of their society is trebly enhanced from the intensity and purity of the feelings with which these dreams are accompanied; in which the characters of the emotions of the mind have so little resemblance with the waking state, that we sometimes lie for a time after waking, to recollect what circumstance of our dreams has caused that repose and serenity which we feel diffused through our whole mental being."

senses ; our being would be a blank, and we should feel that we were, like Campbell's last man, alone in the world. The passions are our mental stimuli ; and I have shown how they modify the state of the imagination during sleep : hence, if we wish to sleep undisturbed, or to be visited only by those dreams which are agreeable, we should remove all strong mental impression, of an unpleasant character, from our thoughts before retiring to rest. Unhappily, however, for such is the tenure of our existence, we are unable, in many instances, to control the gloomy ideas which will intrude themselves, unbidden and unwished, into the mind,—we cannot get rid of the melancholy produced by loss of fortune, injured fame, or false friendship,—so that we in reality possess more power over the condition of the body, than we do over the state of the mind ; and, consequently, these recollections will be called up during sleep, and invested with all the false colouring with which the Imagination can array them. The state of our body, also, modifies the condition of the mind, as I have said, in a degree as marked as that produced by the passions ; but with regard to the management of this, some rules may be laid down, which will influence, in a great measure, the Imagination of our dreams. Physiologists have divided the stimuli which affect our body into classes ; such are the great divisions established by Halle of the *circumfusa* and *injesta*,—the former including all physical causes, such as climate, the atmosphere, and the seasons, which affect us from without,—the latter comprehending such as operate upon the body from within, in the shape of the infinite modifications of diet.

There is a third class of causes, which may affect the mind through the medium of the body ; and that is the imperfect exhalation or excretion of those liquids or gases which are become foreign to its nature, and which are evidenced in the perspiration from the skin, the vapour from the lungs, and the serous fluids exhaled on the surface of every membrane, and in the interior of every cavity throughout the whole organization. From impure air, from indolence, and from other causes, these become retained or not furnished in sufficient quantity ; and the result is, a state of bodily complaint, which, re-acting upon the mind in sleep, becomes a source of unpleasant dreams. Exercise, during a state of health, is the great medium of preserving these eliminations, or excretions, in a state of sufficient activity. In bringing one division of causes affecting the bodily health to bear upon the condition of the mind during sleep, we should, if we wish to rest in peace and dream of happiness, have a chamber of moderate capacity, well supplied with

pure air. The clothing of the bed should not be too heavy or too hot, since by exciting the circulation too much, that of the brain becomes disturbed, and unpleasant dreams, partaking of the character of night-mare, might be produced; the same effects would be brought about by the head lying too low, which would prevent a return of venous blood from the brain. The state of the stomach, above all, should be attended to; if the food be difficult of digestion, an undue degree of acidity will be produced, which, acting upon the peculiar sensibility of the lining membrane of the stomach, and secondarily upon the brain, will produce all the evils which, in the course of the lecture, I have passed in review. An overloaded stomach causes similar effects, but in a different way; it acts chiefly by irritating the heart, and quickening the circulation; and if the conjecture of an ingenious physiologist be true—that only a certain number of pulsations are allotted to every man—we should be most anxiously watchful how we suffered moral impression, or bodily affections, over which we had any controul, to accelerate the action of the heart. Late hours are attended by a slight degree of fever, which acts in a similar manner; and early rising is productive of the benefits attributed to exercise, in the third division of causes affecting the body.

If we wish, therefore, to have pleasant dreams, the body should be slightly fatigued, the pulse should be quiet, the mind calm, the skin cool, and the stomach nearly empty. We shall then not need a "*pillow of hops*" to woo us to repose. We shall not have to think of the sounding rain, the murmur of bees, the meandering river, the waving corn, or the restless ocean. We shall not have then to exclaim "I cannot win thee, sleep, by any stealth;" but our slumbers will be light and protracted till long after "the small birds' melodies," and the "first cuckoo's melancholy cry."

THE MAMMALS OF BRITAIN SYSTEMATICALLY  
ARRANGED.

HAVING, in the last number, (vol. iii., p. 200), given all the species of Class II. (*Aves*) found in Britain, scientifically arranged and appropriately named, I now propose to give Class I. (*Mammalia*) on the same plan. Mammals, it is true, are neither so numerous nor so interesting as birds, but they, nevertheless, possess strong claims on the attention of the scientific zoologist, as well as of the agriculturist. While the latter appropriates to himself their services, and guards himself against their attacks, it is the province of the former to investigate their habits, structure, and affinities. A due knowledge of these will lead the inquirer to their natural arrangement, and correct views on this subject will enable him to name them with propriety, and an accurate nomenclature will again aid him in his future researches. This department, to answer the purpose for which it was originally intended, should be as simple and free from errors as possible; otherwise it will only prove an impediment in the path, not only of the professor, but of the student. To say that *erroneous* names do *not mislead*, is a contradiction, and refutes itself. I shall here give one out of the many striking instances with which I have become acquainted, both from personal experience and from books, in order to shew that erroneous names are liable to mislead. The example I have selected is related by Audubon, who, speaking of the Wood Ibis (*Tantalus loculator*), says—"The French Creoles of that state (Louisiana) name them 'Grands Flamans,' while the Spaniards of East Florida know them by the name of 'Gannets.' When in the latter country, at St. Augustine, I was induced to make an excursion, to visit a large pond or lake, where I was assured there were Gannets in abundance, which I might shoot off the trees, provided I was careful enough. On asking the appearance of the Gannets, I was told that they were large white birds, with wings black at the end, a long neck, and a sharp bill. The description so far agreeing with that of the Solan Gannet (*Sula bassana*), I proposed no questions respecting the legs or tail, but went off. Twenty-three miles, reader, I trudged through the woods, and at last came in view of the pond; when, lo! its borders and the trees around it were covered with Wood Ibises. Now, as the good people who gave the information spoke according to their knowledge, and agreeable to their custom

of calling the Ibises 'Gannets,' had I not gone to the pond, I might have written this day that Gannets are found in the interior of the woods in the Floridas, that they alight on trees, &c., which, if *once* published, would, in all probability, have gone down to future times, through the medium of compilers, and all, perhaps, without acknowledgement."—*Orn. Biogr.*, vol. iii., p. 132. With a view to prove that names once given should not be altered, it has been said that "the use of names is, in fact, nothing more than a kind of *memoria technica* (artificial memory), by means of which, in writing or speaking, the idea of an object is suggested, without the inconvenience of a lengthened description." And this is the very reason why names should be as perfect as possible; otherwise they will not be "artificial *helps*" to the memory, but artificial *hindrances* to the naturalist. The practice of changing names without sufficient reason, ought certainly to be avoided and condemned, for the very same reason that the doctrine adduced by some persons, that there should be no change, should also be denounced, as alike calculated to retard the progress of science. The blind opposition which has been manifested by some on this subject, will be found, in the end, to defeat its own object; and the anti-reformers will find out, when too late, that they have been but instruments in *accelerating*, instead of retarding, the great cause of improvement.

The nomenclature of Mammalogy is formed on the same principles as that of Ornithology, and indeed the same code will hold throughout the animal kingdom. Every new discovery either confirms or displaces some of the names, specific, generic, sectional, or even family, in connection with the newly-discovered object; and till all the objects in nature are known, and their affinities understood, there can never be a perfect system of nomenclature. Nomenclature will progress in proportion as our knowledge progresses; and man might as well attempt to prevent the earth from revolving in its appointed course, as try to stop either the one or the other.

It has been said that it would be impossible to find vernacular names for every object in ornithology, to say nothing of other classes of nature. This is tantamount to admitting the English language to be infinitely inferior to the Latin in terms; for, if a certain number of names can be found in the one, why should not the other be capable of yielding their equivalents. However, "where there is a will there is a way;" let the opposers acquire the former, and I will pledge myself they shall not be deficient in the latter.

The arrangement adopted in the list of Mammals will be on the

quinary system, which has been ably traced by Vigors, Swainson, and others, though mammalogy has received but little attention, in this respect, compared with ornithology.

## ORDER I.

## QUADRUMANA.

## FAMILY IV., BAT FAMILY,—(VESPERTILIONIDÆ.)

*Horse-shoe Section,—(Rhinolophinæ.)*

## Horse-shoe, (Rhinolophus, Geof.)

- |                    |   |
|--------------------|---|
| Greater Horse-shoe | Rhinolophus unihastatus, ( <i>Desm.</i> ) |
| Lesser Horse-shoe  | Rhinolophus bihastatus, ( <i>Desm.</i> )  |

*Bat Section,—(Vespertilioninæ.)*

## Bat, (Vespertilio, Geof.)

- |                 |  |
|-----------------|--|
| Wall Bat        | Vespertilio murinus, ( <i>Desm.</i> )      |
| Tree Bat        | Vespertilio arborea, ( <i>W.</i> )         |
| Naterer Bat     | Vespertilio natererea, ( <i>Kuhl.</i> )    |
| Serotine Bat    | Vespertilio serotinus, ( <i>Gmel.</i> )    |
| Tainted Bat     | Vespertilio noctula, ( <i>Gmel.</i> )      |
| Chestnut Bat    | Vespertilio lesleria, ( <i>Kuhl.</i> )     |
| Marbled Bat     | Vespertilio discolor, ( <i>Natt.</i> )     |
| Common Bat      | Vespertilio pipistrellus, ( <i>Gmel.</i> ) |
| Pigmy Bat       | Vespertilio pigmæus, ( <i>Leach.</i> )     |
| Emarginated Bat | Vespertilio emarginatus, ( <i>Geof.</i> )  |
| Moustached Bat  | Vespertilio mistacinus, ( <i>Leisl.</i> )  |

## Plecot, (Plecotus, Geof.)

- |                |                                      |
|----------------|--------------------------------------|
| Common Plecot  | Plecotus vulgaris, ( <i>W.</i> )     |
| Willow Plecot  | Plecotus brevimanus, ( <i>Jen.</i> ) |
|                | Barbastel, (Barbastellus, Gray.)     |
| Gray Barbastel | Barbastellus cinereus, ( <i>W.</i> ) |

## ORDER II.

## FERÆ.

## FAMILY I., CAT FAMILY,—(FELIDÆ.)

*Cat Section,—(Felinæ.)*

## Cat, (Felis.)

- |            |                                   |
|------------|-----------------------------------|
| Barred Cat | Felis ferox, ( <i>W.</i> )        |
| Common Cat | Felis maniculata, ( <i>Rüp.</i> ) |

*Dog Section,—(Caninæ.)*

## Dog, (Canis, Flem.)

- |            |                                   |
|------------|-----------------------------------|
| Common Dog | Canis familiaris. ( <i>Lin.</i> ) |
|            | Wolf, (Lupus, <i>Antiq.</i> )     |
| Tawny Wolf | Lupus vulgaris, ( <i>W.</i> )     |
|            | Fox, (Vulpes, <i>Antiq.</i> )     |
| Red Fox    | Vulpes vulgaris, ( <i>W.</i> )    |

## FAMILY II., WEASEL FAMILY,—(MUSTELIDÆ).

*Weasel Section,—(Mustelinæ.)*

	Martin, ( <i>Martes, Flem.</i> )
Common Martin	<i>Martes fогorum, (Flem.)</i>
Pine Martin	<i>Martes abietum, (Flem.)</i>
	Weasel, ( <i>Mustela, Cuv.</i> )
Fitchet Weasel	<i>Mustela putorius, (Lin.)</i>
Ferret Weasel	<i>Mustela furo, (Lin.)</i>
Common Weasel	<i>Mustela vulgaris, (Gmel.)</i>
Ermine Weasel	<i>Mustela erminia, (Desm.)</i>
	Otter, ( <i>Lutra, Cuv.</i> )
Common Otter	<i>Lutra vulgaris, (Desm.)</i>
Aquatic Otter	<i>Lutra roensis, (Ogilby.)</i>
	<i>Bear Section,—(Ursinæ.)</i>
	Badger, ( <i>Meles, Cuv.</i> )
Common Badger	<i>Meles taxus, (Flem.)</i>
	Bear, ( <i>Ursus, Lin.</i> )
Brown Bear	<i>Ursus arctos, (Lin.)</i>

## FAMILY IV., SHREW FAMILY,—(SORECIDÆ.)

Hedjog, (*Erinaceus, Lin.*)

Common Hedjog*	<i>Erinaceus Europeus, (Lin.)</i>
	Shrew, ( <i>Sorex, Lin.</i> )
Common Shrew	<i>Sorex araneus, (Lin.)</i>
Water Shrew	<i>Sorex fodiens, (Gmel.)</i>
Oared Shrew	<i>Sorex remifer, (Geaf.)</i>
	Mole, ( <i>Talpa, Lin.</i> )
Common Mole	<i>Talpa Europea, (Lin.)</i>

## FAMILY V., SEAL FAMILY,—(PHOCIDÆ.)

Walrus, (*Trichecus, Lin.*)

Common Walrus	<i>Trichecus rosмарus, (Lin.)</i>
	Seal, ( <i>Phoca, Lin.</i> )
Common Seal	<i>Phoca vitulina, (Lin.)</i>

## ORDER III.

## CETACEA.

## FAMILY I., SIREN FAMILY,—(SIRENIA.)

Lamantin, (*Manatus, Cuv.*)

Northern Lamantin	<i>Manatus borealis, (Flem.)</i>
-------------------	----------------------------------

## FAMILY II., DOLPHIN FAMILY,—(DELPHINÆ.)

Porpus, (*Phocæna, Lin.*)

Common Porpus	<i>Phocæna vulgaris, (W.)</i>
Voracious Porpus	<i>Phocæna grampus, (W.)</i>
Orkney Porpus	<i>Phocæna melas, (W.)</i>

\* By some authors, this has been corrupted into Hedge Hog, as if this species were in the genus *Porcus*!

	Dolphin, ( <i>Delphinus</i> , <i>Cuv.</i> )
Common Dolphin	<i>Delphinus vulgaris</i> , ( <i>W.</i> )
Blunt-toothed Dolphin	<i>Delphinus truncatus</i> , ( <i>Mont.</i> )
	Beluge, ( <i>Beluga</i> , <i>Barclay.</i> )
White Beluge	<i>Beluga albicans</i> , ( <i>W.</i> )
	Narwhal, ( <i>Monodon</i> , <i>Lin.</i> )
White Narwhal	<i>Monodon alba</i> , ( <i>W.</i> )
	Bottlehead, ( <i>Hiperoodon</i> , <i>Lac.</i> )
Lead-colored Bottlehead	<i>Hiperoodon bibens</i> , ( <i>Flem.</i> )
	Whale Section,—( <i>Baleninae.</i> )
	Blunthead, ( <i>Catodon</i> , <i>Lac.</i> )
Black Blunthead	<i>Catodon trumpo</i> , ( <i>Lac.</i> )
Sibbald Blunthead	<i>Catodon sibbaldia</i> , ( <i>Flem.</i> )
	Finner, ( <i>Physeter</i> , <i>Lac.</i> )
Orkney Finner	<i>Physeter tursio</i> , ( <i>Lin.</i> )
	Whale, ( <i>Balæna.</i> )
Common Whale	<i>Balæna mysticetus</i> , ( <i>Lin.</i> )
	Razorback, ( <i>Physalis</i> , ( <i>Flem.</i> ))
Sharp-lipped Razorback	<i>Physalis jubartes</i> , ( <i>W.</i> )
Common Razorback	<i>Physalis vulgaris</i> , ( <i>Flem.</i> )
Round-lipped Razorback	<i>Physalis rorquala</i> , ( <i>W.</i> )

## ORDER IV.

## RUMINATORS,—RUMINANTORES.

## FAMILY I., HOG FAMILY,—(PORCIDÆ.)

Hog, (*Porcus*, *Antiq.*)Common Hog *Porcus vulgaris*, (*W.*)

## TRIBE IV., RUMINATING TRIBE,—(RUMINANTES.)

## FAMILY I., OX FAMILY,—(BOVIDÆ.)

Ox, (*Bos*, *Antiq.*)Common Ox *Bos communis*, (*W.*)

## FAMILY II., ANTILOPE FAMILY,—(ANTILOPIDÆ.)

Goat, (*Capra*, *Auct.*)Common Goat *Capra hircus*, (*Lin.*)Sheep, (*Ovis*, *Lin.*)Common Sheep *Ovis aries*, (*Lin.*)

## FAMILY III., DEER FAMILY,—(CERVIDÆ.)

Deer or Stag, (*Cervus*, *Antiq.*)Red Deer *Cervus elaphus*, (*Lin.*)Fallow Deer *Cervus dama*, (*Lin.*)Capreol, (*Capreolus*, *Smith.*)Common Capreol *Capreolus vulgaris*, (*W.*)

## TRIBE V., SINGLEHOOFED TRIBE,—(SOLIPEDES.)

Horse, (*Equus*, *Antiq.*)Common Horse *Equus varius*, (*W.*)Ass, (*Asinus*, *Antiq.*)Common Ass *Asinus vulgaris*, (*Gray.*)

## ORDER V.

## GNAWERS,—RODENTORES.

	Beaver, (Castor. <i>Lin.</i> )
Bank Beaver	Castor fiber, ( <i>Lin.</i> )
	Arvicule, (Arvicula, <i>Lac.</i> )
Water Arvicule	Arvicola amphibia, ( <i>Desm.</i> )
Field Arvicule	Arvicola agrestis, ( <i>Flem.</i> )
Bank Arvicule	Arvicola riparia, ( <i>Yarr.</i> )
	Dormer,* (Myoxus, <i>Gmel.</i> )
Wood Dormer	Myoxus avellanarius, ( <i>Desm.</i> )
	Mouse, (Mus, <i>Antiq.</i> )
Field Mouse	Mus silvaticus, ( <i>Lin.</i> )
Harvest Mouse	Mus messorius, ( <i>Shaw.</i> )
Common Mouse	Mus domus, ( <i>W.</i> )
	Rat, (Rattus, ( <i>W.</i> ))
Black Rat	Rattus ater, ( <i>W.</i> )
Brown Rat	Rattus decumanus, ( <i>Pall.</i> )
	Squirrel, (Sciurus, <i>Lin.</i> )
Common Squirrel	Sciurus vulgaris, ( <i>Lin.</i> )
	Hare, (Lepus, ( <i>Lin.</i> ))
Common Hare	Lepus timidus, ( <i>Lin.</i> )
Alpine Hare	Lepus albus, ( <i>Briss.</i> )
	Common Rabbit, (Cuniculus, <i>W.</i> )
Common Rabbit	Cuniculus varius, ( <i>W.</i> )
	Cavy, (Cavia, <i>Gmel.</i> )
Common Cavy	Cavia varia, ( <i>W.</i> )

Several genera are admitted in the foregoing list, which are not generally received: such as the Ass (*Asinus*) and the Rabbit (*Cuniculus*). The laws which govern the construction of genera should, however, be similar throughout Zoology; and if the Grey Squaterol (*Pluvialis cinerea*, of Willughby) may be separated from the Golden Plover, (*Pluvialis viridis*, Will.), surely the Ass may be placed in a separate genus from the Horse. The writer of the excellent article, *Ass*, in Partington's *Cyclopædia of Natural History*, thinks differently; and the point must be decided after further research. The arrangement of Mammalogy is yet in its infancy, and, indeed, it may be doubted whether any department has kept pace with Ornithology, which, being the most interesting department of Zoology, has received the most attention and engrossed the largest share of interest.

Derbyshire, Feb. 5, 1836.

S. D. W.

\* Dormer is derived from *dormire*, to sleep, as this animal sleeps through the winter.—[Usually spelt *Dormouse*.—ED.]

## ORGANIC CHEMISTRY.

“IF our improved chemistry should ever discover the art of making sugar from fossile or aerial matter, without the assistance of vegetation, food for animals would become as plentiful as water, and mankind might live upon the earth as thick as blades of grass, with no restraint to the increase of their numbers, but the want of local room.”\* After having recovered a little from the astonishment which this singular passage may have excited, perhaps, in the Malthusian, not unmingled with the dread of “mankind living upon the earth as thick as blades of grass,” and the horror of multiplying, not merely to “the starving point,” but to the absolute want of room whereon to fix a local habitation, we shall find, on quietly contemplating the subject, that, absurd as Darwin’s idea confessedly is, it would be by no means easy to demonstrate the impossibility of raising food from inorganic matter. Tannin, or that peculiar matter contained in barks, which, by combining with the gelatine of skin, forms leather, is as strictly a vegetable production as sugar, and yet, by a circuitous process, may be formed from “fossile or aerial matter,” and even from matter altogether inorganic in its origin. We have, however, no intention of attempting to prove the plausibility of Darwin’s suggestion, but shall confine our remarks to some of the singular, and even startling changes which chemical processes effect in organic substances. “Saw-dust itself is susceptible of conversion into a substance bearing no remote analogy to bread, and though certainly less palatable than that of flour, yet no way disagreeable, and both wholesome and digestible, as well as highly nutritive.”† This is calculated to excite surprise, “but when persons not familiarized with chemical speculations are told that a pound weight of rags can be converted into more than a pound weight of sugar, they may regard the statement as a piece of pleasantry, though nothing, says M. Braconnot, can be more real.”‡ Let us, then, study a few of the changes produced in organic matter by the action of heat, moisture, and other agents. As the number of organic substances is, however, far too great for present examination, we will confine our attention to two only—the woody fibre of vegetables, and the muscular fibre, or fibrin, of animals.

Woody fibre, in a state of purity, that is, after every substance

\* *Botanic Garden*, add. note xxxix, to part i.

† Herschell’s *Discourse on Natural Philosophy*.

‡ Ure’s *Dictionary of Chemistry*.

has been removed which is soluble in water, alcohol, and dilute solutions of alkalis and acids, contains nearly half its weight of charcoal, or carbon, and oxygen and hydrogen, in the proportions in which they constitute water, to the amount of the remainder. Some of the various products which it affords, or into which it is convertible, are—

*Vinegar, or Acetic Acid.*—When wood is decomposed by being subjected to a high temperature, among other products, acetic acid is obtained. Manufactories have been established, on a scale of considerable magnitude, for the purpose of obtaining this acid by the distillation of wood. In fact, from this source is derived nearly the whole of the acetic acid consumed in the manufacture of sugar of lead, acetates of alumina and iron, and for the other demands of the arts. The small branches of trees, which would otherwise be of little value, excepting for fire wood, are submitted to distillation in iron retorts; the gaseous products are allowed to escape, and the vapours are condensed in tubes of earthenware, surrounded by water. Tar, and very weak acetic acid, are the principal products. The tar is separated, as much as possible, by mechanical means, and the acid saturated by lime, added in considerable excess. In this process, the acetic acid combines with a portion of the lime, forming a neutral salt, which is dissolved by the water present; while the remaining tar combines with the excess of lime, forming an insoluble earthy soap. The solution of acetate of lime is evaporated to dryness, and, after being mixed with a proper proportion of sulphuric acid, is submitted to distillation. The sulphuric acid combines with the lime, forming sulphate of lime, while the acetic acid, being volatile, distils over.

*Pyroxylic Spirit* is formed simultaneously with acetic acid, during the distillation of wood. It resembles ether in its volatility, inflammability, and in its power of dissolving Indian rubber.

*Formic Acid* is the acid with which the bodies of ants are so strongly impregnated, and which they emit so copiously, when irritated, as to affect the eyes. It is the pleasant flavour of this acid which has recommended ants to the taste of some entomological palatians—see Kirby and Spence. Now, if instead of submitting wood to distillation alone, sulphuric acid and black oxide of manganese be added, formic acid, or the acid of ants, is obtained.

*Malic Acid* is found in the apple and in several other fruits, and in the juice of the house-leek. If wood be digested with nitric acid, a little diluted, and in a proportion not too large, an acid identical with the malic, or acid of apples, is produced.

*Oxalic Acid* gives acidity to the leaf of the wood sorrel (*Oxalis acetosella*), and to some other vegetables and fruits. If wood be treated with a larger proportion of nitric acid than was employed in the formation of malic acid, and the digestion be protracted, crystallized oxalic acid, or the acid of wood sorrel, results. Or if woody fibre be moistened and treated with caustic potash, at a temperature below that at which combustion takes place, hydrogen gas, nearly pure, is evolved, and oxalate of potash is formed.

*Ulmic Acid*.—In the common elm, a wound sometimes forms which discharges, in considerable quantities, a thick, brown fluid, containing a peculiar substance, which, from its combining with alkaline and earthy bases, has been denominated ulmic acid. If the last experiment be repeated, with less potash, and at a higher temperature, the wood is converted into ulmic acid.

Thus it appears that woody fibre is convertible, by the action of heat, and other agents, into various acids, possessing very different properties, most of them existing naturally in organized bodies, and one of them as a production of the animal kingdom; but, by adopting other processes, changes not less singular may be effected.

*Gum*.—If dry saw-dust be triturated with concentrated sulphuric acid added slowly, the fibre is gradually destroyed, and a mucilaginous fluid is formed. If pure vegetable fibre, or linen, or cotton, be substituted, no carbonization or discolouration ensues, and the mucilage obtained is clear and transparent. The acid may be neutralized by chalk, and water added, which will dissolve the gum, and but a very small quantity of the sulphate of lime. The liquid, on evaporation, affords a gum resembling that of the acacia, or gum Arabic.

*Sugar*.—If the gum formed in the last experiment be dissolved in water slightly acidulated by sulphuric acid, and the mixture kept at 212° for some hours, the gum will be wholly converted into sugar. The acid may be removed, as in the former instance, by chalk, and the colour by animal charcoal. The liquor being then evaporated to the consistency of syrup, and set aside to crystallize, will afford a crop of sugar exceeding, in weight, the woody fibre employed. M. Raspail assures us that works are established in France for manufacturing sugar by this process: into the acidulated water, heated to the boiling point, starch is thrown, and, in a few hours, is converted into sugar. By the substitution of starch, the conversion of fibre into gum is avoided; a process which, on the large scale, would be difficult, if not impracticable.

*Alcohol.*—It is obvious that the sugar thus obtained may, by fermentation, be converted into alcohol, or spirit of wine. In this country, potatoes have been treated with sulphuric acid, in order to convert their starch into sugar, from which spirit was obtained by fermentation, and subsequent distillation.

	CARBON.	HYDROGEN.	OXYGEN.
Woody Fibre .....	50,	5,4	43,2
Pyroxylic Spirit .....	44,53	9,16	46,31
Alcohol .....	51,98	13,7	34,32
Gum and Sugar .....	42,47	6,9	50,63
Acetic Acid .....	46,83	6,33	46,82
Malic Acid .....	40,68	5,06	54,26
Oxalic Acid .....	33,222	0,244	66,534

If for woody fibre we substitute animal fibre, or muscle, besides the three elementary constituents of wood, we introduce a fourth—azote; animal fibre, or fibrin, containing

CARBON.	OXYGEN.	HYDROGEN.	AZOTE.
53,36	19,685	7,021	19,934

By submitting fibrin to the action of various agents, we sometimes obtain products similar to, but generally different from, those obtained from wood under the same circumstances. Thus, fibrin is, by dilute sulphuric acid, converted into sugar, and by nitric acid, into oxalic acid; but, on decomposing it by heat, instead of acetic acid, that very singular alkali, ammonia, is evolved; and till the discovery of ammonia in the liquor afforded by the distillation of coals in gas-works, the decomposition of animal substances, by heat, was the only source from which the demands of commerce for ammonia and its salts was supplied. The animal matter, generally hoofs and horns, was decomposed in iron retorts. Carburetted hydrogen, water, carbonate of ammonia, and oil, passed over, while a porous charcoal, having a great affinity for colouring matter, and difficult to incinerate, remained in the retort. Part of the carbonate of ammonia condensed in a crystalline mass on the upper part of the receivers, and part dissolved in the water, and formed the harts-horn of commerce. The carbonate was either purified by sublimation, or was combined with muriatic acid, and sublimed into cakes of sal ammoniac. When animal fibre is used in this process, both the ammonia and the oil are formed by its decomposition, as neither of them exist, as such, in fibrin.

*Prussic Acid*, the most deadly poison known, might be considered

as decidedly a vegetable production, as it is found in the kernel of the peach, plum, and bitter almond, in the leaf of the laurel, &c., but if animal fibre, mixed with potash or its carbonate, be projected into a strongly-heated crucible, the mass becomes pasty, and affords, by solution and crystallization, a salt of potash containing this acid.

*Urea*, the last product we shall mention, can be produced by combining prussic acid, or cyanogen, with ammonia. It is probable that both the cyanogen and the ammonia are decomposed, and that their elements re-uniting, and combining with the elements of water, under a different system of molecular arrangement, give rise to this remarkable result; for ammonia is not evolved on the addition of agents, such as potash, whose affinities are more powerful than those of ammonia.

Can we contemplate, without astonishment, the facility with which organic matter is changed into a variety of products, possessing properties the most dissimilar? What can be more different than sugar and oxalic acid, gum and alcohol, from the insipid, insoluble woody fibre from which they were formed, or sugar, prussic acid, and ammonia, from animal fibrin? Yet when we examine the nature of the change which has taken place—when we reflect on the very small differences which the ultimate analysis of the various substances indicates—our astonishment is, if possible, heightened. Thus, woody fibre differs from gum in the proportion of its carbon, while gum and sugar absolutely consist of the same elements, united in the same proportion. Other instances, of a similar description, are not wanting—"Acetic acid has a strong and aromatic smell, succinic acid has no smell whatever. Acetic acid is so soluble in water that it is difficult to obtain it in crystals, and it cannot be procured in a separate state, free from water; but succinic acid is not only easily obtained free from water, but it is not even very soluble in that liquid. The nature of the salts formed by these acids is quite different; the action of heat upon each is, also, quite different; the specific gravity of each differs; in short, all their properties exhibit a striking contrast."\* Yet these acids are composed of the same number of atoms of the same elements, and their atomic number is also, of course, the same. That tremendously explosive acid, the fulminic, is identical, so far as being constituted of the same elements, combined in the same proportions, can render it, with the cyanic acid; yet they do not even resemble each other in any one particular, excepting that their neutralizing power is the same, or, in other words, that their atomic number is the same.

\* *History of Chemistry.*

The facility with which products differing widely in their properties, are formed by causes apparently inadequate, renders it exceedingly doubtful whether a vast number of the products of organic chemistry, which threaten to overwhelm us with more new acids and alkalies than there exist species in the vegetable kingdom, have any real and distinct existence in the plant from which they are supposed to have been extracted, or whether their formation is not rather determined by the agents to the action of which they are submitted, in the complicated processes of organic analysis.

In the experiments recorded, we find gum converted into sugar, merely by the action of a very dilute acid; and, as was stated in the last number of *The Analyst*, starch changed into sugar, by the action of an exceedingly minute proportion of a substance itself a vegetable product; and that starch, merely by drying at a high temperature, becomes soluble in cold water, loses its characteristic property of colouring iodine; and that it can no longer be converted into sugar by the agency of sulphuric acid. Who that had obtained it in this state, in the progress of a vegetable analysis, would not have supposed that he had obtained a new substance? Who could have conjectured its identity with starch?

We have seen that sugar, vinegar, oxalic acid, gum, and alcohol, and many products that the limits of this paper have excluded, have been obtained, from wood and starch, for commercial purposes. We cannot but feel that organic chemistry is yet in its infancy, and we almost fear to look forward in anticipation of the effects which further discoveries may produce on the welfare of society, lest we should be suspected of having rather given up the reins to our imagination, than of being guided by the sober inductions of reason.

B+X.

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### AN ELUCIDATION OF THE THREE BRITISH TREE-LINGS,—(SILVIA).

PERHAPS no genus of British birds has been the subject of greater confusion than that which is the subject of the present paper. This confusion, however, seems to have been caused chiefly by the inattention of *British* authors; for Temminck and other continental writers have correctly described the three species, which are now

satisfactorily established as frequenting our island. No small portion of the uncertainty which has hitherto prevailed, may be traced to the lax and unscientific mode adopted by authors in designating this group. Thus, one species is called the Lesser Middle Willow Wren, another the Willow Wren, another the Lesser Pettichaps, also, Middle Yellow Wren, Second Willow Wren, Large Shivering Yellow Wren, &c. &c., all of which fanciful designations are constantly used by those anxious to elucidate the history of the genus; but which mode of designation would be of itself sufficient to frustrate their intentions. The three species which are now established may be correctly called, the Garden Treeling, (*Silvia melodia*); the Wood Treeling, (*Silvia sibilans*); and the Hedge Treeling, (*Silvia loquax*). The name, "Warbler," is not very applicable to this genus, as only one of them has any pretention to a song, and that consists of two or three notes, scarcely audible at a short distance. I have, therefore, translated the Latin generic appellation, *Silvia*, which, as applied to this genus, is singularly appropriate. The Wood Treeling is frequently called *Silvia trochilus*; but I have preferred the specific name proposed by Blyth, "*melodia*," as this species is distinguished by its sweetly modulated song. The name, *trochilus*, has also been applied to the Colibrees, though I know not for what reason: *Colubris* seems to be the appropriate epithet. I shall here give Blyth's remarks on the generic name of the genus *Silvia*:—"I have termed the genus by the English name, *Pettichaps*, in preference to Willow Wren, the latter not being at all applicable to these birds, and implying that they particularly frequent willows, which is not the case. *Pettichaps* is not quite so euphonical a term as could be wished; but it is well known to most readers on Natural History, as having been employed by many writers, to denote the Garden Warbler, (*Ficedula hortensis*), and also the Chifchaf, (*Silvia loquax*, Herbert), contradistinguished from each other by the appellations *larger* and *lesser*. How the Garden Warbler came to be so termed, is not easy to imagine, as it is one of the strongest billed birds in its genus; and it is as difficult to conceive how the Chifchaf came to be considered as a sort of diminutive of the Garden Warbler, there being no manner of resemblance between them; but chiefly, I suppose, from a disinclination to alter established names, however inappropriate. The terms, *Greater* and *Lesser Pettichaps*, have been adopted for these two dissimilar birds by most of the writers on British Ornithology. The name, *Pettichaps*, is certainly very expressive of the delicate little beaks of the genus *Silvia* (as now restricted), and I have, therefore, employed the term as a general ap-

pellation for the various members of this genus; it being as well always, I think, as far as possible, to have a vernacular designation for every generic division."

I cannot but here remark on the very strange method in which the Treeling family (*Silviadæ*) is classified by some authors. Thus, Fleming, in his genus *Curruca*, (including the Reedlings, the Fauvets, the Locustel, the Whinling, and the Nightingale), places the Wood Treeling; while the Garden Treeling and the Hedge Treeling, (which agree in every generic character with the Wood Treeling), are classed in the genus Kinglet! In Mudie's *Feathered Tribes*, the Treelings are also confounded among the Fauvets, &c.; and in Bewick's work, the Garden Treeling is called "*Motacilla trochilus*," and the Hedge Treeling, "*Trochilus minor*," thus placing them in different genera. It seems strange, and almost unaccountable, how these three elegant little birds should have been so jumbled and confounded; and with a view to unravelling the intricacies with which authors have, by their carelessness, enveloped the subject, I shall give a few notes on each species, together with the characteristics of each. I may here remark the close resemblance of some of the Silvicules to the Treelings, especially the Spotted Silvicule, (*Silvicula maculosa*, Sw.), of which there is a representation in *The Northern Zoology*.

WOOD TREELING.—*Silvia sibilans*.

BECFIN SIFFLEUR.

GRUNER SANGER.

The Wood Treeling was first noticed as a British bird by Gilbert White, under the name "Large Shivering Yellow Wren," and subsequently it was described by Mr. Thomas Lamb in the *Linnean Transactions*. He says,—“this is, undoubtedly, a new species in England, and, I believe, a nondescript: it inhabits woods, and comes with the rest of the summer Warblers, and in manner is much the same, running up and down trees in search of insects. I heard it, first, early in May, 1792, in White Knight's Park, near Reading; and it was there hopping about on the upper branch of a very high pine, and having a very singular and single note, it attracted my attention, being very much like that of the Corn Bunting, (*Emberiza miliaria*, LIN.), but so astonishingly shrill, that I heard it at more than a hundred yards distance: this it repeated once in three or four minutes. I never heard these birds before last spring, (1792), and, nevertheless, I have heard nine in the course of a month; four in White Knight's Park, and five in my tour to the

Isle of Wight; namely, one in a wood at Strathfieldsaye, one at East Stratton Park, two in the New Forest, and one in a wood near Highclere: I have not heard it since June 6. Colonel Montagu informed me he had met with it in Wiltshire, and had called it the Wood Wren; it has also been heard near Uxbridge."—*Lin. Trans.*, ii., p. 246. This account is highly interesting and valuable, as being the first description of it as a British Bird, and the description is followed by an elegant representation, the size of life.

Montagu also describes the species in vol. iv. of the same work. He first discovered it in the latter end of April, 1790. The Wood Treeling is distinguished from its congeners by a broad, conspicuous, yellow streak through the eye, by the more vivid tinting on the back, and the silvery white of the under parts. No one who has once heard the very peculiar note of this species can ever mistake it, or confound it with that of any other bird, and this is rendered the more remarkable by a strange shivering or shaking motion of the wings, on which account it has been named the "Shivering Pettichaps." It frequents oaks and other large trees, and is not so familiar a bird as the Garden Treeling. On its arrival in Britain, it continues in song the greater part of the day, and this lasts throughout the spring, and may be heard even in the summer during the breeding time. The nest is generally placed on the ground, like that of the Hedge Treeling, and is formed of dried grass, amongst which moss is frequently interwoven. Owing to the similarity of colour between this and the herbage among which it is usually placed, it is very difficult to find, without watching the birds. Mr. Sweet, who kept this species tame, says that it will soon become familiar, especially if taken young: they must not, however, be given any kind of berries, as they are not fructivorous; but bread and milk, bruised hemp-seed, and boiled egg; a few flies should be also occasionally administered.

Willughby describes this bird at p. 223 of his *General Ornithology*, under the title "a little yellow bird without name." He says, "it sings like a grasshopper." I shall now give the synonyms, references, and characteristics:—

*Silvia sibilatrix*, BECHST., *Nat. Deut.*, iii., p. 561; SELBY, *Brit. Orn.*, i., p. 224.—*Silvia silvicola*, STEVENS, SHAW'S *Gen. Zool.*, x., p. 748.—Beeftin siffleur, TEM., *Man. d' Orn.*, i., p. 223, and iii., p. 149.—Gruner Sanger, MEYER, *Tass. Deut.*, i. p. 247.—Wood Warbler, STEV., SHAW'S *Gen. Zool.*, x., p. 748; MUDIE, *Feath. Tribes*, i., p. 328, *Analyst*, iii., p. 202.

The length, five inches and a half; bill, horn colour or dusky; upper mandible bent at the tip, and rather longer than the under; irides, hazel; nostrils, beset with bristles; top of the head, neck, back, and tail coverts, olive-green; throat and cheeks, yellow, paler on the breast; belly and vent of a most beautiful silvery white; through the eye passes a yellow line; wings and coverts, brown or ash gray, and edged with green; the tail consists of twelve feathers, rather forked, and of a brown colour, edged with green on the exterior webs, and with white on the interior, the first feather wanting the green edge; under part of the shoulder, bright yellow; legs, rather more than an inch long, of a horn colour; claws, paler; sexes, alike.

GARDEN TREELING.—*Silvia melodia*.

BECCIN POUILLOT.

GARTEN SANGER.

The Garden Treeling is more abundant than the other two, from which it is distinguished by its sweet song, and this has gained it the well deserved epithet, *melodia*. In Britain, it is the most abundant of the genus, and does not confine itself so exclusively to one particular locality as the others, haunting alike woods, hedges, fields, commons, road-sides, and gardens. The latter, however, appears to be its favourite haunt, whence its English specific name. Mr. Herbert, a very close observer of nature, says, "the name, Yellow Wren, is very near as inapplicable as Willow Wren, for the adults have very little yellow, except the stripe over the eye; and the Wood Wren has much more and brighter yellow. I should propose to call it the Garden Wren, on account of its frequently building in small gardens, and approaching dwelling houses, and often entering conservatories in search of aphides." *Wren*, however, it must be at once evident to the mere tyro, is inadmissible as the generic name of this bird, for it differs from the Wren (*Anorthura*) in habits, form, appearance, colour, and structure. The Garden Treelings are very useful in clearing plants from insects, and they will frequently flit about a rose-bush close to a window, clearing it from the aphides which swarm on it. They are likewise of eminent service to fruit trees, especially the cherry tree, which they rid of insects without touching the fruit. They have been kept in confinement, in which state they sometimes become so familiar as to take flies out of the hand. They are, also, fond of milk, or bread and bruised hemp-seed. The nest is formed on the ground,

arched at top, with a hole in the side: exterior, hay; interior, feathers. Lays five or six eggs, prettily speckled with red. Appears in Britain in the beginning of April.

*Motacilla trochilus*, LATH., *Ind. Orn.*, i., p. 338.—*Motacilla acredula*, LIN., *Syst. Nat.*, i., p. 338.—*Silvia trochilus*, LATH., *Ind. Orn.*, ii., p. 338; PEN., *Brit. Zool.*, i., p. 511.—*Becfin pouillot*, TEM., *Man. d'Orn.*, i., p. 224, and iii., p. 152.—Garten Sanger, BREHM., *Vog. Deut.*, p. 427.—*Fitis* Sanger, MEYER, *Tass. Deut.*, i., p. 248.—Yellow Warbler, PEN., *Brit. Zool.*, i., p. 511, STEV., SHAW'S *Gen. Zool.*, x., p. 742.—Willow Warbler, MUDIE, *Feath. Tribes*, i., p. 333.

Weight, about two drams; colour of the head, hind neck, and back, pale green; wings and tail, brown, edged with yellowish green; from the lower mandible a well-defined, light yellow streak passes over each eye; throat, cheeks, and breast, yellow; belly, pure white; legs, yellowish brown.

#### HEDGE TREELING.—*Silvia loquax*.

BECFIN VELOCE.

WEIDEN SANGER.

The Wood Treeling and the Garden Treeling have been frequently confounded by authors; by some, having been united into one species, and by others, as Bewick, they have been multiplied into many species: ornithologists are now, however, pretty well agreed on those two species, but the bird now under consideration is yet enveloped in error. I am convinced that Selby is wrong when he gives the *Becfin a poitrine-jaune*, and the *Silvia hippolais*, of Temminck, as synonyms of the Hedge Treeling. Those names seem rather to refer to the Arbor Horticule (*Hortacula poliglotta*, BLYTH). Notwithstanding this obvious fact, British ornithologists continue to adopt the specific name *hippolais*, which increases the confusion. Rennie, I believe, is the first who pointed out the identity of the *Silvia hippolais* of Selby, with the *Silvia rufa* (*Becfin veloce*) of Temminck. The mistake seems to have been caused by the vague term *hippolais*, which may be applied, with equal justice, to either of the birds, and which should thus be abandoned. Another cause of confusion is, the Hedge Treeling having been named "*Silvia rufa*," by Latham and Temminck—a most inapplicable name certainly. This species, vulgarly Pettichaps, Chifchaf, &c., is very common in our island, and haunts plantations, shrubberies, woods, and hedges, in which its slim form may be seen flitting about, in the spring, and even sometimes in the latter part of win-

ter. Mr. Sweet says that he once saw one so early as the 12th of March, and it has been thought that those which are seen so early must, like the Goldcrested Kinglet, have remained in Britain through the winter. The Hedge Treeling is easily taken in a trap, and will soon become tame in confinement. Mr. Sweet recommends that, when caught, they should, as soon as possible, be put with other birds, and fed on bread and bruised hemp seed, and bread and milk, which must, at first, be sprinkled with aphides shaken on it from a branch. One that was treated in this way became so familiar that, in three or four days it would take a fly out of the hand, and also drank milk from a tea-spoon, of which it was so fond that it would fly after it all round the room, and perch on its owner's hand, without the slightest appearance of timidity. It never attempted to escape when the windows were open, but would sleep on its owner's knee by the fire. It was at last, with difficulty, enticed out at the door, with a spoon of milk; it returned twice to the room, but the third time it ventured into a little tree. It then flew to its owner, and, after drinking some milk, it resorted to some wet chickweed, from which, after washing itself, it flew into a holly bush hard by, and began preening its feathers. After this, it was seen no more, though its voice was heard several times: it was supposed that it left the country as soon as it had thoroughly dried itself, for all the other birds of the same species had departed, it being the end of November. A correspondent of Loudon's *Magazine of Natural History* mentions a new way of successfully rearing birds of the Treeling family, by giving them vermicelli, *boiled* for about ten minutes in water. He thus reared a nest of Hedge Treelings, without any other food whatever, during the first week. Two of them, however, were killed by a cat, and the third was so hurt and frightened by bloody grimalkin's murderous attack that it never *looked up* afterwards, but died in a few weeks. "Nothing, however," says the correspondent, "could be more lively than the survivor of the four: active, elegant, and sprightly, with an eye quick as thought, this little charmer flitted about his cage like a tiny winged mouse, almost too quick for the eye to follow." The nest of the Hedge Treeling is, like that of the preceding, formed of an oval shape, arched at top, with a lateral opening, and placed on the ground. It is a very loose structure, and may frequently be seen, in collections, with the side placed uppermost; thus giving it the appearance of being an open-topped structure, instead of being domed, like that of the Ivy Wren. It is generally on the ground, and often under an old tree-stump; and would generally escape de-

tection were it not for the flight of the bird, who is easily scared from her eggs. These are six in number, ground colour white, sprinkled with red spots. The Hedge Treeling is one of our earliest visitants, arriving in our island about the 21st of March.

*Motacilla rufa*, GMEL., *Syst.*, p. 955.—*Curruca rufa*, BRIS., i., p. 418.—*Silvia rufa*, LATH., *Ind. Orn.*, ii., p. 519.—*Silvia collibita*, VIEILLOT, *Faun. Franc.*, p. 214.—*Silvia hippolais*, STEV., SHAW'S *Gen. Zool.*, x., p. 746; JENYNS, *Brit. Vert. An.*, p. 112.—*Silvia loquax*, HERBERT, WHITE'S *Nat. Hist. Selb.*, p. 55.—*Becfin veloce*, TEM., *Man. d'Orn.*, i., p. 225, and iii., p. 154.—*Fauvette collibite*, VIEIL., *Faun. Franc.*, p. 214.—*Weiden Sanger*, *Nau. Vog.*—*Pettichap Warbler*, STEV., SHAW'S *Gen. Zool.*, x., p. 746.—*Hedge Warbler*, MUDIE, *Feath. Tribes*, i., p. 335.

The following is the description given by Mr. Jenyns—"Usually somewhat smaller than the *Silvia melodia* (Garden Treeling), with the wings and tail, *relatively* considered, still shorter than in that species; also to be distinguished from it by the characters of the quills above pointed out; but in colour and general appearance almost absolutely the same. Upper parts, olive green, tinged with yellow and ash grey; between the bill and the eye, and over each eye, a narrow, faint, yellowish-white streak; quills, cinereous brown, the outer webs edged with yellowish green; all the under parts, including the under tail coverts, whitish, tinged with yellow, the yellow having a tendency, on the breast, to appear in streaks; axillæ, and under wing coverts, bright primrose yellow; tail extending an inch beyond the tips of the folded wings; feet rather darker than in the last species."

*Derbyshire, Feb. 15, 1836.*

S. D. W.

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## ROMAN ANTIQUITIES DISCOVERED IN WORCESTERSHIRE.\*

Two sepulchral Roman urns, containing human bones, were a short time since discovered at Powick, between the roads leading to Upton and Malvern, about nine feet below the surface. One of the

\* The following account is abridged from a highly interesting Paper on Roman Antiquities, read by Jabez Allies, Esq. before the members of THE WORCESTERSHIRE NATURAL HISTORY SOCIETY, December 1, 1835.

urns was accidentally broken to pieces ; but the other is quite perfect, of a fine shape, made of red earth, (apparently the red marl, or clay of the locality), eleven inches high, and nine inches in diameter ; the mouth five inches, and the neck and bottom, respectively three and a half inches across. The perfect urn has a double rim round the mouth ; two indented lines surround the small and thick portion of the neck, and two similar lines encircle the part which may be termed the shoulder. The broken urn was one inch smaller than the perfect one ; a little inferior in manufacture, and has only a single rim round the mouth, and is without the indented lines. These sepulchral urns\* were deposited simply in the ground, without any tumuli, according to the manner of the Romans.

A little to the west of the village of Powick, on the same range of hills, two urns, similar in size to those already described, were dug up, about two years ago, containing the bones of children ; parts of the cranium, with their sutures, and some of the bones of the arm, were, at the time they were discovered, entire ; but shortly afterwards crumbled to pieces.

Two ancient coins have likewise been discovered in the neighbourhood of the village of Powick. Upon one the head is very perfect, and is encircled with a diadem studded with spikes or horns ; but as the piece of metal was not large enough for the die, the inscription is so very imperfect as to render it difficult to ascertain to what potentate it belonged. The other coin is very perfect, and bears the image and superscription of Constantine, who was the son of Constantine the Great.

Several fragments of sepulchral urns, cups, and pans, of various shapes and sizes, evidently belonging severally to the time of the ancient Britons, the Romans, or of the Romanized, or later, Britons, and early Saxons, were dug out of a gravel pit, at Kempsey, in the spring of 1835.† Some of these vessels are made of a very coarse, dark, or ironstone clay ; others of common red, or brick clay ; and others of some light material, mixed with red clay. The fragments were discovered in a bed of gravel, about three feet and a half from the surface. They were enveloped in a black ash, and deposited in a cavity, or cist, of about six yards in circumference, over which a roof of broken pebbles and clay had been originally formed ; but it had fallen into the cist, and probably broke the

\* The Right Honourable the Earl of Coventry has presented the urn and fragments to the Worcestershire Natural History Society.

† They are deposited in the museum of this Society.

vessels. In the mass was a piece of oxidated brass or copper, two inches long, which is supposed to be either the tongue of a buckle, or a fibula, or a brass pin. There were also a few fragments of bones in the same cist, all of which, most probably, belonged to a horse, as one of them is part of the jaw-bone of that animal, with several teeth in it.

If the piece of brass were a pin, it most likely belonged to the period of the ancient Britons; for although they possessed very little iron, the Phœnicians supplied them plentifully with brazen wares, as articles of commerce: and it is stated in Mr. Bloxam's work on monumental architecture, &c.,\* that in the cists of many ancient British tumuli or barrows, a *single* brass pin has frequently been found, which fastened the cloth within which the ashes were enveloped.

It might, however, have been one of the fibulæ or brooches of the Romans, or of the Romanized Britons, and which were used by the men to fasten the tunic, and chlamys or cloak, on the right or left shoulder, and by the women the vestment in front of the breast. They are differently shaped; some are of the circular form, and others oblong, and not very dissimilar, (though much smaller), to the guard beneath the trigger of a gun; and, with the acus or pin compressed into the socket, have been compared to a bow ready strung. The one in question is of the latter form, but is destitute of the acus, which probably was of iron and mouldered away.

If it were the tongue of a buckle, it most likely belonged either to the toga of the person, or to the trappings of the horse, of a Roman or Romanized Briton.

The relics of a horse, found in this cist, afford strong evidence that the ashes either of an ancient British, or Romanized British, or early Saxon chieftain were deposited there,—for such costly funeral sacrifices, although very common among our rude ancestors, (and constituted a part of their religion,) were much restricted among the Romans by the laws of the twelve tables. In some cists, in other parts of the kingdom, fragments of the horns of stags have been found, and from which it may be inferred that hunters were buried there.

The most ancient mode of sepulture among the ancient Britons, was by simple inhumation, or deposition of the body in an entire state; and it is thought that the Phœnicians introduced the mode of

\* Intituled—*A Glimpse at Monumental Architecture and Sepulture of Great Britain, from the earliest period to the 13th Century*, by Matthew Holbeche Bloxam, dated Rugby, Sep. 23, 1834.

burial by cremation into the island. The practice among the ancient Britons of depositing warlike instruments, drinking cups, and other articles with the dead, is likewise supposed to have been derived from the Phœnicians and Belgic Gauls. This custom is of great antiquity; and an instance of it occurs in the Book of Joshua,\* in a very ancient copy of the Septuagint, preserved in the Vatican, (although it is not in our translation), wherein it is stated that knives and instruments of flint were buried with his body in the tomb. The custom is also alluded to in the Book of Ezekiel, wherein he speaks of persons who were gone down to the grave with their weapons of war, and their swords had been laid under their heads.

An instance of the practice of cremation is also recorded in the first Book of Samuel, (chap. xxxi.), wherein it is stated that the bodies of Saul and his sons were burnt after they had been taken down from the walls of Bethshan, and the bones were buried under a tree. There are also frequent allusions to the custom in the Homeric poems.

The sepulchral urns and cups of the ancient, that is to say the Celtic and Belgic, Britons differ in many respects from those of the Roman era, and from which they are in general easily distinguished. Those of the ancient British are coarsely formed at the wheel,† without the lathe, and, in shape, bear some resemblance to a common flower-pot, or truncated cone; the ornaments are rude, consisting chiefly of zigzag and short diagonal lines, and many appear to have been moulded merely by exposure to the sun, or blackened by the funereal fire. Some were of the globular form, and others of a cylindrical shape, the latter were of the most ancient description; and although the cinerary urns and drinking cups of the Romanized Britons and early Saxons were made after the Roman mode, yet they generally corresponded in shape with those of the ancient Britons, and the specimens discovered at Kempsey very much accord with the above rules.

About a dozen other cists, although not so large as the one already described, were likewise discovered near the same spot, whilst excavating for gravel, and contained various articles of pottery, but they were either all destroyed by the workmen or lost. These cists were situated near the northern side of a vallum, which,

\* Vide Bloxam, p. 7.

† The Prophet Jeremiah, in describing the Potter's tools in his time, says, "then I went down to the Potter's house, and behold he wrought a work upon the wheels."

by many writers, is described as a Roman camp, and were evidently constructed for interment by cremation, when the body was burnt ; but whether there was formerly a tumulus, or barrow, over them it is now impossible to ascertain. Probably, however, such was the case, (if the coarse articles were ancient British), as persons of rank were generally so buried by the ancient Britons ; but the tumuli have been levelled for agricultural purposes, throughout many parts of the kingdom. Some of the urns and pans in question, are of ironstone clay, very coarsely formed, badly tempered, (the gritty particles not sifted therefrom), and slightly burnt, or probably only dried in the sun ; not turned at the lathe, but only at the wheel, and therefore most probably belonged to the ancient British era : whilst others, which came out of the same cist are of red clay, were turned at the lathe, as well as the wheel ; were well tempered, sifted, and thoroughly burnt, and consequently belonged to the Romans, or Romanized British, but most probably to the latter ; for although such vessels are made after the fashion of the Romans, yet most of them correspond in shape with those of the ancient British. There is one singularity attending the cist in question, namely, if the coarse articles therein were ancient British, (and which they most probably were), the Romans, or Romanized Britons continued to bury in the same cist ; and, therefore, we may infer that the Romans located themselves at an ancient British station at Kempsey. Many of the other cists in that locality in all probability were purely Roman. A Roman coin was also found by one of the workmen at the gravel-bed, previously alluded to, at Kempsey.

The Rev. E. Rudd, of Kempsey, has in his possession a fragment of a thick slab stone, one yard long and half a yard wide, with a Latin inscription thereon, in honour of Constantine, and which was found in the Roman camp alluded to at Kempsey, in the year 1818. The following is the inscription :—

V A L C ° N S T  
 A N T I N O  
 P F I N  
 V I C T O  
 A V G

Valerio Constantino Pio Felici Invicto Augusto.\*

The vallum of the above camp may now be easily traced ; but being a mound of gravel, it has been much levelled in many places.

\* To Valerius Constantinus, the pious, happy, invincible Augustus.

Mr. Rudd has also a fragment of a supposed Roman flue, and pieces of Roman tiles, which were found near the same place.

Tacitus states that the Roman Proprætor Ostorius Scapula, in the reign of the Emperor Claudius Cæsar, constructed forts on the rivers Avon and Severn; and John Ross, a writer on antiquities, who flourished in the reign of Edward IV., has reported Constantius Cæsar as the founder of Worcester, on the credit of an old British chronicle he met with; and Andrew Yarranton, in the 2nd part of his work, dated 1698, states, that he discovered the hearth of a Roman foot-blast, and a pot of Roman coin by its side, near the walls of Worcester. This is supposed to have been at what is named Cinder Point, on the east bank of the river Severn, in a place called Pitchcroft, where there is an extensive bed of iron clinkers and scorïæ, very rich in metal, (about six feet deep in the alluvial soil), imagined to be the rough and offal thrown aside in the time of the Romans, they having, at that period, only foot-blasts to smelt the iron-stone.

A Roman coin, said to be of Vespasian, was found a few years back, on the east side of the Worcestershire beacon of Malvern hill, near St. Ann's Well, in a cavity which had been made by the sheep. Roman coins were also found in the rubbish of the ancient wall which was on the river-side of the old and lately demolished St. Clement's Church, in Worcester. In the excavations which were made at the building of the house in the centre of Britannia-square, Worcester, the foundation of what is supposed to have been a Roman circular tower, or fort, of sand-stone was found, about thirty feet in diameter, and in the rubbish a great many Roman coins were discovered, principally of Constantius and Constantine the Great, and are now in the possession of Harvey Berrow Tymbs, Esq. One of Domitian was found in the excavations for the new houses at Lark-hill Crescent, near Perry Wood; and one of Cons ( ) upon breaking up an old orchard, to make a garden, near the Infirmary: similar coins have also been found at various other places in and about the city. All the above circumstances strongly corroborate the accounts of Tacitus, Ross, and Yarranton, and appear to place beyond doubt, the fact that Worcester was a Roman station.

## OBSERVATIONS ON THE BRITISH LAND AND FRESH-WATER SHELLS,

FOUND IN THE VICINITY OF CONGERSTONE, IN LEICESTERSHIRE,  
1835—6; WITH PREFATORY REMARKS ON THE ADVAN-  
TAGES OF CULTIVATING THE STUDY OF NATURAL HISTORY.

The numerous cheap and well-executed works on Natural History published of late years, have greatly tended to increase the facilities for the study of this delightful and instructive science, and have given an impulse to the investigation of the inexhaustible variety of natural productions with which this country abounds.

One of the advantages consequent on the zealous cultivation of this branch of science, has been the organization of Natural History Societies, where individuals, however they may differ in their political or religious opinions, meet on neutral ground, without fear of dissension. In lieu of that asperity of manner which too often characterize opponents in mixed assemblies of the present day, men of inquiring minds, having one object in view—the advancement of science,—at these occasional meetings display a kindly and liberal feeling, and act in unison.

In the midland counties, Worcestershire and Shropshire have taken the lead in establishing societies for promoting the cultivation of Natural History; and it is to be hoped men equally devoted to the cause of science will be found in this and the neighbouring counties, who will follow so laudable an example, and zealously promote the formation of similar institutions. I feel persuaded they will receive the support and assistance of those classes of society who are best able, by their education and their pecuniary resources, to promote so desirable an object. Landed proprietors would, doubtless, furnish the museum with the rarer British birds, through the medium of their keepers; a hortus siccus of the various plants, with their localities described, would speedily be formed by zealous botanists; specimens of the rocks, minerals, and fossils found in the different strata of the respective counties, would be obtained by persons devoted to geological pursuits; coins and antiquities, which are now too frequently mutilated or destroyed by ignorant workmen, not having any incentive to their preservation, would be carefully deposited with the curator of a museum, for a trifling remuneration; works on every branch of science, scattered far and wide, would be presented by liberal donors, and thus being brought into one

focus, would constitute a truly valuable library of reference. The student in Natural History is too often deterred, by the dry details of science, from persevering in his favourite pursuit, from the want of access to a museum and well-selected library—a reference to which would speedily remove the obstacles from his path, and incite him to further exertion.

The formation of museums in every county would, likewise, be attended with important advantages, not only to the cause of science, but in a national point of view. Deep as the investigation has gone into the natural productions of this country, its recesses would be more diligently and successfully explored if museums were formed, as on the continent, for the reception of the geological, botanical, ornithological, and other treasures, with which every county more or less abounds. Were this plan adopted throughout the kingdom, and the museums opened, under certain restrictions, to *all* classes, they would be not only interesting to the scientific stranger, but prove a source of instruction, and open a wide field for inquiry, to those resident in the county, who would be enabled to form some idea of its resources, if they could contemplate, in a well-arranged museum, the various natural productions to be found within its limits.

When we consider that this country contains more than ten thousand insects already named and catalogued; between fifteen and sixteen hundred indigenous plants, independent of those more minute, though not less beautiful, forms of vegetation, the mosses, which amount to three hundred; that there are four hundred and twenty lichens enumerated in the second volume of Hooker's *British Flora*; that the Hepaticæ, Algæ, and Fungi, form an immense tribe for students to investigate, independent of the numerous species of birds, quadrupeds, reptiles, fishes, and molluscous animals, whose natures, instincts, and habits, form a fertile ground for research—when we consider that minerals, or fossils, and geological specimens are to be met with, more or less, in every county, we never need be at a loss for amusement and instruction, if we would observe, and take some little trouble to surmount the difficulties of the first introduction to science.

There is, indeed, ample food in every county for an inquiring mind, whether we turn to its natural productions, or to its antiquities—the former comprising its botanical, ornithological, and other kindred subjects; the latter, its architectural and monumental remains, its ancient tumuli, barrows, and camps,—its monastic and castellated edifices—its churches, and their sculptured tombs, and

stone tracery-work of various styles and ages. There is no neighbourhood, probably, but what, in a circuit of a few miles, embraces some of the above objects; and with respect to its natural productions, a person may pass year after year in the same spot, and still find something new to admire—something new to investigate. In the neighbourhood where I at present reside, and of which I have made but a limited examination, (it being quite unknown to me till within the last few months, and my time being much occupied in duties of a more important nature), I have been able to discover four hundred and fifty indigenous plants, sixty species of mosses, numerous lichens, and more than forty species of the British land and fresh-water shells. Some of the rarer species of birds are, also, occasionally met with, the male and female Peregrine Falcon having both been shot in a wood in the immediate neighbourhood during the past winter; one of which is now preserved in the residence of Earl Howe, at Gopsal. Some of your readers may, perhaps, wonder at the number of British land and fresh-water shells which I have stated as found in this neighbourhood. I will, therefore, give some insight into my mode of procuring them; and as many of the specimens, though exceedingly minute, are yet most interesting objects of nature, I will preface my account by mentioning a very useful, and by no means expensive, work upon the subject; I allude to Turton's *Manual of the British Land and Fresh-water Shells*, with coloured figures and descriptions of one hundred and twenty-six different species, the greater number admirably executed. It does not, indeed, contain the whole number hitherto discovered, as I possess three or four species which are unnamed and unalluded to in the work. One, the *Assiminia Grayana*, from Greenwich Marshes; also, *Helix obvoluta*, *Cyclas pulchella*, *Helix pullulata*, (possibly a variety of *Helix nemoralis*), *H. globularis* and *cellaria*; the four last from Mr. Bean's splendid and unique collection, at Scarborough, which also, I believe, contains several others not mentioned by Turton. A descriptive catalogue from Mr. Bean would be a valuable addition to our knowledge of British inland conchology. Perhaps it may not be uninteresting to some of your readers were I, in the conclusion of this paper, to enumerate the different species of shells which I have discovered during the present winter. The country around, at first sight, does not appear to be well adapted to the increase of the larger species of *Helix*, as there is no calcareous deposit in the neighbourhood, and it is in a limestone, chalk, or oolitic subsoil, that most of these species flourish, and are consequently found in considerable abundance. The surrounding

country is rather a low, open, and extensive valley ; the subsoil almost entirely composed of gravel, in which are not unfrequently found good specimens of jasper and agate. The Ashby Canal and River Sence, with one or two small brooks, run through the parish, and from the predominance of water, and the absence of lime, the greater number of the species met with are such as are peculiar to ponds, rivers, low marshy situations, and wet ditches ; and it is among the silt and dead leaves which are left on the banks of the streams after the subsidence of a winter flood, that I find the greater number of shells. A careful examination of such a heap has not unfrequently produced as many as twenty different varieties, and the majority generally in a good state of preservation, and immediately fit for the cabinet, as the snail has been devoured by the numerous minute insects and worms which are continually preying upon them. I enumerate the following list of those I have already discovered, though I do not doubt but that eight or ten more might be added to it by a more careful research.

*Catalogue of British land and fresh-water Shells, discovered during the winter, in the neighbourhood of Congerstone, Leicestershire.*

**CYCLAS CORNEA, C. PUSILLA**,—River Sence and Carlton brook.

**ANODON CYGNEUS**,—River Sence and Ashby canal.

Fine specimens of this shell, as much as six inches wide, have been found in ponds belonging to Mr. Cope, at Osbaston, in this neighbourhood.

**MYSICA PICTURUM, M. OVATA**,—Ashby canal.

**VITRINA PELLUCIDA**,—Low grounds adjoining the Carlton brook.

**HELIX NEMORALIS, H. HORTENSIS, H. ASPERSA**,—In hedges and gardens ; **HELIX NITENS, H. LUCIDA, H. HISPIDA, H. CRYSTALLINA, H. PYGMEA**, (*rare*), **H. FULVA**, (*rare*), **H. PULCHELLA**,—Left on the banks of the Carlton brook, among sedges and dead leaves, after the subsidence of a flood.

Turton makes two varieties of *H. pulchella*, the one quite smooth and glossy, the other with regular oblique raised transverse striæ ; he also well remarks, that it may still be doubted whether these two varieties may not be considered as distinct species. In this point I am inclined to agree with him, for I have never yet discovered the two varieties in the same locality. Turton also remarks, that, in the *dry hills* around him, (Bideford, Devon), he finds the smooth variety in abundance, but never any with the epidermis or trans-

verse ridges; on the contrary, he says, "in marshy places, we as constantly find the second variety with its striæ and epidermis, and never without them." Now, in Suffolk, on the banks of the river Waveney, I have found none but the striated variety, which Turton also says he finds in marshy places; but here, on the banks of the Carlton brook, (which is bounded, on both sides, by low, flat meadows), out of more than one hundred specimens, I have not one with the least appearance of striæ upon it; so that a dry or moist situation cannot be the cause of the difference; I am, therefore, inclined, upon present evidence, to suppose they may be two distinct species, though in every other respect their resemblance is great.

**BULIMUS LUBRICUS**,—In abundance amongst dead leaves.

**SUCCINEA AMPHIBIA**, **S. OBLONGA**,—In the Carlton brook and River Sence.

I am inclined to suppose the above are only varieties of one species. They are almost as various in their form as individuals of *Limneus pereger*.

**CARYCHIUM MINIMUM**,—In great abundance on the dead leaves of the sedge.

I have, also, sometimes found it among the matted roots of *Bryum ligulatum*, in woods and on banks.

**VERTIGO PYGMÆA**,—This minute, but strongly-formed shell, is found, in considerable abundance, with the latter.

**PLANORBIS CORNEUS**,—River Sence; **P. FONTANUS**,—Pond in Bosworth Park; **P. CARINATUS**, **P. MARGINATUS**, **P. VORTEX**, **P. CONTORTUS**, **P. ALBUS**, **P. SPIORBIS**,—Carlton brook.

**LIMNEUS AURICULARIUS**,—River Sence; **L. PEREGER**, **L. STAGNALIS**,—In ponds; **L. FOSSARIUS**,—In ditches; **L. PALUSTRIS**,—River Sence; **L. ELONGATUS**,—In ponds.

**PHYSA FONTINALIS**, **P. HYPNORUM**,—Carlton brook.

**VALVATA OBTUSA**,—Carlton brook.

**PALUDINA ACHATINA**,—Ashby Canal; **P. IMPURA**,—Carlton brook.

**NERITINA FLUVIATILIS**,—Carlton brook.

**ANCYLUS FLUVIATILIS**, **A. LACUSTRIS**,—Carlton brook.

All the above shells, with the exception of *Helix trochus* and *pygmæa*, *Planorbis corneus* and *spirorbis*, and *Ancylus lacustris*, I have met with in the neighbourhood of Rugby, about twenty-five miles south of this place, together with the following, which I have not yet discovered here. *Cyclas rivicola*,—Oxford Canal; *Cyclas*

lacustris, amnica, and appendiculata,—River Avon ; *Helix arbustorum*, *H. ericetorum*,—at Newbold lime quarries (blue lias limestone) ; *Limneus scaturiginum*,—River Avon. So that we have thirty-eight species common to both places—five in the former are not met with in the Rugby district, and seven of the latter place are not found at Congerstone. I may, perhaps, here take the opportunity of mentioning, on the authority of Mr. Churchill Babington, of Thinkstone, that the *Carocolla lapicida* is found at Gracedieu, in this county ; and I have also met with *Helix arbustorum* and *radiata*, *Clausilia rugosa*, *Bulimus obscurus*, *Achatina acicula*, and *Pupa umbilicata*, about twelve miles from hence, in the neighbourhood of Calke Abbey, Derbyshire ; to which place I also transferred about three years ago, a colony of *Helix pomatia* (sent from the neighbourhood of Hertford), which, I believe, is still flourishing. This is the edible snail of the continent, and the largest of our different species of *Helix*. As an account of its peculiar operculum may not perhaps be unacceptable to some of your readers, I will conclude these desultory remarks with an extract from Turton's work above-mentioned.

“In the winter, the mouth is closed by a thin calcareous lid, or epiphragm, which, however, is not attached to the inhabitant, like the true operculum of the *Cyclostoma* and *Paludina* ; but, having performed its office of protection from severe cold, is dissolved upon the approach of summer,—not by the increased heat of the atmosphere,—but by a phosphorous acid, which at that season it abundantly secretes. In the first vol. of *The Zoological Journal*, at p. 99, Mr. Gaspard supposes that the epiphragm seals up the mouth hermetically during the winter ; and that, in this state, the inhabitant is without animal heat, nutrition, respiration, or circulation, and utterly devoid of all animal organic formation ; observing in testimony, that they may be immersed in water during the winter, and yet recover themselves in the spring. This would suppose, not only the utter extinction of vital existence and actual death, but an annual reviviscence and regeneration of life—a doctrine quite at variance with our knowledge of the laws of physiology, as applicable to animated nature. But upon examination it will appear that, in the centre of this epiphragm, is an exceedingly minute orifice, communicating with an umbilical chord which is connected with a fine placenta-like tissue of vessels, penetrating into the pulmonary cavity itself ; and this minute orifice, although not large enough to admit a drop of water, is of sufficient capacity for the passage of that quantity of oxygenated air, necessary for the purposes of extremely

slow, but not totally extinct, respiration. If this orifice be coated over with a coat of wax or varnish, so that all possible connexion with external air be excluded, animal life becomes altogether extinguished, never to be again restored. We have observed this minute puncture in the winter covering of the *H. ericetorum* and some others; and it is probable that all whose aperture is closed during the cold season only, are furnished with this beautiful apparatus for the preservation of life."

Thus we see in every contrivance the wisdom of the Creator: nothing—not even the organization of the lowest creature—is left to chance; but every thing is adapted by its peculiar structure for the situation in which it is to be placed and the functions it is to discharge. Truly may we conclude, in the words of the Divine Psalmist, "O, Lord! how manifold are thy works! in wisdom hast thou made them all."

Feb. 22, 1836.

A. B. M.

## SKETCHES OF EUROPEAN ORNITHOLOGY.

GOULD'S "BIRDS OF EUROPE."

SECOND PART.

PLATE I. Exhibits a splendid figure of the Griffon Vulture,—*Vultur fulvus*,—le Vautour Griffon, *Fr.*,—Avoltoio di color castagno, *It.*,—Weisköpfiger Geier, *G.* An excellent drawing of it is given in the second plate of the first *livraison* of Werner's *Atlas*. This fine bird,—le Griffon, of Buffon, and, in its immature state, the *Vultur Kolbit*, of Latham, and le Vautour Chasse-Fiente, of Vaillant,—inhabits Turkey, the Tyrol, Alps, Pyrenees, South Europe, and the northern regions of Africa. It abounds particularly in the vicinity of Gibraltar. The nest is formed in inaccessible rocks and precipices. The eggs are greyish-white, marked with spots of a reddish-white colour.

PLATE II.—The Puffin,—*Mormon Fratercula*, of Temminck, *Alca arctica*, Linnæus,—*Labradora*, Gmelin,—*Fratercula arctica*, Stephens,—and *Puffinus flavirostris*, of the Family of the *Alcadæ*, of ornithological reformers. This singular bird,—the Puffin Auk

and Labrador Auk, of Latham, le Macareux, and Macar. moine, of French,—der Arktische Alk, and Graukehliger Alk, of German, naturalists,—formerly arranged among the *Alca*, now constitutes the type, and only European species, of the genus *Mormon*, of Temminck. The following are the distinguishing characters, as traced by that celebrated Ornithologist: “Beak shorter than the head, more deep than long, and much compressed. Both mandibles arched, transversely furrowed, and notched at the tip; the ridge of the superior mandible acute, and elevated above the level of the cranium. *Nostrils* lateral, marginal, linear, bare, and nearly closed by a naked membrane. *Tarsi* short, retracted in the abdomen. *Toes* three only, anterior, and completely webbed. Nails, (especially the two internal) much hooked. *Wings* short: first quill-feather as long as, or a little longer than, the second.” The Puffin, although extensively inhabiting the polar regions, is, with us, known only as a summer-visitant. It arrives on the coasts of Britain about the middle of April, and takes its departure for the south of Europe about the second week of August. The single egg, of a dirty-white colour, is deposited in a burrow of the earth formed by the male, and frequently provided with a double entrance. It is almost exclusively an aquatic bird; and feeds principally on the smaller fishes, marine *Crustacea*, and plants. The Northern Puffin, *Fratercula glacialis*, of Leach, distinguished only by the inferior size of the beak, is regarded, by Selby, as a young bird of this species: for the organ, he observes, does not attain its full strength and development till the expiration of the second or third year. Mr. Gould has delineated, in this plate, figures of the adult male and female Puffin, in his wonted style of excellence. The specific epithet, *flavirostris*, is obviously preferable to *arctica*.

PLATE III.—The Black-headed Bunting,—*Emberiza melanocephala*,—Bruant crocote, of Temminck, Fringille crocote, Vieillott. This bird inhabits the southern provinces of the east of Europe; is very abundant in Dalmatia and the whole of the Levant; common in Istria, the environs of Trieste, and the declivities of the hills which skirt the Adriatic. An agreeable songster. Feeds on the seed of wild plants, grain, and insects. Builds in low bushes; and lays four white eggs, sprinkled with minute specks of a light ash-colour. The bird is distinguished from the other species of Bunting by the deep-black colour of the summit of the head and region of the eyes and ears of the male. Hence, the specific name. The female has all the superior parts of a reddish-ash colour. Nothing

can exceed, in accuracy of outline, and splendour and softness of colouring, the two figures here delineated by Mr. Gould.

PLATE IV.—Of the subject of this plate, the Hooded Merganser, —*Mergus cucullatus*,—one specimen only, either a young female, or, in Mr. Gould's opinion, more probably an immature male, has yet been taken in the British islands. It was killed in Norfolk, in 1829; and first described by Selby in the *Transactions of the Natural History Society of Northumberland*, and subsequently in the second volume of his *Illustrations of British Ornithology*; to which, and to Richardson's *Fauna Americana Borealis*, the reader is referred for a more particular description of the Bird. The head of the male exhibits a crest composed of two separate rows of feathers radiating from each side, and easily divisible by the hand. That of the female is furnished with a "small crest of slight hair-like feathers, of a dull ferrugineous brown." This bird,—le Harle couronné, of Buffon, but not described by Temminck,—is a native of the northern regions of America and Europe; and strikingly resembles, in its characters and habits, the other species of the *Mergus* genus. The two figures, male and female, of Mr. Gould are executed with marvellous spirit and fidelity.

PLATE V.—The beautiful Bee-eater,—*Merops apiaster*, Linnæus,—*chrysocephalus*, Latham,—Guêpier vulgaire, Fr.,—Bienfresser, G.,—forms the subject of this exquisitely-coloured plate. It is the only European species of the genus; inhabits the southern regions of Germany, Switzerland and France, Spain, Sicily, the Archipelago, and Turkey; and migrates, in Autumn, towards Egypt. It is merely an occasional visitant of the British islands. Why our Derbyshire correspondent should have applied to this insectivorous bird the specific designation *glandarius*, we are utterly at a loss to comprehend. Surely *Merops flavicollis* would constitute a more correct and, at the same time, characteristic synonym than *glandarius*, of the "Yellow-throated Bee-eater."

PLATE VI.—On the expediency of separating the Wheat-ear, —*Saxicola Œnanthe*, of Bechstein,—Traquet Moteux, Fr.,—Culbianco, It.,—Graurückiger Steinschmatzer, G.,—from the two other British species with which it has been commonly associated, and transferring it, as Ray and Brisson have done, to the genus *Vittiflora*, we are exceedingly sceptical. What, we would beg leave to inquire, are the peculiarities of structure which call for, or justify, this innovation? The propriety of its removal from the *Motacilla* and *Sylvia*, with which it was respectively arranged by Linnæus, and Latham, no enlightened Ornithologist will, for a moment, ques-

tion. The Wheat-ear is principally distinguished from its ancient congeners, by the “*snow-white* mark across the base of the *tail* ;” and hence has received, from good old Bewick, the homely but expressive name of *White-Rump*. The specific designation, *albicaudata*, or *albicoccygea*, would, consequently, be far more applicable and characteristic than the *enanthe* of the older, or *cinerea*, of modern Ornithologists. The British Wheat-ear is a migratory bird ; arriving in March, and quitting in September. Gould’s two figures, illustrative of the sexual diversities of plumage, are finely executed.

PLATE VII.—The Turtle-Dove,—*Columba Turtur*,—Colombe Tourterelle, *Fr.*,—Tortora commune, *It.*—Turteltaube, *G.* A specimen of the adult male, drawn and coloured with surpassing skill and accuracy. It is the *Peristera turtur*, of our Derbyshire correspondent. Of the existence of any external character sufficiently marked to authorize this innovation, we are, at present, ignorant. Without some striking distinction of habits or character, birds ought never to be removed from the position which they have originally occupied.

PLATE VIII.—The Pintailed Sand-Grouse,—*Pterocles setarius*, Temminck,—*Tetrao alchata*, and — *caudacutus*, of Latham and Gmelin,—le Ganga cata. *Fr.*,—inhabits the southern countries of Europe, the sterile districts which skirt the Pyrenees, and the borders of the Mediterranean ; and visits, at uncertain periods, the southern provinces of France. It is a very handsome bird ; and distinguished from the only other European species, *P. arenarius*, by the extraordinary length of the two slender feathers situated in the middle of the tail. Hence, the English specific designation ; and the obvious propriety of substituting the Latin adjective *caudacutus*, for the *setarius* employed by Temminck. The species of this genus constitute the genus *Ænas*, of Vieillot ; and belong to the *Tetraonidæ*, or *Caprivalidæ*, of modern Ornithologists. Two specimens, an adult male and female, are admirably figured by Mr. Gould. The bird is, also, prettily drawn and coloured in *Livraison* 25 of Werner’s *Atlas*.

PLATE IX.—Presents ably-executed figures of two species of *Cypselus* : 1. The Swift,—*C. murarius*, of Temminck,—le Martinet de Muraille, *Fr.*,—Rondine maggiore Volgare, *It.*,—Thurm Schwalbe, *G.* Most of our readers are probably aware that this singular bird,—with whose shrill scream, uttered in its rapid flight around the old grey church-tower in the glorious evenings of summer, some of the best and brightest recollections of our earlier years are indissolubly blended,—was arranged, by Linnæus, among the Swallows,

under the title of *Hirundo apus*. Now the Swift, according to the established principles of zoological arrangement, is assuredly no Swallow: for the structure of the foot, with its four toes *all anteriorly directed*, suffices at once to distinguish it from every species of *Hirundo*; one of the generic characters of which is the existence of “*three toes before, and one behind* :” and the absurdity of designating by the epithet *apus*, footless, an animal which possesses feet, however small, is at once evident. The propriety of removing the Swift from the Swallow genus, and assigning to it a new specific designation, cannot, therefore, be denied: but, respecting the manner in which this has been done, we have a *crow to pluck* with our friend, the Dutchman. Temminck’s new term *Cypselus*, taken from the  $\kappa\upsilon\psi\epsilon\lambda\omicron\varsigma$  of the Greeks, is, in our opinion, far less apposite and precise than the compound, *Brachypus*, introduced by the German Ornithologists; and literally signifying *Short-foot*. His specific term, *murarius*, is, moreover, vague, if not perfectly unmeaning. The *Wall Swift*, of Temminck, and the *Tower Swallow*, of the Germans, are terms, in fact, almost equally objectionable. Our well-known *Develin* differs principally from the only other European species of the genus in the *dark colour of the whole inferior region of the body*. Why, then, not designate it by the terms *Brachypus* (or *Brevipes*) *melanogaster*, dark-bellied Short-Legs? The common Swift is a Summer-visitant of the British islands; arriving about the end of May, and quitting, in August or September, for more genial climes. The mode in which, without alighting on the ground, this truly aerial bird collects materials for the construction of its nest, is, at present, a subject of controversy. Our own observation leads us to believe that the object is principally accomplished by the fashionable process of “*spoliation*.” Are not the organs of secretiveness and acquisitiveness largely developed in the broad and depressed cranium of the Swift and of its Alpine congener?

*Figure 2* represents the Alpine, or White-bellied, Swift;—*C. alpinus*, Temminck,—*Martinet à ventre blanc*, *Fr.*,—*Rondine maggiore*, *It.*,—*Alpen Schwalbe*, *G.* This fine bird has, of late, been twice or thrice captured in the British islands; and is, consequently, now recognized as a British bird. A native of southern Europe, the shores of the Mediterranean, the Archipelago, and Africa, it is larger than the preceding species, and distinguished from it by the *pure-white colour of the lower parts of the body*. Hence, the French and English designation of *White-bellied Swift* is strictly applicable; and we should consequently propose the substitution of the scientific epithet, *leucogaster*, for that of *alpinus*. *Brachypus leuco-*

*gaster*, the *White-bellied Short-legs*. The only fault which we can possibly find with Mr. Gould's figures is that they are much too large. Bewick's drawing of the "Swift,"—p. 296, Edition of 1826,—is executed with admirable spirit and fidelity. Werner's—*Livraison 22* of the *Atlas*,—is sadly defective in colouring.

PLATE X.—A finely drawn specimen of the male White Spoon-bill,—*Platalea leucorodia*,—la Spatule blanche, *Fr.*—Pellicano volgare, *It.*—Weisser Löffler, *G.* It is the only European species of the genus; and merely an occasional visitant of the British islands. We greatly prefer to *leucorodia*, the specific designation, *nivea*, applied, by Cuvier, to this elegant bird.

PLATE XI.—The Dottrel,—*Charadrius morinellus*,—*sibiricus*, of Gmelin,—*Tataricus*, et *Asiaticus*, of Pallas,—Pluvier Guignard, *Fr.*,—Piviere de corrione, *It.*,—der Dömmen Regenpfeifer, Morenel Regenpfeifer, *G.*,—is here presented in admirable fidelity of outline and colouring. The two figures, presented by Mr. Gould, illustrate the diversities of plumage in the adult and young bird. His present subject is the Dottrel Plover,—*Pluvialis morinellus*,—of our Derbyshire Contributor.

PLATE XII.—The Three-toed Woodpecker,—*Picus tridactylus*,—*Pic tridactyle* ou *Picoide*, *Fr.*,—*Picchio a tre-dita*, *It.*,—*Dreizehiger Specht*, *G.*,—is distinguished from the other species of the *Picus* genus by the *absence of the back toe*: and hence has been removed, by Swainson, into a new genus, under the title of *Apternus tridactylus*. See *North American Zoology*, vol. ii., p. 301. In character and habits, it otherwise closely resembles its ancient congeners. It is common in the northern parts of the European continent, and the Swiss Alps; and occasionally visits France and Germany; but has never yet been seen in the British islands. The male bird is principally distinguished from the female by the existence of a golden-yellow patch on the crown of the head. A figure of each sex is admirably delineated by Mr. Gould.

PLATE XIII.—The Little Bustard,—*Otis tetrax*, Linnæus,—*minor*, Ray,—*Outarde Canepetière*, *Fr.*,—*Gallina pratarola*, *It.*,—*der Kleine Trappe*, *G.*,—is transferred, by modern Ornithologists, to a new genus, under the title of *Tetrax campestris*, or Field Buz-zernel. With the peculiarities of character upon which this innovation is founded, we are, at present, unacquainted. The little Bustard, common in the southern parts of Europe and north Africa, is only an occasional and rare visitant of the British islands. It is now ascertained that the adult male resembles in its plumage, during winter, the adult female and the young bird, and merely

assumes, for the summer-season, the characteristic markings of the male plumage. The two figures, given by Mr. Gould in illustration of these diversities of sex, are amongst the most admirably-executed in the whole work.

PLATE XIV.—Represents a figure of the Great Shrike,—*Lanius Excubitor*,—in the act of destroying a Dragon-Fly. The colouring of the iridescent wing of the writhing insect is exquisite; and that of the destroyer itself is little less to be admired. This species,—Pie-Grièche Grise, *Fr.*,—*Velia cenera*, *It.*,—Grauer Wurger, *G.*—forms the type of the new genus *Collurio*, as constituted by Mr. Vigors, under the title of *C. excubitor*. The principal ground of separation consists in the rounded figure of the wing, which, in the *Lanii*, is more pointed; in the lengthened and graduated tail, and in the general superiority of size, of the species composing the genus *Collurio*. Other ornithologists, among whom is our Derbyshire Correspondent, retain the “Gray Shrike” in the *Lanius*—, and transfer its two British congeners to the *Collurio*, genus.

PLATE XV.—The Pomarine Gull,—*Lestris pomarinus*, of Temminck,—*Cataractes pomarinus*, Stephens,—Le Stercoraire rayé, Brisson,—Pomarin, Temminck,—Felsen Meve, *G.* This fine, powerful, and courageous bird, the Pomarine Skua, of modern writers, and belonging to the Family of the *Laridæ*, was formerly included in the Gull genus. Two other European species, the Common and Arctic Skua, now compose, with it, the genus *Lestris* or *Cataractes*. They are described, by Bewick, in a distinct Section, under the title of the “Predatory Gulls.” The Pomarine Skua inhabits the northern regions of both continents; and visits, only, however, in its immature state, the coasts of Britain. In this condition it closely resembles the Black-toed Gull, with which it has evidently been confounded by Bewick; but it may be distinguished from the latter by its greater size, the more robust figure of the bill, and its longer and more roughly reticulated tarsus. The principal distinguishing character of the *Lestris* genus is the *elongation of the two middle feathers of the tail*; and, in our present species, *these feathers are rounded at the extremity*. It subsists upon fishes, and articles of food which, by pursuing and fiercely attacking the Gulls, it compels them to disgorge. Mr. Gould’s figures of the young and the adult bird, are boldly and finely executed.

PLATE XVI.—Of this, the Golden Oriole,—*Oriolus galbula*,—Le Lorient, *Fr.*,—Rigogole commune, *It.*,—Gelbe Rache, Gelber Pirol, *G.*,—constitutes the subject. The figures of the male and female of this rare and beautiful visitant of the British islands are exquisitely drawn and coloured. The only European species of the

genus, it closely resembles the Thrushes in its structure and habits; and, consequently, belongs to the modern Family of the *Merulidæ*.

PLATE XVII.—Still more admirably executed are the two figures representing, in its summer- and winter-plumage, the Little Grebe or Dab-chick,—*Podiceps minor*,—Grêbe Castagneux, *Fr.*—Colimbo minore o Juffetto rosso, *It.*,—Kleiner Steissfuss, *G.* Five European and British species compose the genus *Podiceps*, as at present constituted. The subject before us is, as the specific designation indicates, the smallest; but size obviously affords a very crazy foundation whereon to establish a specific character. It would require more time and reflection than we can, at present, bestow on the subject, to select, or fabricate, an accurately characteristic term. The epithet *fluvialis*, adopted by the Derbyshire reformer, is, in our opinion, little less vague and objectionable than *minor*. *Melanogenius* would constitute a trivial term sufficiently precise and expressive; but the *black chin*, unfortunately,—a distinguishing character only of the species when dressed in its summer plumage,—is inconstant, and therefore unavailable.

PLATE XVIII.—A correct and striking representation of the Pied Wagtail,—*Motacilla alba*,—la Lavandière, Buffon,—Berge-ronette grise, Temminck,—Gutrettola cenerea, *It.*,—Weisse Bachstelze, *G.*,—it has never yet been our lot to meet with. The attempts of Bewick, Werner, and Selby also, if we recollect right, to delineate this sprightly and most elegant bird, are perfect failures; and even in the figures of Mr. Gould, we are woefully disappointed. These figures represent the bird in its summer- and winter-plumage. In the former state, a large black patch covers the whole throat: in the latter, a slender gorget only of that colour is left. Why a really black and white bird should be designated *white* in Latin and German, and *grey* in French and Italian, it would wellnigh puzzle a special pleader satisfactorily to explain. Surely the specific term, *melanoleuca*, or *nigralba*, would more correctly designate the Pied Wagtail than the *alba* or the *maculosa*, hitherto employed.

PLATE XIX.—A most masterly delineation of the Herring Gull,—*Larus argentatus*,—Goëland à Manteau bleu, *Fr.*,—Gabiano reale, *It.*,—Weissgraue Meve, *G.*,—both in the young and the adult state. This bird is the Silvery Gull, of Pennant,—*Larus marinus*, Latham,—in immature age, le Goëland à Manteau gris et blanc, of Buffon,—in its summer-plumage, the *Larus glaucus*, of Benicken, and Goëland à manteau gris ou cendré, of the more eloquent than accurate French Naturalist. It breeds along the rocky parts of the British coast.

PLATE XX.—Two admirably drawn and highly-finished figures

of the Rock Thrush,—*Petrocincla saxatilis*, Vigors,—Le Merle de Roche, *Fr.*,—Tordo sassatile, *It.*,—Steindrossel, *G.*,—terminate the *Second Part* of Mr. Gould's invaluable work. This beautiful bird, of which the male and female are here represented, although belonging to the Family of the *Merulidæ*, differs from the Thrushes, in frequenting the rugged declivities of rocks and mountains; and hence seems to constitute a connecting link between them and the *Saxicolæ*. It is the *Turdus saxatilis*, of Linnæus; was first removed, with *T. cyanus*, into a separate Section, entitled *Saxicoles*, by Temminck; and, at length, elevated, by Vigors, to the dignity of forming a distinct genus, the *Petrocincla*. It inhabits the central and eastern parts of Europe; but has never yet been known to visit the British islands.

*Recapitulation.*—The twenty Plates of *Part 2*, exhibit thirty-five figures, and twenty-one species of birds, belonging to twenty distinct genera. Five of these plates contain one figure, only, of the adult bird: the remaining fifteen, two figures, each. Of these fifteen plates, one represents two distinct species; and the other fourteen display the peculiarities of plumage dependent on age, sex, or season, in two figures of one and the same species. Five of the species figured, have never yet been known to visit these islands: the remaining sixteen are British birds.

*Birmingham, March 9, 1836.*

P.

*Note.*—For the epithet, *European*, in line 3, page 272, of the last volume the reader will please to substitute *British*.

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## CORRESPONDENCE.

*To the Editor of The Analyst.*

SIR,

WHILE perusing Mr. Carey's paper,\* I was induced to make several marginal remarks of dissent from the opinions he offers on one or two points connected with art and literature, and my small arguments being in defence of a great authority, I beg to lay them before the readers of *The Analyst*.

\* "Cursory Observations on Certain Inconsiderate Criticisms respecting Painting and Sculpture, by William Carey, Esq."—Vide *Analyst*, No. XIV., p. 230.

After a somewhat lengthy dissertation on Dr. Johnson's well-known indifference to works of art, in which a very pointless Boswell-anecdote is introduced, we have this remark of the "great literary leviathan:"—" *Painting can illustrate, but not inform.*" This very clear summary, and, in my opinion, correct estimate of the powers of painting, appears to Mr. Carey an attempt to humiliate *that* art, to the exaltation of its sister, poetry. He then, through a long series of arguments and cases, endeavours to subvert the Doctor's reasoning, and establish the theory that painting can *inform*, as well as illustrate. In allusion to Johnson's remark, after quoting from his *Dictionary* the derivation and meaning of the word illustrate, Mr. C. observes—" Now, how a painting can illustrate, that is, explain, elucidate, or expound, and not inform, is a question which Dr. Johnson, were he living, could best answer." Certainly, Dr. Johnson, could *best* answer it, but, he not being now a denizen of this cavilling world, we humbly offer ourself as the unworthy champion of his authority; *not* because it *is* his, but as seeming to us a sensible and just remark, wrongfully censured.

But I would fain assure Mr. Carey (whose zeal in the praise and promotion of art merits the kindly respect of all its votaries) that it is no unbelieving heretic, to whom the worship of painting's might, magic, and beauty, is an unknown faith, who is now ranked as an opponent to his expressed opinion. Therefore, as the knights of olden time declared their title and style before the combat of the tilt-yard, so do we, or (dropping the mysterious and hydra-headed editorialism) so do *I* avow myself as staunch a lover of the three intellectual graces, poetry, painting, and music, as if the goddess of either glorious art numbered me among " the votaries of her order ;" and I defy my venerable friend Mr. Carey, or " any he in Christendom," to lay his heart and mind down in admiration before a picture or statue wrought by the hand and invested with the spirit of genius, with more hearty devotion than myself.

Now, "*revenons à nos moutons,*" *c'est à dire*—to the cause of Carey *v.* Johnson. Mr. C. assumes that painting conveys original information. I only believe it capable of illustrating, elucidating, and *increasing*, previously acquired information. In one part of the paper we find it affirmed, that " Painting cannot illustrate, without conveying new, *or additional*, knowledge." This latter is my own opinion, but Mr. C's. arguments tend to prove that painting can *inform* originally, and it is this idea on which my remarks are offered.

West's " Death of General Wolfe" is cited as a triumphant instance of the information conveyed by pictures. After observing that

the picture "informs the spectator of the mode of his death, that he was not slain in close combat, but received a mortal wound from a distant gun-shot, and died soon after, in the moment of victory, surrounded by his officers," Mr. Carey says—"The uniforms shew that the General and his army are British, and the tattooed Indian warrior tells the country in which the battle was fought." Here is a most apt illustration of *my* argument, for all these signs would be of no avail, without much foregone knowledge, both of localities and events. *Ex. gra.*—We must be *acquainted* with the British uniform, in order to *recognize* it—we must *know* the characteristic features of the American Indians, before the introduced portrait of one can be any guide to the scene of the depicted event. The picture serves as a correct *illustration* to written or verbal descriptions of the circumstances represented in it; but it cannot convey absolute information. Barry's fine, but ill-judged, picture of the same subject is mentioned in Mr. Carey's *evidence* to prove that, being conceived and executed in a manner inconsistent with the fashion and habits of the time, it failed in conveying the required *information*,—when the ability to discover its deficiency only arose from the accurate fore-knowledge every one possessed on so familiar a topic, enabling them to claim acquaintance, as it were, with the various *telling* points in the popular canvass version of the story. To a person ignorant of *our* national uniform, of the tattooed faces and figures of the Indians, and of all the other "appliances and means to boot," supposed to convey the information in this picture, Barry's "Battle of Naked Warriors" would be quite as intelligible, nay, more so, than the fully-accounted group of officers in West's praised work; but, *of themselves*, neither could give information; they could only cause vague impressions.

Mr. Carey considers West as expressing an opinion contrary to Johnson's, in this remark on the picture of Wolfe—"It is a topic that history will proudly record, and the *same truth* that guides the *pen* of the historian, should govern the *pencil* of the artist." In this very sentence, West describes himself as acting *with* the historian, *illustrating* the event which *he* will relate; and, accordingly, is scrupulously exact in every accessory matter, "to mark the *date*, *place*, and the *parties* engaged in the event," that his picture may *agree* with the historian's account.

In a few sentences of his essay, Mr. Carey himself half renounces the very faith I have been combating; but I shall not withdraw my remarks on some of his pages, because he has thought fit to contradict himself in others.

Mr. Carey wonders "how any educated and considerate person

can think that there is no information, nor instruction, conveyed by Leonardo da Vinci's Last Supper, at Milan; Michael Angelo's sublime frescos in the Sistine Chapel; Raffaele's biblical series and additional historical works, in the Vatican, &c.; by Poussin's Seven Sacraments, Bourdon's Works of Mercy, and all the splendid historical and poetical pictures painted in the last four hundred years." Now, though I am far from doubting myself to be a *very* "considerate person" where art is concerned, yet I cannot bear witness to any "information, or instruction," literally so called, received from the sources he has named, though most of the works are known to me. Pleasure, delight, and high veneration of art and the glorious sons of genius, arise from the contemplation; but for *information*, instead of studying Leonardo's Last Supper, I should read the Gospel, and for biblical subjects, go to the same fountain-head as Raffaele himself; Poussin's Sacraments would direct me to a like study: and I much doubt if Bourdon's Works of Mercy have yet effectually instructed any spectator to imitate her gentle deeds. (I speak now as a vulgar looker-on, because it is self-evident how much instruction and information an *artist* gains from such works.) Hogarth's works are great moral lessons, intended as such, and easily read. They are written in characters so plain, that they illustrate themselves, and stand alone in art, forming a class of their own; no other pictures can be judged by the effect *they* produce, because there are none of the like kind. After these examples, Mr. Carey asks—"Is there no information to be gained from all the works of Reynolds—from West's Battles of the Boyne and La Hogue—and Cromwell dissolving the Parliament?" I answer,—much *illustrative*, but no original, information can be drawn from any such sources.

The next several pages are occupied in defending that splendid production of Mc'Clise, "The Installation of Captain Rock," against the ridiculous attack of some scribbling pretender, who perpetrated a criticism upon it to the effect that the women introduced are "too beautiful!" Mr. Carey has treated the superficial hyper-critic with a far more gentle hand than *some* pens that we wot of would have felt disposed to do, and cites abundant evidence to support his praise of that grand, and glorious, and truly wonderful picture.

I have given my grounds of dissent from Mr. Carey's assumed theory, and shall not further extend this paper, which has already taken a more lengthy form than I originally intended; as I merely wished to place Dr. Johnson's opinion in a correct point of view, as expressing his conviction that painting did not convey original information, though valuable *illustrative* knowledge may frequently be gained from it.

*To the Editor of the Analyst.*

SIR,

SINCE the framer of the ornithological arrangement in No. 14 of *The Analyst* informs us that he shall be "ready to attend to suggestions respecting the names of any birds," a few observations on his luminous list, may, probably, not be altogether unacceptable to S. D. W., and to the other ornithological readers of your *Journal*. Of the general tenor of the catalogue submitted to the public by S. D. W., I much approve; but a few of the minutiae appear to me somewhat objectionable. As the classification agrees in most particulars with the system adopted by Selby in his *Illustrations*, it will be unnecessary to offer any remarks on this department. To the investigation of the appellations, Latin and English, I will proceed without delay.

The principle of giving a generic and specific English name to each species, is admirably adhered to; but I fear that some of the English designations are not sufficiently euphonious to allow them to come into general use. I should have considered this but a trifling objection; but it is probable that much stress will be laid on it by those who are averse to innovations, or to a little temporary inconvenience, without reflecting on the advantage that must and assuredly will accrue from the alteration, when effected. To such names as Abern, Ossifrage, Pern, and Forktail, few will object; but the fastidious will not readily assent to Toadeater, Madge, Surn, &c. Fantail, Reedling, Fauvet, Whinling, Kinglet, Longtail, Pinnock, Oatear, Longspur, Goldwing, Coalhood, &c., are admirable, and deserve to be speedily adopted; but what an uncouth term is Brakehopper, for the sprightly bird to which it is attached by S. D. W. It is but fair, however, to admit that, in this case, we have our choice between Brakehopper and Locustel; but it is little better than a "Hobson's choice." Popin is, likewise, a vulgar, Rennie-like name, and Zigzag Wryneck, though singularly appropriate, is not sufficiently euphonious. The same observation applies equally forcibly to Sprigtail, Aptern, and Buzzernel. With the designations of the water-birds there is much less fault to be found, though one can scarce help smiling at Woodcock, Zapern, Viraly, Zeme, &c. While I object to the above-mentioned names, I do not at present pretend to offer others in their stead, but have merely pointed them out for the further consideration of the "zealous ornithological reformer of Derby." Of course, I well know the difficulty of obtaining appellations which are suitable in every respect, but still it is not an impossibility. The next point to be

considered, is the applicability of the English designations given by S. D. W.

The name *Fern* Nightjar, is not sufficiently exclusive; and I am almost inclined to side with my intelligent friend, Mr. Blyth, in considering *European*,—though a local, and therefore a partially objectionable, name,—preferable to *Fern*, inasmuch as the other species—the *Vociferator ruficollis*, (N. Wood)—is only known in Europe as a straggler, and even the few specimens which were shot, occurred on the confines of Europe, whilst the common species is spread over the whole of that part of the world. I am not certain, therefore, that my former name, *V. Europæus*, is not less objectionable than *V. melolontha*.—*Minnow* (applied by S. D. W. to the Kingfisher) would suit almost any other individual of the *Halcyonidæ*, as well as the British Kingfisher; but I admit the extreme difficulty of procuring an exclusive specific name for this bird. I certainly think that it would have been preferable to have retained the Latin name, *ispida*,\* because, though the same objection applies to it as to *Minnow*, yet *splendens* is by no means an improvement.—Instead of *Brake* Nightingale, Mr. Blyth has proposed to me *Rusty-tailed N.*, and it is a curious fact, that that gentleman and my excellent friend, Chas. Liverpool, Esq., M. D., alluded to this name in their letters, at about the same time, and without either of them being aware that the other had proposed it.—The Red Lark, mentioned by Montagu and others, is, I believe, merely a variety of the Sky Lark; and I cannot find that the real Red Lark, (*A. Pennsylvanica*) has ever occurred in Britain.—*Seedling* cannot, in my opinion, with propriety be allotted to any genus of the *Fringillidæ*; the seed-eating is rather a family character than a generic one.—*Garden* Linnet would, I think, be better rendered *Whin* Linnet, inasmuch as the bird at all times abounds on furzy commons, while it only frequents gardens during the breeding season.—The Brown Starling (*Sturnus unicolor*) only ranks doubtfully in the British Fauna.—Amongst the water birds, I have little objection to find with the specific names, except that *common* is employed too frequently. In one or two instances, as the *Common Gallinule*, it is admissible, as that bird is met with, and most abundantly, in

\* Though I can scarcely lay claim to being called an “erudite scholar,” and though I have not “rummaged lexicons and other musty repositories of ancient lore, in search of the unknown epithet,” I have little hesitation in pronouncing *ispida* to have its origin in *piscis*, a fish.—See *The Analyst*, vol. iii., p. 267.

almost every part of the globe ; but otherwise it is highly objectionable, for reasons adduced by S. D. W. himself.

And here I cannot but deprecate the manner in which it has pleased the able framer of this arrangement to spell many of the Latin and English names. Thus, he has *Nictea*, *Cipselus*, *Silvia*, *Coridalla*, *Colimbus*, *Cignus*, &c., for *Nyctea*, *Cypselus*, *Sylvia*, *Corydalla*, *Colymbus*, *Cygnus*, &c. Likewise, "Chuf" for Chough, "Cucoo" for Cuckoo, "Falarope" for Phalarope, "Cwail" for Quail, and the like,—the advantage of which I cannot precisely comprehend. Nor is S. D. W. satisfied with reforming the spelling of the names of *birds*, but he has attacked the names of *Naturalists*, having commenced with "Mister Mihi Stephens," by substituting the letter *v* for the *superfluous* ones, *ph!* I sincerely hope the other worthies will escape uninjured from the hands of this "zealous reformer." Why, we should hardly know our old friends under the names of Swānsn, Selbi, Looïn, Bekstïn, Miur, &c. ! S. D. W.'s "zeal" is really a little misplaced when he descends to such frivolities as these.

I am, of course, well aware that the above are nothing better than hints or "suggestions ;" but as S. D. W. courts these, I trust he will consider them worthy of notice. In a popular work I now have in preparation for the press, entitled *The British Songsters*, I intend to discuss in detail the English designations of all the species which will be described and figured ; and, what is of yet more importance, the proper appellations will be employed throughout. Until the improved English names are adopted in some popular work, I conceive it will be of little avail to preach and demonstrate principles. The organs of Imitation and Love of Approbation, are far more active with the public than causality ; and, consequently, authority will much sooner effect the introduction of an innovation than the most subtle reasoning that can be adduced. For a specimen of the work above alluded to, see the *Supplement of the Ornithologist's Text Book*, where, likewise, will be found a paper on Nomenclature, which was read before the Worcestershire Natural History Society, Dec. 1, 1835.

In conclusion, I may be allowed to observe, that the new principles of nomenclature, first alluded to in *The Analyst*, No. 10, are now gradually winning their way into favour ; and I think we have every reason to believe that they will ultimately be universally acknowledged in Britain, as they already are by our continental brethren.

NEVILLE WOOD.

Foston Hall, Derbyshire, Jan. 10, 1836.

*To the Editor of The Analyst.*

SIR,

THERE is no mistake more common, in forming a judgment of fine ideal works of art, than that of approving or censuring those performances according to rules which the critics have derived from authority and precedent.

A disposition thus to see by the help of other persons' eyes, appears to me strikingly illustrated, in a long article in your last Number,\* in which, after a series of observations upon various matters connected with the arts, somewhat loosely connected, the author proceeds to claim for clever painters a "licence" to introduce into their groups—their "fine ideal works of art"—pleasing figures—young and handsome girls especially—whether they be germane to the matter, or no.

The instance selected, is the splendid picture by Mc'Clise—"The Installation of Captain Rock,"—exhibited last year; and as certain critics were tempted to question the fitness of some of the groups in this remarkable composition, their remarks are, at once, by an ingenious use of the figure "*petitio principii*," designated as "inconsiderate."

Mr. Carey observes, "I will exemplify it [the alleged painter's licence] by a censure passed on some parts of Mc'Clise's wonderful painting 'The Installation,' &c. An objection has been particularly made to the introduction of the bevy of very handsome girls on the right of the canvas. Their youthful forms and playful vivacity are, in the principal censor's judgment, *improprieties*, and where beauty is *displeasing*, it is not unreasonable to suppose that home-lines would be welcome."† How could Mr. Carey write the above sentence without discovering the error of using two words broadly distinct in their etymology and in their common acceptation, like "improper" and "displeasing," as synonyms and convertible terms!

Mr. Carey does not afford any clue, by quotation or reference, to the whereabouts of the censor whom he designates as "principal" and "inconsiderate," but the turn and tendency of the critique may be conceived; and the following extract from *The Birmingham Journal* of November last, if not the article referred to, must closely resemble it in the nature of the objections adduced:—"Mr. McClise, in his description, declares that 'the numerous persons introduced,

\* "Cursory Observations on Certain Inconsiderate Criticisms, respecting Painting and Sculpture, by William Carey."—*Analyst*, vol. iii., p. 230.

† *Analyst*, p. 240.

*engage in the act*, (the vow of mischief and revenge), according to their characters and temperaments.'...To us it seems that no national temperament could bring together, in willing, or even in *tolerating* associations, the evil and the good—the splendid and the debased—the fierce and the soft—which are here accumulated,...The Madonna-like figure who is nourishing her babe, and the girlish, yet intellectual innocence, that gleams in the eyes of many others;—*could* they be found in such an assemblage? Or, if the assemblage came to them, could they remain, and preserve undarkened the sunny expression of joy and charity which they display; *as if deaf and blind* to the passion, the drunkenness, the wild demoralization which surround them."

Thus, then, without deserving the charge of misogynical aversion to beautiful women, as "unpleasing," a person may conceive that their introduction in a work of art may involve an "impropriety," even though, as Mr. Carey says, "the entire [scene] be a fiction."

I forget whose free translation of Horace's *Art of Poetry* begins thus:—

"If that Sir James a human face should draw,  
With gelding's mane, and feathers of maccaw,  
A lady's bosom, and a tail of cod,—  
Would you not think the thing *exceeding odd*?"

Assuredly we should! not because the objects themselves—a human countenance, gay plumage, the female bust—are individually "displeasing," but because, thus collocated and wanting relation the one to the other, their introduction would be "improper"—unfit. Would a friend of the painter, then, think it sufficient to reply to a criticism on the work—"Ha! your objection is not that these forms are ill drawn or ill coloured; oh no! it is that they are too beautiful, and beautifully painted."

But "the entire is a fiction:" so, in fact, are all pictures of historical and moral subjects; for whoever supposed that at any instant the action stood still, while the characters formed themselves into a "tableau," for some conveniently placed artist to sketch from? But fictions should be consistent. It is not only the introduction of "lions, tigers, elephants, and boa constrictors,"\* as decorations of English landscape, that should be considered as improprieties. Hogarth's *Harlot's Progress*, and his *Industry and Idleness*, are fictions, but not therefore—not with any haughty assumption of the "painter's licence"—would their designer have ventured to intro-

\* *Analyst*, p. 243.

duce Bishop Heber and Mrs. Fry, had they been extant,—however well-drawn or well-coloured,—as unconcerned and unconscious spectators of the Bacchanalian orgies which he was depicting; defying the critic's objections as inconsiderate—because “nature has not withheld bishops from England,” and because pious and benevolent “females are frequent in that island.”\*

Let the censor, then, look on the work of art before him as a real scene, and discuss it accordingly, and the chance is, that he will give a correct appreciation of its merits. Those whose minds are open to the perception, generally, of beauty and fitness,—who look with the eyes of common sense and observation upon the works of the old masters,—will be led to the remark—at least such has been my impression—that their great characteristics as to form and composition, are their perfect simplicity and matter-of-fact-ness; and the result is, that quiet, impressive, *speaking* truthfulness, which distinguishes the works of these kings, these emperors, of elder art.

But supposing the unknown critic to be completely in error, Mr. Carey is not at all the more correct. Admitting the Irish character to be utterly reckless;—assuming that the “young and lovely females which are so frequent in the island” are so far habituated to the spectacle of riot and intemperance that their presence in such a scene is a matter of course—that their pursuing their pastimes within the four walls where are congregated maddening hate, wild fury, naked swords, and gory corpses, may be termed “engaging in the act according to their characters and temperaments”—still no poetical or painter's *licence* is claimed by the artist who illustrates such an incident; for if the apparent anomalies be, in truth, facts and nationalities, it is as *facts* that they are represented, and the scene, though physically a fiction, is a moral verity, and the “pouring-out” is the presentation of the “abundance and variety,” *not* of “daring inventions,” but of actual characteristics, which careful observation has furnished. S.

\* *Analyst*, p. 242.

*To the Editor of The Analyst.*

SIR, THE principles of ornithological nomenclature, as explained in the third volume of *The Analyst*, page 26, being apparently misunderstood by a correspondent, I shall endeavour to clear up the points which have occasioned the difficulty. Carlo Cyffin is right in stating that my remarks have as much reference to the popular (or rather vernacular) as to the scientific names; and it was with a view of ridding Natural History of these stumbling-blocks that I proposed the nomenclature which has appeared in the two last numbers of *The Analyst*. Your correspondent objects to the use of Latin names; in this objection I coincide, and it is to *remove the necessity* of adding the Latin to the vernacular name, that I would have the latter as perfect and free from errors as possible.

If it be true that, as your correspondent remarks, "scientific names are hard to be acquired by the unlearned," should he not hail with pleasure any plan calculated to lessen that labour? and such I conceive is the one I have proposed in the systematic arrangement in the last number of *The Analyst*. The ornithological student, of course, makes himself master of the characters of the genera found in Britain; and if each of these has an English name, he can at once know in what group to class any new foreign species, even if he hears its name for the first time. Numberless instances might be cited to shew how erroneous names have misled, but the proposition scarce requires demonstration.

Your correspondent seems to have mistaken the object for which Latin names are invented and used: he remarks—"It is to be presumed that those who are Latinists also understand English," &c.; but it is not for the sake of *English* naturalists that the Latin name is appended to the vernacular, but for *foreigners*. Thus, a German, on taking up a French, or an English, or an Italian, or a Portuguese work on Natural History, even though he knew those languages generally, would probably be puzzled to know to what objects the names in those languages referred; but if the Latin name were added, he would recognize them instantly. It is true that, in private communications, we are often obliged to employ the Latin name, and why? simply because we will not take the trouble to learn the proper English appellation. Thus, in one part of the country, the *Accentor modularis* is known by the name of Hedge Sparrow, and in another part it is the *Passer arboreus* which is so

called; and to obviate the confusion thus occasioned, the Latin name is called into requisition.

Carlo Cyffin then proceeds to remark—"Frequent changes in the nomenclature of natural productions are highly to be deprecated." True, and in order to do away with change, I propose to adopt a system of nomenclature built on a sure basis. First inquire what the true principles of nomenclature are, and then act upon them.

Your correspondent asks why so many generic names are given in the Owl family (*Strigidae*). I answer,—simply because so many genera exist. The ten species of that family found in Britain\* belong to seven genera, therefore there are seven generic names given, in order that when any one of them is mentioned, the genus to which it belongs may at once be known. It seems, however, that your correspondent objects to so many generic names, on the score of the trouble requisite to learn them all. He proposes that *Owl* should be the *Family* name. Let us examine this proposal. It has been well remarked that "if a principle is good, its advantages will become the more apparent, the more they are followed out into *detail*. This is an axiom." Thus, suppose we try how the principle now under consideration is calculated to abridge our labour, and facilitate our research. In the Warbler family (*Silviidae*), for instance, are twenty-one British genera; now suppose, according to the plan of C. C., we abolish all these distinctions, and lump the whole of these genera under the single appellation Warbler! Instead of calling the *Parus cæruleus* Blue Tit, we must say Blue Warbler; the Pied Wagtail must be named the Pied Warbler; the Whin Chat, the Whin Warbler; and so on throughout! The Swans (*Cignus*) are in the Duck family (*Anatidae*); instead, therefore, of speaking of the Whistling Swan, we must call the species Whistling Duck, and the Redbreasted Merganser must be called Redbreasted Duck.

Your correspondent next adverts to my having applied the name Snowflake to a genus of the Owl family; and the principal objection seems to be, that that name has already been applied to another genus, namely, *Plectrofanés*. I am aware that the *Plectrofanés nivalis* is, in some parts, known by the name Snowflake, and it is given, in some of the books, as a provincial name of that bird.

\* In the list at p. 26, there are not *eleven* of the Owl family enumerated (as C. C. represents), but *nine*: another has, however, since been discovered—the Funereal Nightling (*Noctua funerea*, Jenyns). The other two are the Brown Nightling (*Noctua dasipus*, W.), and the Passerine Nightling (*Noctua passerina*, Selby).

Among ornithologists, however, it is universally known by the name "Snow Bunting (*Emberiza nivalis*);" and this name it continued to bear, until Charles Bonaparte very judiciously separated it and the *E. lapponica* to a new genus, under the name "Longspur" and *Plectrofanus* (which is a Greek version of the English name). As to "Snowfleck," of which your correspondent speaks, I suppose he picked it up from Rennie's Montagu; it is, of course, nothing but a corruption of Snowflake.

Your correspondent speaks of the *radical* changes, and wishes some substantial reason for them; he will surely admit that where the evil is radical, the remedy must be so likewise. I have already explained why Nightling was proposed, and surely no one can at least object to the sound of this word; but if the ear of the fastidious is offended at the name Madj, C. C. is welcome to propose another more euphonical. I chose that name because it is well known in many districts, and has thus an advantage over an entirely new appellation. However, if any one will propose a better I shall be happy to adopt it, for, as I observed in my former paper, "it is not to individual things, but to broad principles, that I am attached."

The objections made in the next paragraph are evidently the result of a confined view of the subject; your correspondent has in his mind only *British* ornithology. He says—"If I see the names Kite, Nightjar, Kingfisher, and Dipper, I clearly understand what is meant; but when I see the name White [*Cinereous* he should have said] Kite, I am led to suppose that there must be *another* Kite, of some other colour." There certainly are not other species of Kite in Britain, but is that the only country the ornithology of which deserves cultivation? It is but a speck on the globe, though, of course, to Britons its peculiar productions are, or ought to be, of paramount interest: this is, however, no reason why the ornithology of other countries should be excluded. There are several other species of Kite found in Europe besides the Cinereous Kite, all of which have English names, and it is, therefore, necessary that the species found in Britain should have a distinctive appellation.

I have now, I believe, answered most of the points on which your correspondent founds his objections to my plan of nomenclature, which will doubtless, on more mature consideration, meet with his approbation. Any objection or amendment, by whoever suggested, is deserving the attention of the naturalist; and those who really seek information with a desire to improve, will always find others ready to assist them.

I shall now advert to some remarks which occur in a review of

No. XIV. of *The Analyst*, and shall set the reviewer right on two or three points which he has misunderstood. He says—"The next paper which arrests our attention is, 'The Birds of Britain, systematically arranged.' Now, we think that few of the editorial fraternity will be able either to comprehend, or appreciate, this article, and, therefore, a few observations on the principles it upholds may not be misplaced. The plan of giving to each genus an English generic name, originated, we believe, with Neville Wood, Esq. in No X. of *The Analyst*; and this is one of the chief principles on which the present list is founded." I would beg leave to remark that, so far from the plan above alluded to belonging to Mr. Neville Wood, it has been acted on, with more or less success, by every ornithologist since Willughby. Stevens\* and Mudie are particularly exact in this point; most authors, however, make this the *rule*, though all have more or less *exceptions*. Temminck, Lesson, and Vieillot among the French, may be mentioned as scrupulous adherents to the rule. I believe, however, that I was the first who put it fully in practice, as may be seen by referring to Loudon's *Magazine of Natural History*, vol. vii., p. 593, and vol. viii., p. 110, p. 225, &c. The reviewer continues—"To one (comparatively unimportant) particular, however, we object, and that is the substituting *i* for *y* in many of the Latin names; as *Silvia*, *Budites*, *Coridalla*, *Ortia*, &c." The three last are not "Latin names," but Greek; however, to the point. The reviewer evidently is not conversant with the writings of antiquity, or he would have known that Roman authors themselves wrote the first mentioned word with an *i* and not a *y*. We have likewise Ainsworth's authority, and in Johnson's Dictionary he will likewise find—"Sylvan, better *Silvan*." In the remaining three instances the letter which the reviewer would render *y* is, in Greek, *υ*; and why *i* should not represent the Greek *υ* as well as a *y* the reviewer must himself explain. *Y* is nothing but an *i* final, similar to the *σ* and *ς* in Greek, and many consonants in Hebrew; and why we should stick a *final* letter in the *middle* I do not know. The Greek *φ* is frequently rendered in English by *ph*, which is still more absurd, as *f* exactly corresponds to the Greek letter. With regard to Cwail and Quail, I have not time to discuss it now, and in the mean time would refer the reviewer to a little work by Mr. Latham, entitled *A Grammatical Sketch of the Greek Language*. The reason for omitting the *k* in

\* Shaw's *General Zoology*, 14 vols. 8vo., 1800—1826. The eight first vols. of this work were by Shaw, but on the decease of that author, it was continued by Stevens.

Cucoo is explained in Loudon's *Magazine*, vol. viii., p. 256; but as the reviewer has not seen this, I may inform him that I conceive the bird does not say cuk-coo, but cu-co, and in this view of the matter the Romans, French, Germans, and Italians coincide, though the Greeks have the two consonants in the middle—*κουκουος*. If the latter be correct, the word should be written Cuccoo, the English *c* answering to the Greek *κ*. Having thus set the reviewer right, I now part with him, thanking him cordially for the good opinion he has bestowed on my labours.

To the catalogue given at page 200 may be added the following:—the Buscarl Reedling (*Salicaria carex*, W., *Silvia cetti*, of Marmora); the Shore Lark (*Alauda alpestris*, Lin.); the Mealy Linnet (*Linaria carescens*, Gould); the Pectoral Dunlin (*Tringa pectoralis*, Bon.); the Whiteheaded Scoter (*Oidemia leucocephala*, Stev.); the Buffelheaded Garrot (*Clangula albeola*, Stev.); the Shortbilled Guillemot (*Uria brunichia*, Sab.); and the Brown-headed Gull (*Larus capistratus*, Tem.); Audubon doubts whether the *Lestris Richardsonia* be really distinct from the *L. parasiticus*. The Rusty Thrush (*T. varius*) has only occurred once in Britain. The Fen Reedling (*Salicaria palustris*) has never been seen in this country. *Longirostris* is, I think, preferable to *Macroramfus* for the genus Longbeak. For Common Merganser, read Greenheaded Merganser. The title of the Hairy Woodpecker to a place in the British fauna is very doubtful.

I must here conclude my letter, suggested by the objections of your correspondent. Should he wish to prosecute the science of Ornithology, I should advise him to procure Selby's *British Ornithology* and Mudie's *Feathered Tribes*, both now enjoying the honours of a second edition: they are worth all the other works on British birds put together, and from their moderate cost are accessible to all. For those who wish merely for a general idea of the animals of our island, I should recommend Jenyns's excellent *Manual of British Vertebrated Animals*, just published, which is incomparably superior to Fleming's wretched *History of British Animals*, the only other work of the kind which has appeared.

Derbyshire, February 9, 1836.

S. D. W.

*To the Editor of The Analyst.*

SIR,

YOUR correspondent S. D. W., in reply to my questions concerning the names of two small migratory birds, agrees that I am right in my conjecture that the first is the *Red Lark*, but that the second is certainly no other than either the Yellow or Grey Wagtail. Now I happen to know all the Wagtails perfectly well; and I am certain that the yellow bird I have but imperfectly described is as different from the Yellow Wagtail as the latter is from the House Sparrow. There is, indeed, some resemblance in the call of the two birds; but the Yellow Wagtail has much more olive brown on the back, is larger, and also much more elegant in shape, than the yellow bird I have for so many years noticed. Besides, it is never seen near cattle, fly-catching, as the Wagtails frequently are; but in the midst of fields where neither men or cattle, of any kind, resort.

I applied to my friend Mr. Mudie for his opinion, but neither himself nor his excellent volume could give any direct information. Mr. Mudie could think of no other than the Yellow Wagtail as any way answering to my description; and as this seems also to be the settled opinion of your correspondent, I take the liberty to reaffirm what I have heretofore written of this nondescript, in order that neither your correspondent or other ornithologist may deceive themselves by the idea that I am mistaken. The bird may be met with in the southern counties of England, in the months of June and July, in fields of peas, tares, or other low growing crops.

I am, Sir, your obedient servant,

J. M.

[The length of S. D. W.'s letter rendered its curtailment absolutely necessary. We would entreat our Correspondents to be as *concise* as the subject under discussion will allow, in order to relieve us from so onerous and unpleasing a task as abridging their communications.—ED.]

## PROCEEDINGS OF PROVINCIAL SOCIETIES.

### BIRMINGHAM ROYAL SCHOOL OF MEDICINE & SURGERY.

A MEMORIAL, signed by the governors and trustees of this School of Medicine, and many of the leading individuals in the county, was recently presented to the King, by the Right Honourable Lord Howe, praying his Majesty to become the patron of the Institution, and soliciting permission to style it the "Royal School of Medicine and Surgery." The memorial represented that the Institution had become important to the public from its situation in the centre of the kingdom—from its power of communicating all that is essential in the primary education of medical and surgical students—and from its being recognized by the constituted medical authorities of the realm." His Majesty, in the most gracious manner, acquiesced in the wishes of the memorialists, and conveyed, through the medium of Sir Herbert Taylor, an assurance that His Majesty was "very sensible of the great importance and utility of this establishment, and of the advantages, general and local, which the country must derive from the manner in which it was conducted." A special meeting was subsequently held, when an address, expressive of grateful acknowledgments to His Majesty, was proposed by the Earl of Dartmouth, seconded by Dr. John Johnstone, and carried with acclamation.

During the last session, upwards of ninety students pursued their studies at this Institution, and the several candidates who have sought to be enrolled members of the profession, have passed their examination in a manner alike creditable to their exertions and to the Professors of the School.

The funds of the Institution, we are happy to observe, are in a flourishing state. The donations and subscriptions received in 1835 amounted to £379. 4s., leaving a balance in hand, after paying the disbursements, of £132. 9s. 2d.

Lord Viscount Lorton, and Lord Viscount Lifford have been added to the list of honorary governors; and the Rev. Mr. Lawson, M. A., incumbent of Moseley, has been appointed professor of mathematics and natural philosophy. The liberal founder of the Leamington Hospital, the Rev. Dr. Warneford, has presented the munificent donation of one hundred pounds towards the funds of the School; and the committee have determined, as a mark of acknowledgment and respect towards the benevolent divine, to appropriate a part of that sum in the purchase of wax models, to be termed "The Warneford Collection."

Specimens of the Corals have been presented by Lady Charlotte Law, a hortus siccus of the Mosses and Jungermannia, by the Rev. Mr. Gisborne; and various other specimens of Anatomy, Natural History, &c., have been added by Dr. John Johnstone, Mr. J. E. Piercy, Mr. W. H. Osborn, Mr. Beilby, and Mr. W. Fletcher.

## BIRMINGHAM PHILOSOPHICAL INSTITUTION.

WE regret exceedingly that Mr. Ryland's lectures "On the Geographical Classification of Animals," were delivered so late in the month, as it would otherwise have given us pleasure to have inserted a fuller abstract than we are now enabled to do, from the pages of *The Analyst* being nearly pre-occupied before their delivery. In the following summary we by no means do justice to these lectures; but we can conscientiously express our admiration of their merits.

Mr. Ryland introduced his first lecture by some remarks upon the earliest records of animal existence being coeval with the Noachian deluge, and their distribution over the earth. It is gratifying to behold those sacred truths which seem identified with our existence, upheld by the reasonings of philosophy, which, from misunderstanding and evil prejudices, has too long been rejected by the religious mind, as an enemy to its faith. The lecturer rested his opinions upon the Scriptures, not opposing, but, by facts, carrying out and confirming, the divine declarations, by the discoveries of the natural philosopher.

As soil and vegetation depend especially upon atmospherical temperature, exhibiting in their character so many changes in the different regions of the globe, with which animal existence always corresponds, both in structure and habits, the "geographical distribution of animals" must be regulated according to the peculiarities of the various species.

"We observe," says Mr. Ryland, "in the first place, that the number of animals, of almost every description, is far greater in the warmer regions of the earth than in the colder climes. The degree of heat in the torrid zone appears to be favourable both to the increase of the number, and the development of the size, of animated beings; and as we advance towards the poles the number of living creatures diminishes, till we come to latitudes where the cold is so intense that man, with all his resources, is unable to maintain existence. The same observations hold good with regard to the vegetable world: in tropical countries we find the greatest exuberance of vegetation; without culture of any kind, the surface of the earth is covered with innumerable plants, shrubs, and trees, of gigantic size. Almost the only limits to the extension of vegetable nature are formed by the decrease in the temperature of the air, and by the absence of humidity."

In order to observe more particularly the effect of temperature upon the geographical distribution of animals, Mr. Ryland proposed the simple plan of dividing the earth into three separate climates, each comprising 60 degrees of latitude. First, the torrid or tropical climate, extending 30 degrees on each side the equator; the temperate climate next in succession, bounded by the north and south latitude; and lastly, the frigid zone, which completes the third division of the globe.

Mr. Ryland enumerated the animals of the torrid climate, beginning with the type of the Felidæ—the Lion, Tiger, Leopards, &c., as now confined to the burning regions of the tropics; "comparing these ferocious and huge animals with those of South America—the

Jaguar and the Puma," and the remarks upon the production and preservation of this species were extremely interesting. Roaming within the immense and gloomy forests, beyond the pursuit of their greatest foe—supplied with sufficient food by the multiplicity of animals, and supported by an atmosphere which is the very embryo of life. The lecturer then enumerated and compared some of those prodigious creatures inhabiting the African and Asiatic regions, which seem to be the type of those monsters whose remains call forth our wonder and admiration—the emblems of remote time.

Mr. Ryland pointed out the distinction between the African and Asiatic Elephant and Rhinoceros, also the Dromedary and Camel, the Hippopotamus, the Tapir, the beautiful Giraffe, the Zebras and Quaggas, frequenting the plains of South Africa, and the innumerable herds of Antelopes, constituting a striking peculiarity of South African zoology.

The lecturer continued his subject with much interest through the numerous animals; thence to the birds of this division—as the Eagle, Condor, the Humming-birds, the dazzling-coloured Rollers, the magnificent Plantain-eater, and a whole host of gorgeous creatures, on whom Nature seems almost to have exhausted her powers of beauty.

The reptiles appertaining to these regions exhibit the same gigantic form as other creatures—the huge monsters, that rise as if engendered from the slimy rivers by the rays of the burning sun, are but the type of the vast Megalosauri. The serpents and smaller reptiles were included in this description, and the account of the Ants, those "mighty pioneers," was highly instructive.

The first division was concluded by an examination of the insect class. As with the higher species of animals of this latitude, the production and increase of insect life is, beyond calculation, favoured by the same prolific causes. The pied colours of these creatures were represented as rivaling, in intensity, the dazzling lustre of metals. Like the Bratrachian family, the Gnat, Bee, and Fly seem citizens of the whole world, appearing in myriads wherever there is an asphaltis to engender them. Mr. Ryland gave a short and pleasing account of the zoology of Australia—as the marsupial animals, &c.

Such is a very imperfect outline of this first part of the lecture, which was completed by an enumeration of the animals of the temperate zone, including that portion of the globe between the 30th and 60th degrees of latitude, comprising the immense continent of North America (exclusive of Mexico), that part of Africa bordering upon the Mediterranean, all Europe, except Norway, Sweden, Lapland, part of Russia, &c. In each boundary running into the torrid and frigid zones, the animals are distinguished by a resemblance of either north or south, according to their geographical contiguity. The predacious quadrupeds, as the Tiger, Hyenas, Jackalls, of the southern, Bears, Wolves, Foxes, Badgers, Racoons, &c., &c., of the northern parts of this division.

## BIRMINGHAM MECHANICS' INSTITUTION.

IN giving a brief analysis of Mr. Watts's most interesting lectures, which he has so liberally afforded to this Institution, we regret that our notice of them must be so limited; but as an abstract of one particular part, or lecture, would be but a division in the series, in which a strict connection is observed, we rather offer an analysis, than mangle the whole by a partial extraction. The first series, now delivered, was on the Physical Nature and Peculiarities of Man. The subject was divided into six lectures: in the first lecture, Mr. Watts demonstrated the osteological structure of man and animals, exhibiting those peculiarities of form in which man differed from the most anthropomorphous animal, and wherein the Hottentot resembled the ape,—if those differences were essential distinctions, or arose merely from the cultivation of the species, as supposed by Monbodo, Rousseau, and other *defensores simiarum*. Mr. Watts pointed out the striking peculiarities in the skeleton of the Hottentot and the European; and though repudiating the shallow arguments of some philosophers, that man was an animal superior only in degree, yet stated that the claim of man's superiority was seen more decidedly in his moral, than in his physical character.

In the second lecture, the comparison between man and the *Simia Satyrus* was continued, by an examination of the principal internal organs, and still that humiliating resemblance was exhibited between man and the brute. After explaining the differences between the alimentary canal in the herbivorous and carnivorous animals, which was assisted by the exhibition of some admirable diagrams of those organs in different animals, the lecturer treated of their peculiar structure corresponding to the nature of the animal; and beholding man as omnivorous both by structure and necessity—what food was best adapted to his wants, if the Pythagorean or Newtonian aliment of “herb and fruit,” or flesh. Mr. Watts illustrated this very interesting part of his lecture by some beautiful quotations from the ancient and modern writers. This lecture excited very considerable attention, for every one felt a personal interest in the conclusions.

The subject of the third lecture was a comparison of the organs of the senses, wherein the ape resembled man, as in the seat of touch, &c. Mr. Watts's remarks were certainly a corrective to human pride; for the striking resemblances between man and the ape were repeatedly pointed out, and we sometimes fancied with a fondness for the alliance; but Mr. W.'s subsequent opinions, which, in the last lecture, were deduced from these facts, explained the reason. Having thus far briefly dwelt upon the most striking physical peculiarities in man and animals, the subject of colour completed this lecture. The lecturer first demonstrated the cuticular structure, and, dividing colour into permanent and fugitive, ex-

plained the seat of each: in the former being hereditary, in the latter depending on local causes. How colour was modified by civilization, which alone could effect it.

In the fourth lecture, the subject of colour was continued, with an examination of the opinion of Dr. Prichard as to the Ethiopic character of Adam. The differences of stature and general external form completed this lecture. Mr. Watts illustrated his subject with many amusing anecdotes of the "*monstrum horrendum*" of our species. But what more especially interested us was the application of the remarks on colour and form. Shewing how colour and form were hereditary; that deformity, like disease, was perpetuated by hereditary transmission, in spite of every change of climate, however extreme; proving, by a hundred facts, that the civilization, moral and physical, of man, could alone change the "*leopard's spots*," and remodel man in the beauty and image of the Creator. Thence, Mr. Watts naturally passed to the Ethiopic colour and deformity of the *mind*; still keeping to the argument extradictionary, that, as physical aliment modified physical form, so the "*animi pabulum*" changed the moral complexion and character.

The fifth lecture included a brief examination of the brain, its relation to the size of the nerves issuing from it, the size and form of the skull, with an inquiry into the facial angles of Camper and Daubenton. The differences between ancient and modern heads—wherein they differ—national contour and the proportions of the head and face. Mr. Watts explained the advantages of the facial angle, and how far the admeasurement could be relied on; that the angle of Camper was applicable only to the *elevation*, without determining the *breadth* of forehead. To supply this deficiency, Mr. W. proposed an original plan, which was to carry the line from the glenoid fissure of the temporal bone across the highest prominence of the os frontis to the opposite glenoid fissure, and then comparing the length with a line carried from the same points over the most projecting prominence of the os occipitalis. The facial angle of the Grecian statue was opposed to that of the Hottentot, who still, as in structure, resembled too nearly the ape, the angle being, in each, nearly equal. Mr. W.'s remarks on the cranial differences were highly interesting and instructive.

Having thus far advanced, Mr. Watts concluded his sixth and last lecture by an examination of the instinct of animals. And finally, if the distinction between man and the ape be physico-intellectual, or merely intellectual.

The striking resemblances of form, habit, &c., between man and the *S. Satyrus* were recalled; and here, as we cannot do better than extract a few pages from the last lecture, Mr. Watts shall speak for himself:—

"Beginning with the supposed original structure of the globe, and the first creation of organic existence, we advanced rapidly through the succession of "moving life," from the infusorial monads to the huge Ichthyosauri and Megalosauri, and thence by "gradual scale" ascending to the more per-

fect animals created for the benefit and subservience of man—examining the structure of animals, and shewing, by a striking correspondence, however modified to the aptitudes of the creature, that the structure of every living thing exhibited but one character, and in the myriads of changes which occurred we beheld but the charms of ceaseless variety, so necessary to the happiness of man, while the original type was never destroyed, but displayed through endless variations, a faint shadow of the unity of that “*Power*” which created the sentient principle itself, and by the order of an unerring necessity, perpetuated change without decay.

“Thus “*all things*” are arranged according to the will of a Deity, as immutable as he is ineffably pure; and man, by the universal law, that Nature cannot be at variance with herself, is saved from those inconceivable evils of chance which nothing less than a divine vigilance could foresee and escape from. To judge of the physical nature of man, we compared his structure with that of the Simia Satyrus, and we perceived the most humiliating resemblance; that the Ape offered but few distinctions, and comparing the Orang with the Hottentot, we might be inclined to suspect that the pre-eminence of man was only in degree, and might wonder why the Simia had made no further advancement than the solitary instances of individuals who, though they acquired an extraordinary intelligence, yet, like other animals, never imparted to their progeny more than the natural instinct of the species. Suppose we could succeed in pairing a male and female Orang, teaching and improving the successive offspring, it may be a query how far their structure would be improved, and their reasoning faculty be developed. Of course, this is a mere hypothesis; but when we can hardly distinguish between some human and brute creatures, and at the same time know that the human is subject to improvement, even to the highest degree, in a long period of time losing almost all the original character, we might not unphilosophically argue upon the possibility of improving the brute, though perhaps not to so high a condition as man. We have examined into the most suitable food for man, whether vegetable or animal—we have pursued the subject to the habits, form, colour, and moral condition, of the different nations on this globe—we have examined the size and form of the cranium with the corresponding size of the brain—and we have again to remark the analogy between the facial angle of the Ape, and that of the black races; and, lastly, have examined the subject of animal instinct, and how far the brute can claim the distinction of reasoning man.

“With all the uncertainty of the inquiry, of one thing we are convinced; that, however impossible it is for the animal to break down the line of demarkation which separates man from the living world of moving beings, man can be degraded to that line; and if the Deity has bestowed upon him a faculty which unites him with the angels, it may be so remote as to be like the lowest grade of animal life, which is scarcely distinguishable as such. The character is preserved, but so faint and indistinct that the brute, rather than man, seems the bond of alliance. 'Tis man educated who is the image of God; for the resemblance cannot be in the mere flesh: the beauty of the statue is the life and expression which struggle through it, and breathe around every feature. It is the mind which gives eloquence to the eye and loveliness to the face, otherwise cold and spiritless,—it is the mind which animates our baser nature, and gives to the creature the image of the Creator. Take this mind away, as we have before said,—place an infant in the inauspicious circumstances of a prisoner immured within the cold damp cells of the prison-house,—throw around him the veil of darkness, without a ray of loveliness and light,—teach him not by words or things, by nature or by art,—where would be the innate ideas?—where would be the proud symbols, divine or human?—where would be the ascendancy of man? Whatever the soul be—and I hope we are too wise to attempt to define its nature—whether the aggregate of all our ideas—a spiritual recipient for the images of the senses—a supreme independent unalloyed power—or a material emanation—whatever it be, an uneducated man is to us a soulless, useless, dependent

animal, without hope in the world. It is education, it is knowledge, which seals the human with the divine presence; and thus if an uneducated man can claim no just affinity (for where is the bond of alliance?) with the wise and good Spirit—so the sum of knowledge possessed gives the only legitimate ascendancy and power. Truly, knowledge is power! it places the lowest in worldly greatness in the places and palaces of princes; and what is more, opens stores, inexhaustible stores, of wealth—gives every object a richer value, heightens every enjoyment, and elevates the spirit of our mortal nature into the presence of the Eternal—

“Hail, holy light—offspring of heaven—  
First-born and of the eternal co-eternal  
Beam!—may I express thee unblamed.”

“Looking over the different periodicals which load the tables of our public libraries and reading rooms, I pause with hopeful exultation when I see so many pages allotted to the subject of popular education—I dwell with gratified feeling on the notices of Mechanics’ Institutions and Education Societies—I read with ardour the descriptions of different professors, and, in the spirit of an enthusiast, fancy I already behold in the distance a new era when light shall cover the land, and men shall walk worthily, fulfilling the law: I may be an eutopiist, but in this I feel all the faith of a devotee, that, as we depart from the brute only as we depart from ignorance, with all its evils of unlimited credulity or incredulity, prejudice, cruelty, and all uncharitableness, and as we approach to higher nature by intellectual acquirement, we shall become possessed thereby of a sort of divine prescience; that is, to foresee, by a comparison of past events with present states, a future result, or by first causes trace through the intricacies of effects to an ultimate good. The age of metaphysics,—in which the blind lead the blind,—of magic and mystery, is gone; the age of superstition and bigotry is going, the age of truth is advancing; for where every man becomes his own teacher and master, he is accelerating an universal revolution. But sometimes I awake as from a dream of the night, when I read of the wretched moral condition of thousands of people who are actually so steeped in besotted ignorance and gross darkness, that knowledge whispered to them is as a ray of light shooting athwart the deepest gloom, leaving no trace of its path. It is melancholy; yet if we think of it, how confidently the modern Pythagorean foretells the benefits of a pure and simple diet in restoring health and happiness! May we not, *ceteris paribus*, affirm as confidently that, by removing the deleterious poison of a depraved mind, and substituting a moral diet suited to its own existence and health, the mental deformities may be removed, and happiness perpetuated?”

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#### CHESTER MECHANICS' INSTITUTION.

THE object of this Institution is to communicate useful knowledge, and thereby to increase the respectability and happiness of individuals, and to promote the welfare of society. The means for attaining this desirable end, are the establishment of a library and reading-room, the delivery of lectures on popular and useful subjects, and the opening of classes for the study of English grammar, arithmetic, mathematics, drawing, or other branches of knowledge which at any time may appear to be requisite.

This Institution flourished from the very moment of its formation, and bids fair to become one of the best conducted and most useful establishments of its class. Every support has been afforded by the higher classes, and the names of the following noblemen and gentlemen appear as patrons:—Marquis of Westminster; Lord Bishop of Chester; Lord Robert Grosvenor; Sir Thomas Stanley, Bart.; Sir Stephen Glyn, Bart.; George Wilbraham, Esq., M. P. John Jervis, Esq.; Rev. Chancellor Raikes; Venerable Archdeacon Wrangham, &c. The patronage of the Bishop of Chester, one of its vice-presidents and warmest friends, cannot but be attended with the most beneficial results, as it will no doubt induce the clergy—on whose cordial efforts so much depends—to follow his example, and advocate the progress of useful knowledge, as an important portion of moral machinery for the permanent establishment of reformation and social order.

Lectures have been gratuitously delivered by the following gentlemen:—H. Raikes, Esq., (son of the Rev. H. Raikes, Chancellor of the Diocese), on Astronomy; H. Moor, M. D., on the recovery of drowned persons; the Rev. J. S. Stamp, Independent Minister, on bibliography and the art of printing; and the Rev. E. Stanley, Rector of Alderley, on fossil geology. We subjoin the following short abstract of a part of this instructive lecture:—

“In commenting upon the outspread of education, the lecturer reminded those who might still be found amongst the ranks of objectors to a more general cultivation of the mind, that as no power could now stay the current, it was the duty of the wise and prudent to turn it into the most efficient channels and superintend its progress.—After alluding to the very gratifying support the Institution had received from the aristocracy, and pointing out the duty of every one to study the Book of Revelation and that of Nature, he referred to the additional gratification within the reach of all persons who encouraged the cultivation of any branch in art or science, which he compared to the acquisition of another sense; illustrating the pleasures derived from such pursuits by reference to the study of ornithology, entomology, and particularly geology, each confirming the poet’s assertion, that as there were—

“Tongues in trees, books in the running brooks,  
Sermons in stones,”

so as all and each were the works of God, it followed as a corollary that there was “good in every thing.” \* \* \* He then entered upon the immediate object of the lecture by asserting, on the authority of those who had devoted the full powers of their enlarged minds towards the subject, the certainty, rather than the probability, that we were now standing on the ruins of a former world: a mass of matter described in the Mosaic records as “without form and void,” but moving in its long established orbit, and containing within it the shattered remnants of previously-existing races of animals dissimilar to those at present known, and shewing undeniable proof of its surface having been subjected to incessant convulsions and dislocations, and subsequent slow sedimentary deposits and crystallizations which it was the work of indefinite ages to effect. By adducing the awful effects of modern volcanic action, in one or two instances, he pointed out the far more tremendous consequences which must have been constantly ensuing, when the crust of the earth was more exposed to the source of igneous action than at present. He next proceeded to draw a comparison between the physical energies under the controul of man, and those others which, although within his knowledge, as yet defy his powers of reducing them to practical purposes,—

such as the expansive forces of certain gases and metallic bases. In exhibiting a section of the figure of the earth, with reference to its shape, comparative insignificance of its highest mountain ranges, increase of temperature, now ascertained to proceed in a known ratio, in proportion to the distance below the surface, and the fused state of some of the primitive rocks, he inferred the probability of the interior of the globe being a mass of incandescent matter, in full accordance with the high authorities of the most distinguished philosophers of the present day, who advocate this theory of central heat. By referring to specimens on the table of the gigantic ferns, palms, and other vegetable and animal productions now limited to warmer climates, but found imbedded, not only in the rocks of our latitude, but within the polar regions, he pointed out the certainty of a material change in the temperature of this, compared with that of former ages. The lecturer next proceeded to direct the attention of his audience to a series of drawings on a large scale, representing the various gradations of animal life, from the saurian or lizard tribes to the winged monsters and singular quadrupeds, which geological investigation had brought to light. He then entered, at some length, into the anatomical and physical peculiarities of each of the fossil remains, explaining in detail the peculiar fitness of their apparently distorted and unnatural construction for the situation in which they were placed; which at the same time gave him an opportunity of shewing how strongly what might be termed the most trifling facts in science may be brought to bear upon other and more important points, and afford light and information upon distant and, at first sight, unconnected branches. The reverend gentleman, in conclusion, briefly recapitulated the hints he had thrown out respecting the probable structure of the globe; and from them inferred, on the joint authorities of the revelation and science, its probable termination. From a tabular view of the appearances of nebulae, or those misty forms which modern astronomical observations have so abundantly placed before the scientific world, he assumed that, under circumstances by no means improbable, a similar expansion of its material particles might await our own system. And then, quoting a variety of those striking passages from the scriptures, referring the end of all things to fiery irruptions and convulsions, by which all matter might pass from its solid to a fluid, and finally a gaseous state; when the elements might melt with fervent heat, the earth quaking and the heavens trembling, he anticipated that awful consummation of all things, when, amidst signs and wonders in the sun, and in the moon, and in the stars, the sublime language of the Apostle might be literally verified, and in a mysterious mantling of clouds Deity may return again for the final completion of his work.

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#### MACCLESFIELD MECHANICS' INSTITUTION.

WE are happy to observe that the county of Chester has taken its place in the intellectual and moral progress so rapidly extending itself over the whole kingdom, and, we are convinced, with the fairest promise of success and benefit to all classes of the community. Macclesfield had the honour of setting the example, in the formation of a society for the acquirement of useful knowledge, in December, 1834; an example which was followed by the establishment of a Mechanics' Institution in Chester, in March, 1835. The former had, however, to struggle with difficulties, and contend with

prejudices, if not opposition, which, for a time, materially impeded its progress, and had well nigh stifled it in its birth. But there is every reason to believe that it will now maintain its ground, and insure that patronage and encouragement it so well deserves from all parties. The management of this Institution is vested in a committee of twenty persons, one half honorary members, and the other half members belonging to the working classes; and the object is to instruct the latter in the principles of the arts they practice, and in other branches of useful knowledge: all party politics and controversial theology being strictly prohibited.

The committee of managers examine the candidates for admission, and they allow no individual to become a member that "does not, at the least, bear a good, steady, sober, moral character;" and each member, on being enrolled, is required to sign a declaration, solemnly avowing that he "believes in the principles of Christianity."

Exclusive of its official managers, the Institution consists of nearly one hundred members, with every appearance of an increase. A house was engaged and fitted up for the society, early in 1835; but it is already found to be on much too limited a scale for the accommodation of the members, and the committee are taking measures for procuring a building sufficiently large to admit of reading, class, and lecture rooms, on a considerably larger scale. Only two lectures have hitherto been delivered: one by Dr. Lardner, in December, on Steam, chiefly with reference to its locomotive powers; and another by the Rev. Edward Stanley, rector of Alderley, one of the vice-presidents, in the latter end of January, on Geology and Fossil Natural History. Both lectures excited considerable interest, and were very respectably attended. A professional lecturer has since been engaged to give a regular course on chemistry, and various other subjects connected with art and science. The attention of the members to their mental improvement may be collected by the following enumeration of the numbers who have sought instruction:—arithmetic, 68 members; grammar, 46; drawing, 41; geography, 12; chemistry, 11. Many of the members attending two, three, or more, of the above classes. The individuals who have thus, with so much credit to themselves, devoted their leisure hours to the cultivation of their minds, instead of giving themselves up to the degrading pursuits which vice and sensual indulgences hold out, are entitled to the highest commendation; and the advantages they are deriving from this excellent establishment—in the formation of which they were in a great degree instrumental—will no doubt induce many others to follow their example.—Both in Macclesfield and Chester, Temperance Societies have been established, with equal success and benefit. We allude to this point for the purpose of throwing out a hint as to the mutual advantages these societies would, in all places, derive by co-operative union. The objects of both may be said to be similar—reformation implying improvement, and improvement reformation. By a community of interests, the funds of each might be rendered more extensively useful. Tempe-

rance hotels, with public rooms, are now erecting in many towns, as well as premises for Mechanics' Institutions. Why might not both be accommodated under the same roof? And there can be little doubt that considerable emolument might be derived from the occasional meeting of friendly societies, and other similar clubs, in their rooms, instead of, as is too frequently the case, to their serious cost and disadvantage, moral as well as pecuniary, in public houses.

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### MANCHESTER ATHENÆUM.

A public meeting took place at Manchester in October last, for the purpose of establishing an Institution combining the several attractions of an extensive reading-room, news-room, and library. To these advantages it was proposed to add a theatre for the delivery of lectures, and rooms for young men to pursue, in classes or sections, various literary and scientific studies, through the medium of competent teachers. With these facilities for mental improvement, it was resolved to appropriate an apartment for refreshments, where tea and coffee might be obtained by those whom a taste for social converse might induce to resort, at the close of their daily avocations. The proposition met with the hearty concurrence and zealous support of numerous individuals imbued with a love of literature and science, anxious to promote the mental cultivation of young men engaged in commercial and other pursuits, and to withdraw them from those snares and temptations which unfortunately abound in all large communities. The intelligent and public-spirited merchants and manufacturers of Manchester, of *all* parties, came forward promptly and liberally to supply the necessary funds, and, in less than three weeks, shares to the amount of £7,000 were taken towards the sum of £10,000, required to erect a suitable building for the purpose, and the whole amount was shortly afterwards subscribed. Although much confined for space, we cannot resist making a few brief extracts from the admirable address delivered by James Heywood, Esq., the President of the Institution, at the first general meeting, held at the lecture-theatre of the Royal Institution, on the 11th of January, 1836. After alluding to the success which had attended the establishment of the Athenæum, the president adverted to a communication received from Dr. Henry, (expressing his intention of becoming a contributor to the funds) in which the learned physician remarks—

“It is vitally important that the Athenæum should never be perverted to the purposes of party politics, either local or general. It should never cease to be held inviolate as neutral ground, upon which no one must be permitted to enter, without first casting aside all hostile weapons, and without deter-

mining to pursue, in the spirit of cordial union and co-operation, those objects only that are calculated to bind men together, and to still the warring elements of interest and passion into peace."

The Honourable Poulett Thomson, and Lord Francis Egerton have likewise transmitted liberal donations: the latter states, in his letter, that he "considers this Institution of a class which he should hope to see very generally established in the towns and districts of the country which can afford the means of supporting them; for he is confident that were the means exist, the expediency of that establishment must be coexistent."

A committee, composed of individuals of different shades in political sentiments, was appointed to select newspapers, periodicals, and books, adapted to the taste of the subscribers; and in three weeks after the directors were impowered to commence their operations for opening the library and news-room, "the Athenæum rose into sudden and permanent existence, like one of those tall luxuriant palms of southern climates, which fix their roots firmly in the ground, and then spring up rapidly to spread abroad the refreshing shade of their branches, and to increase the comfort and the happiness of all around them."

The greatest care has been taken in selecting such works for the library, (which already consists of 3,000 volumes), as are calculated to be perused with advantage by the members. In alluding to the introduction of the classics and foreign literature, it is observed—

"It will be a source of pleasure to the directors to introduce these works into the library, if the subscribers should wish to follow out within these walls the classical pursuits of their early youth, or the more important study of the French, German, and Italian languages. When the dry introduction to the ancient languages is once mastered, there are many rich and rare gems to be found in the dark evergreen groves of Athenian and Roman literature, many brief sententious precepts and descriptions of high actions and high passions, which will be remembered amidst the busy scenes of the world, and will afford a solace and a support, far inferior, indeed, to the animating and glowing words of the Holy Scriptures, but still valuable at times even in the practical affairs of life. But may not many of the other boasted advantages of classical learning, the power of literary criticism, and the knowledge of the grammatical niceties of language, be derived more easily and more profitably from the study of French, German, or Italian? To commercial men in Manchester, as their trade extends with the continent, a knowledge of these living languages is daily becoming more indispensable."

The address then alludes to the vast and rapid improvements which have taken place in Lancashire—to the facility for transmitting passengers and merchandize by means of rail-roads and canals, which now intersect the country—to the gigantic increase, during the last fifty years, of the cotton trade, at the present time annually exporting manufactured goods to the amount of £33,000,000, forty times greater than in 1785, and employing, in Manchester and its neighbourhood, a population of 300,000—a state of prosperity attributable to the original inventions of that eminent individual Mr. Watt, whose literary acquirements and amiability of character is thus descanted upon—

“Mr. Watt was not only minutely and extensively skilled in chemistry and the mechanical arts, but also curiously learned in many branches of antiquity, metaphysics, medicine, and etymology; and perfectly at home in all the details of architecture, music, and law. He was well acquainted, too, with most of the modern languages, and familiar with their most recent literature; and with all these vast acquisitions of knowledge, no man could be more social in his spirit, less assuming or fastidious in his manners, or more kind and indulgent towards all who approached him. He had in his character the utmost abhorrence of all sorts of forwardness, parade, and pretension; and there was a finer expression of reposing strength and mild self-possession in his manner than his friends ever recollected to have met with in any other person. Shall we then subscribe to place the statue of this great benefactor of the commercial world within our town, and not endeavour to imitate his virtues? Shall we gaze with admiration on his image, and not fix his noble example in our hearts? ‘Whatever,’ says Dr. Johnson, ‘withdraws us from the power of our senses, whatever makes the past, the distant, or the future, predominate over the present, advances us in the dignity of thinking beings.’ With this end in view, history and biography are given to young commercial men, that they may learn to dwell with pleasure on those characters which are most distinguished for their intelligence, the excellence of their lives, and the permanent good they have actually effected among their own neighbours, and in their own land. In this enlightened age, the temple of fame has opened wide her gates to the rising generation of commercial men. Already they possess the bold, active, vigorous spirit, which is formed by the jostling competition of the world; but the steep before them is still rough and toilsome; they can only progress by slow degrees; and the dazzling rewards of scientific discovery and literary distinction will probably fall to the lot of few among the numerous aspirants who crowd the portals. Fortunately for the advancement of society, the pursuits of science and literature have their own intrinsic pleasures, their own ennobling rewards. ‘Is it nothing,’ said Mr. Roscoe, ‘that science has opened our eyes to the magnificent works of creation? That she has accompanied us through the starry heavens? Descended with us to the depths of the ocean? Pierced the solid rock? Called in review before us the immense tribes of animal and vegetable life; and from every part of the immense panorama of nature has derived an infinite source of the most exalted pleasure, and the truest knowledge? Is it nothing that she has opened to our contemplation the wonderful system of the moral world? Has analyzed and explained to us the nature and qualities of our own intellect? Defined the proper boundaries of human knowledge? Investigated and ascertained the rules of moral conduct, and the duties and obligations of society? Whatever is wise, beneficent, or useful in government, in jurisprudence, and political economy, is the result of her constant and indefatigable exertions—exertions which always increase with the magnitude of the object to be attained. And literature has also departments of her own, the variety and importance of which need only to be stated to be universally acknowledged. It is to her that we are indebted for the record of the institutions and transactions of past ages. Those lights and land-marks which enable us to steer with greater confidence through the difficulties that may yet surround us. It is she who has embodied and preserved in immortal language those splendid productions of fancy and imagination, which for so many centuries have been the delight and the glory of the human race; and it is still her peculiar province ‘to catch the manners, living, as they rise,’ and to hand down to future ages the true form, and features, and characteristic traits, of the present day.’

“Such are the objects, such are the advantages, of literature and science; and there are not wanting many individuals in this town to whom these objects and advantages are already familiar. Henceforward they will be inseparably united in the Manchester Athenæum, with the enterprising vigorous spirit of commercial life. Like the three graces of antiquity, these three fair sisters, science, commerce, and literature, will mutually assist and sup-

port each other. After the arduous labours of a day passed in commercial or professional engagements, the lighter and more elegant pursuits of literature will afford recreation, relaxation, and refreshment, to the wearied mind."

The President, who was listened to throughout with the deepest attention, interrupted only by frequent bursts of applause, thus concluded :—

"Near St. Peter's Church, in the modern city of Rome, there are two lofty and lovely fountains, separate from each other, but correspondent, and mutually ornamental. As far as I know, they are the two most beautiful fountains in the world. Both rise to the same height in the air; both diffuse around them, to the thirsty neighbourhood, the abundant streams of their refreshing bounty. The same dazzling sun of Italy shines on both, and reflects in the spray, as it circles around, the richly coloured tints of the rainbow. In this humid climate, and among the busy sons of commerce, ornamental fountains are not wanted; but there are now established in this town two institutions, intended to be equally useful and equally permanent. They are separate from each other, and yet mutually correspondent. Commerce characterizes the one, and mechanical arts the other. Both diffuse around them, like intellectual fountains, the refreshing influence of mental and moral improvement. On both the same cheering light of public approbation shines brilliantly.

"May the same prudence and wisdom which have long guided the Mechanics' Institution, be now shared by the Manchester Athenæum. May the same zeal and warmth of attachment, already manifest among the directors, become the pervading characteristics of all the members. May prosperity thus be secured to this new institution; may relaxation and improvement be ever afforded within her walls in the social pursuits of literature and science; and may that high tone of moral feeling be here cultivated which will conduce to real happiness and elevation of character in this life, and to preparation for a higher, a nobler, and a holier state of being."

The meeting was subsequently addressed by G. W. Wood, Esq., Mark Philips, Esq., M. P., R. Potter, Esq., M. P., and Mr. A. Watkin, in very apposite speeches, expressive of their warm interest in the success of the Institution.

Courses of lectures have been delivered by Mr. Davies, of Manchester, on Heat; by Mr. Montgomery, of Sheffield, on the British Poets; by Mr. Hemming, on Chemistry; and Mr. L. A. J. Mor-dacque, is now engaged on a course on the Study of the French Language. Several other lecturers are engaged to deliver courses on various useful and scientific subjects. A very numerous French class is also in the course of formation.

Notwithstanding the present temporary accommodation is inadequate to afford all the advantages held out in the original prospectus, nearly eleven hundred members have already enrolled their names. The arrangements of the directors have given the greatest satisfaction, and the popularity of the Institution is daily increasing.

## MANCHESTER MECHANICS' INSTITUTION.

THE annual meeting of this flourishing Institution was held on the 25th of February, B. Heywood, Esq., president, in the chair; when a highly interesting and able report of the society was read by the secretary, Mr. Cottam. We most sincerely congratulate the members of this excellent Institution on its increasing prosperity, and feel the most lively satisfaction in making the subjoined extracts from the report of the proceedings of the past year. It commences by recording, in every department of the Institution, increased activity and usefulness—a large accession to the number of members—a prosperous state of the finances—and, above all, a marked and most gratifying advance in the accomplishment of the great objects which the Institution was established to promote. The receipts during the year were £2,173. 14s. 7d., the payments £2,092. 16s. 2d., leaving a balance of £80. 18s. 5d.

At the close of the year the number of subscribers was 1526. Of this number there were 131 under fourteen years of age; 626 between fourteen and twenty-one years of age; 769 above twenty-one years of age. The following is a general classification of their respective employments:—305 principals, engaged as merchants, manufacturers, and machinists,—117 mechanics, millwrights, and engineers,—58 overlookers, spinners, and other mill hands,—92 building trades,—78 sundry trades, chiefly handicraft,—164 warehousemen,—240 clerks,—52 artists, architects, engravers, &c.,—13 professional men,—15 schoolmasters,—111 shopkeepers and their assistants,—18 no profession,—21 ladies,—242 youths.

The elementary evening classes and day schools continue to furnish proofs of the substantial benefit which may be derived by the members from this department. The average number of pupils attending the respective classes during the year, was as follows:—grammar, 91—architectural drawing, 33—vocal music, 30—arithmetic, 104—mechanical drawing, 38—elocution and composition, 21—landscape and flower drawing, 60—Latin, 12—writing, 80—algebra and geometry, 25—French, 26. The members on the class-list for the current quarter shew a very considerable increase; in some instances they are more than double the numbers above enumerated. It is also in contemplation to establish classes for geography, natural philosophy, and to afford opportunities to the young artist to draw and model from antique casts, and to acquire a knowledge of the art of design.

The meetings of the Mutual Improvement Society were attended, on an average, by thirty-six members, and during the twenty-eight sittings which took place the following papers were read:—

On the various methods and materials used to convey ideas to posterity, previous to the invention of paper.—Thos. Belshaw.

On iodine and some of its compounds.—Jas. Woolley.

On the necessity of artisans acquiring a knowledge of the principles of geometry and mechanics.—Isaac Newton.

On the history and manufacture of coal gas.—J. E. Kent.

On the progress of chemistry from the commencement of the eighteenth century to the present time.—Jas. Woolley.

On the necessity and advantage of acquiring the theory and practice of correct reading and speaking.—S. Turnbull.

On coal and its origin.—W. H. Spencer.

An account of chivalry.—W. Forrester.

An account of the crusades, with an inquiry into their consequences.—S. Darbishire.

On elocution and the mode of teaching it.—G. Rosson.

On poetry.—A. W. Woolley.

On the faculty of observation.—H. Stanley.

On the general properties of arsenic.—Jas. Woolley.

An account of the Dublin meeting of the British Association for the promotion of science, with a sketch of the advantages of the institution.—S. Darbishire.

On the discoveries and inventions in the physical sciences.—Isaac Newton.

On natural philosophy.—E. Clarke.

On national peculiarities and characteristics (England).—H. Hayes.

On botany.—G. Wain.

On attraction, cohesion, repulsion, and divisibility.—H. Stanley.

An historical account of the life and reign of Henry 4th, and of Louis 13th and 14th of France.—S. Darbishire.

On inertia, motion, laws of motion, action, and re-action.—R. A. Phillips.

A report of Dr. Dalton's lecture on the atomic theory.—T. A. Phillips.

On the relative benefit to society of an orator and a poet.—G. Rosson.

On gravitation, accelerated and retarded motion, centre of gravity, and the composition and resolution of motion.—Isaac Newton.

On the blessings of human life.—John Jerom.

An account of the celebration of Christmas in England.—B. Heywood.

On the mechanical powers.—E. Billington.

On the duties of chairman and speaker, and the rules required for the orderly conduct of a discussion or public meeting.—John Stanfield.

Since the 23rd of February, 1835, eighty-nine lectures have been delivered on the following subjects:—

Two on acoustics, by Mr. Robert Addams; two on electro-magnetism, by Mr. Robert Addams; five on meteorology, by Dr. Dalton; six on animal physiology, by Mr. Greaves; seven on the art of reading, by Mr. Calvert; four on modelling and casting in plaster, &c., by Mr. Bally; eight on optics, by Mr. Addams; one on music, by Mr. A. Ward; five on the radiated class of animals, by Dr. R. E. Grant; three on heraldry, by Mr. Newton; eight on the theory of arithmetic, by Mr. S. E. Cottam; one on the atomic theory, by Dr. Dalton; eight on the philosophy of the atmosphere, by Mr. Sweetlove; three on steam navigation, by Dr. Lardner; six on mechanics applied to the arts, by the Rev. H. Moseley; four on electricity, by Mr. S. E. Cottam; eight on the history and construction of the steam engine, and its application to the arts, by Mr. C. F. Partington; eight on chemistry, by Mr. Hemmings.

The attractions of the library continue daily to increase. Since the last report 638 volumes have been added by purchase, and 92 by donation, making the addition of 730 volumes on various branches of science and literature. These additions make the total number in the library 3595. The number of issues from the 23rd of February, 1835, to the 20th of February, 1836, was 43,946

volumes. On the tables are a great variety of English and foreign periodicals; the walls are ornamented with maps of a local and general interest; and on the reading-room table may be seen nine weekly, twenty-four monthly, nine quarterly, and four annual periodicals.

The directors offer their warmest congratulations on the station which the institution has now attained. It ranks, unquestionably, the first of similar institutions in this country, whether regarded in reference to the number of its members, to the variety and value of the branches of knowledge in which it affords instruction, or to the efficiency of its several departments; and, what is of more importance, the beneficial results of its operations are manifest and increasing, and the good which it effects bears its proportion to its means of usefulness. They also express the gratification with which they have seen a new and rich fountain of knowledge erected, and which is already pouring its refreshing streams for the special benefit of the youth of the middle classes, with success almost unexampled. The Athenæum and the Mechanics' Institution have common objects—the intellectual and moral improvement of the people; and though each has its separate sphere of action, the interests of both will ever be promoted by that mutual co-operation and friendly intercourse which, the directors trust, will always subsist between the two institutions.

The following apposite remarks conclude the report:—"Let it constantly be borne in mind that the objects of the Institution are to diffuse useful knowledge among the working classes, to afford them facilities of instruction in those principles of science which regulate their respective occupations, and to draw them from scenes of dissipation and vice, by furnishing them with rational employment for their leisure. By keeping these important objects steadily in view, and carefully avoiding the quicksands of party politics and polemics, so that all our proceedings may be characterized by unanimity, good-will, and brotherly love, we may confidently hope to receive the countenance and support of every friend to human improvement."

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#### WORCESTER LITERARY AND SCIENTIFIC INSTITUTION.

Mr. Addison recently delivered a highly instructive Lecture at the above Institution on Physical Power. The object of the Lecturer was to shew the existence of an invisible power or energy pervading matter, and giving rise, not only to the phenomena of science, but, also, to changes of ordinary occurrence. He commenced by observing that "a mind quite unaccustomed to attend to na-

tural facts, finds neither novelty nor beauty in the different changes daily occurring around ; but when once a taste for scientific inquiry has been imbibed, and reason solicited to trace the effects of general causes, and to notice the exemplification of general laws, then every object wears a more interesting aspect, and minute changes are accurately scrutinized as being a part of some universal economy in nature : while the pleasure derived from such pursuits entirely excludes that craving after artificial excitement which too often leads to frivolous and unworthy occupation. Man commences his career in this world by observation : his senses, called into activity by the objects about him, and always alive to external impressions, is soon informed of various *motions* and *changes* which are in continual progress without his aid or interference. But custom reconciles him to these : the constant regularity by which many of them are characterized begets a habit of indifference, and they are regarded as merely matters of course with which he has nothing to do. They occur, pass over, and are forgotten. But it is not so with those who investigate the secret springs of Nature's multifarious operations : they are soon taught to regard even the most trifling change as the result of the active interference of certain physical energies or powers to which all the materials of her workmanship are, in one way or another, subservient.

If we survey the various objects placed within the sphere of our observation, two very obvious conditions may be remarked in them—*motion* and *rest*. Motion includes a change either in the position of an object, or in the arrangement of its several parts, and any such change implies the existence of a power capable of making it. Rest, on the other hand, is the opposite to motion, and gives us an idea of the absence of all power whatsoever. To the casual observer, *all inanimate* objects appear inert, and incapable, of themselves, of originating, or even experiencing, any change, except by man's interference. A little investigation will dispel this notion, and convince any one that the particles of matter are endowed with curious and extraordinary powers, by which constant, though, perhaps, often unobserved, changes are brought about. When we see a chair or a table stand fixed before us, we do not regard it as composed of materials possessing physical powers, yet this is the fact ; the genescent condition of such objects arises not from the absence of physical power, but from an equilibrium of opposing energies. An object retains its shape and form by the cohesive power of the materials of which it is composed. It is fixed in the position in which it is placed by the power of gravitation, and all other changes are opposed by a balance in the chemical affinities of its component atoms. But observe what takes place when this equilibrium, this balance, is overturned or destroyed : then the physical energies of matter are very apparent ; in the case of combustion, at a certain temperature, the oxygen of the atmosphere begins to act, vast quantities of solid materials are rendered æriform, steam and carbonic acid largely generated, and, silently mingling themselves with the

air, pass away with the phenomena of heat and flame; the power of cohesion is overcome, and the visible remains now subject to the power of gravitation, are only a few white ashes, which a breath of wind will scatter away.

The slow and silent operations of this agent are, perhaps, less striking, but equally effective. Thus, no sooner does the sun dart his ray upon the earth in the morning, than the repose which all substances might seem to be enjoying is directly, though, perhaps, unobservedly, terminated. Particles of water, whether in form of dew, or spreading upon the surface of the ocean, a river, or a lake, expand, and, no longer subject to the earth's attraction, spring off into the higher regions of the atmosphere. The air upon which the sun's heat is acting also expands, ascends, and gives rise to currents of wind. The different tribes of living beings are variously stimulated to activity; feeble currents of electricity are, at the same time, excited, and all nature put in motion. As the sun reaches its zenith, larger or more considerable floods of caloric are poured upon the earth, evaporation goes on with the utmost rapidity, the winds blow stronger, and the functions of life are more vigorously performed. The vast streams of vapour reaching the higher regions, are there robbed of the caloric which carried them upward, and are condensed into an arched and snowy mass of cloud. The electricity caused by evaporation accumulates; and, at length, the vivid flash, the succeeding thunder, and torrents of rain, restore again the aqueous atoms to their source. This is only a very imperfect account of the disturbances and consequent phenomena produced by the agency of light and heat, flowing in upon the earth from the sun, but it is sufficient to assure us that every particle of matter is obedient to peculiar physical powers. If further testimony is needed to convince any one of this fact, it is afforded by circumstances of a still more striking character, daily falling under our observation. The explosion of gunpowder—the bursting of strong leaden pipes by the freezing of water—the extraordinary power of steam—electricity and magnetism—the curious effects of chemical affinity—the symmetrical forms of crystals—and, lastly, the increasing revolutions of the earth itself—are all so many proofs of the existence and activity of physical power, and afford to the contemplative mind a very exalted idea of the omnipotence of that Supreme Intelligence which governs and directs the whole.

The lecturer then entered upon the consideration of the laws by which the phenomena of physical power are regulated, and pointed out the importance of a knowledge of the laws of nature—"so that in all we attempt we may not vainly struggle against some insuperable difficulty opposed to us by natural causes, and on the other hand that we may be enabled to avail ourselves of those important auxiliaries which a knowledge of them does not fail to bestow upon mankind."

This interesting lecture was illustrated by various experiments in chemistry, electricity, and electro-magnetism, calculated to develop and enforce the lecturer's views of physical power.

At the conclusion of the lecture, Mr. Addison pointed out the clear and intelligible distinction which, in physical investigations, is always made and understood between the material substance, the invisible energy or power, and the effects, or the results, derived by the action of the one upon the other, and alluded to the necessity for the same distinction in metaphysical inquiries: thus, the living body would represent the material substance; the intellectual principle, or soul, the invisible power; and the mind, the phenomena or effects derived from the action of the one upon the other.

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### CRITICAL NOTICES OF NEW PUBLICATIONS.

*Natural Evidence of a Future Life*, by F. C. Bakewell. London: Longman and Co. 1835.

It may appear paradoxical, but we cannot help feeling that divines are not always the best writers on divinity. It may be urged, indeed, that having dedicated more time to the subject, they are, therefore, more competent to undertake the task—that, as physical sciences are best explained by those who have devoted their minds to such investigations, so, also, in spiritual matters, clerical professors should be the best expounders. As far as critical inquiries extend, this may be, indeed, admitted; but we must recollect that, with theological analysis, early habits, education, and various prejudices are so closely intermixed, that it is next to impossible to expect absolute impartiality and the absence of all partial associations. On points of faith, therefore, we can rarely expect to meet with more than the best arguments in favour of some favourite and adopted theory; general views of the question in its various bearings and ramifications being in a manner precluded by the peculiar circumstances in which the writer is placed. Not so with the laity: they can step forward, free and unshackled, with a freshness and originality excluding those warpings and biassed feelings to which their ecclesiastical brethren are of necessity more or less exposed. With these impressions, we hailed a work from the pen of a layman, written with a view to establish the important doctrine of a future state, and the immortality of the soul; and the more so, as it professed to be founded on scientific principles. And conscientiously and strongly do we recommend it, not only as an admirable specimen of able and conclusive reasoning, but as a valuable tribute to the utility and importance of science, which has been so frequently and unfairly assailed as hostile to religion, and therefore to be shunned by those who would preserve their minds in a state of orthodox purity; a charge made, we think, with as much justice (because

some philosophers happen to have been free-thinkers) as if we were to denounce the Bible as the parent of fanaticism, because some who have been its most diligent readers have turned out fanciful enthusiasts, advocates for an immediate millenium, or eloquent in the language of unknown tongues. The fact is, that the religion of revelation and that of nature closely resemble each other in their tendency and limits. In both, though there is much light and abundant truth, we see nevertheless through the glass darkly; and though inquiry is not only permitted, but encouraged, we must not, in this our imperfect state, expect perfection of knowledge in either the one or the other. Hence, albeit nothing doubting, and firm in faith, we should nevertheless add to our perseverance in research, humility, and argue from the general impression of those glimpses we are enabled to obtain of what will be, from the consideration of what is and has been, that the rules by which the Deity regulates the moral as well as the physical world, are as simple and universal as they are all-perfect and comprehensive in operation. And that this impression will result from a perusal of Mr. Bakewell's work, we confidently anticipate. The reader will find nothing to jar against his feelings in the way of dogmatism or controversy. He will, if he has a soul capable of being led on to higher thoughts, and the loftier pursuits connected with an eternal world, thank us for introducing him to a companion for his meditative hours, from which we shall think it strange indeed if he does not derive as much benefit as information. The metaphysician, it is true, discovers in the powerful reasoning of Butler's *Analogy*, arguments in confirmation of the immortality of the soul; but metaphysical food is neither agreeable to the taste, nor suited to the digestive intellectual organs of a large portion of society; and after all, connected more or less as it is with abstract reasoning and imagination, its deductions may or may not be always accurate. In physics, however, the case is different; as many who are either unwilling or incompetent to dive into the abstruse lore of a Bacon, a Locke, or a Butler, will be glad to be directed to similar conclusions, by the more agreeable and equally convincing path of the work to which we allude.

We will now, therefore, proceed to give as comprehensive an analysis of our author's plan, as our brief space will admit of. He begins by reminding us that, although many works on natural theology exist, few have ventured on the interesting field in which the spiritual and material portions combined to form man appear so intimately connected. "The exclusion of natural phenomena from these considerations," he justly observes, "must therefore be ascribed to the impression too hastily received, that the evidence to be derived from the actions of matter, is either not favourable to, or at least that it affords no satisfactory proof of, the immortality of the soul." That such conclusions are unfounded, it is his object to shew, laying it down as a fundamental position capable of proof, that every phenomenon in physical science directs us to look beyond material existences for its ultimate cause. "The manifestations of

design, of power, and of wisdom, in all the inanimate works of creation, teaching us that there exists some power beyond the cognizance of our senses ; and the uses to which those properties are applied inform us that that power must be supremely intelligent and efficient.”\* “ If,” he adds, “ we are to confine our views to the phenomena immediately presented to our senses, and were to reason exclusively from a superficial observation of the changes in the constitution of the body consequent on death, we should be led to the conclusion that the destruction of the body involves also the eternal destruction of the mysterious principle by which it was animated.”† Hence he contends that “ it is upon this contracted view alone of the processes accompanying the dissolution of the body, that the hypothesis of the materialists can be supported ; but such a consideration of the subject is only suited to the rudest ages of ignorance, and will be found to be directly opposed to the plainest deductions from all scientific investigations.”‡

The causes, no doubt, which have indisposed religious persons to follow up this pursuit may be traced to that laudably sensitive apprehension of guarding against any approach whatever to materialism ; namely, that atoms, whether of matter or, if we may so speak, of spirit, have an innate self-exerting power of generating what is termed life. But we do not see why the subject may not be grappled with, even in its most menacing form. The materialist argues thus : Matter, in its atomic subdivisions, is the cause of vitality, under certain arrangements of its monads or monocules. The advocate for the separate existence of life says, No ; I admit, indeed, that under certain polarities, or proportions, or call them by whatever other term you please, life becomes apparent ; but I deny, *in toto*, that the cause of such connection is inherent in either the one or the other : my belief is that a higher power, the great master-mind of the universe, has so constituted his instruments that, by his fiat and permission, life, instinctive or intellectual, shall ensue. We have scriptural authority for this, even to the very letter. “ God formed man of the dust of the ground ;” that is to say, the forming and fashioning of the particles of matter under certain arrangements, rendered it a fit recipient for the creative and spiritual afflatus which ensued. That the mode, and manner, and cause, is beyond our ken, is of little consequence ; it stands upon the same basis, and is, at all events, as intelligible, or rather say unintelligible, a fact, that the particles of iron in a magnet, for instance, are under the control and power of an ætherial or spiritual agency acting independently, and which may be separated without the slightest interference with its existence and acknowledged presence. All this is in strict conformity with the assumption of Mr. Bakewell, “ that the vital and thinking principles are as indestructible as matter, and that their combination with, and separation from, material organization, are merely preparatory to entering another state of

\* p. 14. † p. 16. ‡ p. 17.

being. In short, if it should be found," he adds, "that the corporeal organs are merely instruments that assist in the development of some higher inscrutable power, we may surely infer, with a degree of certainty equal to that which attends any conclusions in physical science, that this superior power—which we designate the soul—is distinct from material organization, and that its existence does not depend on those subservient agents which manifest its presence." His arguments are drawn from a well-arranged division of the subject into three parts, derived, first, from the indestructibility of matter; second, the properties of matter; and lastly, the phenomena of life. We have merely space to give an example from each of these divisions, which are again sub-divided into a variety of sections, each connected with the most interesting phenomena in distinct branches of science. The solution of a lump of sugar might be adduced as a familiar illustration of the first section; we, however, prefer another, less familiar, but on that account, perhaps, more striking, of the total disappearance and apparent annihilation of a solid body by solution. If a piece of silver be immersed in diluted nitric acid, the affinity of the acid to the metal will occasion them to unite; a brisk action will ensue, and in a short time the silver will be entirely dissolved, and absolutely invisible. The liquid will remain limpid as before, and will present no difference in its appearance to indicate a change. What, then, has become of the solid piece of silver that was placed in the liquid? Its hardness, its lustre, its tenacity, its great specific gravity, all the characteristics that distinguish it as a metal, are gone; its very form has vanished, and the hard, splendid, ponderous, and opaque metal that, but a few minutes since, was immersed in the mixture, is, to all visible evidence, gone for ever. But this is a fallacy, which chemistry enables us to detect; for if we drop some pieces of copper into the limpid fluid, to which metal the acid has a stronger affinity than to the silver, the latter will be immediately disengaged, or fall to the bottom in small brilliant metallic crystals. And the quantity thus deposited will be found to correspond exactly with the weight of the metal dissolved; and if the minute particles be melted, and cast into the same shape that the piece of silver presented before solution, it will be reproduced not only the same in substance, but in its pristine form, and actual identity. Similar instances are given under the effects of evaporation, rarefaction, decomposition, and even combustion; all tending to shew that the elements of matter are neither changed nor diminished, that no particle of matter acted on suffers annihilation, and that by no known process whatever can it be destroyed: which accumulated evidence corroborates the analogy, and the proof of the indestructibility of matter becomes almost as well established as any truth can be of which we have not absolute demonstration.

Our next illustration will be from the second division of the work, where proofs are collected from the properties of matter. The instance selected shall be that from light. If a ray of sun-light be

admitted through a small hole in the shutter of a darkened room, and be permitted to fall upon a piece of black cloth which reflects none of the light, the room will appear to be in darkness, notwithstanding the ray of light from the sun passes directly through it. If, however, an orange, or other bright object, be placed in the ray, the reflection of the light from its surface will not only render the object distinctly visible, but will diffuse light to all parts of the room. Now, in this case, no more light actually enters the room, when the reflecting substance is placed in the ray; but, owing to the peculiar conformation of the surface of that body, it is enabled to decompose the light, and to absorb all the coloured rays but the one which gives it its peculiar colour; and that ray it reflects with inconceivable velocity in every direction. If the reflecting substance be removed or destroyed, the room will again become dark; for there will be no longer any object to reflect its rays. But are we, therefore, to suppose, that, with the destruction of that substance, the light it emitted is also destroyed? Far from it: the reflecting substance was only the medium through which the presence of light was manifested to the senses: and when that body is removed or destroyed, the light streams onwards—unseen, indeed, but still existing with the same energy as when rendered sensible to the visual organs by the agency of a body competent to reflect it. Thus, does this, with other phenomena of light, bear a strong analogy to the presumed independence of the soul, and its continued existence after the dissolution of the body.

The last section is dedicated to instances proving that the living principle in creation, whether vegetable or animal, is distinct from the organized structures in which it is developed; and that it is not inherent in any portion of the matter which composes these organizations. One of the most obvious instances in point, and to which Mr. Bakewell briefly alludes, is the striking emblematical analogy which the insect transformations bear to another state of existence; wherein, after casting off the material form that binds man to earth, the grub may enter into a new life with enlarged and additional mental capacities. This hint might, indeed, be carried infinitely further, and afford wide scope, for the transformations and enlargements awaiting our mental and rational powers, when renewed and regenerated, under the all-absorbing spirit of divine grace, deprived of the earthy, and partaking of the heavenly alone. In fact, as we passed from page to page of this interesting work, we saw, as it were, many visionary and mysterious openings into the things which shall be hereafter; all in accordance with, and all bearing direct witness to, the truths of revelation. As we paused over several of the instances recorded, flashes of light seemed to dart athwart our imagination, and gleam upon shadowy forms of heavenly imagery, in which the scheme of man's redemption, the atonement, and all the sublime machinery of evangelical christianity were so directly and closely interwoven, that we closed the book, pitying the fool who hath said "there is no God," and mourning

over the Deist whose heart hath hitherto resisted the truth, and who has yet to learn, and feel, and rejoice, that Christ is the way, and the resurrection, and the life.

*Boswell's Life of Johnson*, edited by Crofton Croker. London: Murray, 1836.

IN the whole circle of literature, there are no books more eagerly inquired for, or universally read, than biographies. Every one feels a personal interest in the lives of eminent persons; for if their virtues and talents excite our envy or ambition, their foibles are, at least, an apology for our own. While we recognize feelings which we possess in common, our sympathies are spontaneously rendered to those, who have elevated us by a correspondence of habits and opinions. Biography, therefore, must necessarily please, when it becomes an offering to our vanity.

But, like other marketable wares, the supply increases with the demand, until curiosity is satiated, and vanity rises superior to compliment. Biography—like embalming among the Egyptians—should be reserved as the sacred privilege of the illustrious, not of birth, but of mind: the homage due to the aristocracy of intellect, is degraded by an indiscriminate assumption, and under the plea of *friendship*, has become a premium for stupidity, wherein dullness celebrates itself. To observe the biographical fecundity, it might be supposed that such works were the common offerings to the dead, produced without cost and received without censure: but these wayside monuments perish with the same facility as they arise; while the monuments of Genius alone are preserved undecayed, and their inscriptions religiously renewed as the birth-right of future generations.

Biography has this correspondence with art—it is the portraiture of the soul—and however exalted be the character, however sublime the genius, however dignified the virtues, it rests in the ability of the *artist* to ennoble or degrade his subject. The foibles or eccentricities of character are too often magnified by dwelling on them, until (like the Vetch of Cicero) a man is known by his mode, rather than by his mind—made notorious for a singularity of habit, rather than celebrated for the highest moral excellencies and intellectual attainments. Thus, by the touch of the pen, the brightness of fame is clouded for ever, except with the *few* who can read with a clearer eye the secrets of nature—who can find an apology for the inconsistencies of a Swift, the irregularities of a Goldsmith, the irritability of a Pope, or the gloomy savageness of a Johnson—the few who can pass lightly over failings that were without sin.

To write the life of a great man, calls for great powers. It is not enough that the features be correctly drawn; there is the play of a thousand changing expressions to pourtray, which can alone constitute a faithful image. It is not when arrayed in "purple

and fine linen" that the picture is fair and good ; but when there is the natural fire-side look, undecked by affectation.

The difficulty of the task is, indeed, sufficiently proved. Considering the multiplicity of biographers, how few are adequate to the enterprise. It is no trifling play to unravel the intricacies of the human heart, and to exhibit the primary impulse of actions so contradictory, and in their results so often unfortunate. There is one essentiality necessary to the excellence of biographies, and that is, a similarity of character, if not in the same degree of power. Without this, that vigorous enthusiasm which quickens the eye to perceive, and which propels the mind with a prescient intelligence, is lost, and the only merit of the work is in the bare exposition of facts. Did not Hayley require the religious fervour of Cowper? or could Johnson himself do more than lend his voice to the universal praise of Milton? There was a dissimilarity which rendered their labour abortive. Men may write with the understanding, and not of the heart, or the reverse.

The life of the poet is the record of feelings, and emotions, and ardent aspirations—twin sister of devotion. The life of the philosopher and man of science is not of feeling, but of fact—when speculation is only a prelude to reality. But there is also the life of the moral philosopher, and there is the life of the colloquist ; which last are the least numerous. Johnson and Coleridge belong to the last, though in themselves dissimilar. The work before us, with all its imperfections, is certainly unequalled, comparing it with similar productions, excluding the biography of the poet and the natural philosopher. Boswell chose the only method by which it was possible to pourtray the moral character of Johnson. Hawkins's life wants the aphoristical conversations of Johnson, and therefore wants everything ; inasmuch as the character of the colloquial Titan was best found in his conversations.

No man would think of looking for the character of Johnson in his productions : he was too cautious to commit himself in writing, and was too wise to unloose those vagrant opinions (to which the best of men sometimes incline), as precedents for evil minds to act upon in future generations : Johnson was not a man to mislead by a foolish desire to surprise—he knew the power of precedent. It was in conversation, in the unrestrained intercourse of social meeting, that the doctor unbuckled himself, and gave way to the natural vigour of his mind : when surrounded with a few chosen friends, he would temper his corrections with kindness, and run unbridled from subject to subject, ransacking and seeking tribute of the whole universe of soul. There was no other mode of exhibiting the true character of Johnson than by his conversation-*style*. We look in vain for the reflection of the author in *The Rambler* ; for individuality in his *London*, his *Vanity of Human Wishes*, in his *Irene* ; we behold no personal semblance in the history of *Rasselas*, nor do we recognize the gross and gloomy depressions of his nature in the tender melancholy of the lovely Pekuah.

The character of Johnson cannot be deduced, like that of the poet, from his creations; there is no embodying of feelings and emotions natural to himself. There was a graveness in the constitution of Johnson opposed to refinement, and which was not always subdued by reason. Reading the pages of Boswell, we are successively led away by different feelings; now audible in our admiration, and then indignant and disgusted with his brutality. At one moment charmed by his humility, in the next offended with his overbearance, astonished at his reasoning, hating his bigotry, reverencing his virtues, but suspicious of a "*faith*" that was almost without hope, leaving him a prey to childish superstition and credulity.

Dr. Johnson lived at a time most fortunate for his reputation; not that his works could be less than immortal, but the extension of his fame was mostly owing to the loud admiration of his great contemporaries, and it is the names of Fox, Burke, Goldsmith, Reynolds, Garrick—those lustrous stars with whom Johnson communed as with familiar spirits, whose adoration of mind elevated him above himself—that have lent such lustre to the life of Johnson. Boswell has wisely interwoven the opinions of those illustrious persons. We take our seat beside them, and as their thoughts are uttered we behold them "come like shadows;" and thus the work is a history of the age rather than of the individual.

The character of Johnson may be divided into the natural, or physical, literary, and moral. It is not less essential that a man be judged by his peers on this ground, that a distinction may be made between physical disease and moral culpability—that the expressions of suffering be not exaggerated into sin. Not only in courts of judicature, but in the individual estimation of character, the mind should be physiologically considered. If this were the case, justice would be always merciful, and general opinion without calumny; while the predisposing *knowledge* of an evil would be a security against it—"venienti occurrere morbo." A noble and generous spirit weeps over the failings that dim the lustre of the great man's fame.

The physical character of Johnson is an apology for his brutality: it is in his gloomy and hypochondriacal disposition that we are to seek for an excuse for his moroseness. The mind that is lighted up by a constitutional vivacity, can form no idea of the hereditary gloominess of Johnson. Prostrated beneath the murky vapours of melancholy, Johnson's feelings were betrayed by the bitterness, even savageness, of retort. It is not the dull, clod-pated clown that suffers from the malady of mind. Idiocy is the privilege of the ignorant and debased; madness is the passion of intellect, that would break down its alliance with the body. Poor Swift, Collins, Cowper! The incubus was shadowed upon their spirits, with all the horrors of the grave, and wrought their lives into inconsistencies. How constantly was Johnson oppressed and weighed down by the darkness of despondency, impelled by a stern sense of right,

ceaselessly resolving, and yet the victim of disappointment and self-condemnation. A martyr to the fears of an unsatisfied faith, to himself unforgiving, he made no exception in favour of others, nor scrupled to sacrifice feelings to truth. As a literary character, Johnson cannot be celebrated for his attainments; as a classic he was far from first-rate; knowing little of the sciences, and discursive in his reading; but his prodigious memory collated and arranged in the best order whatever he read; so that though an irregular student, his mind was enriched by the working up of his own ideas, while his knowledge was applied in a thousand various dresses suitable to the subject: it is no wonder, therefore, that he could pass for a most erudite scholar. No part of his attainments were unapplied or unproductive; in his arguments profoundly logical, with a reflex power so inexhaustible that new ideas grew up from the mere collision of each other, until he was sometimes startled into an admiration of his own omnipotence. But Johnson was not infallible, as his obsequious friend would persuade us; and more than once do we cry out against the pusillanimity of his auditors who could tolerate his absurdities. It is too often the case that one or two forcibly told truths will open the way for a succession of errors, without being perceived as such; so readily does an inferior mind resign its judgment altogether when rebutted in a first attack. Thus the conviction of some, and the assent of many, placed Johnson on the oracular tripod; accustomed to regard his fiat as a law incontrovertible, everything he said was admitted upon precedent; nor is it strange that he himself, at length, became intolerant, and believed in the infallibility of his own verdict. In the dialogue between the Doctor and Mrs. Knowles, he is turned, like a turtle, upon his back, and his answer to the spirited remarks of his fair opponent is fraught with coarse insolence and school-boy sulkiness.\* If his friends had been more like Mrs. Knowles, he would have been polished by repeated "*rubs.*" Still, Johnson was a mighty spirit: as a moralist he was perfectly orthodox; but had he possessed less morality, he might have enjoyed more religion: his worship was without fervour, for it was the oblation of duty. The broken sobs of the contrite heart, or the holy aspirations of religion, were unknown to him. His religion pertained to the understanding, not to the heart; quieting his conscience without animating his affections. We are not of those who ridicule Johnson's fear of death: had his faith been confirmed, his fears would have been removed. The fear of death belongs to thinking minds: it is not the unlettered vulgar who fear death; they have nothing to loose but life, which is the least of all losses. It is the "delighted spirit;" for "who would loose for fear of pain this intellectual being?" "To die, and go we know not where," was what he felt. Great minds fear death, for they have much to part with—ignorance exchanges only the sleep of life for that of the grave.

\* See vol. x., p. 106, &c.

In his every day duties, Johnson was correct and honest ; but his friendship was selfish and gross, and his sociality too often sensual. As a public character, he is not celebrated—his apathy or his honesty forbid it : as a pensioner, he consented to throw away the law and worship the golden calf.

We have thus briefly examined the portrait which Boswell has presented to us. A poet and moral philosopher is identified with his works ; nor can we decide on the book without an implication of the writer. Boswell has chosen the only mode by which the character of Johnson could have been drawn—which, in fact, is not from the pen of the Biographist—the impressions arise in the reader's mind from the perusal of his opinions. Boswell has done well in the choice of method ; but how far he has well done the work is another matter. An artist is not required to paint the seams of the coat, nor does it give value to the portrait ; and the frequent fooleries of Boswell tend rather to ridicule his divinity than to awaken our admiration. The humiliation of Boswell was unbecoming a man—it was a *disease* ; his adulation, however sincere, is disgusting to the reader, and his name will be for ever synonymous with servility.

With all its faults, a library would not be complete without Boswell, indeed, without Croker's Boswell ; for the work, interesting as it always was, is perfected by the present edition—enriched with the anecdotes of all Johnson's friends—assisted by the remarks of Croker, which are elegantly written. Nor is there less praise to Mr. Murray, for presenting, at so trifling a charge, a work that is convenient from its size and invaluable for the exquisite illustrations by Stanfield. It is, indeed, a superb work ; and in spite of Reviewers and all evil-talkers, will be printed and purchased from age to age, and age to age.

- I.—*The principles of Descriptive and Physiological Botany*, by the Rev. J. S. Henslow, M. A., F. L. S., &c., Professor of Botany in the University of Cambridge. London : Longman & Co.
- II.—*The New Botanist's Guide to the Localities of the Rarer Plants of Britain*, by H. C. Watson. London : Longman & Co.
- III.—*Remarks on the Geographical Distribution of British Plants ; chiefly in connexion with Latitude, Elevation, and Climate*, by H. C. Watson. London : Longman & Co.

OWING to the late period in the quarter at which we received the works whose copied title-pages head this notice, we are, at present, unable to do more than earnestly invite to them the attention of junior botanists. On detailed inspection they will be deemed, whether taken separately or collectively, truly valuable additions to our yet meagre literature on the interesting departments of physiological, geographical, and statistical, botany.

Professor Henslow's work forms the 75th volume of the enterprising Dr. Lardner's *Cabinet Cyclopædia*. It extends to 314 pages,

and embraces a comprehensive digest of the most approved information which foreign and British botanists possess, respecting *descriptive* botany, *taxonomy*, and *phytography*, and the hitherto strangely neglected *science* of the laws of the simple and compound organs of plants, considered as *living*, self-acting, and re-acting beings.

How far have not French and German outvied British botanists in special enterprize? But, what is more to our present purpose, how far, too, have they not left them behind in *original and standard* authorship! Instead of appearing as competitors with their continental brethren, the most recent writers in this country are constrained, from the influence of indirect causes arising out of the very different conditions of science, and the direction of state patronage under the respective governments at home and abroad, to be little else than their commentators, modifiers, and redactors! If the opinion just hazarded be incorrectly based, let dissentients compare and judge, and rectify it forthwith, by contrasting the matter and bearing of the *Théorie élémentaire de la botanique*, the *Organographie*, and *Physiologie végétale* of the same author, or the spirited and rewarded works of Agardh, Meyer, Mirbel, Runth, and others, with the late productions of English botanists. As journalists, we think that the honor of what is purely matter of impartial judgment, never should be sacrificed to false feelings of false nationalism; we are aware that an able author is lightly, but somewhat inconsiderately, spoken of, by not a few, as slavishly following the steps, and putting too tamely into an English dress, the results of M. Decandolle's labours as an author, inquirer, and inductive reasoner; but we contend that the professors of botany respectively in the Universities of London and Cambridge, have acted wisely, and have best consulted the interests of students by drawing, as both have done freely, from the writings, and also in following out, as they have attempted, the leading suggestions, of the famed and meritorious professor of botany at Geneva.

Mr. Henslow's work, as a whole, may safely be pronounced a masterly and trust-worthy compilation; and in as far as we have had leisure to examine its matter, is *au courant* with the best information of the day—with one heavy drawback, however, in the way of an exception. We have reflected with surprise upon the loose and unscientific remarks committed in the paragraph on organized bodies, in the introduction to Part I.; more especially as no one can be better aware than Mr. Henslow of the baneful and retarding influence exercised upon the views of students in vegetable or animal physiology, by the crude and positively inaccurate notions vulgarly entertained upon the subject of "life." The professor, in preparing and lending the authority of his name to a work intended for the perusal of general readers, surely would not have written of *life* as "that mysterious *principle*," had he borne in mind the continued propagation thus given to loose and decidedly erroneous ideas tending to confound a complex *result* with a simple elementary force or power? Every modern physiologist, whose opinion is worth citing,

regards "life" as a *result*, and considers organized bodies, whether vegetable or animal, as reducible, by inductive analysis, to the association of a power or force (call it "principle" even) named *vital* (or "vitality"), on the one part, with modifications of matter on the other. Now it strikes us that the whole of the truly admirably executed Second Part of Professor Henslow's work, which is devoted to the exposition of *physiological* botany, and the opening chapter on "vegetable life—properties of tissues—*vital* properties—stimulants to vegetation," &c., would have been divested of all difficulty to the tyro, and consequently, therefore, enjoyed by him as in every respect as free from avoidable mysticism as the lucid and chaste manner in which the actions of the living vegetable tissues and their laws are summarily expounded by the learned and otherwise most successful author, in the sections which follow. Even allowing, however, that our opinion, and it is only an opinion, is incontrovertible on the point upon which we have felt ourselves called upon to animadvert, we have no hesitation in strongly recommending the 75th volume of *The Cabinet Cyclopædia* as one of the very best *hand-books*, as the Germans would entitle it, upon descriptive and physiological botany with which any student can possess himself, now when the very season is in progress in which it may almost, without metaphor, be said that nature is in the act of opening fresh leaves and flowers for perusal and appreciation, in one of the most interesting and chaste of her volumes.

In reference to the illustrations, which are generally correctly drawn, we must make an exception to the accuracy of the representation of the *Hydrogeton fenestralis*, fig. 52, p. 59, which appears copied from Dr. Anthony Todd Thompson's work, and bears not the slightest similitude to the natural skeleton of that plant. A gentleman who has two leaves in his possession, states that the form of the leaf has a general resemblance to that of the Laurel, the fibres are of a dark-brown colour, and are more open in the row on each side of the mid-rib, than toward the margin. The form is that of a narrow mesh or oblong square.

We can find room only to express our admiration of Mr. Cottrell Watson's meritorious and unpretending volumes, which we feel assured will win him golden opinions from all discerning critics. The research and minute *labour* required in the preparation of his *New Botanist's Guide*, have been unsparingly bestowed, and in that calm spirit of philosophy and tenacious untiring patience which would lead one to suspect that his heart beats under that truly sustaining stimulus which constitutes the grand and characteristic trait of the true German school. Be this as it may, the volume in question includes the localities of the rarer plants of *all the counties of England and Wales*, and will form a complete work in itself, if, by any unforeseen circumstance, the publication of a second volume should be prevented.

Whatever comes from Mr. Watson's pen, and is authenticated by him, on the difficult and interesting subject of *vegetable geography*,

will at once meet the attention which his known zeal and devotedness to this special range of scientific inquiry have so deservedly guaranteed—the confidence that it will not be profitlessly expended. Though personally, perhaps, unknown to him, yet the writer of this cursory notice (from having been one of his fellow-students, now six years since, whilst under the instruction of the manly and estimable Professor Graham), is well aware that, prior and subsequent to the period to which he has casually adverted, the time and means of Mr. Watson had and have been devoted to his successful prosecution of the arduous investigations respecting the *Geographical Distribution of British Plants, in connexion with latitude, elevation, and climate*. May his success be commensurate with his stirring and unobtrusive merits, so invitingly manifested in the pages of the two volumes which have elicited the foregoing remarks.—T.

*M. Victor Cousins' Report on the State of Public Instruction in Prussia.* Translated by Sarah Austin. Second Edition. London: Wilson, Royal Exchange. 1836.

OF all the subjects contemplated for the benefit and happiness of the human race, which could be brought under the consideration of the statesman and the philosopher, none can equal in importance *public instruction on an unlimited scale*; and to the immortal honour of the Prussian States, although fettered by arbitrary laws, from which our Government is happily exempt, is due the great merit of chalking out the road, the track of which other civilized countries, however tardy, must eventually follow. We have had our Madras and Lancasterian schools, it is true, in operation some years; but how incomplete and inefficient such institutions, when compared with the admirable system adopted in the Prussian schools. Amongst nations, as amongst individuals, there is too often a jealous rivalry which sometimes consents to abandon a positive good, because it emanates from a foreign source: but, in this case, we are confident that no petty causes can have the power to check the advancement of a great national benefit which every civilized member of a community has an interest in supporting. Give a man education—instil into him the desire of knowledge—animate him with the hope of lettered distinction—and, conscious of being a respectable member of society, he spurns the low pursuits of depraved life. From a mere animal machine, he becomes a spiritual being, fitted for those high destinies which await on intellectual supremacy. The idle fears of the affluent, that a general education would, in the course of time, annihilate the useful body of artisans, husbandmen, and servants of all descriptions, is now nearly exploded, since it has been proved that education tends rather to sooth and satisfy the mind on the point of station, than to exhibit the fretfulness of discontent. And even if it were not so, let education take the widest range which can be imagined, there would always be left a due supply of persons whose tastes and capacities unfit them for

more than common duties, and by whom the drudgeries of life would be readily given for the equivalents of food, clothing, and habitation. To discountenance a system so valuable by these or any other methods, is most unworthy, uncharitable, and indefensible; but the spirit of the age will not suffer these cold-blooded cautions to dispel the rising flame of intelligence. A bright dawn seems to have broken on most of the civilized countries of the earth, and its refulgence is not now to be obscured by the formal protest of the sage sticklers for antiquated customs. It is too late even for the baleful sneer of ridicule to arrest the progress of knowledge, when a simultaneous effort has been made by an enlightened people to break the bonds which have hitherto held them in thralldom. The light has at length broken upon us to which no darkness will succeed.

Within the narrow limits to which we are confined, it is utterly impossible to do justice to the important subject which has thus occupied the time and attention of Victor Cousin. The energies of his capacious mind have been called into action on every point relating to the modes of general education now and for many years pursued in the kingdom of Prussia; and the endeavour to engraft the admirable plan on the institutions of his country (for he is a Frenchman) is the professed object of this report, addressed to the minister of Public Instruction and Ecclesiastical Affairs, the Count de Montalivet.

Mrs. Austin candidly acknowledges that utility, and not mere amusement, is the chief characteristic of this book; and that it will be instructive only to the patient reader who will consent to the toil of following the author in a progressive investigation. Although portions may be selected which manifest the spirit pervading the whole, its merit as a piece of legislation can only be duly appreciated when studied connectedly and in detail. It would be doing an injustice to the work, therefore, to quote disjointed paragraphs; but we affirm that there is no publication which has ever yet appeared, to be compared to it in solidity and usefulness; and we trust that the plan, in all its ramifications, will immediately be adopted in every town and village in this kingdom.

What a reproach to this country, the numerous institutions of which we laud so much, is the prevailing mode of its general instruction! Valets and ignorant men, the very quacks of literature, calling themselves travelling tutors to some pretended nobleman, or gentleman of fashion, with a smattering of the French, Italian, and German languages, which if they can partially speak, they can neither write nor read, are the men that usually set up as schoolmasters in the large towns and villages of this country, without a particle of previous instruction in the knowledge and duties of their serious avocations—men who never fail to tack half the letters of the alphabet to their names, as long as the tail of a comet, signifying that they are fellows of *this*, and honorary members of *that*, learned *foreign* society, and thus impose on the weak and credulous, who take them to be learned and respectable on their own impudent

assumption. All this quackery and folly would receive a death-blow if, as in Prussia, *certificates of qualification from some official public board* were made the indispensable requisites of admission to the important office of instructor of youth. There is no doubt but "to this conclusion we must come at last." In Prussia, none but men of education, purposely brought up, duly instructed, and strictly examined in every point of necessary fitness, are permitted to act as schoolmasters, and the salutary regulation is most favourable in its consequences.

We had hoped to have been enabled to make some observations on the establishment of Normal Schools—a most important topic, and an article of deep interest—but we are precluded from lengthening this notice for want of space. Should Mrs. Austin perfect the translation of this work of Victor Cousin (for, be it observed, this volume is only a *part* of the great original), we will examine it with all the care the important topic so well merits, and submit the result hereafter to the judgment of our readers.

*Treatise on the Diseases of the Eye and its appendages*, by Richard Middlemore, M.R.C.S., Surgeon to the Birmingham Eye Infirmary, &c. 8vo. London: Longman and Co.; and James Drake, Birmingham. 1836.

At a first sight of this work, we confess that we were somewhat startled, for two such bulky volumes, each containing upwards of 800 pages, have rarely been presented to our critical investigation.

After many plunges, however, into the beginning, middle, and end, we became perfectly satisfied that this treatise is a work of considerable ability, and of great practical usefulness. We have, therefore, perused it with much attention, and the result of our examination is, that it reflects infinite credit on the medical skill and literary powers of the intelligent author, and should, doubtless, be in the hands of every student who is anxious to arrive at eminence in that very essential knowledge of his profession to which this publication more particularly refers.

In the surgical profession, although long and deep study be required, *practice* is the high road which leads to eminence. We place more value, therefore, on the lucubrations of an author who, like Mr. Middlemore, has been placed at the head of an institution for many years (the Birmingham Eye Infirmary) in which nearly two thousand cases come annually under his observation, than we should do on the strictures of an unemployed member of that department of surgery, however highly gifted he may be with genius and talent. The lessons of practice are necessary to the ripening of all qualifications, but more particularly are they essential to the important branches of medical science. The author of this treatise has advantages, therefore, which all writers on the subject cannot claim; and we must say that he has made these advantages very apparent. It is to be lamented that a thorough knowledge of the

diseases of the eye comprehends so small a part of the objects included in a medical student's education, and that so little time is allotted to the special cultivation of this subject, at least, so far as to attend a course of lectures devoted exclusively to its consideration; but it is still more to be lamented that this defectiveness sometimes leads to consequences disastrous to the patient.

To the medical student, and particularly to the practitioner who is desirous of obtaining a more comprehensive knowledge of ophthalmic disease than is usually acquired, Mr. Middlemore's treatise will be most invaluable.

*Artisans and Machinery: the moral and physical condition of the manufacturing Population considered with reference to mechanical substitutes for human Labour.* By P. Gaskell, Esq., M. R. C. S. London: J. W. Parker, 1836.

THE rapid increase of non-consuming physical power, as applied to British manufactures, is the source of rational surprise and allowable exultation to all who reflect upon the subject; and highly interesting works have been written to display the practical application of mechanical science, and our possible resources. These publications may be considered as forming a kind of series, each one in succession taking a more distinct view of the subject.

Mr. Babbage, in 1827, published his *Economy of Machinery*, which was followed, in 1831, by a volume of the Useful Knowledge Society, entitled *Results of Machinery*, and Mr. Gaskell has now entered the field with his *Artisans and Machinery*; in which the author, fully participating in the admiration of the power of the human intellect, as exhibited in our mechanical and chemical improvements and discoveries, analyzes their present effects with a fearless hand, and gives it as his conviction that, to the great bulk of the people of this country, the results of our scientific power have been any thing but desirable. Mr. Gaskell attributes the present declension in the social and physical condition of the artisans, to the separation of families, the breaking up of households, the irruptions of all those ties which link man's heart to the better portion of his nature,—viz., his instincts and social affections;\* and the existing system of congregating in towns and densely populated neighbourhoods. The period of domestic manufactures, which Mr. Gaskell styles "the golden times," when the distaff and the spinning-wheel were in use, and the majority of artisans laboured in their own houses, and in the bosom of their families, has long ceased to exist; because the various new channels into which our cotton manufactures have been of late years introduced, rendered the production of machinery indispensable to meet the demand in the foreign markets. Looking, therefore, at the rapid and extraordinary increase of this important branch of our manufacturing industry, in a national point

of view, we cannot for a moment admit that the introduction of machinery ought to be condemned as an evil, or considered in the light of a national calamity. It would be difficult to come to any other conclusion, with a knowledge of the fact derived from well-authenticated documents, that the exports in the cotton trade have augmented *forty fold* since 1785, and the amount of manual labour employed in this branch has increased from forty thousand to *one million and a half!*

Mr. Gaskell represents the sufferings and privations of the hand-loom Weavers, from want of employment and reduced wages, as most severe, and quotes Sir D. Barry and Dr. Kay in corroboration of this statement. Would not these sufferings and privations be materially alleviated, if the hand-loom weavers could be induced to turn their attention to those branches of industry wherein they could be usefully employed at remunerating prices for their labour? That there is a deficiency of artisans in Lancashire must be admitted, as the Poor Law Commissioners recommend the transfer of 70,000 to that county, where they are required, from those parts of England where a superabundance exists.

As a remedial agent for the relief of the artisan, Mr. Gaskell strenuously advises the cultivation of waste lands, which he observes "ought to be treated as a national domain, to be divided and allotted as the demands of society for space and employment happen to increase." There are, no doubt, many thousand acres of waste land capable of profitable cultivation, a judicious allotment of which to the unemployed artisan or agricultural labourer, would be attended with the most beneficial results; and we hope the legislature will speedily turn its attention to a subject on which the comfort and well-being of so numerous a class in a great measure depend.

*Observations on the diseases of the Stomach, chiefly regarding derangements of its sensibility, with their sympathetic effects upon some other organs of the economy, particularly the Brain, Lungs, and Heart.* By Langston Parker, M. R. C. S. Birmingham: Hudson. 1836.

THESE observations clearly indicate that the author has deeply studied his subject before he committed them to the scrutiny of the public; and although a mere pamphlet of less than forty pages, there is disseminated such a clear knowledge of the various diseases of the stomach, and their sympathetic effects on the brain, lungs, and heart, as could only be obtained by long and diligent application and by an extensive practice. Some of the cases which the author has selected, are rare and complicated, and his mode of treatment and his remarks upon them are well worthy of attentive consideration. We recommend Mr. Parker to extend the subject on a future occasion—the present pamphlet is by far too concise.

*A History of British Fishes*, by Wm. Yarrell, F. L. S. London : J. Van Voorst.

THE pleasing and lucid style in which the descriptions and characteristic anecdotes of the finny tribe are written in this work, and the correctness and beauty of the illustrations, fully justify the universal meed of praise which has been bestowed upon the labours of the talented author and the engraver. To this circumstance, and to the daily increasing thirst for the cultivation of the study of Natural History, may doubtless be ascribed the rapid progress this publication has made in public estimation.

We had intended to have given extracts from the very interesting description of the Pilchard and Herring fishery, and also the mode of obtaining Whitebait—that delicious fish, so highly esteemed by all epicures—but must refer our readers to the eleventh and twelfth numbers of the work for the information we are reluctantly compelled to omit. Mr. Yarrell satisfactorily proves that the Whitebait is a distinct species, and not the young of the Shad, as supposed by Dr. Fleming and others. Dr. Hastings, in his *Illustrations of the Natural History of Worcestershire*, speaking of the Alice Shad, observes—“This is another fish which the Severn affords in great perfection;” and further remarks, but “although plentiful in the Severn, we hear nothing of the Whitebait.”

*A few observations on Religion and Education in Ireland*, by the Rev. Edward Stanley, A. M., Rector of Alderley. Third Edition, with additional Notes. Ridgway, Piccadilly.

OF the different sects into which the religious world is divided, as far as relates to their various tenets, we offer no opinion. Religious and political subjects of a controversial description are ill suited to the pages of a scientific and literary miscellany; and as we have ever professed to abstain from becoming partizans in these matters, we shall scrupulously maintain our consistency, by adhering to a resolution formed on mature, and, we trust, a wise, consideration. But this is, in every respect, a well-meant pamphlet, and it contains more liberal feeling, and less prejudice, than any publication of the kind which has latterly come under our notice. A clear and liberal statement of the Irish people in their religion and education, by an eye-witness, and that eye-witness a clergyman of the Church of England, is not an every-day production; and now that many legislative enactments are likely to bind the two countries in a closer union, and that the clouds of prejudice and error are giving place to the light of truth and reason, we are bound to notice a publication which is so well calculated to disarm animosity, and to produce mutually beneficial results. This pamphlet, in addition to its generous intentions, is very ably written.

*A History of the Rarer Species of British Birds*, by T. C. Eyton, Esq. Parts I. and II. London: Longman and Co. 1836.

THE object of this work is to figure the rarer birds which have been discovered in the British isles since the publication of the last edition of Bewick, to whose "*History*" it will form an appropriate and valuable supplement. As we propose giving a critical notice on receiving the third part, which will complete the work, we shall now merely observe that the birds are accurately drawn and beautifully engraved; the vignettes are also exquisite specimens of the art, and worthy to be placed in juxtaposition with the productions of the immortal Bewick.

The descriptions are written with great perspicuity, and bear ample evidence that Mr. Eyton possesses every requisite for executing the task he has undertaken, in a manner calculated to elicit the unqualified approbation of the ornithologist.

*Observations on the principal Medical Institutions and Practice of France, Italy, and Germany, with Notices of the Universities and Cases from Hospital Practice, with an Appendix on Animal Magnetism and Homœopathy.* By Edwin Lee. London: Churchill.

THIS sketch of the state of medical and surgical practice, in France, Italy, and Germany, is the result of the personal observation of the author, during a temporary residence at different periods in those countries. The succinct account of some of the principal medical Institutions, and the pertinent remarks on continental practice, bear the stamp of accuracy and impartiality, and convey much useful information to the profession. The practice of M. Dupuytren, Chomel, Roux, Bouillaud, and other eminent men, in the Parisian Hospitals is adverted to, and several interesting cases subjoined.

"The medical institutions of Italy," the author observes, "are regulated much in the same manner as in France, being under the superintendence of their respective governments, and deriving their revenues from property with which they have been endowed, and from the bequests and donations of rich individuals. \* \* \* The profession is divided, as in France, into physicians, surgeons, and obstetric practitioners. The division between medicine and surgery is, in some parts, very arbitrary; the duties of the surgeon being confined to the application of local remedies and operations, while the physician is called in to prescribe for the constitutional disorder accompanying surgical disease. The principles by which the practice is guided, necessarily vary in the different states. At Florence and Rome they are based upon the Broussaian doctrine much more generally than at Naples or Milan; but, with the exception of the last city, the treatment of disease is inferior to the French."

A variety of cases, illustrative of the method of treating diseases in the Hospitals of the several States, are adduced, which fully justify this remark.

The Hospitals of Germany are under similar superintendence to

those of France and Italy; but are represented as "inferior in point of size and interior organization." The Universities, of which there are no less than twenty, are principally situated in small, quiet towns, well calculated to favour studious habits.

"The relations between professors and students are much more intimate than in France and Italy, and the love of science is stronger than in those countries. This devotion to science, and seclusion from general society, occasionally gives rise, however, to a degree of pedantry and confined views, even in men of extensive acquirements; and no where are there so many poor *savans* as in Germany. \* \* \* The students, notwithstanding the roughness of manners which prevails in some universities, are, for the most part, attentive, persevering, regular in attendance, and decorous in their behaviour, in the lecture-room. Of late years, drinking, quarrelling, and taking part in political disturbances, occur much less frequently among them. The practice of medicine is not, in general, based upon any particular theory, but is regulated by the observation of symptoms in individual cases, and approaches nearer to the English than to the French method."

With the exception of Berlin, the most celebrated University in Germany, the management of surgical cases is represented as very inferior to the system adopted in France and England.

The work contains much useful information to English students desirous of completing their medical education on the continent; pointing out the prescribed order of studies, the examinations required, and the expenses candidates must necessarily incur for fees, &c.

The Appendix is devoted to some apposite remarks on Animal Magnetism and Homœopathy, and an account of the experiments instituted by the Académie de Médecine with a view of exhibiting to the public the manner in which the effects ascribed to these agents were produced, and their analogy to each other. The absurdity of these doctrines are now very generally allowed, both in France and Germany; and the attempt to introduce Homœopathy into this country proved a signal failure.

*The Steam Engine familiarly explained and illustrated; with an historical sketch of its invention and progressive improvement; its applications to Navigation and Railways; with plain maxims for Railway Speculators.* By the Rev. Dionysius Lardner, L. L. D., F. R. S., &c., &c. Fifth Edition, considerably enlarged. London: Taylor, Upper Gower-street. 1836.

NUMEROUS in this our day of mental transcendency are those choice spirits who have consecrated themselves to science; but few men have advocated its cause with clearer reasoning, disentangled its intricacies with more successful diligence, and produced results of more extensive benefit and importance, than Dr. Lardner. The power and improvement of the steam engine, from the various publications which he has issued, appear to have been a favourite topic of meditation; and to bring its present advantages into more general operation, and to calculate on the probable effects of its future importance, when the march of improvement shall have increased its

utility, is evidently the great aim of his vigilant perseverance. That he has simplified much that was intricate, and thrown new light on much that was involved in obscurity, by which new experiments have been attended with beneficial consequences, all scientific votaries will readily admit; and he that has so distinguished himself is confessedly a benefactor to the whole race of man.

This treatise has now reached its *fifth* edition, which is a self-evident proof that its circulation has been extensive; and it is an acknowledged truth that no publication will thus get into general notice unless it be stamped with the impress of utility. It should be considered, however, more as a new work than as a continued edition of a former one; for on comparing it with a previous edition, we find that it is almost entirely a fresh composition, a very considerable portion of interesting matter connected with recent improvements having been added to the present volume.

There is sufficient practical detail throughout to make the subject intelligible, but the general principles of the construction and operation of steam engines seem to have been the main object of the author's elucidation; and therefore the reader must not look for the technicalities of the artisan in this volume, neither must he expect to find a history of the numberless disputes respecting the rights of invention which have often so harshly grated on the public ear. These matters are wisely withheld, and in their place are explanations of that stupendous machine familiarly laid down, its appliances to navigation and railways clearly developed, and some excellent recommendatory observations addressed to railway speculators, which, in the present rage for shares, may not be without their usefulness.

From an attentive perusal of this work of Dr. Lardner's, we consider it the best, the very best, publication of the kind which has yet emanated from the press, and admirably adapted, as it professes, to the comprehension of those persons who have neither time nor opportunity to devote to larger treatises. It is a very neatly executed volume, and the engravings and wood-cuts assimilate with its typographical accuracy.

*Manual of Entomology*, from the German of H. Burmeister, by W. E. Shuckard, M. E. S. Nos. 17 and 18—(completion). London: Churton.

THIS admirable manual, alike valuable to the scientific entomologist and the physiological student, is now completed, and deeply are they indebted to Mr. Shuckard for the very able manner in which he has executed his task. The translator has propounded the elementary principles of entomology with great perspicuity, and adduced a vast mass of interesting facts in elucidation of the study, elicited by the laborious investigations of Straus Durckheim, Müller, and other eminent naturalists. The translator, in his preface, very justly remarks that "the advantages to be derived from

the study of natural history are manifest. One of its most conspicuous merits, and that upon which the immortal Cuvier dwelt, is its tendency to methodise the mind, by impressing it with a habit of order and precision; thus having all the effect, but under a more alluring mask, of the abstract mathematics, and the logic of the schools."

The concluding number treats on insects in relation to other organic beings, and contains a well digested history of the chief entomological classifications and systems of the several writers in this department of science.

*The Equilibrium of Population and Sustenance demonstrated: an Essay shewing, on physiological and statistical grounds, the means of obviating the fears of the late Mr. Malthus and his followers*  
By C Loudon, M. D. 8vo. London; and Leamington. 1836.

Dr. Loudon has opened a new and curious inquiry in this essay; and when his principle and its proofs shall come to be rightly understood and properly applied, its operation will greatly facilitate the exercise of a pure philanthropy, while its results will conduce progressively and effectually to the diffusion of human happiness. One of the doctor's propositions is remarkable; but it is founded on a large induction of facts. It is this, that in states where mothers adopt the unnatural practice of not suckling their own offspring, or of continuing this salutary and delightful office only for a short time, there the numerical growth of population is excessive, and, as the shift of a barbarous expediency, too often becomes a cause of infanticide; and that in countries where mothers prolong the self-rewarding duty of suckling their children for many months or for years, there the population is naturally limited, and nearly stationary, notwithstanding the inhabitants may possess the necessaries of life in abundance, and of easy acquisition. We solicit Dr. Loudon to prosecute the investigation of his most important subject, until, by evidence and illustration, he has completely established the truth and practicability of his doctrine. At the same time, we would strongly urge the study of this doctrine upon the attention of all those influential and benevolent persons who considerately recognize a solemn and responsible obligation in promoting the welfare of their laborious and virtuous brethren. We would also very earnestly enforce upon their more fortunate compatriots the pleasure as well as the necessity of endeavouring, by method and kindness, to convince this—the laborious and virtuous—order of the people, which has ever constituted the strength and the pride of nations, that vast additions to their comfort and respectability might be derived from such an instructed acquaintance with Dr. Loudon's principle, as would enable them judiciously to determine the fittest occasions and degrees of its requisite applications.

*Practical Observations on the Phenomena of Flame and Safety Lamps.* By John Murray, F. S. A., F. L. S., &c. London: Renshaw. Second Edition. 1836.

WE received this interesting pamphlet, which abounds with useful and practical information, at too late a period in the month to allow time for more than a cursory glance at its contents; but the subject is of such vital importance to the thousands employed in the mining districts by which we are surrounded, that we should consider it a dereliction of duty to entirely omit a notice of Mr. Murray's researches in the field of science.

After an able dissertation on the beauty of the structure and phenomena of flame, which the author clearly proves is not "solid," but "in texture a luminous bubble, inflated with inflammable vapour," he adverts to the colour and temperature of flame, and then goes on to prove, most satisfactorily, the *insecurity* of Sir Humphrey Davy's Safety Lamp when exposed to a current of air acting, as it were, like a blow-pipe, and forcing the flame through the wire gauze—an occurrence which must necessarily take place in traversing what is technically called a *blower*, in the mine. This opinion is completely corroborated by Mr. Gurney, in his evidence before the select committee of the House of Commons, who stated, most distinctly, that if hydrogen was mixed with the atmosphere, Sir H. Davy's Lamp would not be safe under *stationary* circumstances; neither could it be relied on if moved at a rate of 300 feet per minute in a carburetted hydrogen mixture.

We will now proceed to quote Mr. Murray's observations and description of the invention of Messrs. Upton and Roberts, of which he speaks in terms of high commendation.

"It seems to me obvious, after mature deliberation and reflection, that Messrs. Upton and Roberts' SAFETY Lamp is the only one justly entitled to the name; nor can I conceive of any contingency in the mine that would unhinge that claim and title, save the incidental fracture of the GLASS cylinder by external violence. I would, therefore, strongly recommend the substitution of a double envelope of TALC; the amount of light would not thereby be diminished, and the elasticity and flexibility of the material would be ample guarantees for the preservation of its integrity. This *Safety* Lamp has been exposed to the severest tests by Messrs. Pereira and Parthington, in the presence of competent judges; and it must frankly be confessed that the safety seems *absolute*, nor is it easy to conceive of any combination of gases to be met with in mines that will disturb its pre-eminence.

"The invention of Messrs. Upton and Roberts may be briefly described as consisting of a glass cylinder completely enveloping the wire cage of a Davy Lamp. The air to supply the wick passes through apertures *below* the cage; from these apertures the air is carried under two horizontal layers of wire gauze, through which it has to pass through the wick; these layers, however, are entirely covered by a cone of metal which has an orifice about the size of a sixpence in its centre, for the wick flame to pass through. This contrivance, which produces the object sought for, namely, 'safety,' acts on the principle of permitting none but *the products of combustion to escape into the Lamp*—the gaseous products of flame, namely, carbonic acid gas, &c. with the residual azote, are altogether negative with respect to flame; and conse-

quently a small taper, previously lighted, is immediately extinguished in the space intervening between the central wick flame and the cage. It must be obvious that the enclosure, on these principles, can never be filled with flame, and the gauze cannot be made red hot.

“That Messrs. U. and R.’s Safety Lamp must eventually supplant Davy’s imperfect one, is sufficiently obvious, though I still think the *comparative* safety of ‘The Davy Lamp’ may be considerably enhanced and improved by the means I have already suggested; freely admitting, at the same time, that I cannot conceive it possible, by any improvement whatever, to enable it to encounter the supposable contingencies of the mine, to the full amount of that of Messrs. Upton and Roberts. \* \* \* Whether legal enactment will banish the Davy Lamp altogether from mines, and substitute exclusively the Safety Lamp of U. and R., I cannot pretend to divine; but this I know, that the coal proprietor will be as deficient in humanity as he is wanting to his own interests, if he hesitates to substitute the latter for the *equivocal* safety promised by the ‘Davy:’ while he halts between two opinions, the work of destruction may occur.”

The postscript to this pamphlet, which is deserving the especial attention of the philanthropist and the man of science, contains some valuable hints for preventing the bursting of steam boilers—on the phenomena of decay in timber, called the dry rot—and on the application of *paragrêles* to hop grounds, as a preservative from blight and aphides.

As the application of steam is so extensively employed for manufacturing purposes in this district, we are induced to allude to that subject. Mr. Murray ascribes the explosion of steam boilers to sudden extrication of steam from limited portions or local patches at the bottom of the boiler, arising from the *unequal distribution* of the heat below, conjoined with the *imperfect conductivity* of the water; in which case the so called ‘safety valve’ is of no use. We must refer our readers, for the present, to the work itself for the means pointed out by Mr. Murray for security against accidents of this nature; but we shall probably revert to the subject more at length in our next publication.

The pamphlet is printed on the first paper ever manufactured from *Phormium tenax*, or New Zealand flax (*unbleached*). This paper possesses a smooth surface, with a remarkably firm texture; and if the raw material had undergone the process of bleaching, it would have been fully equal in quality to the best paper manufactured from linen rags. Mr. Murray states that this plant, hitherto an inmate of the green-house, might be successfully cultivated in the climate of Scotland, where he has specimens growing on a poor, light soil, seven feet high, which have withstood, without the slightest protection, the severity of seven Scottish winters. We hope the government will, at no very distant period, turn their attention to this subject, and weigh the advantages of occupying the unemployed agricultural labourers in the cultivation of the *Phormium tenax* on the waste lands belonging to the crown, in lieu of promoting emigration to distant colonies.

*A Companion to the Medicine Chest ; or plain directions for the employment of the various Medicines, with the properties and doses of such as are more generally used in Domestic Medicine,* by John Savory. London: J. Churchill. 1836.

THIS very useful little manual is entirely divested of scientific phraseology, and may be safely consulted, in cases of emergency, by persons residing at a distance from their medical adviser, more particularly where delay may be productive of fatal results. We cordially coincide in the judicious advice set forth in the preface, "not to place too much confidence on books of domestic medicine, especially in such cases as are of a serious nature, but always to have recourse to the advice of an able practitioner, as early as it can be obtained."

A portion of the work, and that not the least useful and important, is devoted to clear directions for counteracting the effects of poisons ; for restoring suspended animation ; and for disinfecting apartments, and checking the progress of contagious diseases.

*Lectiones Latinæ ; or Lessons in Latin Literature. Selected from the most celebrated Latin authors.* In four parts. By J. Rowbotham, F. R. A. S. Wilson, Royal Exchange.

*L'Echo de Paris : a Selection of Familiar Phrases.* By M. A. P. Lepage. Second Edition. Wilson, Royal Exchange.

*Cherville's First Step to French ; indispensable to, and in harmony with, all French Grammars.* By F. M. De Cherville. Wilson, Royal Exchange. 1836.

THESE are well-adapted books for schools and young beginners of the Latin and French languages, and appear to be put together with a due regard to the end for which they are designed. Rowbotham's Selections are made with scholastic care, and cannot fail, with very slight attention, to remove the difficulty of acquiring the language, of which so many students complain. The lessons are divided into four parts:—the first part contains, at Section I., the original Latin, and at Section II., an interlinear translation, both literal and free, in the same line: the second part contains, at Section I., the original Latin, with a poetical translation on the opposite pages ; and at Section II., the English order of construction is given, with what may be termed a literal translation, but which is sufficiently free to convey an idea of the author's meaning. The third part is, in some respects, similar to the second, with the exception of there being no poetical translations. There is also an excellent introductory grammar. This book must greatly facilitate the study of the Latin language ; and when well known, we have no doubt, will be considered an indispensable auxiliary to the classical student.

Lepage's *Echo de Paris* is too well known and estimated to make a comment necessary. It has now reached a second edition, which,

we perceive, contains a large increase of conversational and idiomatic phrases, and is thereby rendered still more useful to the learner of the French language. To persons visiting the continent, it must be found a desirable acquisition. This edition is a decided improvement on the first, as it contains a complete vocabulary, explanatory of the words and idioms, and is therefore better adapted as a manual for learners.

Cherville's *First Step to French* appears to be intended for beginners, and for those who only know the language as it is written. Grammar is here blended with practice, and the tediousness of connecting the rules with practical exercises saved to both teacher and pupil. It is exactly what it professes to be, and must be a valuable assistant to the young scholar.

*Magazine of Natural History. Arboretum Britannicum. Gardener's Magazine. The Architectural Magazine.* Numbers for January, February, and March. London: Longman & Co.

THE untiring activity and zeal of Mr. Loudon is more than usually conspicuous in the several numbers of the works above enumerated. *The Magazine of Natural History* contains some interesting papers by C. Waterton, Professor Henslow, and other eminent naturalists. The observations on the constructions of maps for illustrating the distribution of plants, by H. C. Watson, F. L. S., displays much ingenuity, and is deserving an attentive perusal. The value of the recently published numbers of *The Arboretum Britannicum* are greatly increased by an additional quantity of letter-press. The history, geography, and the science of the study of trees, with their properties and uses, are given in a very able and lucid style, and will render this publication eminently useful as a work of reference. *The Gardener's* and the *Architectural Magazines* contain their accustomed share of valuable information on the respective subjects to which they are devoted.

[The insertion of a critical notice of "Jenyns's Manual of British Vertebrate Animals," "Translations into English verse from the poems of Davyth ap Gwilym," and "S. Robinson's Address to the Subscribers to the Dukinfield Village Library," is unavoidably deferred.]

## FINE ARTS.

*Scotland*, by William Beattie, M. D., illustrated in a series of *Views*, by Thomas Allom, Esq. Parts 1 to 5. London: Virtue.

ILLUSTRATED publications are now "plenty as blackberries," their name is Legion, and, as might be expected in such a motly crowd, few rise above mediocrity, while many rank even lower than that unenviable standard. The true gems are rare; and carefully, kindly must we distinguish them from the counterfeits; if the public would do likewise, the *taste* for the fine arts would gain ground, whereas now the demand for "illustrated works" proceeds, in very many instances, from a mere drawing-room-display appetite, and as this is but a fashionable disease for the time being, the caterers (*i. e.*, artists and publishers) need not be any way particular in the choice of materials for a banquet, not desired as an enjoyment, but required as a ceremony. However, this is neither the time nor place to enter upon a discussion of such length as the state of art, and taste for art, in England, would require; it is time to tell our readers that the brightly-clad volume now before us is not of the garbage class, only fit for the *fashionable* patrons of picture-books: it is one which the artist may rejoice to lay beside his easel, the poet love to feast his fancy upon, and the late or expectant tourist consult as a guide to future wanderings, or a most pleasant reminder of past ones. Beattie's—we would rather say Allom's—*Scotland* is a good and highly-interesting design, worthily executed. Whoever loves Scott, and the creations of his boundless genius—and who does *not* love them?—should possess this beautiful realization of scenes which his wizard words have often so livingly painted to our mental eyes. We do not pretend to affirm the work a faultless one, as our remarks will prove; but, as by far the best of its kind, it is "worthy of welcome and worthy of honour." All Mr. Allom wants, to do more justice to his own talents, is a deeper feeling for the beautiful, the sublime, and the essentially *poetic* subjects of his fine drawings. *Scotland* and Scott are so indissolubly linked in our imaginations, that views of the mere country seem incomplete: we would fain see the spots as the mighty Wizard gives them to us in the magic circle of his airy creations. He has so established each in the assigned "local habitation," that we expect to find our heroes "at home," when the painter's welcome aid ushers us into their domains. In the very beautiful vignette to the volume, where "The Pass of the Trosachs, Loch Katrine," is delineated with the most perfect and picturesque effect, is an apt instance of the *unpoetical* vein to which we have alluded. The scene is one of surpassing grandeur; from the opposite shore of the clear smiling loch, mountains—crag above crag—lift their proud heads into the very sky; lake-ward, girt with rich hanging

woods; and cloud-ward, sterile, rocky, and vast. A boat, with white wings spread, sails like a swan upon the loch, and in the immediate foreground of the picture, two plaided and kilted highlanders are resting beneath a rugged old tree. If we could suppose them watching the distant sail, romance might indulge her speculations to her heart's content; but a gay party, full dressed for a masquerade picnic, are disembarking from another vessel, and contemplate exhibiting fashions and feathers among Highland mountains and Highland heather!

"Inverary Castle" is, indeed, a glorious scene, and a friend, whose fortune, in having seen the original, is happier than our own, pronounces it "a true copy." Here the foreground is occupied by merry troops of reapers, and bonny lassies; and teams loaded with the wealth of harvest.

"Loch Achray," is a splendid scene of cloud-girt mountains and woody dells, which one may fancy are ringing with the cry of the huntsmen, who spring into sight from a bosky dingle; and we instantly recognize "the Knight of Snowdon, James Fitz James," in the rider of the "gallant grey," foremost of the band.

"Ben Lomond, from Inveruglas," "Braemar Castle," and "The Head of Loch Lomond, looking south," are three pictures of places merely as they *are*; but they are beautiful pictures, especially the latter, with its gradually *distancing* mountains; but there is a blot on its loveliness, in the most ungainly of all mechanical forms—a steam boat.

"The fall of the Clyde at Stonebyres," is a fine subject, well described, but rendered ridiculous by the figure of a white-frocked damsel, whom two attendant cavaliers, each seizing an arm, seem about to dismember. The abrupt mass of the white dress, too, in the dark side of the plate, catches the eye, and materially detracts from the effect of the chief light of the picture, which is the grand cascade. The gain of really sublime effect, produced by hiding these offending pigmies, is surprising. Figures injudiciously introduced into a landscape, are in a much greater degree injurious to its effect, than good ones could be beneficial; they very often diminish, and rarely enhance, the beauty. In saying this, we only allude to grand natural scenes, where solitude and sublimity seem the presiding spirits of the place; of course the haunts of men must be represented in their every-day, populous occupation. But when we find pictures of the Giant's Causeway "animated" by a party of exquisite cockneys, or some majestic and hoary ruin—vast, grand, and desolate—invaded by a bevy of boarding-school, parasoled picnickers, we decide that the loss of such additions would be to us as gain.

"The Vale of Glencroe," one of the wildest scenes that ever broke upon painter's eye or poet's fancy, forms the crowning gem of Mr. Allom's volume. "Within that dark and narrow dell," a winding road skirts the margin of a brawling torrent, fed by tributary streams which fall from the summits of the overhanging moun-

tains in myriad petty cataracts, leaping from rock to rock, among the grassy knolls where the goats and sheep are browsing; clouds hang round the mountain's craggy sides, and above them, in the clearer air, are seen the peaks, where the eagle has her eyrie. In the foreground, a shepherd and his dog are crouching side by side, and with these alone, how intensely beautiful—in feeling, as design—had been this splendid view: but in the very centre of the winding road, a *stage coach* is rattling along and desecrating the holiness of the whole scene. The views of Stirling Castle, and Linlithgow are extremely fine: the architectural magnificence of these once royal dwellings is admirably represented in the plates; but the “dark abbaye” of holy Melrose excels even these in beauty and interest; the “broken arches,” the “shafted oriels,” and “the ruined central tower,” as here delineated, worthily embody the poet's graphic description. Inverness, Bothwell Castle, and the Bridge of Don, have a degree of flatness given them from their style of engraving, which fails in distinguishing the foliage of the trees. But the last-named plate, the *Brig o' Balgownie*, is interesting, from the Byron anecdote connected with it.—“*Cartlane Crag's Bridge*,” though a stupendous and beautiful erection, seems like a new arrival, not yet properly located in the picturesque dingle it spans.—The cascade of “*Corra Lynn, on the Clyde*,” is a most bright and animated one, reminding us of Southey's *Lodore*,—“Here it comes sparkling, there it lies darkling, this way the water comes down at *Lodore*.”—“*Loch Long, from Glencroe*,” and “*Glencroe, between Loch Long and Cairn Dhu*,” are two magnificent mountain-scenes. The latter is invested with all the terrific sublimity of a thunder-storm, and the ridiculous accompaniment of a barouche and its screaming occupants being dragged through the defile by frightened horses, at the imminent risk of their lives: we say ridiculous, because, in a picture, such a thing seems a caricature of terror and jeopardy. Perhaps the most perfect design in the volume, is the one representing “*West Bow, Edinburgh*,” with a band of unfortunate Covenanters forced away by soldiery, amid the grief, attempted rescue, and execrations of their friends and relatives: it is but too true a picture of the misery which political and religious intolerance has in all ages inflicted on its unhappy victims.—“*Loch Fine*,” with its busy fishing-boats, is a calm, sunshiny picture; so is “*Loch Lomond, from below Tarbet*,” and here the figures of some Roderic Dhu-like Highlanders embarking on the lake, harmonize well with the subject, and do really improve the picture.

We have thus given our critical analysis of the plates, and at such length as to leave small space for any notice of the learned editor's topographical and historical lore. His portion of the work is highly interesting, and interspersed with many amusing and original anecdotes. Allom, Beattie, and Co., merit the highest encouragement in their most beautiful illustrations of Scottish scenery and antiquities.

We have received the second part of the *Illustrations of Scotland*, which rivals the first in beauty and interest; but as our limits will not allow us to do justice to the merits of this work in the present number, we are reluctantly compelled to defer a notice until our next publication.

*The Doctrine of Proportion, or geometrical admeasurement by similar triangles, practically applied to extending or diminishing drawings.*  
London: Ackermann.

To the expert geometrician who is unacquainted with the art of drawing, or has no "natural taste" for it, this work will prove extremely serviceable, and enable him to use his scientific acquirements very amusingly; but we think it is to geometricians alone that it will render essential service. The author imagines his doctrine of similar triangles will supersede the present very simple and sufficient method, used by engravers, of reducing drawings by similar squares. We cannot agree with him in this expectation, inasmuch as it implies the study of an abstruse science as absolutely necessary, before the principles of this new doctrine can be understood; whereas, the old system of squares is simple enough for a child's comprehension, and has certainly been found to answer every required purpose with positive accuracy. The doctrine exemplified in the handsome volume before us, is an admirable one for persons conversant with geometry, and is illustrated by well-executed plates demonstrating the system; but we must candidly confess we have some doubts of the application of this principle being universally adopted.

*Roscoe's Wanderings through North Wales.* Parts X., XI., and XII. London: Tilt. Birmingham: Wrightson and Webb.

Mr. Roscoe's wanderings proceed very pleasantly to his readers, and from the high interest and picturesque beauty of the scenes he describes, the veritable tour must have been equally agreeable to himself. His account of the beer-shop increase, and hints for a temperance-society mission among the Welsh miners, should be seriously considered by some of the philanthropic tea-totalers of the fraternity. But our Cambrian neighbours are notoriously addicted to their libations of *crw*, and the habit is of such ancient standing that we fear it will be long ere the merry Welshmen consent to forswear their visits to the cottages whose "gaily bedaubed lures to intemperance" gave such uneasiness to our kind-hearted wanderer. He tells us that the public houses are "thick as autumnal leaves;" and that, "in some places, every other house boasts its sign, from 'Uther's Dragon' and 'Prince Llewellyn,' to 'Glendower's Head' and the 'Meredith Arms.'" He strenuously counsels an investigation, and consequent diminution, of these "painted sepulchres;" in fact, a Welsh beer-shop reform bill seems the grand desideratum

towards the civilization of our Cambrian neighbours, in Mr. Roscoe's opinion at least. His account of the South Stack Lighthouse and the Rothsay Castle steam-ship wreck, though not very novel, is very circumstantial; and the former subject is well illustrated by Mr. Creswick's view, where the flocks of Gulls, Guillemots, &c., flying about, make the air exhibit the phenomenon of a black and white snow-storm. The magnificent and gloomy scenery of Llyn Idwal is admirably depicted. The Menai Bridge does not appear to us a happy portrait of our old friend—it does not convey an idea of the vast height and dimensions of that wonderful structure. Barmouth, too, is far from a "flattering likeness." "The falls of the Ogwen into Nant Frangon," with the deep, rocky glen, and mountains soaring high above the clouds, make a splendid view. The Fall of the Machno is another spirited and sparkling picture. In the tenth number (which, by an oversight, we are noticing last instead of first) is a fine picture of Cattermole's, representing Prince Llewellyn and his Barons banqueting in his palace, near Aber. The rather gloomy expression of all the other countenances, and the deep, anxious thought which may be traced on that of the Prince, seem to tell a story of ill news having reached the palace—perhaps, of an English incursion—the thought of which not even the skillful harper can dissipate. There is much fine grouping and spirited drawing in this fine plate. The Vale of Ffestiniog, by Cox, is a scene of quiet, rural, picturesque beauty; where the winding river, the rich woods, with pleasant residences peeping from their verdant slopes, and towering peaks of craggy mountains rising in the background, form a scene uniting, in a singular degree, the beautiful and sublime of British landscape scenery. In this view, as in that of the Rhaidyr y Wenol, Mr. Cox has been extremely happy in the point of view; though the falling sheet of water in the latter plate seems to us as displaying a flatness and fixedness not desirable in such subjects: but the work, "take it for all in all," is one of such beauty, that to cavil at small and only occasional imperfections were ungenerous and hypercritical.

*Maud's Botanic Garden.* Nos. 133, 134, and 135. London: Simpkin and Marshall.

THE plates of flowers in this elegant work are so correctly drawn, delicately engraved, and carefully coloured, as to prove admirable portraits of the beautiful originals. Being so arranged as for each volume to be complete in itself, this work is well adapted for presents, now that the study and culture of flowers has become so favourite an occupation with the young and fair portion of society.

## SCIENTIFIC MISCELLANEA.

ON THE DETECTION OF DROWNED BODIES, BY THE REPRESENTATION OF THEIR FORMS ON THE ICE IMMEDIATELY ABOVE THEM.—It may not be generally known that, under certain circumstances favourable to the phenomenon, the outline tracery of figures reposing at the bottom of a sheet of water, are occasionally visible on the surface of the ice. I remember perfectly well, when many years ago hearing this asserted as a fact, it was considered as a pure phantom of the imagination by some, and by others as a miraculous interference of providence for the discovery of the body. It is, nevertheless, perfectly true; imagination has nothing to do with it; and the miracle resolves itself into a very simple, but curious, operation of natural causes, which, not for the first time, I have verified by repeated observations during the present winter; when my attention was recalled to the case by remarking, after a hard and sudden frost, the exact outline of a semicircular piece of masonry beautifully drawn in white lines in the ice, reminding me of the profile figures incased in solid glass by a patent process of (I believe) Messrs. Pellat and Green. To those who are in the habit of looking at things without much minute inquiry, the pictures drawn by an invisible power certainly assume a very mysterious appearance, and it can scarcely be matter of surprise that, if the figure of a human being above should prove, as it always must do, indicatorial of a human being below, an ignorant or superstitious person would naturally attribute such a manifestation as the result of a supernatural draughtsman. The explanation, however, is easy—merely this: we know that any body containing air, if heavier than water, must be emitting that air in minute portions or bubbles, struggling, by their lightness, to escape through the pores of the submerged body, and rising, if the water is perfectly motionless, in direct straight lines, to the surface. Suppose then, that, during the escape of such minute bubbles, a severe and sudden frost takes place; as a matter of course, on the very first formation of a thin film of ice, the ascending bubbles will be checked and detained by the crystallizing ceiling above them, and remain stationary, and in a few seconds be imprisoned; such will also be the fate of the successive series: and, consequently, if from every part of a subcumbent body, these minute particles are rising, a representation immediately above the body will be the obvious effect. To those who may not have witnessed this interesting, surprising, but yet simple, phenomenon, the following easy mode of proving it by experiment is recommended. Take a piece of porous dry wood, and place it gently in a large shallow tub full of water, pressed down with some weights to keep it steady and prevent its rising, at a time when congelation is rapidly going on, and the air perfectly calm. In the morning, on looking at his tub, the spectator will, if everything has gone on favourably, be gratified with seeing the image of his piece of wood faintly or strongly depicted, and incorporated in minute bubbles through the surface of superincumbent ice, proportioned to the quantity or rapid rising of the stream of escaping air. It is scarcely necessary to add that should a human body chance to be in that peculiar state of decomposition, or putrefaction, when gases are generating and evolving, a rapid and abundant ascent of such gases will, on meeting the surface above, be imprisoned in thrilling characters of ribbed ice, to tell the fatal tale of what has taken place below.

E. S.

**ASSAYING.**—The quantity of alloy which silver contains, is determined by cupellation. The process consists in fusing the alloy with a certain proportion of lead, upon a bed of bone ashes, termed a cupel. The oxidizable metals enter into combination with the oxide of lead, and sink into the cupel; while the silver, which resists oxidation, remains in a brilliant globule on the surface. The process is so elegant, so simple, and so rapidly performed, that it has been generally adopted, not only by individuals, but by the different European governments. It is a process, unfortunately, which is not deserving of confidence within less than 5 or 6 parts in a thousand. Alloys were made, by M. d'Arcet, containing exactly 950, 900, and 800 thousandths of silver, and samples of each sent to the principal assayers of Europe. Few of the trials approached within less than 4 thousandths, and some not within 7 or 8, of the truth. In some future number of *The Analyst* we intend to enter in detail upon this subject, which seems not to have excited that degree of attention in this country which a matter of so much importance demands.

## B.

**SECRETIONS OF VEGETABLES.**—The following singular instance of secretion in the economy of vegetation, observed in the *Coryanthus maculata*, a native of Brazils, and belonging to that extraordinary class of flowers called epiphytes, has recently engaged the attention of Mr. Murray, F.L.S. In this remarkable flower, which refuses to open during cloudy or gloomy weather, there are two glands, sufficiently conspicuous, from which a secreted liquid, perfectly limpid and colourless, is incessantly distilling, day and night, for the space of about three days, when the temperature of the air is considerable. The discharge is from the tips of the glands into the labellum or pouch, and as soon as it reaches a certain level, the superfluity flows away by means of certain ducts provided for that purpose. By the test of permuriate of iron, and chloride of gold, conjoined with potassa, the presence of morphia was ascertained; and other tests, with litmus paper, determined it was a super-salt of morphia.—Dr. Edward Turner having stated that the liquid in the ascidium of the Pitcher-plant, yielded, on evaporation, crystals of superoxalate of potassa, Mr. Murray states that in the very considerable number of analyses which he has made of the liquid abstracted from unopen *Ascidia*, or Pitchers, lime-water and chloride of platinum gave him indications of neither the one nor the other of these ingredients. Muriate of soda, malic and other acids, and chromule, were the exclusive contents of the liquid of the Pitchers. When the lid of the Pitcher opens, a more decided degree of acidity, is soon manifested, from the contact of the atmosphere.

In the 3rd vol. of Audubon's highly interesting *Ornithological Biography*, the following passage occurs at p. 361 :—“ On opening several individuals [of the Pied-billed Grebe, *Podiceps Carolinensis*] in different parts of the Union, I observed in their gizzards a quantity of hair-like and feather-like substance for which I could not account; but which I at length found to be the down of certain plants, such as thistles, the seeds remaining undigested and attached to it. My friend, Thomas Mac Culloch, made the same observation, on examining some at Pictou, in Nova Scotia, and I have found similar substances in the stomach of many individuals of *Podiceps cristatus*.” In the description of the Rednecked Grebe, (*P. rubricollis*, Lath.), in the *Ornithological Dictionary*, Montagu says :—“ Upon dissection, the stomach was found to be distended with feathers and small seeds. Being struck with so singu-

lar an appearance, it was carefully washed and dried, and the contents of the stomach was, by that means, discovered to be feathers collected from its own body. For what purpose could such a quantity have been swallowed? Few of the piscivorous birds disgorge the refuse, like the Falcon family; and such a quantity can scarcely be supposed to have been taken into the stomach in the act of cleaning and dressing its plumage, unless they had been long collecting, and were impassable: many indeed were completely comminuted, and fit to pass into the intestines. This singularity has been observed also in the Crested Grebe." Now it would be difficult, nay impossible, to account for the circumstance of so great a number of *feathers* having been found in the intestines of a bird; and it appears to me the more likely to be the down of plants, from the fact of Audubon, as well as our own zealous Ornithologist, having discovered the feathery substance in the Crested Grebe. In future, the gizzards of the Grebes, and especially of the Crested species, should be examined with the greatest care.

In the same volume, speaking of Bewick, the great wood-engraver, Audubon says:—"He was a tall stout man, with a large head, and with eyes placed farther apart than those of any man that I have ever seen."—p. 300. I think that, were there no other facts in support of Phrenology, the above would at once settle the doubts of all sceptics, as to the truth of that invaluable science: for the organ of Form is indicated by the breadth between the eyes, or, which is the same thing, by the breadth of the bridge of the nose; and it may be imagined that Bewick possessed this faculty in a most wonderful degree.

N. W.

TEMPERATURE OF STEAM.—It is generally known that steam under pressure, is considerably higher in temperature than steam under ordinary circumstances; and that if such steam be allowed to escape into the atmosphere, its temperature is reduced, by expansion, so much below the boiling point, that it will not scald the hand when introduced into it *near the aperture* from whence it escapes. A portion of this rarified steam, however, instantly condenses, and, by giving up its latent caloric to the remainder, raises the temperature to the boiling point; so that, at a short distance, it will scald like the most vulgar tea-kettle steam that was ever generated. Paradoxical as it may at first appear, it is nevertheless true, that if high-pressure steam, at 270 or 280, be allowed to expand suddenly, the hand may be borne in it, so much will the temperature be reduced: but after this steam has traversed a hundred feet of iron pipes and lost a considerable part of the heat which it originally contained, the portion which issues at the termination will be 212°, and will scald severely.

B.

CHLORIDE OF SODIUM DECOMPOSED IN THE STOMACH.—It has been long known that bile contains a considerable quantity of soda, and it has been generally admitted that the source from which it is derived is the muriate of soda taken in the food. It is, therefore, singular that no inquiry was ever instituted, as to the mode in which the muriatic acid was disposed of. It is now satisfactorily proved that the stomach secretes this acid in considerable quantities. No cause can be assigned adequate thus to effect the decomposition of muriate of soda, excepting the operation of that mysterious agent, which, in living bodies, seems to set at nought all those laws of chemistry and mechanics which operate on inert matter, yet which, could we investigate its mode of action, would be found strictly to conform to them.

B.

## LITERARY INTELLIGENCE.

Shortly will appear, in 2 vols. small 8vo., *The Reliques of Father Prout*, late P. P. of Watergrasshill, in the county of Cork, Ireland. Collected and arranged by Oliver Yorke. Illustrated by Alfred Croquis.

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NEW ENGRAVING.—Shortly will be published, by subscription, (by Edward Everitt, Gallery of the Fine Arts, Birmingham), a highly-finished print of Wm. Sands Cox, Esq., to be engraved in mezzotinto by one of the first London artists, from a picture presented to the Royal School of Medicine and Surgery, Birmingham, by the Rev. Chancellor Law, painted by Mr. Pardon.

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## METEOROLOGICAL REPORT.

THE cold foggy weather, the latter end of December, furnished me with an extraordinary and curious fact—not altogether new, as it is noticed particularly in White's *Natural History of Selbourne*,—still extraordinary, as shewing in how short a distance great differences of temperature may be found. I shall here merely transcribe the remarks entered in my Journal :

"Dec. 24.—The fog very dense below, the top of it just reaching up to the village, sometimes enveloping us, and then again receding. The trees *here* have but very little hoar frost upon them—those just *above* have none at all—whilst all *below* is white as snow. *Last evening*, the air here clear and transparent, and the thermometer 31.; down below the fog was thick, and I find the thermometer at the same hour stood at 20. When the fog reaches this place, the thermometer falls, and it is *now*, (5 p. m.), just in the fog, 20°; whereas a thermometer which I took with me about 100 yards up the hill, *out of the fog*, rose to 30."

"27, 10 a. m.—Fine, sun, and light southerly breeze, and really feels mild—thermometer 32: not 50 yards below, it is foggy, and every thing beautifully crusted with *hoar*, and the same thermometer falls to 18°!" I carried the thermometer myself, and ascertained the fact by two or three trials. "The distance traversed to obtain these temperatures is certainly not more than 50 or 60 yards. The higher locality, *out of the fog*, being 14° warmer than the lower *in it*."

This fog, then, had a really *specific temperature*, and that a very low one. In those elevated spots, out of it, the temperature was by no means low—on the contrary, 14° warmer.

W. A.

Great Malvern.

## DECEMBER.

1835 Dec.	Barometer.		Thermometer.		Day.	Remarks.		Wind.
	Morn.	Even.	Max.	Min.		Night.		
1	28.820	28.510	49	45	Fine, sun	Showers	S. W.	
2	28.920	29.100		39	Fine a. m., rain p. m.		S. W.	
3	28.920	29.100		38	Fine, cloudy		Southerly	
4	29.310	29.500		38	Fine, cloudy		Southerly	
5	29.700	29.610		34	Fine		Southerly	
6	29.640	29.645		38	Fine		Southerly	
7	29.665	29.660	38	35	Damp and foggy	Fine	Calm, Nrtly	
8	29.580	29.300	44.5	35.5	Fog a. m., fine p. m.	Fine	Calm	
9	29.465	29.733	42	37	Fine, cloudy	Fine	N. & N. E.	
10	29.865	29.800	37	34	Cloudy, clear p. m.	Fine	Calm, Nthly,	
11	29.665	29.745	32	26	Fine, sun	Fine, frost	Southerly	
12	29.830	29.845	41.5	32	Fine, cloudy	Fine, cloudy	Calm, south	
13	29.830	29.800	44	39	Fine, cloudy	Fine	Southerly	
14	29.830	29.875	44	42	Fine, cloudy	Fine	Calm, south	
15	29.880	29.860	44	39	Fine, cloudy	Fine	Calm, north	
16	29.895	29.890	42	40	Fog, and cloudy	Fine, cloudy	Calm	
17	29.865		44	37	Fine, cloudy	Showers	Calm	
18	29.70	29.600		38	Fine, sun	Fine	Northerly	
19	29.600	29.590	35.5	35	Fine, sun, snow, p. m.	Cloudy	N. E.	
20	29.570	29.650	35	28.5	Cloudy, snow, showers	Snow	N. E.	
21	29.730	29.835	32	29	Cloudy, fine	Snow	Easterly	
22	29.945	30.060	32	28	Fine, all sun	Cloudy, fine	Northerly	
23	30.075	30.040	32	24	Fine, all sun	Fine	N. Easterly	
24	30.010	29.925	28	20	Rather foggy, sun	Fine	Calm	
25	29.865	29.875	30.5	19.5	Fine, all sun	Fine	Calm	
26	29.850	29.785	32.5	22	Clouds, sun, fine	Fog below	S E	
27	29.740	29.700	37	30	Clouds, sun	Fine	Southerly	
28	29.570	29.720	4.8	33	Cloudy, slight showers	Fine	Westerly	
29	29.790	29.835	4.4	36	Cloudy, fine	Fine	Westerly	
30		29.860	46	40	Cloudy a. m. rain p. m.	Cloudy, fine	N. W.	
31	29.835	29.775	37	35	Fine, rain, fog	Rain	S. W.	

Mean Max. 38.8. 33.7 Mean Min.

## JANUARY.

1836 Jan.	Barometer.		Thermometer.		Day.	Remarks.		Wind.
	Morn.	Even.	Max.	Min.		Night.		
1	29.810	30.000	32	32	Fine, light snow	Snow	S. E., calm	
2	30.125	30.070	33	23	Fine, cloudy	Cloudy, frost	S. Easterly	
3	30.000	29.760	44	39	Cloudy, fine	Fine	S. W. high	
4	29.735	29.725	48	44	Fine, cloudy	Fine, windy	West, fresh	
5	29.760	29.780	50	45	Fine, cloudy	Fine	Westerly	
6	29.730	29.540	45.5	41	Fine, cloudy	Cloudy, fine	Westerly	
7	29.425	29.410	40.5	38.5	Cloudy, damp	Mist and fog	Southerly	
8	29.430	29.475	43	39	Cloudy, damp	Cloudy	Calm	
9	29.465	29.290	34	31.5	Cloudy a. m. snow p. m.	Cloudy	Calm, S. E.	
10	29.120	28.775	33.5	31	Cloudy	Cloudy	N. Easterly	
11	28.780	28.705	32	27	Cloudy	Snow	N. E. calm	
12	28.880	29.180	32	22.5	Fine, sun	Fine	N. W.	
13	29.315	29.370	40	28.5	Fine, rain p. m.	Fine	Westerly	
14	29.350	29.040	46	39	Heavy shrs. and wind	Rain	Westerly	
15	28.960	29.340	39.5	35	Fine, sun, windy	Fine	W. N. W.	
16	29.715	29.810	37.5	33	Fine, all sun	Fine	Calm, Wy.	
17	29.825	29.870	42	32	Fine, sun, cloudy	Fine	Light N.	
18	29.725	29.528	45	33	Fine	Fine	Westerly	
19	29.820	29.830	36	32	Fine, sun, cloudy	Showers	S. Easterly	
20	29.740	29.485	42.5	35	Cloudy		Light Etrly.	
21	29.290	29.062	44	40	Fine, clouds		Southerly	
22	28.995	28.860	47	41	Cloudy	Showers	Southerly	
23	28.845	29.340	50	44	Showers, windy	Showers	West, high	
24	29.500	29.690	46	39.5	Clouds, showers	Fine, windy	Westerly	
25	29.865	29.770	45	37.5	Fine, calm, sun	Fine	Calm	
26	29.670	29.520	45.5	40	Cloudy, windy	Cloudy	S. W.	
27	29.550	29.225	45	34	Fine, windy p. m.	Fine	Calm S. W.	
28	29.225	28.925	47	41	Fine, Showers		S. W.	
29	28.975	28.485	39.5	33	Snow, and rain	Windy, cloudy	Westerly	
30	28.590	29.132	40	30	Snow, showers, windy	Prosty	Wstrly, high	
31	28.820	28.740	45	32.5	Fine, sun	Fine	S. W. fresh	

Mean Max. 52.8 43.4 Mean. Min.

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### TO CORRESPONDENTS.

Remarks on an important branch of Female Education in our next.

The report of the Chester Institution was received too late for notice in our present number.

We have been reluctantly compelled to omit the Scientific Miscellanea, for want of room.

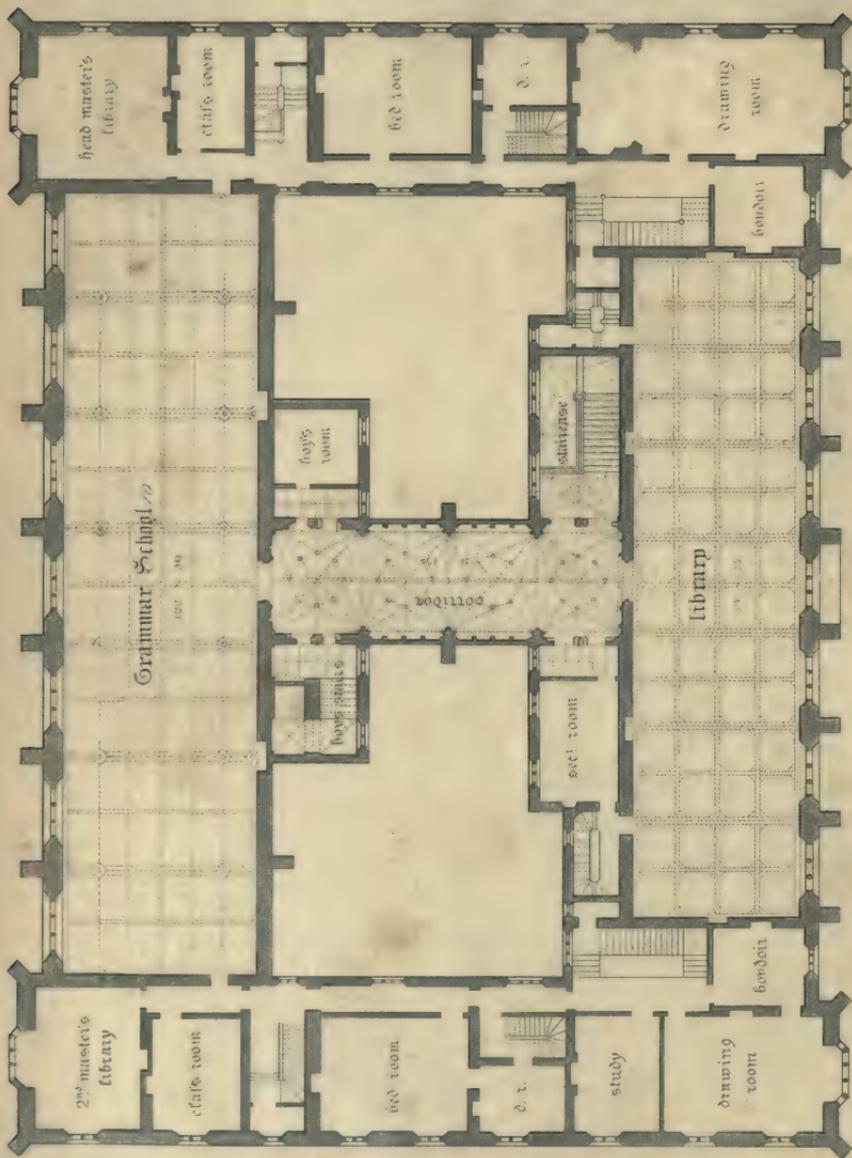
ERRATA.—Page 198, last line but three, for *Ist.* read *Hist.* Page 199, line 36, for *mendacium* read *mendacium*. Page 200, line 7, for Virgil read Vergil.

It is requested that all communications sent to the Editor may be directed (*Post-paid*) to the care of Mr. BARLOW, Bookseller, Bennett's-hill, Birmingham; and contributions should be sent *early* in the quarter *preceeding* that in which they are expected to appear.

The 17th number of *The Analyst* will appear on the 1st of October next.

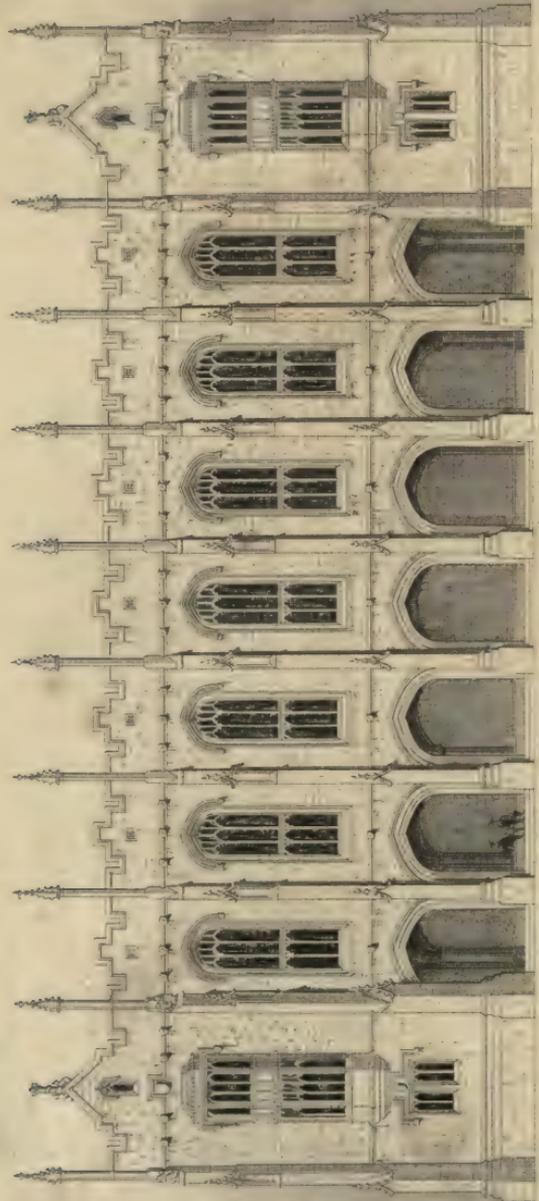
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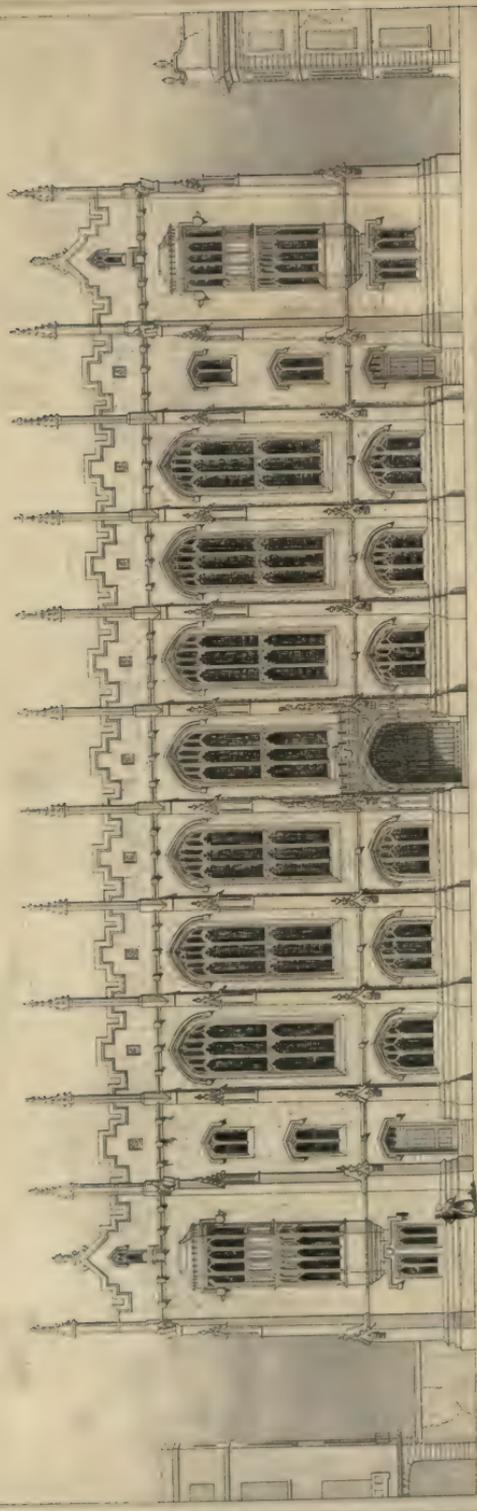


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## ON THE BRITISH ANTIQUITIES OF WARWICKSHIRE,\*

By M. H. BLOXAM, Esq.

WHEN Sir William Dugdale wrote his *History and Antiquities of Warwickshire*, he appears to have paid but little attention to its most ancient remains, for his work—almost exclusively devoted to matters relating to family antiquity, of historical detail, to the transmission of manorial rights, to heraldic notices, and to matters relating to the monks and monastic and ecclesiastical establishments, and containing on these and other subjects an immense mass of valuable information—is extremely defective in many branches of archæological research, the study of which was then little understood, and the notices which he gives of British, Roman, and Saxon remains, are few and unsatisfactory.

Nor has any one since his time,—if we except Dr. Thomas, who, upwards of a century ago, republished the work of Sir William Dugdale, with some additions on the same plan,—attempted to give any general history of this county, or even to treat of it in those points in which Dugdale's *History* is most deficient.

In the wide and discursive field, then, of antiquarian research which the county of Warwick every where presents, its earliest antiquities have hitherto been scarcely noticed, or else they have been so confounded with remains of a later date as to mislead the general inquirer, who may not have had the advantage of an actual and local investigation. For on close examination it will, I think, appear that many of the ancient camps and earthworks in this county, which hitherto have had the reputation of being either Roman, Saxon, or Danish, or have even been ascribed to a much later era, are, in reality, ancient British remains, constructed at a period anterior to the invasion of this island by the Romans.

In like manner, also, those isolated tumuli which lie scattered over the county, most of which are, perhaps, only known to the local investigator, were formerly considered as Roman; and this conjecture was strengthened by the fact that many of them were situated near to those celebrated Roman roads, the Watling-street and the Foss, both of which intersect this county; but it is now generally admitted that these Roman roads were formed on pre-ex-

\* The following is the substance of a Lecture delivered at the Birmingham Philosophical Institution.

isting British trackways, and in considering the tumuli with reference to them in this light, as also from an examination of their internal contents, whenever such has taken place, we are led to the conclusion that these isolated tumuli or barrows (for we have them not in this county in groups) are not Roman, but British.

The antiquities, then, of this county, which may be considered as of British origin, consist chiefly of fortified camps, vestiges of the settlements of the ancient occupants, which were not fortified, and the tumuli or barrows I have alluded to.

No druidical or stone circle, that I am aware of, is to be found in this county; there is, however, close bordering upon it, on the confines of Oxfordshire, a celebrated druidical temple, the Rollright Stones, near Barton-on-the-Heath, in which parish, a few years ago, a polished sacrificial instrument, or celt of flint,\* was accidentally picked up in a ploughed field; and this was probably used in the augural rites pertaining to druidical worship.

With respect to British settlements or towns which retain no marks of ancient fortification, but few vestiges have hitherto been discovered within this county, although we have no reason to think otherwise than that it was anciently as thickly populated as any other district in this island.

That the sites of these settlements should lie undiscovered is not at all surprising, when we consider how much more likely all traces of such remains are to have been obliterated, in the course of ages, in a rich and fertile county such as this, well wooded and cultivated, and divided into small inclosures, than when situated on barren downs and in mountainous districts, where the ploughshare is unknown, and where, indeed, its operation would be useless. It is in such wild and desolate spots that we are apt to meet, with a much greater probability of success, with vestiges of the ancient inhabitants of this island, than in the well-cultivated lowlands. It is in the otherwise most unproductive parts and uninclosed districts that we find evident marks and indications of early settlement, of ancient towns now covered with greensward, distinguished by the irregularities of the surface, and the sites of which, when dug into, become apparent, by the rich black mould and factitious soil immediately beneath it. The features of British fortresses are, of course, more prominently developed, for the Britons were accustomed to choose for the sites of their fastnesses the summits of hills, places naturally strong, but which they contributed to render still more

\* Now in the possession of F. L. Colville, Esq., Barton-on-the-Heath.

secure by artificial means, either by forming, on every accessible side, terraces rising one above another, or by raising banks and sinking trenches; forming a fortification irregular in shape, and suited to the nature of the ground.

In this their choice of position and mode of fortification they differed materially from the Romans, who, though they doubtless occupied occasionally some of the ancient British fortresses, threw up their entrenchments and constructed their camps in a more scientific and regular form, according to certain rules, and generally on low and level lands; depending rather on their discipline and skill than on the natural strength of the place they occupied.

But as to the ancient lowland towns of the Britons which were not fenced or fortified, the vestiges of most of such have been swept away by the plough, or perhaps, as in the case of some of our ancient towns and cities, so completely built over as to retain not the slightest indication of their former state and condition.

It is, then, only by means of repeated observation and research by those local investigators who may take a delight in bringing to view the hidden remains of a former age, aided by those discoveries which time and chance occasionally throw in our way—for we have no historical evidence to guide us in these matters—that we are enabled to trace even in the richest and best cultivated parts, indications which, though faint, are not entirely obliterated, of the settlements anciently occupied by the Celtic aborigines of this island.

The sites of some of these British settlements which exhibit no signs of ancient fortifications, and which have not hitherto been noticed, I have discovered in that part of the county with which I am best acquainted, namely, the district about Rugby, and I doubt not but that more might, also, on close investigation, be found in other parts of the county.

At Cestersover, in the parish of Monkskirby, from the etymology of which we are led to expect Roman remains, traces of a Roman-British settlement, perhaps of a late era, are apparent, from the irregularities of the surface and richness of the soil, and the occasional disclosure of pavements and causeways, marks of fire, and other signs of ancient occupancy; a number of Roman-British relics were also, a few years ago, brought to light, when the burial-place of this settlement was disturbed. The situation of this settlement is within half a mile of the Watling-street road, and lies on the south side of some rising ground, the base of which is washed by the river Swift.

At Kings Newnham, which lies about a mile from the Foss road, is the site of another British settlement, the indications of which are, however, so faint, that were it not for the discovery of British sepulchral and other antiquities on and near the spot, and traces of fires which became visible on ploughing up the site of this settlement about forty years back, it would have continued buried in oblivion. The situation, however, accords with that commonly made choice of by the Britons; being on some high ground overhanging the river Avon, which flows on the south. A few years ago, at the lime-works near this place, a celt of flint, a primitive British weapon, was found, but this has since been unfortunately lost.

The few relics which have been found at this place are articles of a description usually met with in the vicinity of British settlements, and consist of a brass pin, apparently the acus or pin of a fibula or brooch, a fragment of red pottery of the Roman era, a deer's horn, and a boar's tusk.

The site of a Roman-British station was discovered, about ten years ago, on the north bank of the river Leam, about a quarter of a mile southward of Princethorpe, and by the side of the Foss road, when some antiquities were brought to light, on soughing a field. This was rather a singular discovery, inasmuch as it tended to fill up a blank in the *Diaphragmata* of Richard of Cirencester, a treatise on the Roman roads in Britain, said to have been compiled by a monk of Westminster, in the fourteenth century, from some very ancient records now no longer extant.

This treatise, the manuscript of which was discovered at Copenhagen, about the middle of the last century, contains several iters, or lines of road, which do not appear in the *Itinerary*, or road-book, of Antoninus, which likewise treats of the Roman roads in Britain, as well as in other parts of the empire. The authenticity of these treatises is, I think, unquestionable, though a doubt has been thrown on the genuineness of that by Richard of Cirencester, which doubt, however, this very discovery at Princethorpe has contributed to dispel.

In the fourteenth iter of this work a blank is left for the name of a station between the stations *Alauna*, Alcester-on-the-Alne, and *Bennonis*, High-cross; but the numerals which indicate the number of miles from one station to another are preserved, and these evince this (till lately unknown) station to have been twelve miles from the station at High-cross, with which distance this station on the banks of the Leam, near Princethorpe, exactly agrees.

Most of the commentators on Richard of Cirencester, not being aware of any Roman or British remains at this place, have had recourse to conjecture, and incorrectly fixed the station Richard of Cirencester alludes to, at different places; Dr. Stukely, for instance, at Warwick, and Mr. Hatcher, at Chesterton; notwithstanding the great disagreement, in point of distance, with the numerals laid down in the *iter*, and which, to adapt to their several hypotheses, they were obliged to alter.

The antiquities found at this place consist of fragments of pottery, one ornamented with scroll-work, an iron nail, an instrument like a chisel, with a socket for the insertion of a handle, a spear-head of iron, and a very large brass fibula or brooch, and some pieces of stag's horns, which appear to have been sawn. Coins, and other articles of Roman fabrication, have also here been discovered, and these are the common indicia of the position of Roman-British settlements.

We rarely find foundations of buildings in any of these settlements; this fact, however, does but corroborate the statements of Strabo and Diodorus Siculus, who inform us that the habitations of the Britons were mere huts constructed of wood and reeds.

We observe certain peculiarities connected with the position of these ancient British towns; they were all situated on rising ground near a flowing stream, and in the vicinity of a fortress or camp, to which, as to a post of security or refuge, the inhabitants, in time of need, might resort. Thus, Cestersover is within a short distance of an ancient British stronghold at Brownsover, Kings Newnham is near that at Brinklow, whilst Princethorpe, where both Roman and Roman-British remains have been discovered, is in the vicinity of a Roman camp at Wapenbury.

In viewing the characteristic features of those earthworks or strongholds, the formation of which we ascribe to the ancient Britons, we should bear in mind the allusions, however slight, made by those historians who noticed them when in their pristine condition. Cæsar, from his own personal observation, speaks of the British strongholds as generally placed in a wood, and fortified with a rampart and ditch, in which, he says, they were accustomed to get together, to avoid the invasion of their enemies; and Strabo states that the towns of the Britons were in woods, where, having hewn down trees, and fenced round a wide circular space, they erected huts for themselves, and stalls for their cattle.

In these particulars, the position and peculiarities of the British entrenchments at Brownsover agreed. It was situated on the bor-

ders of the famous and extensive forest of Arden, reputed to be the largest in the island, and which extended for many miles along the northern banks of the Avon. Its position was at the projection of a ridge, separated from the high ground beyond it by a small valley or ravine. Through the valley which skirts the ridge on the south flows the Avon, anciently presenting, in all probability, on that side, an impenetrable morass, and the base of the hill towards the west, at the distance only of a few hundred yards, was washed by the river Swift. The vestigia of this fortress or stronghold do not present that bold appearance often observable in like remains, but are yet sufficiently striking as to shew its general character. It appears, on the north and west, to have been defended by a triple row of ramparts or banks rising in terraces one above another, and something of the same kind may be perceived on the south; on the east are indications of a vallum, or rampart, and foss running close to the burial ground of the chapel there; but these earthworks, like many others of a similar nature, are irregular and, in parts, unconnected.

On referring to plans and positions of ancient earthworks elsewhere, such as are known to be British, we frequently find them placed on the point of a hill, projecting into a vale, and backed by a thick wood; we observe them to be, also, of a capricious form, the works unconnected and irregular, and fortified by a double or triple row of valla or banks rising in terraces: all which characteristics will be found to accord with the peculiarities observable at Brownsover.

A road has recently been cut through the most prominent part of this camp, and has destroyed much of its ancient character. In the intersection which then took place, two polished instruments of bone were found, which, however, do not appear to have belonged to the ancient British era, but were rather modelling tools for pottery; likewise, several fragments of glazed ware, which, I am inclined to think, were neither British or Roman, but of a much later period; a barbed arrow-head of iron, of the middle ages, and a curious small brass miniature dag or pistol, apparently of the reign of Elizabeth: the discovery of which articles evince this place to have been occupied in the sixteenth century.

In a large field lying adjacent, causeways have occasionally been disturbed, and traces of a trackway may still be discerned; and in the burial ground of the chapel, ancient British interments, known to be such by the contracted position in which the body was found,

have been disclosed. This place I look upon to have been a most ancient lowland British fortress.

The earthworks at Brinklow present one of the most perfect specimens of castrametation to be met with in this county ; it has been generally supposed to be a Roman camp, but I think that this is a mistaken notion, and that it was a lowland British fortress. It possesses, indeed, the main characteristics of British castrametation, and is constructed on a point of land projecting into a vale ; and from the irregular shape of the earthworks and divisional rampart, by which, exclusive of the exploratory tumulus, it is divided into two parts (an arrangement we do not find in remains of pure Roman castrametation), I am inclined to suppose it a British fortress. The tumulus is likewise, in character, British, and I should conceive it to be one of the largest in this island ; its pre-eminence as a landmark is remarkable, and it was doubtless one of the principal connecting points in that system of Barrow communication which prevailed generally throughout the country.

This fortress or camp is situated on the line of the foss road, which does not, as in the case of the Roman camp at Chesterton, go through it, but is somewhat diverted from its straight course in consequence of the position of the camp ; a circumstance which leads me to conceive that the camp was constructed prior to the formation of the road ; whereas the camp at Chesterton, and the Roman camp at Manduessedum, on the Watling-street, near Atherstone, were evidently formed upon the roads which pass through them.

About half a mile from the camp at Brinklow, and running in nearly a parallel direction with the Foss road, is a curious covered way called Tutbury-lane, leading down to the river Avon, formed exactly like a ditch, with high banks on each side ; and it is a well-known characteristic of British roads that they had frequently other trackways or roads running parallel at a short distance from them.

At Seckington, in the north of this county, is a camp very similar, in some respects, to that at Brinklow, being accompanied by a large tumulus ; it is not, however, like that at Brinklow, divided into two compartments by an intervening rampart, but has merely a single vallum and ditch ; and from the circumstance of a battle having been fought here in the eighth century, between two contending armies of the Saxons, this has been called a Saxon entrenchment, but it is, I think, evidently of British formation, possessing the characteristic marks of many British fortresses, the tumulus and

irregularly shaped outworks. But these are constructed in a different mode and according to a different rule to that practiced by the Britons in constructing their hill fastnesses, which, instead of a raised vallum and foss on the outside, consisted of terraces one above the other: perhaps the more ancient fastnesses were of this latter description, and we have two instances, if not more, of this mode of fortification in Warwickshire.

One of these is Nadbury camp on Edge Hill, near Warmington, and is of an irregular shape, and consists of a double fortification of ramparts rising one above the other, the area included within which is about fifteen acres. Dugdale mentions a sword of brass, probably the kind of sword, with a leaf-shaped blade, used by the ancient Britons, as having, in his time, been ploughed up here; but I am not aware of any more recent discovery of British antiquities at this place.

At Brailes is a British fortress consisting of a conical-shaped hill, called *Castle Hill*, separated, by a small ravine, from a ridge, and fortified with terraces rising one above another, which are strongly developed, especially towards the south. From the summit of this fortress may be seen the British camp at Meon Hill, Gloucestershire, Nadbury camp on Edge Hill, and Ilmington Hills, on which are earthworks.

On some high downs about half a mile to the south of this place, is a place called *Radnall Bush*, where indications of early settlement are apparent. Here skeletons have been dug up, and the vestiges still exist of a building of hewn stone, five yards square, near to which are the traces of a small polygonal shaped inclosure, similar to many discovered in the ancient British settlements on the Wiltshire downs: and close to this spot are excavations and other signs of former occupancy. About a mile to the east of this spot, by the side of the road leading to Banbury, is a tumulus.

The two fortresses or strongholds I have last adverted to, I am inclined to think, may have been amongst those occupied by the troops of Ostorius Scapula, who succeeded Plautius as commander of the Roman forces in Britain, and, in the year 51 of the christian era, advanced with his army to the southern banks of the Severn, Avon, and Nen, along which he established a chain of forts, or camps, extending across the country from sea to sea, for the purpose of securing the conquests already effected by the Romans of the southern provinces of Britain. Now, in corroboration of this idea, a chain of fortresses, most of them in character ancient British, situated so as to be capable of communicating with each other by signal,

has been found to extend through Gloucestershire and a part of Somersetshire, from the Avon, at Bristol, to Meon Hill, near the borders of this county; and along and beyond the Edge Hill range, may be traced a series of fortresses traversing the country from east to west, some British and some Roman, of which those at Nadbury and Brailes, are two; and on the Ilmington Hill is a square earthwork, called Nabworth Camp, apparently Roman, but too small for a camp, being, in its dimensions, not more than thirty yards square, the angles of which are rounded, and the works very slight; and as the view from this place is commanding, and it is but a short distance from the camp on Meon Hill, where, a few years ago, a magazine of Roman arms was discovered, I look upon this to have been a mere exploratory post appended to the more important position on Meon Hill; and I am inclined to be of opinion that the camp at Chesterton, on the Foss road, was constructed at this period as an advance-post.

On the hills about Alcester-on-the-Alne, the *Alauna* of the Romans, are earthworks which I imagine to have been the original positions occupied by the Britons before they descended into the vale. One of these, which lies on the south-west of Alcester, is Oversley, a word of British etymology; and about a mile to the north of Alcester is another, called *Danes Bank*. An entrenchment, also called *Danes Bank*, or *Danes Camp*, lies about five miles south of Birmingham, and about half a mile from Solihull Lodge. This is noted down in the Ordnance Survey, and, from the description given of it by the historian of Birmingham, I should conceive it to have been British, since he speaks of it as situated upon an eminence, and as being about nine acres in extent, nearly triangular in form, and a production of great labour.

*Danes Bank*, or *Danes Camp* is an appellation frequently given to ancient earthworks; are we from thence to conclude that these were Danish? I think not; I doubt exceedingly whether the Danes, in their predatory incursions into the interior of the country, threw up the numerous entrenchments ascribed to them. Much rather is it to be supposed that, where they could, they occupied some of the ancient British or Roman camps, with which the country abounded, than that they should entirely form new and extensive fortifications, at the cost of immense labour, and that, too, at a time when their stay was never destined to be permanent, but uncertain, and of short duration; and the remembrance of their occupancy would thus be traditionally handed down, by imparting their much-dreaded name to the place.

Many ancient fortifications have, in later times, been called by the incorrect appellation of "*Castle Hill*:" the British fortress at Brailes is thus called. At *Castle Bromwich*, too, the works are evidently, in character, British; and at *Fillongley* is a circular fortification called *Castle Hill*, which presents the appearance of a small camp, and close to this is a farm called the *Bury* farm, *Bury* being a very usual Saxon term to denote a fortification. Now, had there really been castles on the sites of all or any of these places, we should, in all probability, have had some notice on record respecting them; but on examination we shall find such not to be the case. We should, therefore, investigate closely the locality of the spots which are so called, and not depend merely on the name which may have been affixed, by conjecture, in later times. Two more earthworks in this county merely require to be noticed; that near *Lapworth*, called *Arbury Banks*, which is said to be a Roman camp, and a fortification about six miles north of *Warwick*.

Such are the principal remains of British antiquity in this county, though I am far from asserting I have noticed all the vestiges of its early population, or even of ancient fortification. To the unobservant it may, indeed, seem absurd and inconclusive from broken pieces of pottery, inequalities in the soil, and other trifling indications, to deduce evidence of the identity of the primeval inhabitants of the land, and to distinguish between them and its later possessors.

It must, however, be confessed that on these points there is often room for much speculation, since the obscurity which envelopes the early history of our country renders all inquiries of this kind not only attended with many difficulties, but our determination concerning them oftentimes uncertain; yet, though we may have little hopes of finding out the immediate object of our researches, we are stimulated to persevere by the remembrance of the many important facts which others before us, labouring under still greater disadvantages, have elucidated.

There are, however, certain ancient remains respecting which little or no doubt exists as to whom we should ascribe them; and these are the sepulchral barrows or tumuli of the British chieftains and their families. These may be considered, both with regard to their internal contents, as also with respect to their local position. We perceive the greater number of them to be so situated in the brow of a hill, or on high ground, as to afford, at a considerable distance, a directing point. Many of them are, also, to be found along the line of the *Wattling-street* and the *Foss* roads; some were placed close by the side of the road, as the *Pilgrim's Lowe*, a tumu-

lus so called, on the Watling-street, between Rugby and Lutterworth; and Cloudesly Bush, a tumulus on the Foss road, about two miles south of High Cross; both of these, which are mentioned by Dugdale, have, together with many others, of which no traces are now left, been levelled to the ground. Others were constructed at some distance from the road, of which the tumulus at Knightlowe Cross, between Coventry and Dunchurch, is an instance; this is on the brow of a hill commanding an extensive view, and is about a quarter of a mile west of the Foss road. Other tumuli lie scattered over the county; and in attentively examining the position of several, I find them all to have been so disposed as to be capable of communicating one with another; and in this view they may be considered as beacons or posts of observation: and those who have attentively surveyed different isolated tumuli, whether in this or in any other part of the kingdom, cannot fail to have noticed how complete a connection existed between one and another.

The different tribes of Britain seem to have resorted to these expedients as affording a kind of telegraphic communication between the different fastnesses throughout the country, in the neighbourhood or vicinity of which they are almost always to be found; and the signal of danger was made by the flame of fire in the night time, and by the rising of smoke in the day. But it is the evidence afforded by an examination of their internal contents that justify us in assuming such tumuli to be ancient British; and on this account therefore, we require a comparison between the different modes of burial adopted by the ancient Britons, by the Romans, and by the Romanized or later Britons.

The ancient Britons were accustomed sometimes to bury the bodies of their dead entire, and sometimes to burn them; but the practice of simple inhumation, or burial of the body entire, was undoubtedly the most primitive mode, and this was effected in two ways, the one, by extending the body at full length upon the ground, and piling over it a tumulus, or barrow of earth, or stones, according to the nature of the materials at hand; the other, by depositing the body in a cist, or rude coffin, formed of rough slabs not long enough to contain the body at full length, but only in a contracted position, with the legs gathered up. Of both these modes, which were very common, examples have been found within this county. On levelling a tumulus some forty years ago, near to the British settlement at Kings Newnham, a skeleton was discovered extended at full length on the ground at the bottom of the tumulus, and at a more recent period, not more than three years ago, in dig-

ing for limestone in a field close to the site of this ancient settlement, a rude cist was discovered formed of the limestone, which contained a skeleton, with the legs contracted or gathered up, the scull of which had fallen between the knees. Many like discoveries of ancient interments are often made without being noticed, and very frequently articles of warfare, or ornaments, are found with the body; but in the cases I have instanced there were none.

The practice of cremation, or burning the body prior to interment, was also very ancient, though of a later introduction to the mode of burial by simple inhumation; and after this system commenced, neither mode seems to have prevailed to the disuse of the other. The funeral urn was not always used; sometimes a mere deposit of burnt bones and ashes are found; and in a garden to the south of Oldbury Camp, a few years ago, a simple interment by cremation, without any urn or other accompaniment, was discovered. Although several sepulchral urns have been dug up in different parts of this county, all that have been hitherto noticed are, with a solitary exception, of a period subsequent to the Roman conquest, as may be evinced by their form and make; those of the Roman era approximating the globular, those of the ancient British era, the cylindrical or cone-like form:

A sepulchral urn, of the ancient British era, was taken from a tumulus at Oldbury, near Atherstone, opened in the month of June last, under the superintendence of Mr. Hawkes and myself; and as this was, I believe, the first attempt that has been hitherto made to explore the tumuli of this county, purposely with a view to an investigation of their contents, I shall venture to enter somewhat into the mode of our proceeding. The position of this tumulus, which is laid down in the Ordnance Survey, was on the brink of some high ground on the Hartshill range of hills, in the northern part of this county, and but a few hundred yards from the camp at Oldbury. It formerly commanded a most extensive view, which is now, however, obstructed by the wood which surrounds it, and in the outskirts of which it lies. In the midst of this wood are some earthworks, which are probably British, vestiges of a covered way being perceptible; but, from the thickness of the underwood and foliage, we were unable to examine them with much accuracy, our attention being chiefly devoted to the proposed excavation.

The appearance of the tumulus before it was opened was that of the common bowl-shape form, about seventy feet in diameter at the base, rising to a perpendicular height, as near as could be computed, of about fifteen feet; the sides were covered with trees

and underwood, but no trees were growing on the summit, and a sufficient space was soon cleared for the intended operation. The process of excavating was commenced on the east side, and a section of about six feet in width was first made, which width was gradually increased as the work proceeded onwards. This section was carried two-thirds through the barrow, at the summit, so that when the excavation was completed, it presented the appearance of a pit nearly oval in shape, fourteen feet in length by ten in width, gradually decreasing to eight feet in width at the bottom.

At the distance of two feet from the surface, on the east side, we found a small spear-head of iron, and shortly afterwards some bones, and the iron boss or umbo of a shield; these, I am inclined to think, were the arms and interment of some Romanized Briton of the third or fourth century after Christ, possibly of some native auxiliary serving with the Roman forces then stationed at Oldbury.

On approaching the centre of the barrow, indications of a cairn, or heap of loose stones, became apparent, the apex of which reached to within eighteen inches of the surface; the superincumbent earth being taken off, this cairn was gradually removed, and underneath, at the depth of between six and seven feet, two sepulchral urns were discovered, each deposited, with the mouth downwards, in a cist of rough stones carefully constructed about it. These were accompanied by two smaller vases, or drinking-cups; but, from the perishable, half-burnt materials of which the urns and cups were composed, nothing but fragments could be obtained, although the greatest care was taken in their removal. Near to these lay the blade of a small brazen dagger or knife, which had a rivet or pin at the lower extremity, for the purpose of securing it to the haft. A number of nuts were also found at this depth, which seemed to have been placed as part of the funeral viaticum; two small chippings of flint were also found. These were probably clipped off of some arrow head or celt, and such may possibly have been thrown out unawares in the rubbish, or else escaped our observation.

Notwithstanding the discovery of these urns, the excavation was continued still deeper, the natural soil not having been reached; and at the depth of about eight feet from the surface, a third sepulchral urn was found, deposited, like the former, in a rude cist of stones, with the mouth downwards over the burnt bones; close to this was a drinking-cup lying, with respect to the urn, in a singular oblique position, with the mouth inclining downwards. This was the only article of pottery that could be got out tolerably perfect; for, in attempting to remove the urn, it broke to pieces, but the

fragments have been since reunited. No other discovery was made though the excavation was continued till the natural soil became visible at the depth of about ten feet below the surface, on coming to which the work was discontinued.

The urn and drinking-cup last discovered exhibited, in their fashion and make, the usual characteristics of ancient British vases ; they were each of a truncated cone-like shape, with a wide mouth, that of the urn slightly inclining inwards ; and they were each more or less ornamented with scored lines and small punctured holes, and bore a striking similarity to the urns discovered in tumuli in different parts of this country. The position in which all the urns were deposited, namely, with their mouths downwards or inverted, was the position in which British urns are commonly found, those discovered with the mouth upwards being rather exceptions to the general rule.

It is probable, from the number of interments, that this was a sepulchre pertaining to some Celtic chieftain and his family, not of the aboriginal Britons, but of a period subsequent to the introduction into this county, by the Phœnician traders, of their brazen wares, as is evidenced by the dagger of brass ; for the primeval inhabitants, not understanding the art of working metals, used only weapons of bone or flint. The interment near the surface, accompanied by articles of iron, indicates that, at a period subsequent to the Roman invasion, this barrow was opened for the reception of some Romanized Briton who, through the Romans, had become acquainted with the use of iron. I say some Romanized Briton, for the Romans were not accustomed either to bury their dead in tumuli or with arms, but adopted a mode of burial very different, in many respects, to that which prevailed amongst the Britons.

Many sepulchral urns of the Roman era, so distinguished from those of earlier times by their globular-like form, by being turned in a lathe instead of merely fashioned by the hand, and by being well and thoroughly burnt, have been dug up in different parts of this county. At Alcester, which was a Roman station, urns have been found in a field called the Black Lands. At Sawbridge, near Willoughby, a number of urns are related, by Dr. Thomas, the continuator of Dugdale's *Antiquities of Warwickshire*, to have been discovered, upwards of a century ago, in a well or cist, and one of these, plain and unornamented, is still preserved.\*

\* It is now in the Warwickshire collection of William Staunton, Esq., of Longbridge.

At Kings Newnham three sepulchral urns were discovered, about twenty years since, in a circular cist, or shallow well, steined with limestone; two of these were broken to pieces in the removal, the third was fortunately preserved entire.\*

A sepulchral urn, of the Roman era, was accidentally dug up, about three years ago, at the distance of half a mile from the camp at Brinklow, by some labourers employed in getting gravel. This was ornamented, and, from the circumstance of a large glass bead being found near it, which was afterwards unfortunately lost, I am inclined to think that this contained a Roman-British interment.

But the best illustration in this county of the mode adopted by the Romans in their funeral rites, has been afforded by an undoubted Roman burial place disclosed to view within the last two years, by the side of the Watling-street, close to Cave's inn, on the eastern border of this county; it was accidentally laid open in excavating for gravel to repair the road, and a vast number of interments have been discovered at this place, lying within two or three feet of the surface; but very few of them by cremation, or where the body was burnt, have hitherto been found. A very large sepulchral urn is the only one that has yet been discovered; with the other remains, however, a vast quantity of broken pottery has been dug up, consisting of fragments of cups and bowls, pateræ, or shallow saucers, and portions of the præfericula, or pitchers with a narrow neck and mouth, used for the purpose of pouring the funeral libation into the patera, and pieces of the celebrated red glazed samian, or coralline ware, some of them ornamentally embossed. No weapons of warfare were found, for the Romans, differing, in this respect, from the Britons, did not bury arms with their dead; nor were any ornaments discovered, with the exception of one Roman fibula, or brooch, and a stylus, for the Romans were not accustomed, as a general practice, to inter the dead in their ornamental attire. One coin, a silver denarius of Nerva, was found, which, if it may be taken as a criterion of date, shews this burial place to have been early used by the Romans. A piece of flat Roman glass, of a greenish hue, with a round edge, and a coarse grained surface, a bone counter, and a circular perforated stone, attached to the fragment of a large brass ring, were also picked out of the soil; articles similar to these have been found on the sites of Roman stations, and fragments of glass resembling the one here noticed have been found amongst the ruins of Silchester, and in a Roman villa at Ridgwell, in Essex.

\* Now in the possession of John Caldecott, Esq., of Holbrook Grange.

Now, viewing this as a specimen, which it certainly is, of a Roman burial place, we may observe that, in their common mode of interring the dead, they deposited, by the side of the body, broken platters or pateræ, cups and bowls, containing the libations and oblations of the funeral sacrifice ; we may remark, too, the absence of arms and ornaments, for the few articles that pertain to the latter description do but evince an exception to the general practice.

There is an evident distinction to be drawn between the funeral customs of the Romans and those of the Romanized or later Britons ; for though when the Romans conquered this country they introduced amongst the natives the arts of civilization, the latter never appear to have been so entirely blended with their conquerors as to have changed all their national usages ; and this is more particularly observable when any of their burial places fall under our notice, for we then find that they continued to inter the dead with their arms and personal decorations. Yet we discern between them and the ancient Britons by the kind of accompaniments placed in the grave ; for in the one case we rarely find any other articles than weapons of bone, flint, stone, or brass, and beads ; but after the Roman invasion these primitive relics were discarded, and we find numerous articles of iron, a metal which, though not originally introduced by the Romans, was at least little known in this country before their arrival. These consist chiefly of swords, spear-heads, and the bosses of shields, knives, arrow-heads, and buckles, and ornaments of brass, such as fibulæ, both of the cross and circular shape, clasps, tweezers, and rings, and beads of amber, glass, and baked earth.

The burial place belonging to the Roman-British settlement at Cestersover, was discovered some years ago, about a mile from the site of that settlement on the Watling-street road, between Bensford Bridge and the turnpike road leading from Rugby to Lutterworth, which crosses it. This part of the road was under repair, and the labourers employed on it disturbed a number of human skeletons, which lay buried in the centre, and on the sides of the road, at the distance of only eighteen inches or two feet below the surface ; with these skeletons were found deposited a variety of warlike articles, appendages of dress, and female ornaments, the umbos or bosses of shields, spear-heads, varying in size, and from six to fifteen inches in length, with the wood of the shafts still existing in the sockets ; also, knives and buckles of iron, and hooked instruments, which are supposed to have been used for curling the hair. With the female interments, and those of children, were

found fibulæ or brooches, used for fastening the garments, and these were both of the cross-shaped and circular kind, differing, however, in fashion from the common bow-shaped Roman fibula; also, clasps, rings, tweezers, and other ornaments and articles appertaining to females: the greater part of them were of brass, though some few were of silver. With these were, also, beads of amber, glass, and vitrified earth, variously coloured and shaped. One funeral urn only was discovered, which was found unfortunately crushed to pieces; this was well burnt, had evidently been turned by a lathe, and was much ornamented; it contained ashes concreted together in a lump; close to the urn lay an iron sword, the only one discovered at this place, and on the mouth of the urn was a spear-head of iron, distinguished from the rest by having a narrow rim of brass round the socket. Several half-burnt drinking-cups, containing about half a pint each, were also dug up, but these, with a single exception, were so friable that they crumbled to pieces, or were broken by the pickaxe and spade.

That these remains were deposited in time of peace, and probably during a long succession of years, is evident from the order and regularity in which they lay, the length of road on which they were buried, and from the ornaments found disposed with the skeletons of females and children; from a comparison of these articles with arms and ornaments of a similar description elsewhere discovered, I am inclined to attribute them to the fourth or fifth century of the Christian era.

There is great difficulty in discriminating clearly between the funeral remains of the later Britons and those of the early Saxons, before their conversion to Christianity; for the same custom of interring the dead with instruments of warfare and in their choicest apparel, prevailed equally with both, and perhaps some of those relics which we attribute to the later Britons may have belonged to the early Saxons.

An interment of this kind has been discovered, within the last few months, in Ragley Park, near Alcester, and not far from the fortification called Danes Bank, where the skeleton of a female was found, with several personal decorations, consisting of a fibula or brooch, highly gilt and engraved, nearly seven inches long, and one of the largest and most richly ornamented that has ever been discovered in this kingdom; two fibulæ of a smaller and more common shape, but still richly ornamented, though not gilt, were also found in the same spot, together with the blade of a knife, which lay close to the ribs, several beads of amber and jet, the remains of a

buckle, and other articles; and, judging from the style of decoration which these relics exhibit, and which approximate to the early Saxon style, as well as from the circumstance of the buckle being similar, in shape and make, to some found in the tomb at Tournay, said to be that of Childeric, king of the Franks, who died about the middle of the fifth century, I am inclined to think that the bones so found were the remains of some Saxon female of rank, of an early period in that dynasty.

I have thus far attempted to give a sketch, though a slight and imperfect one, of the sepulchral antiquities of the early inhabitants of this island, both before and after their subjugation by the Romans, and also those of their conquerors; and I have endeavoured to illustrate my subject by adducing some of the antiquities found in this county, discriminating, as far as I have been able, between each people and era. Whilst, then, we look upon the most ancient of these relics, and contrast them with the modern productions of skill and science around us, we can scarcely fail to be struck at the vast and immeasurable distance we have advanced in the arts which tend to civilize mankind, and contribute to their happiness and comfort.

Little did the mourners assembled round the tomb of their Celtic chieftain imagine, when they deposited the most valued article he possessed, his brazen dagger, beside his remains, that his ashes would, after the lapse of, perhaps, two thousand years, be disturbed from their long and unbroken sleep by a pardonable curiosity, and that when that period should arrive, and they should again be disclosed to view, the interior of Britain—into which, in the absence of native manufactures, the brazen wares of Phœnician workmanship, for of such I conceive this dagger to have been, had tardily found their way—should, from its own internal resources, and the skill, industry, and talent, employed thereon, be able to supply—not merely one or many nations, but—every portion of the habitable globe with arms and manufactures, and more than compete with the once famed emporiums of the east, Tyre and Sidon, in the enterprising spirit of its merchants.

SOME REMARKS TO JUSTIFY THE SUPPOSITION  
THAT HENRY VIII. WAS THE REAL AUTHOR  
OF "THE ASSERTIO SACRAMENTORUM," &c.

THAT the once famous *Ioân Basilikè* did not come from the pen of the sainted Charles was thought a bold piece of criticism in Bishop Burnett at the time he delivered it. This judgment, however, has been since confirmed by most writers of authority. But with respect to his other dogma, that Henry VIII. was only the ostensible writer of the celebrated letter to Luther, in reply to his treatise, *De Captivitate Babylonicâ*, this argues, in my opinion, an equal want of acquaintance with the nature of Henry, and with the most authentic statements upon this curious topic. This dictum of the historian of the Reformation, seems to partake of that sort of reasoning which Locke describes "as seeing a little, presuming a great deal, and so jumping to a conclusion." That the king received some assistance in his book, is highly probable; but I cannot believe it to have been of that magnitude which should invalidate his claims to the honours of this production. And here, by the way, it is worthy of remark, that while Burnett by no means scruples to palliate the vices of Henry's heart—to take the brand from his forehead—to gloss over acts which were barbarous and unmanly in the extreme, he willingly disparages his learning and talents where he has the fairest opportunity of commending them. I shall proceed to state the motives which, in all likelihood, urged Henry to gird up his loins for the task of preparing this memorable letter upon his own responsibility, and the grounds for concluding that the composition, in point of style and argument, was not above the grasp of his intellect.

It should be observed, and this Burnett seems strangely to have forgotten, that before the publication of this work, entitled *Assertio Septem Sacramentorum* adversus Martinum Lutherum,\* Henry had

\* *A Vindication of the Seven Sacraments.*—The full title is as follows:—*Assertio septem Sacramentorum adversus Martyn Lutherum edita ab invictissimo Angliæ et Franciæ Rege et Dom Hybernice Henrico ejus Nominis octavo.* It ends,—*Apud inelytan urbem Londinum in ædibus Pynsonianis anno MDXXI quarto idus Julii cum privelegio a rege indulto Editio 4to.* In the Althorpe Library, there is a magnificent copy of this first edition, in vellum, and finely illuminated. The original, in an elegant MS. is still preserved in the Vatican. The work was dedicated to Leo X, and transmitted to him with the following lines, and the name of Henry written under them with his own hand:

stood forth as the champion of the Holy See, and for his services Leo X. had presented to him a consecrated sword and hat;\* a compliment not even paid to those who wore royal and imperial crowns, unless they had obtained, in person, a signal victory in defence of the church. But his towering pride could ill brook the thought that, while his subjects had almost raised his power to a level with the attributes of divinity, himself alone of the great potentates of Europe should remain uninvested with one of those high swelling titles which the church conferred upon her kingly vassals; for monarchs then were proud to throw themselves at her feet, and let their kingdoms be held in spiritual chains.† That he, then, who stood among the foremost of all the Roman catholic sovereigns should be thus undistinguished, so chafed and fretted his ambitious spirit, that Wolsey at last received instructions to apply to the College of Cardinals‡ to bestow upon his master a title equivalent

Anglorum rex Henricus, Leo Maxime, mittit  
Hoc opus, et fidei testem, et amicitia.

In giving this distich, Roscoe in his life of Leo the tenth, vol. iv., p. 58, has printed Decime instead of Maxime; but the latter I believe to be the correct word, and it is so used in Butler's Historical Memoirs of the English Catholics, vol. i. p. 143.

\* In *Rymer's Fædera*. Tom vi. par. i. p. 57. De Pileo et Gladio consecratis ad Regim missis—there is a letter from the Pontiff to Henry, which explains the use and value of these rare gifts.

† As a proof of the extreme obstinacy and absurd pride of Henry upon this point, and of his adopting the precise line of argument, fit only to be taken by those princes who were under the immediate fear of being conquered and dethroned by the Pope, but certainly not by the head of a nation of high spirited free-men; I will give the reader his reply to Sir Thomas More, whose wise policy suggested that in his book, "*The Pope's authority be more slenderly touched.*" "To that, answered his Highness, we will set forth that authority to the uttermost, for we receive from that See our Crown imperial." See *Roper's Life of More*, p. 77. Yet as Henry's ideas were ever warped by prejudice and passion, we find after his defection from the Romish Communion, that every thing rage or malice could discover to blacken and render it odious, was practised by this capricious King. There is a missal which belonged to him still preserved in the British Museum: in the Kalendar he had erased all the Saints that had been *Popes*.

‡ The noted Cardinal Campeggio was employed to make the application. See *Cott. MSS.*, *Vittel.*, B. iv., p. 116. The curious reader who may be desirous of obtaining full information of the proceedings at Rome respecting Henry's book, should consult Pallavicino's *History of the Council of Trent*, in which they are discussed at length, and with apparent impartiality. To this learned and acute Cardinal was confided the task of writing a true History of the Council of Trent as a proper antidote or set off, according to his

to that of the French and Spanish kings. Here, therefore, was a strong impelling motive for Henry to do what he proposed to do with all his might—to task himself for an achievement of intellect which should justify to the world and to posterity his claims to that title, the *Defender of the Faith*,\* which he afterwards obtained, in consequence of this once applauded,† but now disregarded, book. Besides, too, he reasoned, and plausibly enough, it must be allowed, that the new views of Luther—which were spreading with so strange a rapidity over Germany, replete with dangers to its thrones—might at length reach his own kingdom with an augmented force difficult to be suppressed. Policy, therefore, as well as predilection, dictated an avowed and determined hostility to them. Added to which, the Saxon reformer had treated the writings of Aquinas with ostentatious insult; and this was a mortal offence to Henry,

account, for the wilful misstatements of Fra Paolos' work on that subject. And a more able advocate could not have been selected by the Romish See, if the list of three hundred and sixty errors in matters of fact, committed by the Venetian Historian and appended to the end of Pallavicino's book, be taken as a true one.

\* Some of the holy Synod debated whether the Apostolic, the Faithful, or the Angelic, were the fittest appellation to bestow upon their orthodox hero. But the suggestion of the Pope at last prevailed, and the Bull was accordingly issued to confer the above mentioned title upon Henry. See Pallav. *Concil de Trente*. Lib xi., cap. i., p. 177. This title, to which Clement afterwards added that of Liberator Urbis Romæ, Dr. Lingard maintains, belonged to the King *personally* and not to his successors. *History of England*, vol. vi., note, p. 144. But surely these words imply it was to be transmitted to his posterity, hoc et immortale Gloriæ tuæ Monumentum *Posteris tuis* relinquere. See *Rymer's Fœdera*, vol. vi., par. i., p. 199. Bulla pro titulo Defensoris Fidei. It is well known that Henry retained this title after he had thrown off his allegiance to the Church of Rome; and the act passed in 1543 for the ratification of his Majesty's style declares it to be thenceforth annexed for ever to the imperial crown of England. See *Rym. Fœd.*, vol. xii., p. 756.

† His reputation was so extensively diffused by this work, that those eminent Italian scholars of the time, Vida and Colocci, sang his praises, and the former in a strain that must have put Henry to the blush, if he had not so delighted in the language of flattery, particularly when his intellectual attainments were the muse's theme.

“Lingua dimicat acrius  
Novis dum rationibus  
Doctus sacrilegos premit  
In vos ore furentes.  
Quis unquam fuit aut erit  
Qui regi meritis tot huic  
Tot virtutibus enitens  
Compararier ausit.”

in whose eyes the very absurdities\* of this illustrious schoolman were venerable. If we couple these facts with Henry's eager vanity to extort from his fellow sovereigns the same undissembled homage to his literary qualifications which they had, for a time, paid to the supremacy of his power,† we shall cease to wonder at his entering the lists of controversy with Luther with a confidence of success which sprung from a conviction that he would bring it to a triumphant issue. Indeed, if Erasmus and Melancthon‡ were as sincere as they have been copious in their praises of the king's scholarship, and they ought not in common fairness to be suspected, on this occasion, of throwing a grain of incense upon the altar of vanity, as neither of them was the pensioner of his bounty, he could not be esteemed a feeble adversary. Some of his Latin compositions had previously acquired the applause of the lettered part of Europe; while his close study of the subtleties of Aquinas had mightily strengthened his reasoning faculties for a theological combat. Collier, certainly no contemptible judge, unhesitatingly assigns to Henry the victory in it; for he says—"The king had the better of the controversy, and was, generally speaking, the soundest divine; superior to his adversary in the vigour and propriety of his style, the force of his reasoning, and the learning of his quotations." He adds that "his manner was not altogether unexceptionable, and that he leant too much on his character, argued in his garter-robcs, and wrote, as 't were, with his sceptre."¶ The consciousness of having sounded so loud

\* Some of his paradoxes are more than absurd, they are dangerous. In the following opinion, this great Doctor of the Augustine school, scales not the summits of reflection, but goes to the very edge of extreme and licentious speculation. *Quamvis omne quod Deus vult justum sit, non tamen ex hoc justum dicitur quod Deus illud vult.* *Opera.* par. 1664, vol. vii, p. 697. For three centuries however he was the moral teacher of Europe. Nothing indeed can shew the real superiority of his genius in a more striking point of view than the praises bestowed upon his *ethical* works in particular, by Erasmus, Grotius, and Leibnitz. These are his best epitaph, for their commendation is glory.

† Robertson has touched upon this topic with his usual discrimination. See *Reign of Charles V.*, vol. ii., p. 70.

‡ Mr. Sharon Turner in his *History of the Reign of Henry VIII.*, book i. chap. ii., p. 29—34, has produced passages from the epistles of these two celebrated men, in which they speak of Henry's literary merit in the aggregate, in such superlative terms of encomium, that according to their judgment, he may be almost considered as the wonder of the sixteenth century.

¶ *Eccles. Ist.*, vol. ii. p. 17. In the opinion however of the public, who generally embrace the cause of the weaker side, Luther had the advantage. See *Fra Paolo Istoria del Concil Trident.* Lib. ii. p. 13.

the trumpet-note of defiance may reasonably be supposed to have produced that concentration of his powers which kindled a flame of eloquence in him that had never since or before burnt so bright.

Burnett, however, is positive that the letter was not written by Henry.\* But this enunciation, unfenced as it is with any qualifications or exceptions, betrays a total ignorance or forgetfulness of this indubitable fact, that when Luther threw out oblique hints and insinuations to the foregoing effect, Henry replied, with great distinctness of affirmation, that he was the author of the work printed in his name. "Although ye fayne yourselfe to thynke my booke not my owne, yet it is well knowne for myne, and I for myne avouch it." Wolsey, also, in a letter to Dr. Clarke, the English ambassador at Rome, after informing him "of the king's catholique mind for repressing and extingting the diabolical opinions and detestable heresies of Martin Luther," and likewise "what pain, labour, and studie, his Highness had taken in devising and making a book for the confutation of his said erroneous opinions," states that "the said booke is, by his Highness, perfected."† Moreover, is it a likely or a conceivable thing, if this performance were not the product of his own pen, that through that envoy he should order copies to be presented, in his name, to the different princes of Europe, and thus swell his shame, instead of his glory? The chief topics of argument in it were the Eucharist, Penance, Satisfaction, Confirmation, Matrimony, Holy Orders, and Extreme Unction.

\* Vol. iii., p. 171.

† See *Cott. MSS.*, b. iv., No. 70. If the Cardinal, in the above quoted passage, speaks of Luther with a reprobation sufficiently violent, the Monk in return breaks out into expressions which must have shocked "the full blown pride of Wolsey, with law in his voice and fortune in his hand," for he abuses him with every coarse term of reproach. Take the following specimen of his style and diction,—*"illud monstrum et publicum odium Dei et hominum, pestis illa regni."*—*Opera.*, vol. ii. p. 517. The *courtliness* too of the following epithets, *blasphemer* and *liar*, applied by Luther to Henry must have produced a very surprising effect; but, I trow, not of the most pleasing kind, upon the muscles of the Royal countenance. "Nunc quam prudens et sciens mendacium componat adversus mei Regis majestatem in cœlis, damnable Putredo et Vermis, jus mihi erit pro meo Rege, majestatem Anglicam luto suo et stercore conspergere, et coronam istam blasphemiam in Christum, pedibus conculcare." *Epist. Lutheri contra Henricum Angliæ Regem.* Lond. 1626, p. 13. Well therefore might the temperate and judicious Melancthon blush at the outrageous abuse poured forth in the writings of his great Master: "Quem quidem virum ego meliorem esse judico, quam qualis videtur facienti de eo judicium in illis volentibus scriptis ipsis." *Epist. ad Camer.*, p. 90.

His mental constitution, his spiritual taste, and the spiritual atmosphere that he was daily breathing, enabled Henry to lead, and not to follow, his people on each and all of these debateable points. To be further convinced that Henry was entitled to the authorship of a treatise which Robertson justly says "is not destitute of polemical ingenuity and acuteness,"\* it may be necessary to add that Polydore Virgil,† Speed,‡ Herbert,¶ Holinshed,§ Strype,|| and other historians, have formed a correspondent judgment. The evidence appears to them so clear and decisive that he was the writer of the *Assertio*, that they were induced to speak of this fact in a way which shewed there was no room left, in their minds, for scepticism on the subject. Burnett himself admits\*\* that he had seen a copy of *The Necessary Erudition of a Christian Man*, with a variety of interlineations by the king; and he mentions, also, other documents which had received the king's amendments, and particularly a Latin definition of the catholic church. His alterations in his coronation oath, and correcting and finishing touches in his royal letters, commissions, speeches, acts of Parliament, convocation regulations, and proclamations, have been noticed by several writers.†† But Mr. Hallam, though by no means disposed to listen to the too common depreciation of Henry's ecclesiastical learning, yet supposes "that he was assisted in his work by some who had more command of the Latin language."‡‡ That prince of Latin scholars, Erasmus, however, declares that Henry had attained to great excellence therein, and to confirm this assertion, produces a specimen of his style of Latin composition, from which I must infer his capability to write the *Assertio*, for it shews his very great proficiency in copying the gene-

\* *The Reign of Charles V.*, vol. ii., p. 125. The first also of our most popular Historians, need I add the name of Hume, remarks, that if allowance be made for the subject and the age, the performance does no discredit to his capacity.—*Hist. of Engl.*, vol. iv., p. 36. Both of them also might with great propriety have commended the elegance of its latinity in these words of Luther: "inter omnes qui contra se scripti sunt latinissimum," but who at the same time forgets not, in his low scurrility, to designate it as stolidissimum et turpissimum.

† *Angl. Hist.*, p. 664.

‡ *The History of Great Britain.* p. 79.

¶ *Life of Henry VII.* p. 79.

§ *Chronicles of England, &c.*, vol. ii. p. 872.

|| *Eccles Mem.*, vol. i. p. 33.

\*\* *Hist. of the Reform.*, vol. i., p. 33.

†† See *Davies's Athenæ Britannica*, vol. ii. p. 18.

‡‡ *Const. Hist.*, vol. i., note, p. 64.

ral manner of his scholastic models.\* Does there lie, also, any self-destroying absurdity in this supposition, that if Henry had not been the real writer of the book, the author or authors† would have received some splendid mark of the royal patronage, if it were only for the prevention of all disclosures? But in what page of the voluminous records of his reign are such traces to be discovered? Now, it is no answer to this question to say that, if they had been troublesome in their applications for reward, or if they had dared to breathe an expression indicative of divulging the truth, Henry would have had them strung up like acorns on trees, without judge or jury. The same escape from his direct tyranny was as open to them as to Cardinal Pole; and in a foreign land, beyond the limits of his power, their fiery attacks upon his reputation would have so scorched it, that it would have shrunk into as vile and worthless a thing as shrivelled parchment. But Henry knew his proud situation too well to subject himself to such critical discipline. Prone as he might be to sacrifice nobles or ecclesiastics, as a holocaust to his fierce and evil passions, yet he took especial care that his throne should never be allied with contempt; and therefore disdained a falsehood, however great the object at stake. He and his people, differ as they might in other points of Scripture, thoroughly acqui-

\* Although School divinity was Henry's favorite study, yet that he did not confine himself to one particular branch of literature, and that he possessed more than a common share of mental endowments, may be evidenced by his becoming an occasional writer of poetry. Warton tells us that Lord Eglintoun had a genuine book of manuscript sonnets composed by Henry, —*Hist. of Eng. Poetry*, vol. iii., p. 58; and the following effusion of his Muse was addressed to Ann Boleyn, on the authority of Sir J. Harrington.—*Nit-gæ Antiquæ*, Lond., 1804, p. 388.

“The eagle's force subdues each byrd that flies:  
 What metal can resyst the flaming fyre,  
 And melte the ice, and make the frost retyre?  
 The hardiest stones are piercede thro' wyth tools;  
 The wysest are, with princes, made but fools.”

These lines were set to music by the famous Bird, and printed in *Psalms, Sonnets, and Songs*, 1611.

† Seckendorff, in his *Comment. de Lutheranism*, p. 187, ascribes the *regius libellus*, or the king's book, to the pen of Edward Lee, afterwards Archbishop of York; but, observes Mr. Bruce, from a passage in the next page, it would appear that Luther merely suspected that prelate, and the grounds of his suspicion are not stated. Mr. Bruce has investigated the whole subject with the greatest care, and has looked into all the authorities where doubts are entertained of the king's authorship of the book.—See *Archæologia*, vol. 25, p. 67—76.

esced in this, that "lying lips become not a prince's mouth." In my view, therefore, Burnett has manifested himself, on the foregoing subject, as deficient in reflection as in research, in deciding with constitutional confidence where the careful survey of a minute specification of circumstances is so necessary, before any opinion can be urged from a conviction of its superior force and validity. Truly, this our historian's style of judging can only be compared, in its want of acuteness and discrimination, to that of Horace Walpole, who with one stroke of his pen affirms the book in question to be a contemptible performance,\* and with the next, pronounces Henry to be unequal to its composition.

F. A. S.

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## REMARKS ON MR. COMBE'S "CONSTITUTION OF MAN,"†

WITH ILLUSTRATIONS OF HIS DOCTRINE AND ITS TENDENCIES.

MR. COMBE'S essay on *The Constitution of Man* originally formed the concluding part of a course of lectures delivered by him at Edinburgh, in the winter of 1826—27; and, at the time, his exposition of the natural laws excited a profound interest in the minds of his hearers. Many of these expressed their perfect conviction of the truth and practical importance of his doctrine; and, in the end, he was urgently solicited by them to publish his views, as well calculated to promote the best interests of society. Having patiently considered this application in all its bearings, he printed a very small impression of the essay exclusively for private distribution, with the object of presenting copies to reflecting individuals who entertain a disinterested concern for the improvement of mankind, and of thus obtaining their deliberate opinions on the tendencies of his propositions, and on the inferences he maintains. His own judgment clearly discerned the duty and advantages of their publication; and, finding himself encouraged to submit his principles to

\* *Catalogue of Royal and Noble Authors*, vol. i., p. 24.

† *The Constitution of Man, considered in Relation to External Objects*, by George Combe. 8vo. Edinburgh and London, 1835. The fourth edition, revised, corrected, and enlarged.

a general discussion, Mr. C. sent them forth to the world on the 9th of June, 1828, in the first edition of his work. Since that time, upwards of sixteen thousand copies have been sold in this country, besides three large editions in America, and translations into the French and Swedish languages. From these facts, the deduction stands self-evident—that Mr. Combe's volume, which is an extraordinary production, has succeeded completely in creating a very considerable degree of attention to the study of that system of mental science on which the elements of his positions and inductions rest their foundations.

When the late Earl of Bridgewater died, in February, 1829, Mr. Combe's "*Constitution of Man*" had already taken a conspicuous position among ethical systems, and the wisdom as well as the philanthropy of his work were acknowledged with increasing favour, for several years before the appearance of those "*Bridgewater Treatises*," which embrace the same subject and profess a similar aim, but which might have proved more practically useful if they had been similarly constructed on a definite arrangement of primitive mental principles. One object of these treatises appears to have been to ascertain what the character of external nature and the capacities of the human mind really are, and what is the adaptation of the latter to the external world. Now, these are questions of vast importance in themselves, and they manifestly can be solved only by direct, bold, and unbiassed appeals to nature herself. Before we can successfully trace the adaptation of two objects to each other we must be acquainted with each by itself; the first inquiry, therefore, that ought naturally to be pursued in the execution of the proposed object is—"What is the constitution of the human mind?" This branch of inquiry however is entirely neglected in the fore-mentioned essays: in them, no system whatever of mental philosophy is propounded: in them, indeed, there is no attempt to assign to human nature any definite or intelligible constitution: and consequently, as is felt generally, they have thrown very little new light on the moral government of the world. Mr. Combe had long previously endeavoured to avoid this inconsistency. Having been convinced, after minute and long continued observation, that Phrenology is the true science of mind, he assumes this as the basis of his reasoning; and as, in this inquiry, it is indispensably necessary to admit some system of mental philosophy in order to obtain one of the elements of the comparison, he recommends the student, if he chooses, in the mean time either to regard the phrenological views as hypothetical and to judge of them by the result, or to

substitute in their place any better system with which he is acquainted, and try how far it will successfully conduct him in the investigation. In instituting the specified comparison, Mr. C. next brings into view, and endeavours to substantiate and apply, a doctrine which he holds to be the key to the true theory of the divine government of the world, namely, "*the independent existence and operation of the natural laws of the creation.*" He divides the natural laws into three great classes, the *physical, organic, and moral*; and, the peculiarity of his new doctrine is, its inculcating that these laws operate independently of each other; that each requires obedience to itself; that each, in its own specific way, rewards obedience and punishes disobedience: and, that human beings are happy in proportion to the extent in which they place themselves in accordance with *all* of these divine institutions.

Among his introductory remarks, which are both original and instructive, Mr. Combe specifies a variety of reasons for believing that the primitive world was constituted on the principle of slow and progressive improvement; and, that this view is made apparent by the general circumstances of history. He regards the creation as being so arranged as to afford every inducement to rational beings, to cultivate and exercise the understanding; and, on this and other accounts, he anticipates a vast future increase of the intelligence and happiness of the human race. Of the question, "Do the physical and moral worlds contain within themselves the elements of melioration," he offers an ingenious solution, which affords the richest and most comprehensive field imaginable, for tracing the evidences of Divine power, wisdom, and goodness, in the universe. If, therefore, he infers, his views are sound, the *first* object of man, as an intelligent creature desirous of happiness, must be to study the elements of external nature and their capabilities; the elementary qualities of his own nature, and their applications; with the relationship between these: and, his *second* object will be, to discover and carry into effect the conditions, *physical, moral, and intellectual*, which, in virtue of man's constitution, require to be realized before the fullest enjoyment of which he is capable can be attained.

According to Mr. C., the capabilities of physical and human nature have hitherto been ignorantly undervalued; and, in consequence of this essential oversight, although divines and moralists have frequently applied scientific discoveries in proving the existence, and explaining the character, of the Deity, yet they have failed in applying either the discoveries themselves, or the knowledge of the divine character obtained by means of them, to the

construction of any system of mental philosophy susceptible of combining harmoniously with religion, and promoting the improvement of the human race. It is his decided anticipation, however, that phrenology will enable our instructors hereafter to acquire this desirable attainment. In surveying the world itself, this new science guides the honest inquirer to perceive that the Creator has bestowed definite qualities on the mind of man, and on external objects, and also established determinate relations between them. From the beginning, the mental faculties have been incessantly operating according to their inherent tendencies; generally aiming at good, always desiring it, often missing it through ignorance and blindness, but capable of advancing towards the acquisition of it when enlightened and properly directed. Most of the mental faculties have direct reference to this world, and in their functions exhibit no intelligible relation to another: the rest display, in their agencies, a connexion at once with this life and a higher state of existence. Philosophers and divines should study human nature as it exists, and accommodate their views to its actual qualities and relations. To guide and successfully exercise the inferior faculties to the promotion of true happiness, it is indispensable that we should know these faculties themselves, together with the physical conditions on which their strength and weakness, inertness and vivacity, depend, as well as the relations established between them and the external world, which is the grand theatre of their action: and, finally, we ought also to be conversant with the relations that exist between these and the superior faculties which are destined to direct their operations. If, then, the faculties of mind, which are common to man and the lower animals, possess exclusive reference to this world alone, much useful knowledge for their guidance will be afforded by the philosophy of this world: and the wisdom which is to reduce them to order will receive important aid from studying the constitution which the Creator has bestowed on them, and from ascertaining the relations which he has instituted between them and the other departments of his works. God has bestowed on us the endowments of intellect to discover his will, and moral sentiments for disposing us to obey it, in whatever record, natural or revealed, its existence is inscribed. Philosophy and revelation can never be at variance: all real philosophy and all true religion necessarily harmonize. There must, therefore, be a manifest advantage in cultivating each by itself, till its full dimensions, limits, and applications, shall be brought clearly to light; and then we may advantageously compare them, and use the one as a means of elucidating or correcting *our views* of the

other. True philosophy is a revelation of the divine will manifested in the creation.

Mr. Combe maintains the proposition that the mental powers of man are capable of ascertaining what exists, and the purpose of what exists, but that they are not capable of ascertaining the *will* of the Deity in creating the universe. All the departments of nature act according to definite constitutions and fixed laws. A *law*, in denoting a rule of action, implies a subject which acts, and that the actions or phenomena exhibited by that subject take place in an established and regular manner; and this is the sense in which the author uses the term when treating of physical substances and being.

In this world, pleasure and pain depend upon observance of, and obedience to, these constitutions and laws. Obedience or disobedience to each of these natural laws produces distinct effects, while the whole of them are universal, invariable, unbending, and in harmony with the entire constitution of man. Mr. C. does not suppose that full and universal obedience to these laws will lead to *perfect* happiness on earth, or interfere with the prospects of futurity. He does not pretend to predicate anything concerning the absolute perfectibility of man by obedience to the laws of nature. The system of sublunary creation, so far as we perceive it, does not appear to be one of optimism; yet, in its constitution, benevolent design is undeniable. Neither does he intend to teach that the natural laws discernible by unassisted reason are sufficient for the salvation of man without revelation. Human interests regard both this world and the next; and, in order to enjoy the present state of being, we must discover and obey the natural laws. Our Bibles do not communicate complete information concerning the best mode of pursuing even our legitimate temporal interests, and numerous practical duties resulting from our constitution are ascertainable, which are not revealed in detail in the inspired volume; for example, the means of preserving health, of successfully conducting a business or profession, or of distinguishing the qualities of persons with whom we intend to associate our interests. This is the case, Mr. Combe conceives, probably because faculties have been given to man to discover arts, sciences, and the natural laws, and to adapt his conduct to them; and because his physical, moral, and intellectual natures are left open to investigation by these faculties. Hence it becomes a reasonable and most useful object to study the natural constitution of the human body and mind, their relations to external things and beings in this world, and the courses of action that appear, in consequence, to be beneficial or hurtful in this life. Man's

spiritual interests belong to the sphere of revelation ; and, as formerly stated, obedience to the natural laws is not sufficient solely for salvation in a future state. Revelation prescribes two pre-requisites for salvation, and these are, faith, and the performance of certain practical duties. Such duties, however, do not entitle the performer to salvation ; they are the native result of a lively faith, and the necessary evidences of its sincerity. The natural laws form no guide as to faith ; but the dictates of these laws, and the precepts of revelation coincide harmoniously in all matters relating to the practical duties of man's temporal concerns. Mere knowledge of the natural laws is not all-sufficient, but it is a primary and indispensable requisite for their regular observance ; this may be greatly promoted by methodical training and the aid of every inducement by which the human feelings can be affected : but religion, the Christian religion, furnishes the purest, the best, the highest motives to this obedience.

Founding his reasons on the principle of a subjection of all the other mental faculties to the intellect and higher moral sentiments, Mr. Combe satisfactorily proves the constitution of man to be formable to the constitution of the external world. He considers man as an animal, moral, and intellectual being : next, he exhibits a systematic view of the human mind and its elements ; then, he compares the mental faculties with each other ; defines their uses and abuses ; makes it evident that even the mere animal propensities are designed for good, when they act harmoniously with, and are guided by, the moral sentiments and intellect, on the habitual exercise of which he regards the true happiness of individuals and societies as being essentially dependent. The mental powers are arranged by Mr. Combe into two grand divisions or orders. Under the *first*, he classes the propensities which are common to man with the lower animals, and the sentiments, some of which are common to man and the lower animals, while others are peculiar to man. His *second* order comprises the intellectual faculties, which he distributes into three distinct kinds—the sentient, perceptive, and reflective. Altogether, his system, with the facts and inductions on which it is founded, unfolds a multitude of principles and practical precepts, adapted in a remarkable manner to purify and extend the happiness of mankind. According to his views, all enjoyment arises from activity of the different parts of the human constitution ; and he represents the arrangements of creation as being such as to invite and encourage the exercise of our bodily and mental powers. With conclusive reasons, he supports the positions, that intuitive know-

ledge would be less advantageous to man than the mere capacity which he actually has to acquire knowledge by his own exertions; and that the laws of the external world will, in the progress of discovery, be found accordant with the dictates of the moral sentiments. To obtain enjoyment in the greatest quantity, and to maintain it most permanently, the mental faculties must be gratified in harmony with each other, in the exercise of their proper functions.

In treating of the application of the natural laws to the practical arrangements of life, Mr. C. suggests a scheme of living and occupation for the human race. According to this scheme, every day ought to be so apportioned as to permit of bodily exercise, of the useful employment of the intellectual powers, of the cultivation and gratification of the moral and religious sentiments, and of taking food and sleep. His elucidation of the question, *to what extent are the miseries of mankind referable to infringement of the physical, organic, and moral laws?* is elaborate and highly instructive; and, in connexion with this discussion, he obviates the objection that the great body of mankind is not sufficiently moral and intellectual to act in conformity with the natural laws. He admits that the more ignorant and careless men are, their sufferings are generally the greater; hence, the manifest necessity for so enlightening the intellect as to enable it to curb and direct the blind feelings which naturally and spontaneously arise in the mind. Before the human constitution can become as perfect as possible, it must spring from a sound and complete germ; be supplied regularly with genial food, air, and light; and duly exercise its proper functions. The frame of man is so constituted as to admit of the *possibility* of health and vigour during a long life; and many reasons exist to show that nature does not intend the death of human beings, except in old age. Untimely dissolution is the result of the infringement of the natural laws; and the divine institution which inflicts pain and disease, as punishments for transgressing them, is founded in benevolence and wisdom—for, if death, in the early and middle periods of life, is an arrangement for withdrawing the transgressor from further suffering, and from transmitting to offspring the consequences of such transgressions, the institution of death itself is evidently both wise and benevolent.

While discussing the calamities which arise from infringements of the moral law, Mr. Combe points out the cause of the diversity of moral and religious codes in different nations, and among philosophers; and, at the same time, he innumerates the advantages which may be secured by cultivating the moral sentiments and intellect, and by acting in compliance with the dictates of these, the higher

mental powers. He evinces, with complete success, the truth of these propositions:—that the periods for labour, by the operative population, ought to be abridged, so as to afford sufficient time for their cultivating their moral and rational faculties: that many of the miseries endured by the middle and upper classes, are consequences of departures from the moral law, in the present customs of society: that nations, in order to attain the highest prosperity, should act towards each other on the principle of the supremacy of the moral sentiments; and that the civilization of savages will be more easily accomplished by pacific than by forcible measures.

The object of punishment for disobedience to the divine law, is to arrest the offender in his career of transgression; and in this way to save him from greater suffering. God's punishments of evil-doers, in this world, are beneficently designed for their own welfare, and to terminate their misery by death when the error is irreparable. Criminal laws are two often framed on the principal of animal resentment: hence, the inefficacy of these, from over-sight of the causes of crime and their being left to operate with unabated energy after the infliction. Every crime proceeds from the abuse of some faculty, and the tendency to abuse arises from three sources;—from particular faculties being too powerful and spontaneously over active; from great excitement of these faculties by external causes; and from ignorance of what are uses, and what are abuses, of the mental faculties. Crime, then, can only be extinguished by the absolute removal of its causes; and, so long as punishment continues to be necessary, a moral chastisement is greatly to be preferred to animal retribution. These are the doctrines of Mr. Combe, and he demonstrates their truth and fitness with great perspicuity and eloquence.

Having unfolded several of the natural laws and their effects, and having shown that each of them is inflexible and independent in itself, and requires absolute obedience to its injunctions, Mr. C. next explains the mutual relationship among these laws, and adduces instances of their joint operation. These instances are wonderfully instructive and most apposite: they consist of a reference to the defects of the arrangements for jury-trial in Scotland—the great fires in Edinburgh, in 1824—shipwrecks, from ignorance or irrational conduct in commanders—Captain Lyon's unsuccessful attempt to reach Repulse-bay—the foundering of decayed and ill-equipped vessels at sea—and the mercantile distress that overspread Britain in 1825—6, which he regards as having originated in an excessive activity, combined with a general ascendancy, of the ani-

mal and selfish faculties over the moral and intellectual powers. His illustration, taken from Captain Lyon's failure is singularly pathetic and beautiful. The moral law, he says, shines forth with delightful splendour, in the conduct of Captain Lyon and his crew, when in the most forlorn condition. Piety, resignation, and manly resolution, then animated them to the noblest efforts. On the principle, that the power of accommodating our conduct to the natural laws depends on the activity of the moral sentiments and intellect, and that the more numerous the faculties which are excited the greater is the energy imparted to the whole system—on this principle, he would say, that, while Captain L.'s sufferings were, in a great degree, brought on by infringements of the physical—his escape was materially promoted by his obedience to the moral—law; and that Providence, in the whole occurrence, proceeded on the broad and general principle which sends advantage uniformly as the reward of obedience to, and evil as the punishment of infringement of, each divinely instituted law of creation.

It has been remarked, that, although when viewed abstractedly, the natural laws appear beneficent and just, yet they are undeniably the cause of extensive, severe, and unavoidable suffering to individuals; so that, while, theoretically, the moral horizon seems to be cleared up, nevertheless, practically and substantially, the obscurity and intricacy remain undiminished. The author, in reply to this objection, observes—that, as the whole is but an aggregate of all the parts, if any natural institution, when viewed in its operation with regard to the race of beings, is found to be just and beneficent, it cannot well be cruel and unjust to individuals who are component parts of this aggregate; and, accordingly, he holds that his position admits of something approaching to a demonstration. He works out this demonstration in the form of certain imaginary cases of the suspension of various physical, organic, and social laws; and these inductions of his ideality are curious, amusing, and conclusive.

Introductively to his remarks on the "relation between science and scripture," Mr. Combe observes—that science, being an exposition of the Creators' works, it cannot be at variance with a correctly-interpreted revelation of his will; and, by reasoning and authority, he shews the impropriety of testing science by the scriptural writings which were never intended to contain or expound a system of natural philosophy. New doctrines have been branded as impious, in all ages: even the primitive christians themselves were everywhere accounted a pack of atheists, and their religion *the Atheism*; they were denounced as mountebank impostors, and men of a despe-

rate faction ; and they were accused of sacrilege, sedition, and high-treason. Mr. Combe's favourite science of mind has not been exempted from the same sort of obloquy : nevertheless, it flourishes vigorously, and its benignant influences are extending to the utmost precincts of the civilized world. Its advocates expect that it will lead to a better *interpretation* of some parts of the Bible, and thus conduce eminently to the realization of pure practical christianity, by giving a new direction to the pursuits of the religious instructors of mankind. History exhibits the apostolic doctrine itself as becoming corrupted by the selfish or senseless inventions of men, and as exerting but little influence in improving the nations, until it came to be aided by the arts and sciences. Mr. C. uses a narration of the persecutions for witchcraft, in the fifteenth, sixteenth, and seventeenth centuries, as an illustration of the inefficacy of Scripture, alone or not rightly *interpreted*, to produce a perfectly rational and moral conduct ; and hence he infers the necessity of employing all our lights and all our powers in searching for the true meaning of the divine enunciations. In his essay to determine the relation between scripture and science, Mr. Combe explicitly disavows all intention or desire to depreciate the importance of *The Bible* : in his own words, he only very humbly endeavours to vindicate the study of the Creator's will in his works as in his word ; to shew that the human mind needs illumination from both science and scripture, to direct our conduct towards virtue ; and to prove that, without philosophical knowledge, we may grievously misunderstand and misuse the doctrines revealed in the sacred writings.

Supposing it to be true, what is the practical use of phrenology ? Mr. C. devotes a section of his work to a solution of the question, and his observations on this head are every way worthy of attention and unprejudiced consideration. With much felicity of illustration and deduction, he defines the varied and comprehensive utility of this science, with reference to politics, legislation, education, morals, and religion ; the professions, pursuits, exercises, and amusements of individuals. He concludes his admirable exposition of the advantages to be conferred on education by a right application of the new mental system, with the remarks that, by teaching mankind the philosophy of their own nature, and that of the world in which they live, and by proving to them the coincidence between this philosophy and Christian morality, as well as the inconsistency of their own institutions with both, they may then be induced to modify the latter, and to entrench the moral powers ; and that when schools and colleges shall expound the various branches of science

as portions of the Creator's institutions, and when the busy scenes of life shall be so arranged as to become a field for the practice at once of our philosophy and our religion—then, after a long train of gradual advances, will man assume his high station as an intelligent and responsible being—then will the ascendancy of virtue and religion be more complete—and then will Christianity achieve her noblest triumph, and flourish, ever brightening, most glorious and immortal.

J. K.

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ON THE NATURAL HISTORY OF THE NIGHTINGALE,

(*Philomela luscinia*,—Swainson ;)

BY EDWARD BLYTH, ESQ., TOOTING, SURREY.

[*Concluded from our last number.*]

*What agencies affect the development of the migrative impulse.*—In matters of Natural History, nothing is more difficult than to arrive at sound general conclusions, to deduce universal laws, which shall not be liable to certain exceptions. It is so with the migration of birds, at least when we would attempt to refer the development of the migrative instinct to the mere agency of internal impressions. Thus, in most of the species (as in the Nightingale), the migratory impulse would seem, at least to all appearance, to be chiefly, if not wholly, influenced by change of temperature ; in others (as in the common Grey Flycatcher), deficiency of food would seem also to be a predisposing cause ; while others again (as the Cuckoo and the Swift) retire southward, as has been already mentioned, at the very hottest season of the year, and when their food would seem to be most abundant. The adult Cuckoos even leave us when in full moult, though none of the flying feathers, by the way, are shed till after they have left us ; and so powerful is the migrative feeling in the common Swift, that this species has been several times known actually to forsake a late brood of half-fledged nestlings to leave the country. All the migratory small land birds perform their long journeys by night, choosing moonlight nights, and starting immediately as the moon rises. It is early in the morning only that they are observed to settle on the rigging of

vessels ; by day they rest from their fatigue, and seek their food : and, in perfect conformity with this, the Nightingale, and the various migratory warblers, in confinement, very rarely evince any peculiar restlessness by day ; but at night, more especially when a light is brought into the room where they are kept, they are like mad creatures, rapidly fluttering and flapping their wings, as if flying with their heads continually pointing upward, and every instant appearing as if about to spring into the air, which they now and then do with such violence that Nightingales (for instance) have been often known thus to fracture their skull against the wooden roof-work of their cage. Of course, food can have nothing to do with this, as birds in captivity have always a regular supply ; their desire to migrate would seem to be wholly influenced by the temperature, every change to colder weather in the autumn, and generally during the winter, invariably occasioning this uneasiness, while the same is always induced by a change to warmer weather during the spring. When the temperature is more settled, they are more quiet ; and although confined in a close and warm room, it is surprising how quickly they feel every change that takes place out of doors, which is sure to be indicated by their greater or less desire to migrate.

*Various phenomena exhibited by migrant birds.*—It is also worthy of remark that, in confinement, most of the species particularly exhibit this impulse in spring, in the exact order in which the wild birds arrive in the country ; and that, in general, each kind becomes, in its turn, the most restless, precisely about a week or ten days before that particular species makes its first appearance in its proper haunts. In the wild birds, the migrative impulse seems always to be wholly dissipated by their long journey ; for these, if captured upon their arrival, never evince it ; whereas those which have lived in captivity through the winter continue to shew it, at intervals, during the greater portion of summer ;—that is to say, till they have discontinued singing, and are about to undergo their autumnal moult, from which time they do not again evince it till the proper season arrives for leaving the country. Migratory birds captured late in autumn exhibit it very strongly.

*Which cannot be accounted for on any secondary principles.*—The above numerous facts, which are deduced from the results of careful observations made through several consecutive years, would appear, in some instances, to be contradictory ; the birds are affected by changes of temperature, and yet exhibit the migratory impulse in summer, when the required degree of temperature is arrived at ;

and they are, moreover, always most uneasy about the period when their free brethren must be upon their journeys. The truth is, I believe, and as I have already stated, that secondary causes can have but very little to do with the matter, further than as tending, in some degree, to regulate it. The more deeply we investigate the subject, the more clearly do we perceive that it is a seasonal impulse originally implanted in these birds by the Creator, which can never be reduced to any nice and delicate degree of sensitiveness to external agencies. The diurnal bird migrates by night, soaring aloft above every impediment which, in the dark, might intercept its course near the surface; and a wonderful and most inexplicable instinct carries it due north and south, according to the season (and more or less directly so, according to the species), over hundreds and even thousands of miles of sea and varied continent, to the identical spot where, a previous season, it had met with a due supply of every requisite.

*Affinity of the migrative instinct with that which impels an animal towards its home.*—There is probably in this a close analogy (if it be not the very same innate principle, whatever that may be) with the instinct which carries a Bee home to its hive, which impels a common Pigeon homeward from one extremity of Europe to another, and by means of which an Ass, a Bullock, as well as many other quadrupeds, have been known to return straight to their accustomed haunts, over pastures and across streams they never could have traversed before, and by a nearer and very different route from that by which they had been driven. It has been stated even of many savages of the human race, and more particularly of some of the aborigines of Australia, that they also possess this faculty, or rather instinct, to a most astonishing degree of perfection; and some seemingly very incredible tales have been related of them concerning it. How far these may be true, it is not for me here to undertake to determine: I shall content myself with merely referring the curious to Mr. Jesse's *Gleanings in Natural History*; a work which will amply repay the trouble of a perusal, and in which many remarkable instances of this singular phenomenon are recorded, together with some curious details upon the subject generally.

*A Turtle from the British seas has found its way back to Ascension Island.*—Mr. Jesse, however, related one fact, which may be here quoted, as shewing that the same instinct has been observed even in the gelid inhabitants of the ocean, though most naturalists have been long aware of this as regards the Salmon. "Among a number of Turtles which were taken upon Ascension Island, was

one individual which, to use the technical phrase, had been deprived of one of its *pins*. It was marked in the ordinary manner upon the under shell, which marks are well known to be indelible; and in the course of time it became a great favourite with the sailors, by whom it was called the Lord Nelson. When the vessel arrived in channel it was detained a long while by contrary winds, and a considerable mortality took place among the Turtles, these dying one after another so fast that, at length, it was resolved to cast the remainder (including his lordship) into their native element, to give them, as was said, a chance for their lives. Three years afterwards, this same Turtle—with its three *pins*, and the marks of the hot iron beneath—was found again upon Ascension Island.”

*Under certain conditions, it is probable that Nightingales may be introduced into new localities.*—Upon the principle that birds of passage revisit annually their former haunts, it has been stated by M. Bechstein, and so confidently that any reader might suppose it to be a common practice in Germany, that “there is a means of peopling with Nightingales some districts which they did not previously frequent. It is only necessary,” he observes, “to bring up some broods of young ones, and not let them loose the following spring, till the period of return is elapsed; because, being then no longer incited by the instinct which induces them to travel, and the instinct itself being, in a great measure, subdued by their imprisoned education, they will not wander, but will remain and propagate, provided they are not disturbed, and will return the year after with all their progeny.” The whole of this, however, has exactly the appearance of shallow theory; not a single fact is adduced in support of it. As I have already asserted, in the first place, the migratory instinct does not dissipate in caged birds, at the period of the return of their wild brethren; and secondly, I know from long experience that no duration of captivity tends, in the slightest degree, to abate the force of this excitement. On the contrary, a Blackcap which was presented to me after having been four or five years confined, and which I afterwards kept for more than two years, died at last from being absolutely worn out by the excess of this very impulse, which affected it by day as well as by night; and this is the only instance I ever knew of a bird of this tribe exhibiting the migratory feeling in the day-time. Still I believe that, within certain limitations, Nightingales may, upon this principle, be introduced into new localities; and I regret, for the sake of elucidating the subject, that the experiment has not oftener been tried. I question whether they could be thus located in Devonshire, in Wales, in Ireland, or in the

greater part of Scotland, because, appearing as they do to migrate almost exactly parallel to the lines of longitude, these would probably never find their way to land; and this I consider to be the reason why Nightingales are nowhere found, except as rare and accidental stragglers beyond the third meridian of western longitude. From other districts they are cut off by the character of the soil, as they avoid everywhere both the rocky ground and fen.

*Futile experiment of Sir John Sinclair.*—And here also we perceive an additional cause of failure to the experiment, made upon a large scale, by Sir John Sinclair. That gentleman, wishing to introduce the species upon his estates (I rather think) in Caithness, procured a considerable number of Nightingales' eggs, and placed them in the nests of Robins, where the young Nightingales were hatched and reared, and were afterwards observed about the place till the usual season of migration, when they disappeared, and were never afterwards seen in the neighbourhood.

*Return of young migratory birds to their native place.*—There is even another consideration which may be mentioned here in connexion with this circumstance. It appears, from the experiments of Temminck and others, made however chiefly upon aquatic birds, that the young of these (many of which require more than one season to attain their mature plumage, and are, therefore, easily distinguished) do not migrate either to the north or south over so many degrees of latitude as the older individuals; and although I could furnish some decided and very remarkable instances of the young of the small migratory land birds returning the following spring to the place of their nativity, yet it is possible that the same law which thus exists among migrant water-fowl, may also, to a certain extent, prevail with them; so that, although the young of the preceding year will return to their native place when situate within the southern or middle districts of the natural summer range of their species, still they may not, perhaps, continue their journeys to the extreme north. It is not unlikely, too, that these may always have some tendency to settle in convenient localities, but are generally driven off and prevented by the birds which have already occupied them; and this is rendered, indeed, the more probable by the fact that, in many situations, no sooner is a Nightingale captured in spring, than another immediately supplies its place: yet this is not conclusive, for as migratory birds sing by day before they have finally taken up their abode, we never can be sure, for a certain time, that it is the same individual we hear on successive days; an experienced ear will, indeed, very frequently detect

the contrary. Where I reside, many Chiffchaffs are always heard singing upon the first arrival of the species, very few of which ever remain and breed in the neighbourhood.

*Migrative birds seem instinctively to know of the period when their native homes become fit for their reception.*—In the former part of this paper, I mentioned that as the Nightingale is said to arrive a month earlier, and to depart a month later, in Italy than in England, this fact would seem to countenance the supposition that the species, in its migratory journeys, proceeded by slow stages overland; but that I did not believe this to be the case, for reasons I should afterwards adduce when I came to speak more particularly on the migrative instinct. Now, it will be borne in mind that Redwings, Fieldfares, and certain other species which winter in the British islands, do not leave us until the first or second week in May; long after those resident kinds to which they most approximate have commenced breeding, and after many of them have even reared their first brood; and, what is more extraordinary, a number of visitant Song Thrushes, which arrive annually at the same time with the Redwings, also remain gregarious—as I have many times noticed—until about the period when those birds disappear; our resident Song Thrushes continuing solitary throughout the winter, and most of them commencing nidification early in the month of March. It would seem, therefore, necessarily to follow, that these birds must have an instinctive knowledge of the period when their native homes become fit for their reception; and that, consequently, the more northerly these may be situate, the later in the season do the birds feel an impulse to quit their winter residence.

*Most of the phenomena concerning migration quite inexplicable.*—No doubt this appears very strange, hardly credible; but so is all that concerns migration, even the instinct which impels a bird to proceed in the true direction, rather than in any other; and although it is, doubtless, flattering to human reason to endeavour to explain every phenomenon upon principles we understand, in this case, as in many others connected with Natural History, it appears quite useless to attempt to do so. Upon what principle of atmospheric or other external influence can we ever hope to account for the following extraordinary fact related by a high authority, Mons. Temminck? “The routes taken by water-fowl, and birds which frequent marshes, depend entirely upon the course of rivers, and the bearing (*gisement*) of the great lakes, the waters furnishing to each species its proper food; they seem to be impelled, by a wonderful instinct, to choose for a rallying point and place of departure,

*those spots* where the passage from the great sea to the lakes and rivers is shortest and least occupied by land ;” a fact of which several instances are mentioned in corroboration. We might as well try to explain the instinct which induces an ant, or a small rodent quadruped, to bite off the corcule (or growing part) of a seed, before storing it away for a future occasion.

*And, therefore, proffered explanations of them to be received with much caution.*—It may be considered that I have been very diffuse, perhaps tediously so, upon the subject of migration ; and that I have devoted more time and space to its consideration than was needed in a dissertation upon the Nightingale ; but I have been induced to descant on it thus largely on account of the plausible and easy manner in which I have noticed the various phenomena connected with it to be explained away, in some recent and popular works on Natural History ; explanations which, at first sight, would appear to be satisfactory in the extreme, but which a very little practical observation shews, at once, to be shallow and unsound.

I proceed now to offer a few remarks upon the treatment of Nightingales in confinement, and will then conclude by pointing out what I consider to be its true affinities, and its proper and natural situation in the general system of ornithology.

*Mode of capturing the Nightingale.*—Those who might wish to possess a caged Nightingale should capture one upon their first arrival in the spring, for then there can be no doubt of its being a cock bird, and there is also a much better chance of its living. Nothing is more easy than to catch them ; but if they once happen to get away, they are not to be entrapped a second time. Persons, therefore, whose grounds are much molested by bird-catchers, and who wish to preserve their Nightingales, cannot possibly do better than to have a number of them caught every spring, and then suffered to escape, which will effectually baffle the ingenuity of these marauders. The usual mode of taking them is with what is called a Nightingale trap, which may be procured at any bird-shop ; this is baited with a meal-worm, or with a moth or butterfly (which will answer the purpose equally well), and placed where some ground has been turned up, close to where one is heard singing. The bird (a fine songster being, of course, selected) will survey the whole operation, and then, perfectly unsuspecting, will fall at once into the snare.

*And of getting it to live in a cage.*—He should then be immediately placed in a cage, of which one side only should be wire, and be

covered over with a white handkerchief, which admits the light without allowing the bird to see out, or he would rub off the plumage of his forehead by his repeated efforts to escape. A slice of fresh raw beef should be procured, and scraped so that the substance of it be separated, leaving the fibres, and with this should be chopped up a hard boiled egg. Some of this food should be placed in the cage and also some water, in a bird glass; but as in general he will not at first take to feed of himself, it will be necessary three or four times in the course of the day to take him in the hand, and gently opening the bill (keeping it open for a few seconds by means of the finger and thumb of the hand that holds him) to put into his mouth a piece about the size of a pea, and then to hold the mandibles together till he has swallowed it; or otherwise he will often cast it from him. In a few days he will feed of himself, at which time he generally begins to sing; but his cage had better still be covered over with the handkerchief for a few weeks, indeed, till he ceases his song in June, by which time he will probably have become reconciled to captivity; this, however, must be left to discretion.

*It is very fond of bathing.*—He should always be kept very clean, fresh water being supplied every morning; and as he is extremely fond of bathing, he ought every day to have a pan of water placed in the cage, even from the first, and his ablutions will tend very much to preserve the beauty of his plumage, besides keeping him in health: this may be given when the sun shines warm even in winter, but not when the air is very cold, and it should always be taken away as soon as he has bathed, or otherwise he will jump in so often as to injure himself. I have many times had occasion to observe how fond the Nightingale is of bathing in the wild state, and have seen him rise from a brook so wet as to fly with much difficulty. In confinement, he is not more tender of cold than a canary bird.

*Food in confinement.*—His cage should be furnished always with two food-pans, besides a glass of water; and in one should be placed a portion of the above mentioned food, which of course should be fresh made every morning, and in the other some bread and milk, which he soon learns to eat, and becomes in time extremely fond of. A Nightingale thrives much better upon this mixed diet, and lives longer, than upon chopped meat and egg alone, and he sings upon it to perfection: it is besides often a matter of convenience for the bird not to be wholly confined to one particular sort of food. The more insect diet he is also given, the better, and it is as well always to hang his cage in summer near a window, that he may regale

himself on the flies that come within his reach. An excellent sort of food for all sorts of insectivorous birds, are the maggots from a wasp's nest.

*How to render it tame.*—A Nightingale (and indeed all cage birds) should always be kept where they may become habituated to the sight of people; and before they undergo the autumnal molt, it should be endeavoured to render them a little tame, in order that they should not injure their new plumage. A Nightingale will soon venture to snap a buzzing blue-bottle fly from the hand, and after taking these a few times, will be emboldened to come down for other food, and thus may be quickly rendered familiar; though this will of course depend much on the individual disposition of the bird. Being creatures of habit, like ourselves, they loose in time all desire to fly away, and often become remarkably attached to those they know. They generally resume their song early in January, sometimes however a month, or even two months, before, and sometimes later, and are usually in full song at about three weeks from the time they commence. Some sing by night, and some never do, but these can hardly be said (as some have fancied) to form distinct *varieties*, the difference probably depending merely on constitution.

*The Nightingale's song is heard to greatest perfection in confinement.*—The song of the Nightingale, besides being heard for a much longer period of the year, is warbled to greater advantage in a room than in the open air, none of the softer notes being lost; and he sings at all hours of the day, even when a person is close looking at him. Those who would like to have them, might keep two or three at little or no more expence and trouble than one; and it is as well perhaps to do so, not only because in general they like to sing against each other, but in the event of a single bird dying, which is sometimes very annoying after having kept it pretty well through the winter months; and as they have no objection whatever to companions which are not of their own species, and sing quite as freely in such society as when alone; a few of the finer insectivorous songsters might be kept along with them, allowing them of course a larger cage, that they might have room to exercise their wings. I have generally observed that this tribe of birds thrive most in airy cages, which have wire on every side; though at first they require to be more covered.

*Systematic arrangement.*—The Nightingale, in scientific arrangement, has never been placed very naturally in any system of ornithology, having always been considered as closely allied to the

Blackcap, and other Fauvets, for which it has very little or no affinity. I do not, at present, think it necessary to enter deeply into the subject, but may here just cursorily remark that the immature, or nestling, plumage of birds, furnishes always a very good negative test of *affinity*; species which differ strikingly from each other in this garb, being never very closely allied. In the *Dentirostral* (or notch-billed) division of perching birds (*Insessores*), there is an extensive host of species, forming divisions of three natural *families*, all of which are allied to each other, and possess a variety of characteristics in common, one of which is to have their first plumage invariably mottled, in the manner already detailed of the young Nightingale; which style of marking, it is to be observed, is peculiar among the *Dentirostres* to these birds, and, indeed, the only instance I know of its occurring in any other group, is in the solitary case of the Tree-creeper (*Certhia familiaris*). The three *sub-families* to which I have alluded are the *Merulinæ*, or typical major group of the Thrush family (*Merulidæ*); the *Saxicolinæ*, or Robin and Chat division of the Pettychaps or Warbler family (*Sylviadæ*); and that division (as yet unnamed) of the *Muscicapidæ*, or Flycatcher family, to which the European species belong. The Nightingale will therefore, in all probability, appertain to one of these (all the remaining *Dentirostres* having their first plumage of quite a different character); and to classify it naturally, and according to its true affinities, we have, of course, only to place it beside those birds which most resemble it in all their general characters.

*Is very closely allied to certain of the smaller Thrushes of America.*—We find, *by far*, the nearest approximation, then, in an American group of Thrushes (*Merula*), of which the Tawny and Hermit Thrushes, of Wilson's work, are among the most Nightingale-like of all. Indeed, the whole of the spotted-breasted Thrushes of America (I exclude, of course, the genus *Orpheus*) are very nearly allied to *Philomela*; they have the same predominant rufous tint, and many of them the same form, including the long slender *tarsus*; and the *habits* of even *Merula mustelina*, the species which approaches nearest of all to our Song Thrush, as described by Wilson (who entertained no idea of the resemblance), hardly differ in a single point from those of the European Nightingales. They are solitary birds at all seasons, and (like the Nightingale) they even migrate solitarily, which is contrary to the habit of the more typical Thrushes; and they are also considerably more retiring and hiding in their general manners than are those standard species of *Merula* with which only we are familiar. So closely, indeed, do some of

the species resemble Nightingales, and so very gradual is the transition from one genus into another, that the dividing line may be considered as quite arbitrary, where the Thrush ends, and where the Nightingale begins. The greater Nightingale of Eastern Europe has even an obscurely—though very noticeable—spotted breast; while, on the other hand, some of the smaller American Thrushes have the spots but very few in number, and these appearing as if more than half obliterated. Such is the plumage of the Tawny Thrush (*M. Wilsonii*), which has besides the exact bill of *Philomela*; while the Hermit Thrush (*M. solitaria*) has even a rufous tail, as in our Nightingale. Both these are also, in size, intermediate between the later and the more typical Thrushes, and the gradation is likewise shewn in their nidification—no plaster being used to form the nest, as in our Thrushes, or as even in *M. mustelina*—and both of them, more particularly the first, most closely resemble the Nightingale in make; so much so that, if found in Europe, I have no doubt that, at least, the former would have been generally ranged with it.

*And to no other birds so much.*—This species is indeed, in every respect, a great deal more similar to the Nightingale than it is to the more typical members of its own genus; and were I not aware of the existence of another, from the same locality, named *M. parva*, which I have not yet seen, and which (as its name, in some degree, implies) may possibly have still more of the true *Philomela* character, I should prefer to change its specific appellation *Wilsonii*, for the more significant term *Philomelloides*, expressive of its close affinity to the Nightingale genus. These small Thrushes are, moreover, the only birds that I know of, which, in every character, so much approximate to our noted songster; which renders it the more remarkable that, from all description, they should be wholly devoid of song; yet we cannot but recognise, notwithstanding, in the few monotonous cries which they are alleged to utter, and which notes have been sufficiently expressed in writing, in Wilson's work, some analogous occasional chirps of our Nightingale. Indeed, I cannot but feel very great surprise that this most striking affinity should hitherto have escaped the notice of every writer upon systematic ornithology.

*The greater, or Thrush, Nightingale of Eastern Europe.*—Of the Nightingale genus (*Philomela*), but two species are at present recognized—our bird, and the great Nightingale of Eastern Europe, to which the terms Thrush Nightingale, and *Philomela meruloides*, might be very pertinently applied. This bird may be said to connect

our common Nightingale with the Tawny Thrush, or more immediately, perhaps, with the Tiny Thrush (*M. parva*). It is described, by Bechstein, to have "the whole plumage generally, and in all parts, deeper and darker than the common species. The head is larger, and the *beak thicker*; the throat white, bordered with black; the breast brown, with *darker spots*;" and it is said, also, to be considerably larger, and longer by about an inch and a half. It is a very loud songster, and sings chiefly by night, but its voice is by no means so melodious as that of the common Nightingale. "It has," continues Bechstein, "a much stronger, louder, and deeper voice, but it sings more slowly and more unconnectedly; it has not that astonishing variety, those charming protractions and harmonious conclusions, of the common Nightingale; it mutilates all its strains; and, on this account, its song has been compared to that of the Missel Thrush, to which, however, it is superior both in softness and pureness. The common Nightingale is superior in delicacy and variety, but inferior in force and strength. \* \* \* The voice of the large species is so loud that it is almost impossible to bear with it in a room." Its call-note, &c., as described by the same author, are also very different. This bird, in some districts of Hungary, Austria, and Poland, is said to be more abundant than the common Nightingale, which it exactly resembles in its habits and nidification. "In cages," observes Bechstein, "they are fed like Nightingales, but are less delicate, and generally live much longer;" which, in fact, is another approximation to the Thrush genus.

*Situation of the Nightingale genus in the system.*—I would, therefore, rank the Nightingales (*Philomela*) in the order and sub-order *Insessores Dentirostres*, in the Thrush family, *Merulidæ*, and typical sub-family *Merulinæ*; considering them to be about the smallest species of that *family*, and to be most closely allied to certain of the smaller American Thrushes (pertaining to genus *Merula*), which they intimately connect with the European Robin, and other members of the Chat division of the Pettychaps family, *Sylviadæ Saxicolinæ*. This I long suspected to have been their true station, even before I was aware of the existence of intermediate connecting forms; and I am now much inclined to the opinion that, in all probability, species will yet be found midway between the Nightingale and Robin.

*Analysis of its generic and specific names.*—It is hardly necessary, perhaps, here to say, in conclusion, that the generic name *Philomela* is derived from two Greek words, and signifies "fond of the

the dark ;” and that the specific appellation, *luscinia*, is Latin, derived from *lugens*, mournful, and *cano*, to sing ; although to my apprehension the song of this bird is, for the most part, lively and inspiriting, rather than plaintive. The  $\chi\eta\delta\alpha\nu$  of the Grecian poets does not, in all cases, refer to this particular species, though commonly translated *Nightingale* : they not unfrequently apply to it the terms *green*, and *green-necked* ; from which it seems highly probable that the *Sylvia hippolais* of continental naturalists is then intended—a splendid songster, but which does not visit the British islands—though our systematists have, by mistake, appended the term *hippolais* to another and a very different bird, which is a common summer migrant in the south of England. This last-mentioned species has, however, been lately distinguished by a separate appellation, *loquax*. I may finally add that the *Buhl-buhl* of the poets of the East is not, as is commonly reported, our Nightingale.

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## ON THE EFFECTS OF CERTAIN MENTAL AND BODILY STATES UPON THE IMAGINATION.\*

BY LANGSTON PARKER, ESQ.

### III.—THE IMAGINATION OF SLEEP-WALKERS.

DURING perfect sleep, that is, during the complete and undisturbed repose of both body and mind, we are dead and insensible to the world around us, and are totally cut off from all communication with external objects, whether they are presented to the senses or to the Imagination. Sleep, like his brother Death, annihilates all our faculties, destroys perception, throws over our senses a veil of total insensibility, and, though differing in nature and appearance from his terrible relative, presents points of similarity which are at once recognised by all.

“ Death and his brother Sleep :—  
 One, pale as yonder waning moon,  
 With lips of livid blue ;  
 The other, rosy as the morn  
 When, throned on Ocean’s wave,  
 It blushes o’er the world ;  
 Yet both so passing wonderful.”†

\* The following is the third of a series of Lectures delivered at the Birmingham Philosophical Institution, by the author.

† Shelly.

Perfect sleep is a state not frequently enjoyed or long continued, attendant only upon the most complete bodily and mental health. There is a state of mental disturbance common to sleep, in which the faculties of the mind are irregularly called into action, losing their proper and accustomed bearing and relation, acting independently of each other, and producing combinations which rarely have any existence in nature, but which are, at various times, and under various circumstances, pleasing, ludicrous, or terrific. This constitutes dreaming. Dreams, under ordinary circumstances, are not sufficiently vivid in their pictures, or do not act with stimulus of sufficient power upon the sensorium to induce it to call into action, in a more or less isolated form, the senses, or the organs of locomotion. In its more active and extraordinary forms we have, however, induced sleep-talking and sleep-walking—the *Paroniria loquens*, and the *Paroniria ambulans*, of the classification of Dr. Mason Good. The Imagination of our dreams are of three distinct classes. 1. Those which, however vividly impressed upon the Imagination, do not call into action any of the voluntary functions, *i. e.*, any power of body over which we have any controul when awake: 2. Those which call into action one of the senses separately, under which must be included speech: and 3. Those which are sufficiently powerful to excite one or more of the senses in conjunction with the organs of locomotion; to cause the person so affected to go to long distances, and into perilous situations, from which he returns perfectly safe, in order to perform actions which, when awake, he is not conscious of having committed. Sleep-talking is a modification merely of somnambulism; a variety in degree of that condition of the sensorium which produces, in its more violent forms, sleep-walking. Dr. Macnish supposes that “sleep-talking consists in a distribution of sensorial power to the organs of speech, by which means they do not sympathize in the general slumber, but remain in a state fit to be called into action by the particular trains of ideas.” This opinion is difficult to understand; we cannot conceive of organs whose nervous or exciting influence is derived from central sources, such as the brain, remaining, during sleep, in a state to be acted upon, unless that nervous centre from which they derive their excitation were, in itself, morbidly or unduly excited. The opinion of the German physiologist, Hennings, adopted by Dr. Mason Good, appears far more rational and satisfactory, and explains, as far as the sensorium is concerned, the proximate causes of sleep-talking. “As the stimulant force of our ideas, in dreaming, is often sufficient to rouse the external senses generally, and to

awake us suddenly, and at once, it may be of such a kind, and just such a strength, as to excite into their accustomed action the muscles of those organs or members only which are more immediately connected with the train of our ideas or incoherent thoughts, whilst every other organ may remain torpid: and hence, the muscles chiefly excited being those of speech, some persons talk; or again, those chiefly excited being those of locomotion, others walk in their sleep, without being conscious, on their waking, of any such occurrence. Dreams of great power and vividness, which are terrible in their character, and connected intimately in their scenery with our own immediate destiny, are of so stimulating a character as to rouse the whole faculties of the mind at once, and we are instantly awoke. Of such a character were the dreams of Richard, on the eve of the battle of Bosworth. These dreams are always dependent, during a state of bodily health, upon intense mental anxiety, which, if it permit sleep at all to take place, constantly produces dreams of this kind, which as constantly interrupt it. The invasion of attacks of acute disease are almost invariably marked with dreams of this nature.

Persons thus indisposed jump up suddenly in extreme terror; they are suddenly plunged into the ocean from high precipices, or placed in situations of danger, from which they attempt to escape by efforts so violent that the dream is broken. So intense, and apparently real, are the events and objects of these dreams, that the personages or fiends of our visions remain, to the fancy, tenants of our chamber for some time after waking, and it is with difficulty we can imagine that these pictures, the children of a distempered fancy, are not actual occurrences. Those dreams which produce sleep-talking, are far inferior in the intensity of their character to those which I have just described. Carrying forward the theory of Hennings, which, with some trifling modifications, appears to me to be the correct one, I should describe the Imagination of our dreams, which cause sleep-talking, to be "ideas presented to the fancy, with sufficient power to call into action the faculty of speech, the ideas at the same time being of such a character as relate immediately and directly to the exercise of this faculty.

The modifications of sleep-talking are extremely variable, from the use of a few incoherent expressions, to the distinct relation and long description of scenes long past, or those which are then present to the Imagination. These variations depend, doubtless, upon the intensity of the dream, and upon the natural vigour of the Imagination thus excited. Children are particularly liable to sleep-talk-

ing; the nervous system is, in them, so active and so easily excited, particularly in some constitutions, that a day of pleasure with their companions commonly produces sleep-talking, by reviving the events of the day in vivid and unsettling dreams. Days of great excitement are highly injurious to some children, by thus becoming the causes of disturbed and feverish nights. A youth, about nine years old, had been visited, for several successive mornings, with attacks of sleep-talking of rather an extraordinary character. He would, for half an hour, hunt a pack of hounds, as appeared by his hallooing and calling the dogs by their names, and discoursing with the attendants of the chase; describing exactly a day of hunting, which he had witnessed a year before, going through all the most minute circumstances of it: calling to people who were then present, and lamenting the absence of others who were then also absent. He then sung an English, and then an Italian song, part of them with his eyes open, and part with them closed, but could not be awakened or excited by any violence which it was proper to use. Reasoning metaphysically upon this case, the hunting scene appears to have been rather an act of the Memory than the Imagination, attended with the pleasurable eagerness which was the consequence of those ideas recalled by recollection. Some occurrences of this nature are most singular, and cannot be well explained by the laws of ontology, as far as they are at present known. A very elegant and ingenious young lady had an attack of sleep-talking on alternate days, which continued nearly the whole day; and as on her days of disorder she took up the same kind of ideas which she had conversed about, in her sleep, the day but one before, and could recollect nothing of them on the day she was well, she appeared to her friends to possess two minds. Now, it is probable (for Dr. Darwin, who relates this case, does not inform us of the fact) that the subject of this lady's sleep, discourses, and revelations, were some previous occurrences, of a melancholy or secret nature, which she did not choose to reveal to her friends, but which, constantly preying upon and exciting her mind, produced that excess of sleep-disturbance which characterized her malady. Many examples of this kind are to be found in real life, and in the poets. Great crimes, from precisely similar circumstances, have been revealed during sleep. Memory—busy, meddling memory—haunts them by its harrowing dreams; and the disclosure (which involves life itself, and which is guarded when the judgment is awake by all the watchfulness of suspicion) is made with its attendant circumstances, when the Memory and the Imagination escape in

dreams, from her controlling power. Byron's description of the dreams of Parasina, in which is revealed her guilty love for Hugo, is an illustration in point:—

“ But fever'd in her sleep she seems,  
And red her cheek with troubled dreams,  
And mutters she in her unrest  
A name she dare not breathe by day.”

Dreams of great power are seldom unaccompanied by sleep-talking, when they do not at once rouse the whole of the mental and corporeal faculties into action. It matters not of what character they may be; but, certainly, those which relate to our own immediate circumstances, above all if these happen to be of a more critical nature than ordinary, are most apt to occasion this phenomenon.

The cases of sleep-talking which have excited most attention, are those in which great crimes have been disclosed. The sickness of heart, the weariness and brokenness of spirit, which must attend minds thus diseased, prevents all true sleep: their's is a trouble for which the freshness of morning, the splendour of noon, and the repose of evening offer neither alleviation nor relief—which waking does not dissipate, nor sleep drown—which casts a gloom over all the beauties of nature—which the revolving seasons change not—which eats like a canker into all our joys—which embitters all the sweetness of existence, and dashes a polluting ingredient of unmingled misery into our hopes, our wishes, and our comforts. This is wretchedness for which there is no sympathy, it is but to be disclosed to be abhorred—it is a mill-stone hanging over us by a thread, from the impending of which we know no escape—a cave, through whose adamantine sides there is no exit; and we know that our misery—our unutterable misery—is not for an hour, for a day, for a year—but, for ever. This state of mind, destroying all natural repose, has been analyzed in the most masterly and perfect manner by Shakspeare, in the tragedy of Macbeth. Immediately after the murder of Duncan, the imagination of Macbeth at once opens to him, as the most appalling evil which could befall him, that he should never again know calm repose: his fancy rings in his ears, with the voice and accents of a demon, that peace has for ever flown: “ Methought I heard a voice cry, ‘ Sleep no more!’ ‘ Macbeth doth murder sleep; the innocent sleep;

“ Sleep that knits up the ravel'd sleeve of care,  
The birth of each day's life, sore Labour's bath,  
Balm of hurt minds, great Nature's second course,  
Chief nourisher in Life's feast.”

And then, accumulating, as it were, the concentration of all human misery upon him, he continues,—

“ Still it cry’d ‘ sleep no more !’ to all the house,  
 ‘ Glamis hath murdered Sleep, and therefore Cawdor  
 Shall sleep no more; Macbeth shall sleep no more.’ ”

This appears to strike all minds, like the punishment of Cain, that it was a retribution too great to bear; and all the great actors who have personated this character—Garrick, John Kemble, Kean, Young, and Macready—throw expressions of the most acute agony into the words “ Macbeth shall sleep no more !” Macbeth, when visited by the Physician, who informs him that his queen is not so sick, as she is troubled with thick-coming fancies that keep her from her rest, is aware from what source the indisposition proceeds, and directs his mode of cure by recommending his attention to the state of his patient’s mind, in one of the most pathetic passages of this noble play :

“ Canst thou not minister to a mind diseased,  
 Pluck from the memory a rooted sorrow,  
 Rase out the written troubles of the brain,  
 And, with some sweet oblivious antidote,  
 Cleanse the foul bosom of that perilous stuff  
 Which weighs upon the heart.”

We now revert to the scene in which Lady Macbeth is introduced as a somnambulist and sleep-talker, disclosing, by fragments, the past scenes of her guilty life. And here the poet, as in the cases of insanity in Lear, Hamlet, and Ophelia, has shewn himself a correct physiologist, and a judicious metaphysician. As in the case of the youth, which I have related, and in most others of inveterate *Paroniria loquens*, we have the Memory playing a part almost as important as the Imagination, and Lady Macbeth’s mind constantly dwells upon her remembrance of the murders of Duncan and Banquo. She is transported by the Imagination of her dream, as we learn from her disclosures during sleep, to the castle of her husband, as Thane of Cawdor, and the daggers, the bell, and the bleeding Duncan are present to her fancy, with all the attendant scenery of that awful hour. She is introduced attempting to wash spots of blood from her hand, to clean which appears an attempt as vain, as to cast an oblivion over the truth of her memory or the wanderings of her imagination:—“ Out, damned spot! Will these hands ne’er be clean? Here’s the smell of blood still: all the perfumes of Arabia

will not sweeten this little hand. To bed—to bed; there's knocking at the gate: come, come, come, come, give me your hand; what's done cannot be undone. To bed—to bed—to bed."—Nothing can exceed the fidelity of this illustration. Reality itself is not more true to nature, than this fictitious character to these instances of sleep-talking depending upon similar causes or intense mental anxiety.

The milder forms of this affection, which, apart from bodily indisposition, depend merely upon an irritable and restless state of mind, are, in most instances, relieved by the administration of opium before the attack. As its invasion is, in general, periodical, and its paroxysms pretty regular in occurrence, the person should be awake about an hour before the attack is expected, and opium freely given; so that its effects may be in full operation at the time of the usual occurrence of the disease. When this affection depends, as it commonly does, upon bodily disorder, it will be removed or mitigated only in proportion as its exciting cause is lessened or altogether removed; and, of course, the indiscriminate use of opium in such cases cannot be too severely condemned.

I shall now proceed with the consideration of the subject of somnambulism properly so called, not, in this lecture, adverting to that state of extatic somnambulism produced by the manipulations of the animal magnetiser. Somnambulism, or sleep-walking, is a peculiar condition of the nervous system consequent upon our dreams, in which the Imagination gains the power of directing our movements, and, in some measure, of controlling the operations of the senses, although the operations of these organs are then excited in a particular manner, widely different from their waking actions, which I shall presently particularly notice. In sleep-walking, the affected person is a sort of anomaly in nature. He is blind and sees, hears and is deaf, sensible and insensible at the same moment. The causes of this walking are various, and like those of insanity and dreaming generally, and in strict accordance, also, with those which produce hallucination, are dependent upon the two classes of causes to which I have so frequently adverted, viz., bodily disorder producing mental excitement, or certain states of the latter independent of the former. There is evidently a predisposition to this affection in the organization of the nervous system of the individuals in whom it occurs. They generally possess all the characteristics of what is called the nervous temperament, or constitution; they are thin, dark, sallow, addicted to study, fostering ridiculous fancies, and taking up unwarrantable prejudices.

Their Imaginations are brilliant or morbid as it may happen ; ting- ing the whole moral aspect of events with the sunshine of summer, or shading them with the gloom of winter. On this account, females, students, philosophers, physicians, and statesmen, are particularly liable to it ; whilst others whose occupations relate rather to things tangible and real than to ideas, are comparatively exempt from its attacks. The young are more subject to it than the old, and its accession is more to be expected in spring and autumn than in summer and winter. The most curious point in the history of the Imagination of sleep-walkers appears to be " From what source the sensorium derives its ideas during this state." I have described somnambulism to be the result of vivid dreams, occurring in constitutions of peculiar nervous irritability, these dreams being dependent upon bodily complaint or not. In this case, the ideas of the sleep-walker would be the product of his Imagination alone, with the assistance of Memory, without which, it will be at once perceived, that the former could not exist. Three opinions divide the scientific world on this subject, and in illustrating them I shall have to bring forward some cases of a most singular and amusing character.

The first opinion considers the sleep-walker, as I have described, acting from the Imagination of his dreams. A young nobleman, in the citadel of Brenstein, was observed by his brothers, who occupied the same room, to rise in his sleep, put on his cloak, and, having opened the casement, to mount, by the help of a pulley, to the roof of the building. There he was seen to tear in pieces a magpie's nest, and wrap the young birds in his cloak. He returned to his apartment and went to bed, having placed his cloak by him with the birds in it. In the morning he awoke, and related the adventure as having occurred in a dream, and was greatly surprised when he was led to the roof of the tower, and shewn the remains of the nest, as well as the magpies concealed in his cloak.—A gentleman of my acquaintance, invariably acts his dreams, when they happen to bear upon the events or occurrences of real life. He dreams that the house is on fire, and instantly the family is aroused by the most vociferous cries for assistance. I remember him once having a dream of this kind at an inn in London, the whole household of which would have been alarmed and the engines summoned had not a friend who was with him, and aware of his propensity, awoke him.

Bertrand and Professor Heinroth both positively assert that somnambulism is a distinct affection from dreaming, since, in dreams,

we exist in an ideal world ; whilst the sleep-walker is conversant with actually existing and material objects. Therefore they conclude that the sleep-walker is awake, or rather that he derives the impressions which are the subjects of his imagination, through the senses alone.

Somnambulism appears rather to depend upon the nature of the dream, when there is a strong propensity to it, and this will explain the difficulty which Bertrand and Heinroth have started. It is only when the dream relates to actual and real occurrences, that it can be acted upon by the sleeping person : were it of a more fanciful or ideal character, this could not possibly take place. He may dream of swimming, and imitate the action—of walking or climbing to certain situations near, and instantly do it—he may dream of writing, reading, dressing, cooking, riding, dispensing, composing, singing, and other actions, and perform them : but if his dream carry him to Arabia, to the North-pole, to Heaven, or to the moon—if his Imagination bury him alive, turn him to a stone, a sphynx, to a mummy, an egg, or a tea-kettle—it becomes impossible for a somnambulist to represent or perform any of these actions, and, therefore, he remains quiet and undisturbed.

These physiologists consider the somnambulists' actions to be entirely independent of both the perception of their senses, and the imagination of their dreams ; they suppose them to be endowed with a peculiar mode of perception, which they term "*Clairvoyance*." This power combines the functions of sight and hearing ; it is neither separately, but a compound of both, and is diffused over the body generally ; though its principal seat, the organs of the function, are the finger-ends and the nervous centres surrounding the stomach.

This opinion appears to be ill-founded, and unworthy of reception or belief, although adopted by all, or the greater part of, the philosophers and physiologists of the continent of Europe ; and, indeed, many facts may be deduced in its support. A somnambulist was accustomed to rise in his sleep, dress himself, go down to the cellar, and draw wine from a cask ; he appeared to see in the dark as well as in a clear day : but when he awoke in the street or in the cellar he was obliged to grope and feel his way back to his bed. Negretti, another sleep-walker, of whom we have an account given by Muratori, in his admirable book, *Della Fantasia Umana*, sometimes carried about with him a candle, as if to give him light in his employment ; but on a bottle being substituted, took it, and carried it, fancying that it was a candle. He once said, during his sleep,

that he must go and hold a light to his master, in his coach. Righellini, an observer, followed him closely, and remarked that he stood still at the corners of the streets, with his torch in his hand, not lighted, and waited awhile, in order that the carriage, which he supposed to be following, might pass the place at which he imagined the light was required.—The young Devaud, of Vevey, one of the best reported cases of sleep-walking on record, being engaged to write a theme, took pen, ink, and paper, lighted a candle, and began to write. As he was writing, a thick paper was placed before his eyes, notwithstanding which, he continued to write and form his letters as before, shewing signs, however, that something was incommoding him; which apparently proceeded from the obstruction which the paper, being placed too near his nose, opposed to his respiration. Upon another occasion the young somnambulist arose at five o'clock in the morning, and took the necessary materials for writing, with his copy-book; he meant to have begun at the top of a page, but, finding it already written on, he came to the blank part of the leaf, and wrote some time from the following words: *Fiunt ignari pigritiâ, ils deviennent ignorans par la paresse*; and, what is remarkable, after several lines, he perceived he had forgotten the *s* in the word *ignorans*, and had put, erroneously, a double *r* in *paresse*. He then gave over writing, to add the *s* he had forgotten, and to erase the superfluous *r*.—Probably the most remarkable case of this kind, in which the somnambulist acted entirely independent of his organs of sense, is one which has been given to the world by the Bishop of Bourdeaux, himself a witness and reporter of the facts. A young priest in a catholic seminary was accustomed to rise in his sleep, and write sermons. After finishing a page, he read the whole aloud, and, if necessary, erased words, and wrote his corrections over the line, with great accuracy. In order to ascertain whether he made use of his eyes, a card was put under his chin, so as to intercept the view of the paper which was on the table, but he continued to write without perceiving it. Wishing to know by what means he judged of the presence of objects, the paper on which he was writing was repeatedly changed. He always perceived this by the difference of size; but when a paper of exactly the same shape and size was given to him, he took it for his own, and wrote his corrections on places corresponding to those on the paper which had been taken away from him. The most astonishing thing is, that he would write music with great exactness, tracing on it, at equal distances, the five lines, and putting upon them the clef, flats, and sharps; after-

wards he marked the notes, at first white, then blackened those which were to be black. The words were written under; and once happening to make them too long, he quickly perceived they were not exactly under the corresponding notes; he corrected this inaccuracy by rubbing out what he had written, and putting the line below, with the greatest precision.\*

These cases, with numerous others which I could adduce from authentic record and from personal observation, prove that the senses, properly so called, do not, in such instances at least, minister to the activity of the imagination. How this is fed, is a matter concealed by a veil too thick for us to penetrate. There may be more things in heaven and earth than are dreamt of even in our philosophy; but, with due deference to the Magnetizers of France and Germany, we can hardly believe that hearing dwells in the tips of the fingers, or sight in the region of the stomach. It is plain that the general and vulgar opinion denies the operations of the senses generally in the phenomena exhibited by sleep-walking; at least, though the eyes are open, they are supposed to be unable, to be incapable, of exercising their accustomed properties. Such was the opinion of Shakspeare, in the dialogue between the gentlewoman and physician, on the somnambulism of Lady Macbeth,—“You see her eyes are open!” “Aye! but their sense is shut.”

We must at once conclude, from the perusal of the cases I have selected to illustrate this part of my subject, that the Imagination alone was active in producing all the phenomena which those cases present. The sense of vision did not in any measure assist the fancy, since the eyes were not only completely closed, but opaque bodies, as in the cases of Devaud and the priest, were placed between them and the paper upon which their themes, sermons, or music was transcribed. It at once strikes us as extraordinary, and almost impossible, that, without the assistance of sight, a person should be enabled to write, with as much accuracy as though this sense was in full operation; and to make all the alterations, corrections, and additions which a second perusal of a composition invariably requires. These cases of somnambulism can only be explained by supposing that the objects, about which their attention is engaged, are pictured to the Imagination in precisely the same order as they actually exist around them. It is a common circumstance, in ordinary dreams,

\* L. A. Muratori, *della Forza della Fantasia umana*, Venezia, 1766.—*Reflessioni sopra il Somnambulismo*, di Francisco Soave.—*Dictionary of Practical Medicine*, Art. *Somnambulism*.

that we fancy ourselves to be lying in the chamber in which we are actually reposing, and surrounded by the furniture which really occupies our apartment. In such cases, there is some difficulty in distinguishing between a dream and the waking state; and we dream, if I may so express myself, that we are awake—at least we are unable to distinguish, from the identity of circumstance, between the waking and the dreaming state. Such a state is extremely common with some persons, and with myself it is a frequent occurrence: I dream that I am in my own bed, in my own room, under all the circumstances which would surround me were I awake and so situated; and it is not till some unpleasant event takes place—such as the fancied entrance of robbers—or change in the character of my dream, that I am convinced, by waking, that I was not so before.—I am convinced that these are the sort of dreams which produce somnambulism; and I am, also, certain, in such cases as I have deduced, that somnambulism does result from such dreams; though in most instances they have passed from the memory of the affected person.\* Under the influence of such dreams as I have mentioned, the sleep walker would go to any part of his room, and take from his desk pens and paper, write, and perform other actions, since the accurate imagination of his dream pictures to him surrounding objects precisely as they are then disposed. It appears necessary to this explanation, that the senses should, before retiring to rest, have taken cognizance of the situation of surrounding objects, with which memory would furnish the Imagination during sleep. The priest read what he had written during his sleep, and corrected his composition. This is an extremely curious point; but it does not appear improbable, that he would recollect what he had written in his fit of somnambulism, though his senses certainly afforded him no evidence of it—precisely as we remember the actions of a dream as long as the dream lasts.

It is from this cause that somnambulists generally meet with no accident in ascending to perilous situations during their sleep; as in the case of the young nobleman in the citadel of Brenstein, who ascended the tower for the magpie's nest. The surrounding localities are so correctly presented to the mind, that the person ascends with safety to the roofs of houses, or crosses torrents and bridges which, during the waking state, he would be afraid to do—the pas-

\* The young nobleman, of Brenstein, did, however, recollect his dream, and it was precisely the same as the action he had performed during the somnambulatory state, which he had not been aware of, but only related his dream.

sion of fear being destroyed by sleep. The perilous situations of somnambulists have formed the wonder and admiration of gazing multitudes, and the mind of the vulgar has been impressed with the importance of leaving the sleep-wanderer to his own guidance, where a mistake in his footing of the twentieth part of an inch would have plunged him into eternity. The intense interest thus excited has been scarcely lessened by the admirable personification of the Somnambulist by Garcia, Kelly, and Damoreau Cinti.

The somnambulist is limited in all he does, during this state, to the ideas which are furnished by the dream under whose impression he acts; his mind and, it should seem, his organs of sense generally, are likewise limited to these impressions. Many persons have composed sermons and themes, elucidated difficult points in law and mathematics, during sleep, which they were unable to accomplish when awake. The intellectual faculties are here concentrated, by the power of Imagination, upon one train of ideas, to the exclusion of all the rest. From this cause, those passions which agitate us when awake are, in sleep, all in a state of oblivion, except those which are connected with the Imagination of our dream. The state of the perceptive power of the senses of vision, hearing, taste, and touch, are under the complete control of the Imagination, during the somnambulatory state. In the waking state, the Imagination is dependent for the materials of its actions upon the senses, particularly upon the sense of vision. Fancy is "*engendered in the eye, by gazing fed:*" but during sleep-walking, when the senses are evidently in action, they appear to be entirely governed by the Imagination, and see and hear only what the Imagination chooses to take cognizance of, or only perceive those objects about which the Fancy is then employed. Castelli was a pupil of Porati, an Italian apothecary. He was found one night, being asleep, in the act of translating from Italian into French, and looked for words in a dictionary, as usual. His candle being extinguished, he fancied himself in the dark, although several other candles were burning in the apartment, groped for the candle, and went to light it again at the kitchen fire. He used to leave his bed, go down to the shop, and weigh out medicines to supposed customers, to whom he talked. When any one conversed with him on a subject upon which his mind was bent, he gave rational answers. He had been reading Macquer's *Chemistry*, and somebody altered his marks, to see if he would notice it. This puzzled him, and he said "*Bel piacere di sempre togliermi i segni.*" He found his place and read aloud; but his voice growing fainter, his master

told him to raise it, which he did. Yet he perceived none of the persons standing round him, and though he heard any conversation which was in conformity with the train of his ideas, he heard nothing of the discourse which those persons held on other subjects. His eyes seemed to be very sensible to objects relating to his thoughts, but appeared to have no life in them; and so fixed were they, that, when he read, he was observed not to move his eyes, but his whole head, from one side of the page to the other.\* In this remarkable case, which differs from all those which I have hitherto brought forward, we have that singular action of the senses exemplified which is peculiar to somnambulism;—we have vision recognising one object before it, whilst blind to all the rest. Castelli saw his dictionary and books, whilst insensible to the presence of numerous persons who surrounded him: his Imagination rendered him attentive to the command of his master, which related to his own immediate employment, to the train of ideas then in operation, whilst he was deaf to the conversation and remarks which were made in as loud a tone. The eye of the sleep-walker is insensible to the strongest light, whilst it perceives objects, at the same time, in a state of gloom, which it would not be able, under ordinary circumstances, to pierce. His ear perceives not sounds of great power, whilst it collects the merest whisper that bears upon the wanderings of his fancy. The young Devaud, to certain particulars of whose case I have before alluded, whilst in a fit of somnambulism, heard a clock strike which repeated, at every stroke, the note of a cuckoo. “There are cuckoo’s here,” said he, evidently associating the song of the bird with the situation in which he fancied himself placed. The senses are all in limited action in this state if excited, but are invariably controlled by the fancy of the somnambulist. If Devaud was pinched or teased during a fit—unless his Imagination was more than commonly fixed upon any subject—he was sensible of it, and wished to strike the offender; however, he never attacked the person who had done the ill, but an ideal being whom his Imagination presented to him, and whom he pursued through the chamber, without running against the furniture; nor could the persons whom he met in his way divert him from his pursuit.†

\* See *Cyclopædia of Practical Medicine*, Art. *Somnambulism*,—the work of F. Soave before quoted, &c.

† A most pathetic and singular instance is given by Erasmus Darwin, of the facility with which somnambulists tenant the scenes of their imagination with sights and sounds, which affect them in this state; and the manner in

A female servant, in the town of Chelmsford, surprised the family, at four o'clock one morning, by walking down a flight of stairs in her sleep, and rapping at the bed-room door of her master, who inquired what she wanted? when, in her usual tone of voice, she requested some cotton; saying, that she had torn her work, but hoped that her mistress would forgive her; at the same time bursting into tears. Her fellow-servant observed her get out of bed, and quickly followed her, but not before she had related the pitiful story. She then returned to her room, and a light having been procured, she was found searching for her cotton box, from which she was offered an empty reel, but she refused it, and taking up the gown she pointed to the two holes which she was anxious to mend. In order to quiet her, her fellow servant threaded a needle with black cotton, which she angrily rejected as of no use, her gown being a light-coloured one. Another person now went to her, when perceiving a difference in the voice she said "that is my mistress," which was not the case. This girl evidently acted upon the imagination of her dream; and, without doubt, her senses were limited in their action to it. Her sense of vision enabled her to distinguish the difference of colour between the two cottons; but at the same time deceived her in the person of her mistress, who was not present. Her imagination was employed about tearing her work, for which she supposed her mistress would be angry, and hence the two leading ideas of her fancy were the rents in the work, and the anger of her mistress. We consequently find what her senses reveal to her relating only to these two circumstances. Cotton is presented to her which she rejects because it was not the colour suited to her wants. She hears a voice, and fancies, since the anger of her mistress was the predominant idea of her fancy, that it is her mistress's voice though it is not so. The senses of the somnambulist are curiously modified in their action, and over them, in this state, the Imagination exerts some of its most extraordinary effects. They take cognizance of nothing except the fancy wills it, and to the examples which I have given of hearing and sight, may be added others which affect the senses, touch, taste, and smell, in the ordinary condition; not nearly so liable to deception or deranged impression as the former.

It is evident that the senses are not awake during sleep-walking, which these are modified by the imagination of the dream.—This lady in the sunnambulatory state, heard the sound of a passing bell. "I wish I was dead," she cried, listening to the bell; and then, taking off one of her shoes, as she sat upon the bed, she exclaimed "I love the colour black, a little wider, and a little longer, and even this might make me a coffin."

or they would judge more correctly as to those circumstances about which the Imagination employs them. When I say, awake, perhaps I may be misunderstood: they are awake, as far as regards their customary actions—those actions which they perform independent of the governing or directing power of the judgment; but dormant as far as relates to their detection of the qualities of bodies. They resemble, very much, the state of the senses in insanity, exemplified by the case of a poor gentleman, in Edinburgh, who, in a state of mental derangement, was limited, in his diet, to simple milk-porridge. He was curious in his selection of dainties, (he observed to a visitor), careful in his choice of cooks, had every day a dinner of three regular courses and a desert, but, somehow or other, all he ate smelt and tasted of porridge. The state of this poor gentleman's senses resemble precisely those of the sleep-walker. Negretti had prepared himself a bowl of salad, for which seasoned cabbage was substituted, but he did not detect the deception. Others have taken coffee for snuff, water for wine; imagined when they were struck with a stick that they were bitten by a dog, and resolved all objects, with which they came in contact, into the tenants of their own wandering and distempered fancy. It is not, perhaps, by examining, in an isolated and simple manner, the mental condition in any morbid or erratic state, that we are enabled satisfactorily to explain the phenomena which, under these states, are exhibited to us; but, on comparing one with another,—as insanity with sleep-walking—we arrive at a clear and satisfactory elucidation of what before appeared to us a mystery. Thus, in insanity, we find the senses correct in their action; whilst the Imagination throws the hue of its own peculiar colour over the scenes which they present to it; or we find, as in the case I have just alluded to of the Scotch gentleman, one sense bearing direct testimony to the false action of another. In somnambulism, the Imagination is the predominant faculty in activity, and the senses are strictly subordinate to it.

We must admit, with the phrenologists, the appropriation of certain parts of the brain to the fulfilment of certain actions; and, reasoning from this disposition, we may conclude that, when the senses of the sleep-walker correctly judge of what is presented to them, the judgment is, also, awake, at least to a small extent. Thus, Devaud detected wine, in which there was wormwood, by the smell; and the servant girl, at Chelmsford, could not be imposed upon in the colour of the different cottons. In the insane person, all the organs—both of the senses and the intellectual faculties—are awake: but, in somnambulism, parts of these only are watching,

whilst the remainder are in profound repose, and some physiologists have supposed that those which do slumber, do this more profoundly from the activity of those which are awake. The senses may sleep independently of the brain; and portions of the latter without the former. When all the senses are asleep, and the communication with external objects has entirely ceased—when colours of the most brilliant and varied hue, or of the most dazzling brightness, cease to provoke the action of the eye—when the most melodious sounds are lost upon the ear—when the fragrant of the rose and the daintiest viands affect not the taste and the smell—the intellectual faculties may be in full activity, and all these may be present to the Imagination, to the Memory, or even to the Judgment. In this manner we have dreaming produced; but if the Imaginations of our dreams are of a certain character, or of sufficient degree of vividness, we have called into play the actions of the locomotive organs or the senses, and, in conformity with the Imagination of our dream, we may walk, sing, hear, smell, or taste, according to its character, and the sense, or senses, which are in action.

The endless variety of dreaming and the somnambulatory state can only be explained on the supposition that some parts of the brain wake whilst others sleep, and the opposite; thus forming an endless combination which, like the notes of an octave in different states of combination, afford us music which, at one time, melts to tears, at another excites to love, or at a third, rouses to anger. Somnambulism is comparatively a rare affection, at least in its more marked and singular forms, and is generally connected with a morbid mental or corporeal constitution, commonly preceding or connected with epilepsy, catalepsy, the various forms of lunacy or mania, and other maladies which have their seat principally in the nervous system. It will be recollected that, in my lecture on the Imagination of dreamers, I endeavoured to trace the connexion between the wanderings of the fancy and the variations in the condition of the bodily health; and we shall find that a recurrence to this subject will throw some light on the causes of sleep-walking. The state of our health is hardly the same two hours together; the infinitely various modifications which this undergoes can never be appreciated by us, but may be ascertained, in some measure, by the variable state of the mind. We are troubled with ennui, listless and unhappy we know not why, and again are cheerful, gay, and merry, and are just as ignorant of the cause. The variations in the condition of the body are, in great measure, the origin of this, and the extension of this influence to sleep is the cause of by far the greater

part of the phenomena of our dreams. Persons who never dream till they grow up are generally visited, soon after their first experience of this kind, by a change in the bodily constitution terminating in acute disease, or death. Of all dreams with whose characters we are acquainted, those which produce sleep-walking are the most vivid, intense, and real, and are excited, in persons predisposed to this affection, by the most trivial occurrences. Under ordinary circumstances, we are hardly led to recur to the events of the day in our dreams, except these have been of an unusually stimulating or impressive character. But the somnambulist dreams from the merest trifle; his Fancy is like the vane, veering towards any point from the faintest idea that strikes it. It is sufficient to determine the Imagination of the sleep-walker by impressing his attention with any subject immediately before retiring to rest. If we tell or read to him of a shipwreck, he no sooner closes his eyes in slumber, than he is immediately transported to the foaming billows, and he manifests, by his attempts at swimming, and the most convulsive movements, his sense of danger, and anxiety to escape from it. Devaud was devoted to reading tales of robbers; and dearly did he pay for his indulgence, undergoing a thousand terrors, during the somnambulatory state, from their fancied attacks. Commonly, however, the sleep-walker's imaginings are limited to the scenes of his home, with which he is most familiar, and its accompanying or surrounding circumstances and localities; and it is natural to suppose that the scenes with which he is most conversant when awake, should be most frequently the area of his dreaming fancy. As in ordinary dreams, so in those accompanied by somnambulism, evident bodily disorder, as fever, local congestion or determination of blood, particularly towards the head, dyspepsia, or indigestion, aggravate, in a great degree, all the phenomena of sleep-walking, and render the attacks longer, and more dangerous. Circumstances which have a tendency to favour the removal of an increased quantity of blood determined towards the head, likewise have a tendency to mitigate or prevent attacks of somnambulism where there is a predisposition to it. Signor Pozzi, physician to Pope Benedict XIV., had an unusual quantity of hair, and it was only by keeping it close cut that he could counteract the tendency to sleep-walking. The bodily affections, however, upon which sleep-walking depends, are extremely variable; its essential character consisting in a natural irritability of mind, liable to be aggravated by any morbid change in the corporeal constitution with which that mind is so intimately connected.

Insanity is, in many cases, a disease of the fancy alone, unconnected with any appreciable bodily complaint; and, in these instances, somnambulism, in certain forms, bears a strict analogy to it. We have no attendant disorder, to which it can be attributed; but all its phenomena are alone referable to the ungovernable activity of a morbid imagination.

Reverie consists in an inactivity of the senses to the impression of surrounding objects; the concentration of all the powers of the mind upon one point, or a limited number of ideas; whilst, although the person be wide awake, the senses are not alive to the impression of external objects. Sounds cease to affect the ear, light makes no impression upon the eye, and to such an extent does the deadness to external stimuli occasionally rise, that some are said to have stared at the meridian sun without pain, others to have been undisturbed with a report of a cannon; and there is extant a story of an Italian nobleman, who was so absorbed in the scenes which his fancy pictured, as to be insensible to the torture of the rack. The appearance of a person in intense reverie is not unlike that of the somnambulist, and so little difference is to be detected in their respective affections, that Darwin has considered somnambulism as a variety of reverie. The countenance is vacant, the eye dull, and without speculation; and the whole character listless and unimpassioned. So active and vivid is the predominant idea which possesses the imagination, that it appears to have abstracted all the energy of other organs to concentrate them upon itself. It arises commonly from two causes—from intense study, or from some overwhelming passion of joy or grief. The latter cause, only, will merit our attention here. It is not under ordinary circumstances, or from common causes, that reverie amounts to a degree sufficient to demand more than passing attention or remark; but when the result of a mental affection, which occupies all the energies of our very being, it sometimes acquires a pitch which is only exceeded by certain forms of insanity. The predominant idea which possesses the mind becomes one round which all the faculties at length assemble; and relates, as in the case of dreams, to the situation in which we are placed, or to the circumstances with which we are surrounded; to the hopes which allure us, to the griefs which depress, to the joys which animate, or to the cares which distress, harass, and corrode. The imagination now becomes so active, that an additional beauty is given to one class of ideas; whilst, by the same law of mental abstraction, those of an opposite character are invested by a deeper gloom. We cease to be excited by external objects—

the world which surrounds us passes unheeded, and we are occupied alone by the pictures of fancy. Occasionally our Imagination is led into this state of reverie, by occurrences which bring back upon the memory, scenes and objects long since forgotten: the home of our childhood, the hopes of our youth, the objects of an early and blighted affection, by some particular and unlooked for event, are again presented to the mind; and the Imagination, giving the rein to its workings, plunges us again into these scenes, recalls events over which oblivion for years had drawn her veil, and deludes us by hopes long dead, and joys whose very memory is grief.

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## HISTORICAL MEMORANDA OF WIGMORE CASTLE, HEREFORDSHIRE.

BY SIR SAMUEL RUSH MEYRICK, K. H.

[*Concluded from the last Number*].

SIR Edmund Mortimer, after the battle of Shrewsbury, fled into Scotland; but his nephew, being captured, was condemned to perpetual imprisonment. He was received with great kindness by the king of Scotland, who made him laird of Craigivar, in the highlands of Aberdeenshire, where his successors continued for two hundred years, some even being said to be still extant.\* It is very doubtful whether Sir Edmund married a daughter of Owain Glyndwr, as it has been asserted,† and all means of ascertaining the truth are destroyed by the statute of the 4th of Henry IV. passed in 1403, which enacted "that no Englishman should marry with any of the family of Owain Glyndwr, nor should any such marriage previously formed be considered valid." Thus it became politic to conceal the fact.

The Earl of March remained a captive until after the close of Henry's reign, in 1413; but his son, being anxious to heal all dissensions, admitted, in the next year, a great many to favour; and thus wisely added to the number of his friends, at the time he claimed the crown of France and prepared for war with that coun-

\* Anderson's *Royal Genealogies*, table 492.

† Anderson and others.

try: consequently, among those who were summoned by writs to attend the great council at Westminster, on Tuesday, the 16th of April, were the Earl of March, Richard Plantagenet of Connesborough, Earl of Cambridge, who had espoused Ann, March's sister and eventually his heiress, and his brother Edward, Duke of York. They afterwards assembled at Southampton, to embark, with Henry V. for France, having sanctioned his expedition at that meeting. The Duke of York had under him 100 men at arms, 1 baron, 4 knights, 94 Esquires, and 300 archers; the Earl of Cambridge, 60 men at arms, 2 knights, 57 esquires, and 80 archers; and the Earl of March, 60 men at arms, 1 baronet, 3 knights, 55 esquires, and 160 archers. Some of the bowmen were mounted, and some on foot. As the king was about to sail from Southampton, a conspiracy of three noblemen, one of whom was Richard, Earl of Cambridge, was discovered, which endangered his life. They were all executed.\* Cambridge's first wife had conveyed to him the title claimed by his descendants of heirs to the throne; and enabled them to succeed to the property of the Earl of March. His second wife, by whom he had no issue, was Maud, daughter of Thomas, Lord Clifford. The Duke of York, Henry's kinsman, was slain, 25th of October of the same year, 1415, in the battle of Azincour: and from Leland we learn that "King Henry made the Erle of March capityne on the se." That author, however, appears to repeat an idle tale, when he says that this nobleman "cam from the see to Hogges in to Normandy, and there folowid hym, still a pigge instede of a gide tyl he came to Cane."† The Earl of March sat on his brother-in-law's trial, and seems to have been sent as lieutenant of Ireland, on the death of Henry V., whose funeral he had attended; yet so narrowly watched afterwards, that he died in 1424, at Trim Castle, of a broken heart, in consequence of the indignities and ill usage he received. He left no issue.

Anderson assigns him another uncle, who is not mentioned in the pedigree at the College of Arms, a Sir John Mortimer, who, he adds, "was hanged and quartered for a sham plot, in 1424, to countenance the perpetual imprisonment of his nephew, Earl Edmund, who died that same year in goal."‡

Thus did Wigmore Castle continue in the possession of one family,

\* Without the north gate of Southampton.—Leland, *Coll.*, vol. ii., p. 487.

† *Collect.*, vol. ii., p. 488.

‡ *Royal Geneal.*, ut supra. See, also, Hall's *Chronicle*. The Duke of Gloucester was made Protector of the kingdom, while the Duke of Bedford commanded the army in France, during the King's minority.

and that most powerful, from the conquest to the time of Henry VI.; and their claim to the throne, notwithstanding the melancholy termination of the male branch, was successfully asserted within forty years after.\*

Richard, who succeeded his father in the titles of Earl of Cambridge, March, and Ulster, and Baron of Wigmore, had restored to him the title of Duke of York, forfeited by his uncle, in the year 1425; and was afterwards created Lord of Clare and Connaught in Ireland. He married Cecilia, daughter of Ralph Neville, Earl of Westmoreland. It seems to have been very ill-judged policy in the guardians of Henry VI. to have so treated the last of the Mortimers as to have accelerated his death; as by that means, and the restoration of family honours to his heir, they raised up a far more formidable rival. Richard, under the patronage of the King and the Duke of Gloucester, grew into esteem with the people, and rose to eminence in the state.

Yet there were not wanting those who still clung to the name of Mortimer, from a remembrance of its talismanic effect, particularly as the Duke of Gloucester was a persecutor of the followers of Wicliff. Hence a leader of the Lollards at Oxford, one William Perkins, called himself Jack Sharpe, of Wigmore land, in Wales, and in the year 1431 drew several who cherished an attachment to the late unfortunate owners of that territory. He was captured and executed through the means of William Warbelton, an esquire, who petitioned the Duke of Gloucester and the council for the reward.† After the death of that nobleman, Jack Cade, in 1450, when he headed the rebellion of the Commons of Kent, was induced to assume the name of Mortymer, by which he was called in the prayer of the sheriffs of London, Thomas Conynges and William Hulyn, for remuneration of their expense in disposing of his body and that of other traitors.‡ Whether the William Minors, esquire,

\* It was a descendant of Roger Mortimer, Lord of Chirk, the third son of Roger, who married Matilda de Breos, that obtained the lordship of Genau'r glyn, in the county of Cardigan, and whose descendant, Owain Mortimer, exchanged it for Coedmawr, in the same county; and his descendant, Richard, married Catharine, daughter of Rowland Meyrick, Bishop of Bangor, whose son, Sir Gelly Meyrick, as we shall find, became possessed of Wigmore Castle. There were afterwards Mortimers to be found in Herefordshire, as, in 1433, we meet with Hugh M., an Esquire, and John M., of Bromyard, a Gentleman.

† Ellis's *Original Letters*, second series, vol. 1., p. 103.

‡ *Ibid.*, p. 112. When Cade had entered the city, he struck London stone with his sword, and exclaimed, "Now is Mortymer lord of the city."

who appears in the list of these, was of Triago, in Herefordshire, I am unable to say, but if so it would seem that Jack Cade was encouraged by some persons of this as well as other counties.

The Duke of York, as he was honorably employed in Normandy, escaped being involved in those intrigues which ended in the death of his patron, the Duke of Gloucester. His good conduct had procured him universal esteem; so that there were many who turned their eyes towards him as the lineal descendant of Edward III. Suffolk and Queen Margaret, when too late, appear to have hence become aware of his dangerous relationship to the crown by the removal of Gloucester, and in their fear rashly gave him cause of discontent. In 1447, they obliged him to relinquish his splendid appointment in France in favour of John, Duke of Somerset, and thus provoked his hatred and indignation. To appease and remove him from their presence, the command in Ireland was conferred upon him two years after, where he had to suppress a new rebellion; in which, according to Stowe, "he so assuaged the fury of the wild and savage people there, that he won such favor among them as could never be separated from him and his lineage." Certain it is that the acts which were passed in Ireland under his administration reflect the highest honour on his memory.

The whole kingdom was now in a state of the greatest excitement, and a large portion of the people, disliking the government of the queen, were anxious to see the Duke of York at the head of the ministry. He was encouraged by numerous partizans to assert his just pretensions to a share in the royal councils, and was not without ample cause for discontent, from the preference given to his personal enemies. The queen persisted in plunging the nation in war, rather than admit him to a station which would, no doubt, be detrimental to the Duke of Suffolk.

Nevertheless, without resigning his appointment of lord lieutenant of Ireland, he quitted that country in the month of September, 1451, and proceeded to Wigmore Castle. Here, distrusting the nature of his reception at court, he rested, in order to collect a sufficient force to insure his safe conduct to London. It was at this period that he received the following letter from his sons, Edward, Earl of March, afterwards Edward IV., and Edmond, Earl of Rutland, in reply to his own. "Ryght hiegh and ryght myghty prince, oure ful redouted and ryght noble lorde and ffadur, as lowely with all oure herts as we youre trewe and naturell sonnes can or may, we recommede us un to youre noble grace, humbly besechyng your noble and worthy ffadurhode daily to yeve us your

hertely blessing; through whiche we trust muche the rather to encrees and growe to vertu, and to spede the better in all matiers and things that we schall use, occupie, and exercise. Ryght hiegh and ryght myghty prince, our ful redouted lorde and ffadur, we thanke our blessed Lorde, not oonly of your honourable conduite and good spede in all your matiers and besynesse, and of your gracious prevaile ayenst thentent and malice of your evilwillers, but also of the knowlege that hit pleased your nobley to lete us now late have of the same by relacion of Syr Watier Deureux, knyght,\* and John Milewatier, squier, and John at Nokes, yemon of your honorable chambur. Also, we thonke your noblesse and good ffadurhood of our grene gownes now late sende unto us, to our grete comfort; beseching your good lordeschip to remembre our porteux,† and that we myght have summe fyne bonetts sende un to us by the next scure mesigr., for necessite so requireth. Overe this, ryght noble lorde and ffadur, please hit your highnesse to witte that we have charged your servant, William Smyth, berer of thees, for to declare un to your nobley certayne things on our behalf, namely, concernyng and touching the odieux reule and demenyng of Richard Crofte, and of his brother.‡ Wherefore we beseche your graciouslye lordeschip and full noble ffadurhood to here him in exposition of the same, and to his relacion to yeve ful feith and credence. Ryght hiegh and ryght myghty prince, our ful redouted and ryght noble lorde and ffadur, we beseche almighty Jhu yeve yowe as good lyfe and long, with as muche contenal perfite prosperite, as your princely hert can best desir. Written at your castill of Lodelowe, on Setursday in the Astur week.—Your humble sonnes,

E. March and E. Rutlande.¶

William of Wyrcester§ informs us that among those who intended to repair to Wigmore Castle was Tresham, late speaker of the House of Commons, one of Suffolk's most determined opposers. Whilst on the way thither, he was suddenly attacked by one hundred and sixty armed men belonging to Lord Grey de Ruthyn, who put him to death while he was repeating his matins to the Virgin,|| at Multon Park, near Northampton, on the 22nd of September

\* Of Herefordshire.

† Breviaries.

‡ Of Croft castle, near Wigmore, Herefordshire.

¶ Cott., *Lib. Vesp.*, f. iii., fol. 9,—from Ellis, *Original Letters*.

§ *Annales Rerum Anglic.*, p. 472 et seq., from whom the following account is taken.

|| Parliament Rolls.

At the end of the month the Duke of York marched to London, with a retinue of four thousand men, too powerful to be encountered by Lord Lyle, who was sent to arrest his progress. Having reached the palace at Westminster, he knelt before the king, and, representing the disturbed state of the country, intreated him to summon a parliament. The queen would have sent him to the Tower but for the interposition of Buckingham. The duke gained his point; the parliament was summoned for the following November; and he, in the mean time, retired to his castle of Fotheringay.\* Early in the sitting, Thomas Yonge, member for Bristol, moved that the Duke of York be named heir apparent to the crown; for which he was sent to the Tower.† The duke, at the conclusion of the session, withdrew discontented to his castle at Ludlow. Here he issued proclamations, and one of these, addressed to the citizens of Shrewsbury, in the middle of February, 1452, has been published by Sir Henry Ellis, among his *Original Letters*. It assures the people that his intentions were solely for the good of the country, and welfare of the king. The name of March was powerful in the marches of Wales, and numbers flocked to his standard. King Henry was placed at the head of a powerful army, accompanied by the Duke of Somerset, and other lords. York, avoiding an engagement, crossed the Thames, at Kingston, and proceeded into Kent, where he hoped to gain a considerable accession of strength. He entrenched himself on a heath near Dartford, which he fortified with artillery. The royal forces were encamped at Blackheath, whence the bishops of Winchester and Ely were despatched to inquire the cause of his hostile appearance. The duke demanded Somerset's being put on his trial,‡ and being assured that he was in custody by the king's command, disbanded his followers, and repaired to the royal tent, where, to his surprise, he was confronted by his antagonist, and found himself a prisoner. He was placed on horseback and conveyed to London, where Somerset urged his trial. The king was averse to shed his blood, and the council were alarmed at hearing that an army was hastening to his relief, commanded by his brave son, the young Earl of March. The Duke of York willingly consented to renew his oaths of fealty and allegiance, as the price of his liberty. This done, he was permitted to return to his castle at Wigmore.¶

\* William of Wyrcester.

† Parliament Rolls.

‡ Hall's *Chronicle*.

¶ Stowe.

On the 12th of October, 1453, Queen Margaret gave birth to a son, and the Duke of York was now admitted to a place in the Cabinet. The king became imbecile, and York was appointed Protector of the realm. The queen's hatred continued; but after the lapse of a year Henry recovered, and the protectorate ended.

The command of Calais was now taken from the Duke of York, and given to his enemy, Somerset, which gave fresh excitement to his indignation, and he retired to meditate revenge in his northern possessions. His brother-in-law, Richard Neville, Earl of Warwick, was very rich and powerful. He was joined by him and Lord Cobham, and they put themselves in hostile array to expel the Duke of Somerset. Henry, attended by this nobleman, the Duke of Buckingham, the Earls of Stafford, Northumberland, and Wiltshire, with Lord Clifford, marched to St. Albans, to prevent their entering London, and arrived time enough on the 22nd of May, 1455, to garrison that town. Buckingham was sent to inquire the cause of armed insurgents coming against their sovereign.\* York demanded the surrender of Somerset; adding, that he and his friends, unless this were done, were ready to perish in the field. Henry answered by a spirited remonstrance, and both parties prepared for the encounter.

The royal troops did not exceed 2,000 men; but, possessing the town, they had the advantage, although their antagonists were one-third more numerous. Lord Clifford had the charge of the barriers, which were vigorously assaulted, but without success. Warwick attacked the garden side, his forces burst through the entrenchments and fought hand to hand with the Lancastrians in the streets. The Duke of York, with great generalship, continually sent reinforcements to the weakest points. The king was struck in the neck by an arrow. His three generals fell dead in the fray, and this became the signal for flight. The unfortunate monarch, deserted and bleeding, sought refuge in the house of a tanner: hither the Duke of York immediately repaired, and by the most respectful conduct shewed that he warred solely against Somerset. Although the king was his prisoner, and the Duke had fair pretext to claim the crown, he had due regard to his oath of allegiance; and Henry, in consequence, received him and his friends into favour. He was appointed Constable of England—Warwick, Captain of Calais, with the custody of the sea—and Bouchier, treasurer, with full pardon for their offences. In November, the king again became ill, and the

\* Whethamstede.

lords solicited the Duke of York once more to resume the office of protector. His majesty recovered at Christmas, and the queen took care to have the Duke of York not only removed from this, but also from his high station in the cabinet. He retired quietly to his castle of Wigmore. The other party, regaining power, cried loudly for revenge, and the Yorkists found they could trust to nothing but the sword.

The queen removed the king to Coventry, a town entirely devoted to her interests, whence his majesty invited the Duke of York and his party to repair to him, for the purpose of adjusting differences. They set out for the purpose; but receiving private information that a plan had been laid for their destruction, they hastily retired, York to Wigmore, Salisbury to Middleham, and Warwick to Calais. This was in 1456; and in the next year there was displayed a procession, in which the contending parties seemed to have resolved on forgiving and forgetting each others' trespasses. It was soon evident that this was a vain expectation; and York now raised his eyes to the regal diadem. Reconciliation was utterly useless; and York mustered his followers on the Welsh border. The Earls of Salisbury and Warwick prepared to meet him at Kenilworth, in 1459. The king marched to Worcester at the head of 60,000 men, while the queen and her son repaired to Chester.

On the evening of the 22nd of September, Salisbury had arrived at Blore Heath, near Drayton, in Staffordshire, where he found a force double the number of his own, with Lord Stanley at the head of another division not far off. They met: from good generalship Salisbury conquered, and marched in triumph to join the Duke of York at Ludlow. The royalists, notwithstanding their defeat, set out for Ludlow. Defection now spread among the Yorkists, and the Duke with his youngest son, took refuge in Ireland, while the Earl of March accompanied the Nevilles into Devonshire, whence they sailed to Calais. Ludlow submitted to the triumphant army, and the Duchess of York, with two of her sons, became prisoners. They were well treated, by the king's particular desire; but the estates of the nobles who had fled, were confiscated, and they themselves branded by the name of traitors. Wigmore castle thus fell into the hands of the crown.

In June, of the year 1460, Warwick, accompanied by the Earls of Salisbury and March, with 1,500 men, landed in Kent, where Lord Cobham joined them with 400 more, and the Archbishop of Canterbury lent the sanction of his presence. The invading army amounted to 40,000 by the time it reached London, where the citi-

zens opened the gates. From London, they marched to Coventry. The Bishop of Salisbury was despatched to the king, to prevent bloodshed; but Henry was advised to refuse him admittance. The royalists crossed the river Nene, and entrenched themselves in a field between Harryington and Sandiford. The attack on them was made in three columns; the first led by the Earl of March, who bore his father's banner—the second by Warwick—and the third by Fauconberg. Lord Grey de Ruthyn betrayed his post, and the assailants thus gained entrance to the camp. The king's party were routed, and the Duke of Buckingham was among the slain. The Duke of Somerset fled in haste, and Margaret, with her son, escaped into Wales. The king, left desolate and forlorn in his tent, found the victors kneeling at his feet, and was attended back to the metropolis with all the attributes of sovereignty. A new administration was formed, the attainders reversed, and Wigmore again reverted to the house of March.

The Duke of York, now that his friends had the ascendancy, quitted Ireland, and entered London in October. With a naked sword borne before him, and his approach announced by trumpets, he proceeded to the house of lords, and placed his hand upon the throne, waiting the effect. A dead silence prevailed, and he withdrew it, when a burst of approbation signified that his hopes were vain: nay, the Archbishop of Canterbury asked whether he would not repair to the queen's palace to visit the king,\* when he indignantly replied that he knew of no one in the kingdom who ought not rather to come to him. Hastily retiring, he took up his abode in the royal apartments, and all ranks began to murmur at his ambitious views. He had gone too far to recede, and therefore presented to the chancellor a written document, in which he set forth his claims to the crown, derived from Lionel, Duke of Clarence, the elder brother of John of Gaunt. The Lords were perplexed; but after much discussion the Duke of York consented to waive his claim during the life of the king, and have its reversion after. He and his two sons, the Earls of March and Rutland, swore to attempt nothing against the king's life, but to devote themselves to his service; and Henry, in return, recognized the Duke of York as heir apparent.

The queen's spirit was unsubdued: she assembled her friends in the north, and her formidable appearance obliged the Duke of York, with the Earls of Salisbury and Rutland to leave the capital and

\* Whethamstede.

hasten to Sandal Castle, a strong post, which he reached on the 21st of December, with 6,000 men. The Earl of March followed leisurely with the reserve. Taunted by Somerset, he agreed to meet in the open field, although his enemies were treble the number. The conflict took place at Wakefield, before the Earl of March could arrive. A day was appointed for the fight; but, violating the strict laws of chivalry, the queen's party commenced the attack while part of the duke's were absent in search of forage. York's desperate courage availed him not. In half an hour 2,800 of his followers were slain, and he and Salisbury, covered with wounds, fell into the hands of his remorseless enemies. The tutor of young Rutland, a boy but twelve years of age, led him from the field, in the hope of safety. Lord Clifford met them, and in spite of all entreaties for mercy, plunged his dagger in the supplicant's heart—bidding a priest, who had interceded for his life, carry the tidings to his mother.\* York was put to death; and the savage Clifford, carrying his head on a pole to Margaret, exclaimed "Madam, your war is done; here is the ransom of your king." The ruthless woman disgraced her sex and rank: she laughed at the horrid spectacle, and ordered the head to be crowned with a paper diadem, and placed, with those of Salisbury and others, over one of the gates of York. Thus perished this heroic chief on the 31st of December. His sister was Isabel, wife of Henry Bouchier, Earl of Essex; and his wife, as before stated, Cecily Neville. By her he had eight sons and four daughters: Edward, who succeeded to his titles—Edmond, Duke of Rutland, who so cruelly perished at Wakefield—George, created Duke of Clarence, in 1461, who married Isabel, daughter of Richard Neville, Earl of Salisbury—Richard, created at the same time duke of Gloucester, afterwards Richard III—Henry, William, John, and Thomas, all of whom died young—Ann, who married, 1st, Henry Holland, Duke of Exeter, from whom she was divorced in 1472, and 2ndly, Sir Thomas St. Leger, knight—Margaret, wife of Charles the Bold, Duke of Burgundy—Elizabeth, who married John de la Pole, Duke of Suffolk—and Ursula.

The young Duke of York received the news of his father's defeat, and the disastrous consequences, with great strength of mind, and, conscious of his inability to avenge him, commenced his retreat to Wigmore. He lost no time, however, in summoning his friends

\* Lord Clifford was called "the butcher." See Dugdale, and *The Chro- niclers*.

and dependents, and the men of Herefordshire and the borders flocked to his standard. Owain Tydyr, with his son, the Earl of Pembroke, having joined the Earl of Wiltshire with a mixed force of Welsh and Irish, closely pursued him. Edward, when in the parish of Kingsland, and scarce four miles from his castle, suddenly faced about, and drew up his forces near where the piety of the Mortimers had reared a cross that bore their name; thinking it wiser to attack this force at once than allow its junction with the main body. His attack was made on the 1st of February, 1461, and with such vigour that he dispersed and cut them to pieces, with the loss of four thousand. Owain Tydyr and seven of his captains that were taken, were sent to Hereford, and there executed. On the 17th of the same month, the Earl of Warwick met the queen's army at St. Albans, and, imprudently giving battle, was defeated, and his troops completely routed. London was now defenceless, but the lawless bands headed by the queen committed such ravages that it was thought prudent not to lead them to the metropolis. Edward's army, strengthened by the fugitives from Warwick's, marched, in the mean time, into London. The battle of Mortimer's Cross had caused the Duke of York to be regarded as the flower of English chivalry, and he was soon greeted with the cheering sounds of "Long live King Edward!"

To pursue this further would be to write a portion of the history of England. Suffice it to say that Wigmore thus became part and parcel of the possessions of the crown.\*

The well-known badge of the Yorkists was the white rose, first used as such by Edmond of Langley, fifth son of Edward III., and derived as it is said from the castle of Clifford. This was placed by Edward IV. en soleil, he having adopted the sun in consequence of an optical delusion, which occasioned that luminary to appear doubly refracted, so as for a short time to assume the appearance of three suns, on the morning previous to the successful battle of Mortimer's Cross. The rose and sun, separate, formed the ornaments of a collar which Edward gave to his adherents, and from which depended the lion of the house of March. Such may be seen in illuminations, and on monumental effigies. The white lion had been

\* Cecily, Duchess of York, lived till August, 1495, having made her will on the 1st of April preceding. She therein styles herself "Mother to King Edward IV.," and directs her body to be buried near that of her late husband, Richard, Duke of York, in his tomb within the collegiate church of Fotheringay. Her husband's effigy is painted on glass, at Cambridge.

used as a supporter by the Mortimers, as also a white wolf, another of King Edward's badges. He likewise had a black dragon, which he derived, through the Mortimers, from the Burghs, Earls of Ulster. The falcon and fetter-lock was a badge of the house of York. The falcon seems to have been added by Richard, Earl of Cambridge, grandfather to Edward IV., to the fetter-lock which had previously been used by his family. The fetter-lock was at first closed, it is said to shew how distant the family were from the throne, but after the accession of Edward IV. it was opened. The crest of the Mortimer family was a pyramid of feathers, azure, issuing from a ducal coronet or.\* The divers colours were murrey and blue.

Wigmore Castle was conveyed to the Lancastrian family by the marriage of Elizabeth of York with Henry VII. It seems to have continued in the crown during the reigns of Henry VIII., Edward VI., and Queen Mary, but Queen Elizabeth, at the instance of Robert, Earl of Essex, granted, in 1591, to Sir Gelly Meyrick, then Captain Meyrick, and his heirs, "the burgh of Wigmore, and the dominion, honor, manor, and castle of Wigmore, in the county of Hereford, part of the possession called Wigmore Land, and all the lands, tenements, and hereditaments, belonging to the same; and the forest and chace of Boringswood, and the forest and chace of Morktrey, and all the lands, tenements, and hereditaments, appertaining thereto; and to Henry Lyndley, Esq., the other steward of the Earl of Essex, divers lands, tenements, and hereditaments, in the counties of Hereford, Cornwall, Cardigan, Glamorgan, Lincoln, and York.†"

Sir Gelly (pronounced Gethley) was the eldest son of the Right Rev. Dr. Roland Meyrick, and Catherine, daughter of Owen Barrett, of Gellyswick, in the county of Pembroke, he being the second son of Meyric ab Llewelyn, of Bôdorgan, in the county of Anglesea, Esquire. He was born about the year 1556, left fatherless at the age of nine, and his mother retiring afterwards to Hascard, in Pembrokeshire, the early part of his life was passed in that county. He seems to have entered the army in 1572, and both he and his brother, afterwards Sir Francis Meyrick, were in the expedition to the Netherlands commanded by Sir Thomas Norreys. It was on the 1st of August, 1579, at the battle of Rimenant, that he so dis-

\* See Williment's *Regal Heraldry*, an antiquarian work of much research and authority.

† Document in the State-Paper Office.

tinguished himself as to have an especial grant of arms, where his valour and prowess are duly extolled.\*

He returned to England, and married Elizabeth, daughter of Evan Lewis, of Llanvihangel Nantmelan, and Gladestry, in the county of Radnor, a young widow, that had lately lost her first husband, John Gwyn, of Llanelwedd, in the same county.

About the year 1582, the young Earl of Essex, being at his father's seat, Lamfey Court, in the county of Pembroke, became acquainted with Sir Gelly, and so strong a friendship sprung up between them, as to render these kindred souls inseparable ever after. In 1587 the earl appointed him to what was then considered the first step towards nobility, one of his stewards, and he accordingly assumed the gold chain.† This nobleman, in his ardour for military renown, two years after fitted out some ships at his own expense, and set sail with his brother, Walter d'Evreux, his steward, Captain Meyrick, Sir Roger Williams, Sir Philip Butler, and Sir Edward Wingfield. They joined the expedition under Sir John Norris and Sir Francis Drake. That distinguished soldier, Sir Roger Williams, of Penrhos, Monmouthshire, thus speaks of their valiant conduct. "The world doth know 5000 of our nation made garde at the gates of Lisborne foure dayes, although there were in the town 5000 Spaniards and 4000 Portugeses, carrying armes. Besides, they were assured of all the burgesses, for they had sent into Spaine, and kept in the cytadell their wives, children, and chiefest goodes. Also, by reason of our armie staying in Galitia, where 6000 of ours overthrewe 16000 of theirs, before we arrived at Lisborne, they had twenty daies respite, to arm and put themselves in order. But had our armie not touched at the Groine, and sailed straight to Lisborne, as the Earle of Essex did, neither soldier nor captaine can deny but the towne had been ours; for it was unmanned, without any good order, and when we arrived, had our navie entred, we could have entred the towne, or the world should have witnessed so manie Englishmen had been buried in that place."‡

In 1591, when the queen despatched the Earl of Essex to France

\* See original grant in the State-Paper Office. The arms were gules, two porcupines pass. arg., armed or; crest, a lion's head coupé arg., transfixé with a broken lance, or. These bearings are quartered with the family arms in his seal at Goodrick Court. The grant is dated 1583.

† Wood's *Athen Oxon*, MS. letter of Earl of Essex to Richard Bagot, Esq., dated 22 June, 1588, *pencs* Lord Bagot.

‡ *Discours of Warre*.

with 4000 men, Sir Gelly again accompanied him, and was wounded in the first action with the enemy.\* The siege of Rouen was the principal operation undertaken, but as Henri IV. would not permit the earl to storm the place, he had little opportunity to signalize himself, and returned in disgust.

It was on his return that this generous nobleman applied to the queen to bestow a grant of Wigmore on his friend and companion in arms; and Sir Gelly was probably influenced by its contiguity to his wife's possessions to make choice of it. Other grants had preceded it, at the instance of the earl, and, if we may credit the sarcastic stanza written soon after the siege of Cadiz, such an accession of fortune must have been very seasonable.

A gentleman of Wales, a knight of Cales,  
And a laird of the north country;—  
But a yeoman of Kent, with his yearly rent,  
Will buy them out all three.†

Sir Gelly rose into importance from the countenance of the Earl of Essex, and soon found himself courted on all sides. There are several letters preserved at Blithfield which attest this fact with regard to one family alone, but extracts from two will be sufficient to establish the point. Richard Broughton, Esq., writing to Richard Bagot, Esq., on the 27th of March, 1594, says—"Yesterday, like an asse, he (Mr. Escort) was with Mr. Meyrick, to intreat that my lord of Essex wold not conceave ill of him in this his sekinge [of the place of a justice for Wales, in opposition to Mr. Broughton]." Again, William Treu, Esq., writing to his wife, the daughter of Richard Bagot, on St. Andrew's eve, 1599, observes—"My lord Riche deals badly with me, but I have good words of Sir Gelly Meyrick and Sir Harry Lindley." Indeed, such was the supposed extent of his influence that the renowned Isaac Casanbon, who was patronized by the Earl of Essex, chose to give the name of Meyrick, or as it was sometimes spelt, Meric, to his infant child.

It was in 1595 that the valiant hero, Sir Roger Williams, whom

\* In a letter from Anthony Bagot, Esq., to Richard Broughton, Esq., dated from the wars, he says "Mr. Reynolds and I are all the officers my lord hath, Mr. Meyrick sycke at Diepe, but 4 of his gard came with us, and three of them sycke." MS., *penes* Lord Bagot.

† Percy's *Reliques of Ant. Poetry*. See, afterwards, what Sir Gelly, who was a Welshman and a Knight of Cales, says of his means. Cadiz was then called Cales.

Henri IV., of France, termed “un vray Cæsar,” died, and was interred at St. Paul’s cathedral, by Thomas Powel, of Usk, Esq., and Gelly Meyrick, of the parish of St. Clement’s without Temple Bar, his kinsmen, “at whose funeral Robert, Earl of Essex, and all the warlike men of the city of London, mourned.”\*

The year 1596 became memorable for the gallant and successful attack, by the English forces, on the city of Cadiz. On this occasion Captain Meyrick was promoted to the rank of lieutenant-colonel, and appointed joint commissioner of stores to the expedition with Mr. Ashley, who was acting secretary-at-war on the occasion. Sir Conyers Clifford was promoted to the rank of serjeant-major general, equivalent to what is now termed adjutant general. His regiment was thus officered:—

	MEN		MEN
His own company .....	150	Captain Davy .....	100
Captain Meyrick, Lieut.-Col.	100	Captain Wilton .....	100
Captain Daniel, Serjt.-Major	100	Captain —† .....	100
Captain Wolley .....	100		—
			750

Sir Gelly’s company sailed in the *Prudence*, of Plymouth, a coaster, and his brother’s in the *Fallow Hind*, a victualler, of Dover.‡

Without particularizing, suffice it to say that, after the display of great gallantry, Cadiz was taken, together with immense booty claimed by Queen Elizabeth. Sixty-four heroes received the honor of knighthood in the great square of Cadiz, or Cales, at it was then generally termed, and among them was Lieut.-Colonel Meyrick.¶

To prevent a meditated attack on Ireland, Elizabeth, in 1597, determined to find employment for the Spaniards in their own territories. For this purpose a fleet of nineteen of her majesty’s ships was assembled, to which were added several others fitted out at the expense of the Earl of Essex. The command of the whole was intrusted to his lordship, having under him the lords Howard and Vere, with Sir Walter Raleigh. Sir Gelly Meyrick had her majesty’s ship the *Swiftsure*, of four hundred tons burthen, confided to him, and sailed as one of Sir Walter’s division.§ After encounter-

\* *Athena Oxon*, vol. i., p. 282.

† This Captain was, no doubt, Sir Francis Meyrick, brother to Sir Gelly, as he was with Sir Conyers Clifford at the attack of the Pont Suaco.

‡ See MS., Julius F. vi., 107, fol. 278, Cott. Lib., Brit. Mus.

¶ Camden’s *Ann. Eliz.*

§ Sir William Monson’s account, in the Cott. Lib.; and Sir Arthur Gorge’s, quoted in Lediard’s *Naval History*.

ing storms, which served to apprise the enemy of their intention, they sailed to the Azores. Here, as before, discord sprang up between Sir Walter Raleigh and Sir Gelly Meyrick. The former was brought to a court martial and reprimanded, but the seeds of envy were too deeply sown to be thus erased. Raleigh became a tool in the hands of the Cecils to destroy Essex and his friends, to be sacrificed in turn himself. The earl, it is well known, was driven to desperation; and, in order to drive the ministers from their posts, was induced to take that ill-judged step that deprived him of his head, and his trusty and staunch adherent, Sir Gelly, of his life and property.

In pursuance of his lord's design, Sir Gelly kept open house, where preachers assembled, who delivered sermons, at Essex House, with the utmost freedom of speech; and all persons dissatisfied with the government were readily admitted. In the ill-digested plan for obliging her majesty to change her cabinet, Sir Gelly had the office of providing the earl's residence with military stores, and the command of it while his lordship went into the city with such adherents as he had assembled. The *Aulicus Coquinaria*, published in 1650, mentions that the earl found his house too weak to withstand the force of a piece of ordnance mounted upon St. Clement's church. Whether this was the case, or, distracted by the treachery of pretended friends, he gave orders to surrender to the queen's forces, and all within became prisoners.

Sir Gelly was tried on the 5th of March, 1600, having been previously examined on the 17th of February, according to the then practice in England; and the following, in the hand-writing of Sir John Popham, is in his majesty's state-paper office:

"He sayeth that upon Saturday last was sennyght he dynd at Gunter's, in the company of the Lord Monteagle, Sir Christopher Blont, Sir Charles Percy, Ellys, Jones, and Edward Busshell, and whoe else he remembereth not; and after dynner that daie, at the mocyon of Sir Charles Percy and the rest, they went all together to the Globe,\* over the water, where the Lord Chamberlain's men ys to play, and were ther sumwhat before the playe began; Sir Charles telling them that the play would be of Harry IV. Whether Sir John Davyes were there or noe this examinante cannot tell, but he sayd he wold be ther yf he cold. He cannot tell whoe procured that playe to be played at that time, except yt were Sir Charles Percy; but as he thyncketh yt was Sir Charles Percy.

\* Shakspeare's Theatre.

Thomas Lee was at the playe, and came in sumwhat after it was begun; and the playe was of Kyng Harry IV. and of the kyllyng of Kyng Richard II., played by the Lord Chamberlayne's players.

Ex. p.

Gelly Meyrick.

Jo. Popham\*

Edmd. Fenner.†

At his trial, the attorney-general thus exaggerated the charge against him: he urged, first, "that he was the man who fortified Essex House against the queen's forces; and if God had not otherwise guided it, that day he had been the death of a noble person, the Lord Burleigh—for he set one with a musket shot to shoot at him, but missing the Lord Burleigh, Captain Lovel's horse was killed under him, at Essex gate, with that shot. And the same day that the Earl of Essex went, Sir Gelly Meyrick comes to Mr. Brown's house, being adjoining to the Tennis court, and shuts all his servants out of his house, and all that Sunday walked up and down the house with musketeers following him. And the story of Henry IV., being set forth in a play, and in that play there being set forth the killing of the king upon a stage, the Friday before, Sir Gelly and some others of the earl's train having an humour to see a play, they must needs have the play of Henry IV. The players told them that was stale, they should get nothing by playing of that; but no play else would serve, and Sir Gelly gives forty shillings to Philipps, the player, to play this, besides whatsoever he could get.‡ It was urged, also, that the earl's purpose was to have against this time men of his faction placed in all the houses near about him, to which end the confession of Arthur Smith, dwelling hard by the Tennis-court, was read, who said that, the week before, Sir Gelly Meyrick came to his house, and enquired who lay there? It was told him of a lodging there that was kept for Sir Walter Harcourt, which deing denied unto Sir Gelly, he railed and reviled the good man of the house with foul words, and willed him to discharge Sir Walter Harcourt of that lodging, for my lord would have his friends to lie about him. Now the men that Sir Gelly would have lodged in that house, were Owen Salusbury, Captain Gwynne, and John Salusbury."

Then was read a letter from Sir Gelly Meyrick, writ to his bro-

\* Chief Justice of the Court of Common Pleas.

† Puisne Judge of the Court of Queen's Bench.

‡ This circumstance has been very serviceable to the commentators on Shakspeare.

ther, John Meyrick;\* the effect was to pay money to Mr. Deveux and himself to come up to London, and Captain —† and Captain Damage to come up also, and my lord would take it thankfully. The confession of Thomas Johnson was read, who said he saw Sir Gelly all that day walk in his doublet and hose, up and down the house with muskets following him, and went down to the banqueting-house‡ in the garden with his hat full of shot.

Sir Gelly Meyrick said, “his going with muskets after him was to keep the privy counsellors the safer from the fury of Owen Salisbury, who had sworn that if the house was forced he would send them to go to the devil.”

Johnson said that he saw one Wever¶ follow Sir Gelly Meyrick to the gate, with a musket, to have shot out there; and by the confession of one Watts, it appeareth that there was a watch in the house all Saturday night, and none of the company went to bed, but, for a while rest, threw themselves upon their beds in their cloaths; and that Sir Gelly Meyrick caused certain hogsheads to be broken up to fortify against the Tennis-court; that the earl had 100 muskets in the house, but wanted the flaskets and much other furniture for them.§

Here ended the evidence against Sir Gelly. He then spoke as follows:—“I have little to say, but let what I have done be considered, and my offence will be found less than others; but the law hath adjudged it treason, and I must die; and not unwillingly—for the tree being fallen the branches must not stand.|| I did the office of a servant, as my master bade me; but it was my fault to obey what was not just in him to command. My poor estate, I pray you, let it be considered; it may be thought better of than it is. What is it! I shall sit down, and humbly pray that my poor wife and children may be pitied.\*\*” Lord Chief Justice Popham then pronounced the usual sentence of death in such cases. A

\* Of Pembroke. He married Lucy, daughter of Morgan Powell, of Pembroke.

† Capt. Cuney, as appears by the examination of Sir Francis Meyrick.

‡ The chimney-piece of this apartment, erected by the Earl of Leicester, bearing his badge, is still in existence.

¶ Probably from Herefordshire.

§ The furniture at this time was a powder-flask, a touch-box for the priming, a bullet bag, coils of match-rope, and a musket-rest.

|| This simile refers to the trial and condemnation of the Earl of Essex, which took place on the 19th of the preceding February.

\*\* See the State Trials.

manuscript in the Harleian library of the British Museum\* gives the following interesting particulars :—

“Certain observations, taken from the conference had with Sir Sir Guillam Merricke, in Newgate.

*First*—he affirmed, calling the master of the prison to wytnesse, that, from the first hower of his coming, he acknowledged that in the face of his Lord and Master, and the rest that behold God’s hand in this revealed against them, that they being private men should not dare to attempt the reformation of a prince, which is a worke such that onlie belonging to God: *secondlie*—he protested he was not privie to the plott, yet sought not herebie to excuse himself; for this he voluntarily confesses, that, in whatsoever his lord and master should have undertaken, he should have been made one, and gone as farre in the action as any man; but his lord, in all conferences had with him, did still affirme that he would attempt nothing but what a good conscience should warrant him: *thirdlie*—upon the receivinge of the sacrament this morning, before his execution, he desired Mr. Doctor Parrey† to signifie as much to the Lord Chiefe Justice of England,‡ because he did thinke my lorde did houlde him a papist,¶ which to be he utterlie disclaimed: and askinge God forgiveness that he had bene so negligente in the profession of his religion, protested he did hold the church of England, as now, that yt is the true church. Moreover, in some confidence, he praied for the state of the whole church, that God would enlarge it, and shew the kingdom of his truth to them that yet enjoyed it not; saying, it is an honorable thinge to have all mouthes opened to the praise of God, and all tongues to confesse his holie name. Walking also a little before the coming of the sheriffe, he broke out into speeches, saying, “I prairie God, Mr. Cuffe,§ according to

\* Marked 4289, art. 2.

† This was Richard Parry, D. D., who was much indebted to Sir Gelly for his preferment. He had been master of Ruthin school, and was at this time Vicar of Gresford. In December, 1604, he was consecrated Bishop of St. Asaph, and 16 years after, with the assistance of Dr. John Davies, of Mallwyd, who had been his pupil and afterwards his Chaplain, he corrected and republished Bishop Morgan’s Welsh Bible, the edition still in use. He married a daughter of Rhys Wynn, of Llwynynn, and died 26th September, 1623, being buried in his own cathedral. From the date on his portrait, still preserved at Goodrich Court, he must have been, at this interview, 30 years of age.

‡ Sir J. Popham.

¶ From the expression “Some of you now at the bar are christians.”

§ He was one of the Earl’s secretaries, and doomed to be executed with Sir Gelly Meyrick.

the measure of his great knowledge, to prepare to dye resolutelie and chearfullie."

"On Sundaye night, he desired us that were present to take notice especially of one thinge, and to testifie it from him after his deathe, the rather because he had heard some reporte to the contrarie, namelie, that with his own patrimonie, which he brought to my lord's service, which he did affirm to be large, as he needed not to have served any nobleman in Englande; also a portion which he had in marriage with a greate gentlewoman, his wife; besides his longe service and many employments under my lord: yet if he were presentlie to be sould, all he had would not amount to fowre thousand poundes, now saie that I do speake with the most, my debtes being paid, not to three thousand five hundred poundes; and yet some I do knowe have thought I might have despended as moche yearlie, and I do feare the hope of gaining so moche hath hastened my deathe,\* of which last speache being expressed, I forgive them, said he, if it were so." To Dr. Parry he said, "I knowe you shall have manie enquires of you concerninge me, how I carried myself, and what I did saie when I dyed. I praie you tell them from me that all they who are in the heyght of their pleasures and delighted, and now live as they list, as I of late have lived, let them take example of me, and remember my fall; tell them the course of life that now they most haunte after is nothinge but vanitie."

On the 13th of March Sir Gelly and Cuffe were drawn to Tyburn. Cuffe made a long speech, in which Sir Gelly once or twice interrupted him, advising him to spare a discourse which, however rational, was not very seasonable. Sir Gelly merely said enough to clear Lord Mountjoy from being at all acquainted with the design; and intreated those noblemen who stood by to intercede with the queen that there might not be any further proceedings against such as had unwarily espoused the unhappy cause. He suffered next to Mr. Cuffe.

Of Sir Gelly's character we have very scanty materials wherefrom to form an opinion; but he seems to have possessed undaunted courage, unblemished integrity, gratitude and friendship which no perils could diminish.

No treason can be vindicated, but in palliation it may be observed

\* Sir Walter Raleigh took a bribe to save Lyttleton and two others;—(See Birch's *Memoirs*, vol. ii., p. 496);—and this looks as if some tampering had been tried with Sir Gelly.

that this arose from the same cause as the wars between the houses of York and Lancaster, namely, the want of a constitutional mode of inducing the sovereign to change the ministry. Happy are we at the present day, who live at a time when violence need not be resorted to for the correction of evils in government; nor shall we wrong our ancestors if we consider this attempt of the Earl of Essex as the first movement towards that liberty which has been consolidated by the act of reform in parliament.

Sir Gelly left a son, Roland, who, at his father's death, was prosecuting his studies at Sienna, under the auspices of Casanbon; and a daughter, Margaret, who married John Vaughan, Esq., of Golden Grove, Caermarthenshire, who, through Sir Gelly's introduction, was knighted by the Earl of Essex in Ireland, was created, by James I., Lord Molingar, and on the coronation of Charles I. became Earl of Carberry. There can scarcely be a doubt that had Sir Gelly's life been spared, James would have raised him to the peerage, for "that prince," as Mr. Chalmer's observes, "recollecting the intrigues of Essex and the conspiracy of Gowry, acted on his arrival (in England) as if he had thought that the rebellion against Elizabeth was a rising for him."

The sentence passed on Sir Gelly carried with it, of course, confiscation of property; and thus Wigmore Castle reverted to the crown. Roland Meyrick returned to England, petitioned the parliament for the reversal of the attainder on behalf of himself and his sister, and an act was passed to that effect; but James I. had granted Wigmore Castle, &c., to Thomas Harley, Esq., of Brampton Brian.

The disconsolate Lady Meyrick retired to Gladestry, where she lived with her son, who became one of the magistrates for the county of Radnor. He married Elizabeth, daughter and co-heiress of Thomas Blundeville, of Newton Flotman, in the county of Norfolk, Esq., and had issue four sons and a daughter, Margaret, married to one of the Norreys family. His descendants lived in the vale of Wigmore.

Thomas Harley, Esq., of Brampton Brian, was born about the year 1548, and was the son of John Harley, Esq., slain during the French wars. During his father's life-time he lived at Wigmore Castle, which King James had granted to him. He appears, however, to have been the last regular occupant, as after the death of his father we find him at Brampton Brian, where he was buried.

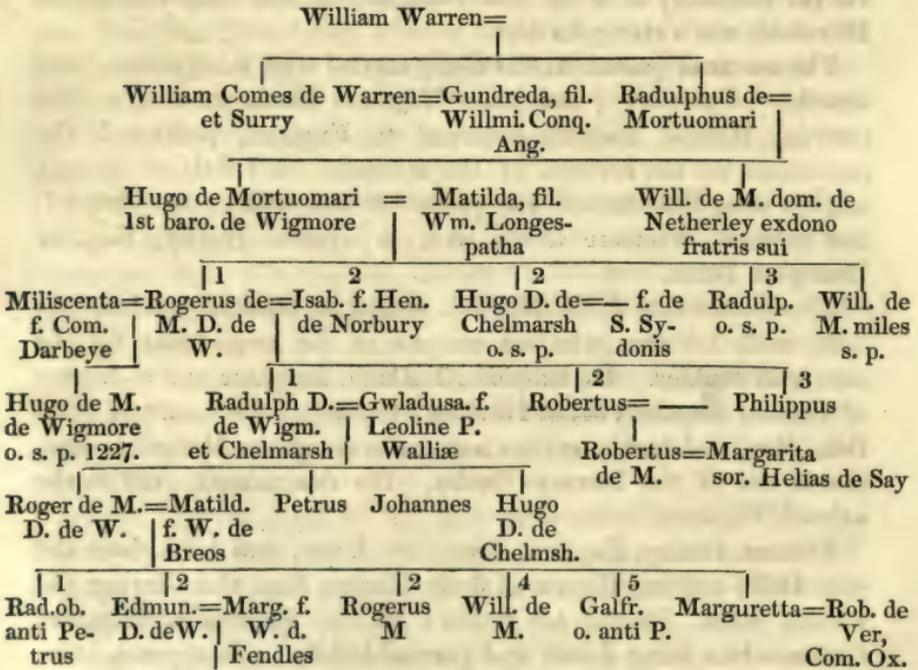
His son Robert, afterwards knighted, was born at Wigmore Castle, and he is said to have dismantled it at the commencement

of the civil wars,\* as he resided at the castle of Brampton Brian Gough, in his *Additions to Camden*, and Collins, in his *Historical Collections of the noble families of Cavendish, &c.*, say that Brampton was destroyed by the parliamentarians in 1643, and the latter, that Wigmore was burnt by them at the same time.†

Since this event it has been merely a ruin, and in possession of the descendants, Earls of Oxford.

If, then, Wigmore Castle be not renowned for the sieges it has undergone, its owners have played so conspicuous a part in the history of this country as to give to it a high degree of interest; and, calling to mind the facts detailed in these pages, it is impossible to contemplate the now deserted ruins without reflecting on its former splendour and importance.

Annexed are pedigrees of the Mortimer family, and that of the Duke of York. The first is from that in the College of Arms; the second from a MS. by Edward Lhuyd, entitled *The British Genealogist*, in the library of Goodrich Court; and the third from Anderson's *Royal Genealogies*.



\* My friend, the highly erudite Rev. John Webb, of Tretire, Herefordshire, gives me this information on the authority of his notes: and adds, "upon this fact you may rely."

† London, 1752, fol., p. 199.

Rog. de M., 1 Com. de Marche	=	Johanna f. P. de Genevill Mit.	Matild.=Theob. deVerdun	Johanna	Johannes	Hugo	Walter	Edm.
					2	3	4	5

Edm. de M., 2nd Com. de M.	=	Eliz. f. Barth. D. de Ba- dlesmere	Rogerus miles	Galf.	Johan	Mary =	Johanna =	Matil. =	Beatrix =
						1	3	5	7
						Cath.=	Agnes=	Blanch=	

Rogerus de M., 3rd  
Com. Mar.

= Philipp, f. W. de  
Montanto, Com.  
Salisbury

Johannes qui  
obiit in pueri-  
tia

Edmundus de M.,  
Com. Mar. et Ul-  
toniæ per uxorem

= Philippa, f. unica and h.  
Lionelli Ducis Claren.  
fil. secund R. Edw. 3tii.

Rogerus de M., Com. M. et N.	=	Aleanore f. T. de Holland.	Edm. de M. =	Elizab. =	Philippa =
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Rich. Plan-  
tagnet,  
Com. Cam.

= Anna  
Edm. de M.,  
Com. M. et  
U., o. s. p.

Roger  
o. s. p.

Aleanora = Hugo de  
o. s. p. Courtenay

## A

Roger Mortymer Lord of Chirk, 3rd son of Roger, Baron Wigmore, & Matilda de Breos, as above.

= Lucy, daughter and heiress of Lord Robert le Wafre, Knt.

1	Mortimer	Llewelyn M., Lord of Geneu'r glyn, co. Cardigan	2	= Angharad, d. to Mere- dydd ab Rhys, Lord of Cardigan.
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Roger Mortimer, &c. = Gwennllian d. of Einon Vawr of the Wood.

Edmund Mortimer, &c. = Eva, d. of Rhys Davydd ab Rhys, of Carrog, co. Cardn.

Owain Mortimer, exchanged Geneu'r glyn for Coedmawr, in co. Cardigan

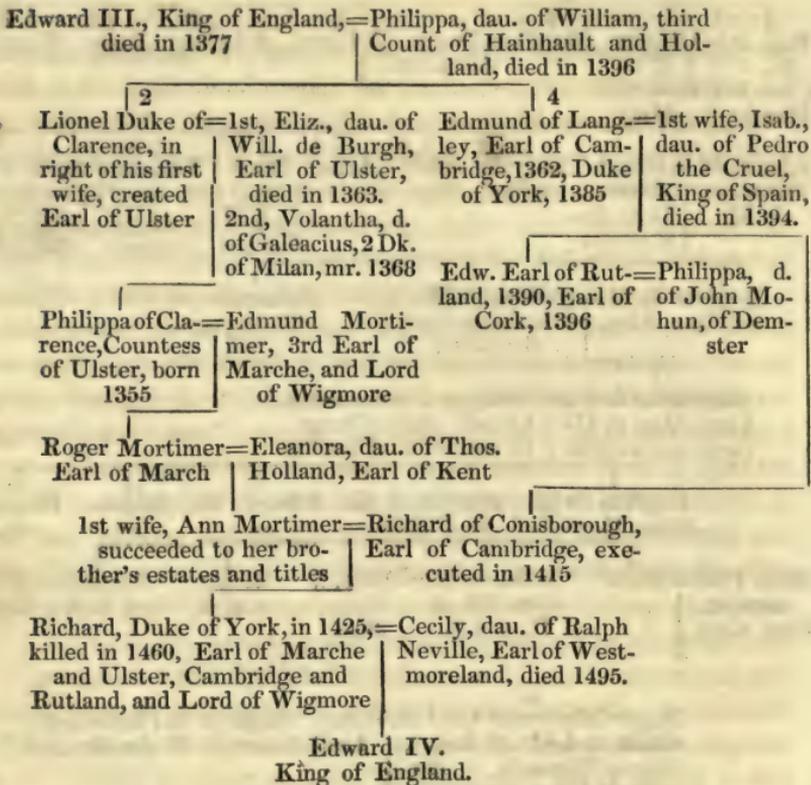
= Angharad, d. to Rhys Davydd Thomas, of Gwernan, in co. Cardigan.

Richard Mortymer = Elizabeth, d. of Lord of Coedmawr | Owain ab Rhys

James Mortimer = Elizabeth, d. of Rhydderch ab Rhys, Lord of Tywin, co. Cardn.

John Mortimer, of Coedmawr, Esq. = Eva, d. of Lewis Davydd Meredydd, of Abernanthychan, co. Cardn.

Richard Mortimer &c. = Catharine, one of the daughters of the Right Rev. Dr. Roland Meyrick, Bishop of Bangor



## ARCHITECTURAL ESSAY ON THE CHURCH AND CHANCEL OF STRATFORD-ON-AVON.\*

BY JOHN BRITTON, F.S.A., &c.

THE following essay was written for a mixed auditory, adapted to the place, and to the anniversary of Shakspeare's birth-day, April 23, 1836.

Pointing to a large drawing of STRATFORD CHURCH, Mr. Britton observed:—Who can gaze on this venerable, but light-some edifice without mingled emotions of admiration and reverence? Who can see its tapering spire, its elegant chancel, and scan its monuments of departed men of note and excellence, without

\* Read at the Architects' Institute, London, May 23, 1836.

feeling his passions warmed, and his imagination excited. This church is the mausoleum of Shakspeare. Here he was baptized—here his remains were interred—here his parents—his wife—his family—were all collected in peace and endless harmony. Whatever little incidents in life may have occasioned dissension or discord amongst them, were all reconciled, forgotten, and forgiven, in this their last and closing home: for “here the tired ceased from labour, and the weary are at rest.”

Architecturally, historically, poetically, this building affords a theme replete with interest, full of pathos, terse in “pith and moment.” Built and consecrated to the omniscient Creator of the universe, it awakens the most sublime emotions of the human soul;—it carries the mind “from earth to heaven,” and “gives to airy nothing a local habitation and a name.” Whilst the vast temples of the old world, with their idols and endless hieroglyphics, astonish and bewilder our reasoning powers, they also oppress the heart with sadness and sorrow. Evidences as they are of human institutions and superstitions thousands of years back, they demonstrate the ingenuity and persevering industry of man; but they also shew that his mental faculties were enthralled, and filled with monstrous absurdities. Even the more modern Grecian and Roman temples, though admired and praised by the architect and artist, and hallowed by the poet, have nothing of that truly fascinating charm which belongs to the Christian church; especially when that edifice is large in size, rich and elaborate in sculptured decoration, adorned with painted glass, and stored with monuments of illustrious persons. In these characteristics and attributes many English churches abound. The cathedrals, in particular, are volumes of history; whilst several parish churches abound in varied and important materials for the study of the practical architect, the antiquary, and the scholar. If that of Stratford be not the most pre-eminent of its class, it has some features and some accessories which render it at once peculiar, attractive, unique, and fascinating: and these peculiarities it will be my duty to point out, in such a way as to claim the attention of every person of laudable curiosity. To the architectural antiquary, and to the artist, I need not appeal: the true lover of Shakspeare, and the enthusiastic poet, will not require the aid of a local ciceroni, or the comments of a critic. The eyes of such are in their imaginations, which, possessing the combined powers of the microscope and telescope, magnify the small, and bring home the distant.

The parish church of Stratford is peculiarly and invitingly placed

at one extremity of a large town, remote from its noise, bustle, business, and life. It is rural, retired, and partly shrouded by lofty trees, whilst the "ever-flowing Avon" moves slowly and smoothly past its walls. Contrasted with the streets and "busy hum of men," it is admirably adapted for "sweet solitude" and mental serenity. The melancholy and musing Hervey could not have found a scene better adapted for his *Meditations among the Tombs*; and a more philosophical and profound mind may ruminate on the spot with deep and piercing thoughts on man, as he has been, as he is, and as he may be.

But I must view the building itself, notice its architectural characteristics, and offer a few passing remarks on persons intimately associated with its history. In plan the church comprises a nave, or rather a choir, with aisles; a north porch being its chief entrance; a transept, with a tower and spire rising from its intersection with the eastern and western ends, and a chancel, forming the eastern extremity. In these different parts are exhibited a few varieties of the numerous architectural designs which mark the middle, vulgarly called the dark, ages. The tower, with parts of the transept, are the oldest. Dugdale calls the whole church "of very ancient structure, little less than the Conqueror's time, as I guess, by the fabrick of the steeple;" but by the windows and mouldings we may safely refer them to the latter part of the twelfth century, during the reign of either King Richard I. or John. It was about that age that the semi-circular, or genuine Norman, style of architecture began to give way to a new species of design, in which columns, mouldings, windows, and doorways, assumed lighter and more lofty proportions; whilst a pointed form of arch was introduced in the place of the semi-circular. It was the era of *reform* in church architecture, which led to a great and essential revolution in the constitution, laws, and ordinances, of architectural design.

Thenceforward every succeeding century, almost every succeeding period of twenty years, was distinguished by palpable changes, and generally by striking improvements, in the forms, arrangements, and details, of ecclesiastical buildings. Unshackled by schools, by precedent, by the dogmas of critics, the monastic architects gave full and free latitude to genius; in every new design they seemed to have been actuated by the laudable ambition of surpassing all former works, and inventing something beautiful, and *fascinating*. The church now referred to manifests some of this inventive ambition; for the parts west of the transept are improvements

on that, whilst the chancel shews another advance in the scale of lightness and beauty. Dugdale is our principal published authority for the dates of the different parts of the building; but he, even the learned and judicious Dugdale, is not always to be trusted on these matters of antiquity. For instance, he states that the transept was raised by the executors of Sir Hugh Clopton, at the end of the fifteenth century; but it is quite clear that most of this portion of the church is of coeval date with the tower, and the age of that has already been stated to be the end of the twelfth century. Some alterations or additions were probably made by the parties alluded to by the valuable Warwickshire historian. That there was a large church of coeval date with the transept and tower is more than probable; and it is equally reasonable to suppose that it occupied the site and area of the present building. Belonging to the see of Worcester from the Saxon times to the year 1337, and having a monastic establishment connected with it, we may infer that this, like most other religious edifices similarly circumstanced, was large, well built, and of fine character. Either from fire or from warfare, it could not have remained perfect many years, for in the time of Edward I., about 1280, the present north aisle is said to have been built; and it is recorded that John de Stratford, Archbishop of Canterbury, bought the whole church in the tenth of Edward III., A. D. 1337, and appropriated it towards endowing a chantry which he had founded in the south aisle about five years before. It is also related that he soon afterwards re-built that aisle. The fine turret staircase at the S. W. angle of the nave is probably part of his work. At the east end are remains of the chantry, in niches and pinnacles, inserted in the wall, traces of the altar, &c. Some of the windows are of beautiful proportions and tracery. The nave is lofty, light, and, in its pristine state, must have been elegant. On a series of six arches on each side is raised a clerestory, forming almost a continued window, both to the north and south; but more correctly speaking it exhibits a series of double windows, with a small pier between each compartment. That pier rises immediately over an hexagonal column, and each pier carries a principal beam, which forms an ornamental feature of a once highly enriched timber roof. A compartment of this roof, adjoining the tower, remains. At the west end is a large and highly ornamented window, over a spacious door-way. At the east end of the north aisle is a chantry chapel, filled with stately monuments to the Cloptons, and to George Carew, Earl of Totness, and his countess.

The most attractive and most interesting part of Stratford church is that now called **THE CHANCEL**, but designated by Dugdale the *Queere*. This was erected by Thomas Balshall, D. D., who was dean of the college from 1465 to 1491, and who is interred within an altar tomb on the N. side of the high altar. Though not equal in simple beauty and solidity to the architecture which prevailed during the reign of Henry III. and Edward I., or to the more enriched and fanciful styles of Edwards II. and III. and Richard II., it exhibits an unity, harmony, and symmetry, which cannot fail to please the eye of the architect. It should be borne in mind that its large and numerous windows were originally intended for richly-stained glass; thus throwing "a dim, religious light" into the sacred apartment. Now, on the contrary, these have common, thin glass, and the whole interior surface of the walls and ceiling are covered with lime-wash—glaring to the eye, and offensive to true taste. The ceiling is flat and badly plastered; the side walls are stained and disfigured; the pavement is uneven and broken; and part of the area is occupied by pews. A common German stove, with iron shaft, piercing one of the windows, and other similar improprieties, are allowed to disfigure and disgrace this once beautiful and always interesting apartment. Several flat grave stones cover the remains of the Shakspeares, whilst an architectural monument, with a bust of the poet, is attached to the north wall, adjoining the spot where the immortal dramatist was interred. To construct a new roof, in a style and character adapted to the general design of the building, and to restore that building to its original purity and beauty, are objects now contemplated by a committee at Stratford, and another committee in London. Designs have been made by Mr. Eginton, architect, of Worcester, and about £800 have been subscribed, in one pounds, towards effecting this object. The work will be commenced immediately; and it is proposed to adorn the roof with the armorial bearings of such noblemen and gentlemen as may wish to have their family blazonings thus recorded in connection with the place, and with the greatest poet that ever lived to dignify and exalt the human race.

## SKETCHES OF EUROPEAN ORNITHOLOGY.

GOULD'S "BIRDS OF EUROPE."

## THIRD PART.

PLATE I.—The Jer-Falcon,—*Falco Islandicus*,—Faucon Gerfaut, *Fr.*,—Sparvière bianco di Moscovia, *It.*,—der Islandische Falke, *G.*,—constitutes the noble subject of this plate. Two figures, illustrative of the striking varieties of plumage in the young and adult, are admirably represented. From the observations of Mr. Gould, it appears probable that, under the common designation of Jer-falcon, two distinct species have hitherto been confounded. One of these, the true Jer-falcon of Iceland,—Faucon d'Islande, *Fr.*?—is regarded, by Falconers, as a much more rare, courageous, rapidly-flying, and valuable bird, than the other,—Gerfaut de Norwege,?—commonly obtained from Norway. They are said to differ, also, in the comparative length of wing with respect to the tail. The Jer-falcon is the type of the true Falcons, and, consequently, of the genus, *Falco*, as constituted by modern ornithologists. It is a native of northern Europe, and occasionally visits the Orkney and Shetland isles. An accurate figure of this noble bird is given, by Werner, in Plate V. of the *Atlas des Oiseaux d'Europe*, and an interesting account, by Swainson and Richardson, in vol. ii., p. 27, of the *Fauna Boreali-Americana*.\* The question respecting the specific identity, or difference, of the birds obtained from Iceland and Norway, is well entitled to the attention of ornithologists.

PLATE II.—The Azure-winged Mag-pie,—*Pica cyanea*, or more correctly, *cyanoptera*. This rare and elegant bird, a native of Spain, has not hitherto been described by Temminck, nor any other European ornithologist with whose works we are acquainted, except Wagler, in his *Systema Avium*. It strongly resembles its lively, impudent, and more common congener, in structure and habits. The following is the specific description, as traced by Gould; whose figure of the bird is as correctly drawn as splendidly coloured: Beak and legs black. Vertex, occiput, and ear-coverts, black, with shining violet reflections. Back and rump ashy rose-colour. Throat white. Under surface same as, but a few shades lighter than, the back. *Wings and tail delicate azure-blue*: primaries, excepting the first two, which are black, white on outer

\* Termed, also, *Northern Zoology*.

web about half the length from tip. Tail graduated; each feather tipped with white. Length 12—14 inches. Sexual diversity, none.

PLATE III.—The Squacco Heron,—*Ardea comata* (—*ralloides*, Scopoli,—*castanea*, Gmelin),—Héron crabier, *Fr.*,—Sgarza cuifetto, *It.*,—Rallen Reiher, *G.* An adult male, figured with extraordinary truth and delicacy. From the long, slender, and *hair-like* plumes which decorate the vertex of this rare visitant of the British islands, the specific designation, *comata*, is rendered peculiarly applicable. Its habits resemble those of its congeners. Of its nidification, little is, at present, known.

PLATE IV. exhibits three exquisitely drawn figures, one illustrative of a newly distinguished species, of British *Regulus*. The *first* of these is the Fire-Crested Wren,—*R. ignicapillus*,—long known and recognized, in south Europe, as a distinct species; but overlooked in Britain, or confounded with its paler-crested congener. We have, ourselves, frequently remarked the difference of colour in the vertex of these two birds; but were induced to consider it as merely a sexual diversity. The honour of the discovery is due to the Rev. L. Jenyns. Our little stranger, closely resembling the common species, in size, habits, food, and nidification, is principally distinguished by the *fiery colour of the crest*, a more decidedly golden lustre of the sides of the neck and top of the back, and the alternate stripes of white and black, which occupy the sides of the face both above and below the eye. It is the Roitelet triple-bandeau (*Sylvia ignicapilla*), of Temminck;—Varietät der goldhahnchens, of the *Germans*; but not noticed in the last edition of Selby's *Illustrations*. *Figure Second*. Golden-crested Wren,—*Regulus auricapillus*,—*vulgaris*, of Cuvier,—*Sylvia*—, *Motacilla regulus*, of older writers,—le Roitelet ordinaire, *Fr.*,—Regolo, *It.*,—Gekrönter Sanger, *G.* A male and female specimen.

PLATE V.—the Pine Grosbeak,—*Corythus enucleator* (*Pyrrhula*, and *Loxia enucleator*, of Temminck and of Linnæus),—Bouvreuril dur-bec, *Fr.*,—Cinfolotto snocciolatore, *It.*,—Haaken Kernbeisser, *G.* This beautiful bird, formerly arranged among the bull-finches, exhibits, in Cuvier's opinion, characters sufficiently decided to justify the institution of a new genus. *Corythus* forms the connecting link between *Pyrrhula* and *Loxia*; resembling the former in its haunts, habits, and style of colouring;—the latter, in the construction of its beak. The *Generic characters* are: Beak short, hard, thick; everywhere rounded, and slightly hooked at the point. Nostrils basal, linear, rounded, and covered with thickly-set, hair-like feathers. Tarsi short. Toes entirely divided. Wings longer

than in *Pyrrhula*. Tail moderate, and slightly forked. Its natural habitation is the Arctic circle, and the extensive pine-forests of the north: its food, the seeds of the pine-cone, and wild berries. It is merely an occasional visitant of Britain. An adult male and female are the subjects of the plate before us. The female is admirably figured at p. 262 of vol. ii. of *Northern Zoology*; and the male and female delineated, and described, by Wilson, and Bonaparte, in vol. i. and iii. of Jardine's Edition of *American Ornithology*.

PLATE VI.—The Waxed Chatterer,—*Bombycivora garrula*.—The genus *Bombycivora*, or *Bombycilla*, as now constituted, comprehends three species: the American Cedar-Bird,—*B. Americana*, vel *Carolinensis*; the Red-winged Chatterer,—*B. phænicoptera*,—discovered, in Japan, by the ill-fated Siebold, and figured in Temminck's *Planches Coloriées*; and the beautiful subject of the present plate,—Grand-Jaseur, *Fr.*,—Garrulo di Bohemia, *It.*,—Europaischer oder Rothlichgrauer Seidenschwanz, *G.*,—an inhabitant of the Arctic regions, and a rare visitant of the British islands. The curious wax-like appendages, which ordinarily adorn the tips of the secondary quills, and constitute one of the distinguishing characteristics of the genus, do not invariably exist. They are not represented in Temminck's figure of *B. phænicoptera*.

PLATE VII.—The Red-breasted Merganser,—*Mergus serrator*,—Harle huppé, *Fr.*,—Mergo oca di lungo becco, *It.*,—Langschnabelliger Sager, *G.* An elegant bird, finely illustrated by figures of the adult male and female. The only one of the four British species of the genus which lives throughout the year, and breeds, in these islands. What connection the spurious *Latin* term, *Serrator*, literally signifying, if it possess any meaning at all, a *sawyer*, can have with this beautiful aquatic bird, we are quite at a loss to imagine. It is high time all these revolting mummeries were swept, with an indignant hand, from the fair face of science, which they serve only to disfigure and obscure. The proper designation of this hitherto misnamed bird is obviously *Mergus rubecula*.

PLATE VIII. contains figures of two species of *Pyrgita*, executed with equal taste, and fidelity of outline and colouring. The *First* is the Spanish Sparrow, *P. Hispaniolensis*,—Gros-bec Espagnol, *Fr.*;—the *Second*, the Alpine,—*P. Cisalpina*,—Gros-bec Cisalpin, *Fr.*,—Passer volgare, of *Italian* ornithologists. In their external characters, these birds closely resemble our domestic sparrow, of which they are congeners; but differ much in their haunts. Of their habits and nidification, little is known.

PLATE IX.—A splendid drawing of the Long-legged Plover, or,

in the reformed nomenclature, Black-winged Longshank,—*Himantopus melanopterus*,—l'E'chasse à manteau noir, *Fr.*,—Cavalière grande Italiano, *It.*,—Schwarzflügelige Strandreuter, *G.*; formerly included, by Linnæus, under the genus *Charadrius*. Of this genus, there are only two species at present known: the subject of the plate under review, a rare visitant of the British islands; and *H. nigricollis*, figured and described, by Wilson, in pl. lviii., p. 340, of vol. ii. of Jardine's Edition of *American Ornithology*, under the name of *Recurvirostra himantopus*, or Long-legged Avocet. The latter is regarded, by Bonaparte, as a distinct species from *H. Mexicanus*.

PLATE X.—European Francolin,—*Francolinus vulgaris*,—Francolin à Collier roux, *Fr.*,—Francolino, *It.* An adult male and female, admirably delineated. The only European species of a genus which, in the Natural System, connects the splendid Pheasants of the East with the sober-tinted Quails and Partridges of the continent of Europe. This fine bird is the *Perdix*—, *Tetrao Francolinus*, of our predecessors in ornithological arrangement.

PLATE XI.—The Rose-coloured Pastor,—*Pastor* (formerly, *Sturnus vel Turdus*) *roseus*,—Martin Roselin, *Fr.*,—Storno roseo, *It.*,—Rosenfarbige Drossel, *G.* The admirable figures of this rare and beautiful bird, as here represented by Mr. Gould, in the adult and immature male plumage; may proudly challenge comparison with any iconographical productions in this department of science which it has ever yet been our lot to examine. The colouring of the adult is as splendid, and that of the young bird as chaste and sober, as they are both correct. *P. roseus* is the only European species of the genus; seldom seen in Britain. Gould proposes as a query whether the young bird of this be not the "Solitary Thrush, of Bewick."

PLATE XII.—A minutely correct representation of the Arctic Tern,—*Sterna Arctica*,—L' Hirondelle-de-Mer Arctique, *Fr.*,—confounded, till the time of Temminck, with the common Tern,—*S. hirundo*; from which it may be distinguished, at all ages, by its smaller and more slender figure; longer and more elegant tail; shorter and less robust beak and tarsus, and the wholly red colour of the former. The eggs of *S. arctica* are smallest. The two species do not associate together. See *Northern Zoology*, v. ii., p. 414.

PLATE XIII, and XIV.—To the separation of the two species of Wagtail which respectively constitute the subjects of these plates, from *Motacilla*, and their formation into the new genus, *Budytes*, we are yet more strongly opposed than Mr. Gould. Such innovation

was, we know, first proposed by the illustrious Cuvier. But we bend not to the authority of names even as great as his. The facts of unerring Nature, not the whims and fantasies of erring and instable man, are the foundation on which we should seek to erect the imperishable edifice consecrated to Science, and only worthy of its destination when so erected. What are the characters which, in the *opinion* of the French zoologist, justify this deviation from the track of his able predecessor, Ray? the greater length and less curved figure of the posterior claw; by which the (so-named) *Budytes* is connected with the Pipits and the Larks,—Farlouses et Alouettes, *Fr.*—*Anthi et Alaudæ*, *L.* See *Règne Animal*, v. i., p: 391. Now, such peculiarity of structure, we contend, although furnishing a good sub-generic—, is not of sufficient weight to constitute, alone, a generic character: more especially, as all the four British species otherwise exhibit a close resemblance to each other in structure. The *First* of Mr. Gould's plates represents two figures, male and female, of the Yellow Wagtail, *Motacilla (Budytes) flava*,—Bergeronette Printanière, *Fr.*—Gutrettola di Primavera, *It.*—Gelbe Bachstelze, *G.*; the *Second*,—corresponding figures of the Gray-headed Wagtail, *M. (Budytes) neglecta*,—a species hitherto confounded with the preceding; from which it is principally to be distinguished by the blueish ash-colour of the head and nucha, and by the existence of two white lines passing transversely, one above, and the other below, the eye. In its manners, *M. neglecta*, described, by Temminck, under the specific designation of *flava*, is said to differ widely, in its manners, from the real Yellow Wagtail of British ornithologists. However this be, the epithet, *neglecta*, is highly objectionable; and should be sentenced to perpetual exile from the domains of science. A more appropriate one will presently suggest itself to us. Where was the vigilant eye of the Derbyshire reformer when he permitted such a scrub to pass muster without summary expulsion or even reprimand?

According to our views of ornithological arrangement, the four British Wagtails may be distributed in the following Order:

Genus, *Motacilla*.

A. Hind claw moderately long and curved.

1. *M. alba—melanoleuca.*                      2. *M. boarula.*

B. Hind claw elongated and less curved.

3. *M. flava.*    4. *M. poliocephala?*

Even Dr. Fleming himself,—*History of British Animals*,—retains the Yellow Wagtail in the genus *Motacilla*.

PLATE XV.—The Sand-Grouse,—*Pterocles arenarius*,—Ganga

unibande, *Fr.*,—Ringel Waldhuhn, *G.* The genus *Pterocles* separated, by Temminck, from *Tetrao*, includes only two species. *P. setarius*,—see p. 100 of this volume, and the subject of the present plate, an inhabitant of Spain, Sicily, North Africa, and Asia. A male and female are here represented in Mr. Gould's best and boldest style.

PLATE XVI.—The Blue-throated Warbler,—*Plœnicura*—, *Motacilla*—, *Sylvia*—, *Curruca*—*Suecica*,—Becfin Gorge-bleue, *Fr.*,—Beca-Fico chiamato, *It.* Of this beautiful and interesting little bird, thinly dispersed over the European continent, from Sweden to the Mediterranean, one specimen only has yet been met with in the British islands. It is at once distinguishable from its congeners by the ultramarine *blue colour of the throat* and upper part of the neck, with a patch of pure silky white in the centre. The male and female are exquisitely figured by Mr. Gould. *Cyanecula* is obviously a more appropriate specific designation, than *Suecica*, for a *blue-throated* bird.

PLATE XVII.—The Green Woodpecker,—*Picus viridis*,—Pic vert, *Fr.*,—Piechio verde, *It.*,—Grünspecht, *G.*,—is here delineated in all the author's characteristic style of boldness, accuracy, and splendour. The two figures exhibited, are those of an adult and young male bird. On what good ground this beautiful inhabitant of our forests has been torn from its ancient family-connections, and transformed into a *Chrysoptilus*, we have yet to learn.

PLATE XVIII.—Of our favorite little songster, the Black-cap,—*Curruca*—, *Motacilla*—, *Sylvia*—*atricapilla*,—Bec-fin à tête noir, *Fr.*,—Capinera commune, *It.*,—Schwarzköpfige Grasmücke, *G.*,—we are here presented with two delightful figures, male and female. To our view, the present is one of the most captivating plates in Mr. Gould's splendid and captivating work. It is necessary to distinguish the present bird from the *Sylvia melanocephala*, of Latham,—bec-fin mélanocéphale, of Temminck,—a species which inhabits south Europe, but is, as yet, an alien to the British islands.

PLATE XIX.—A charming representation of the Grey Snipe,—*Macroramphus griseus*,—Becassine ponctuée, *Fr.*,—in two figures, illustrating the appearance of the bird in its summer and winter plumage. It is, in its *former* state, the red-breasted Snipe, of Pen-  
nant and of Wilson,—*Scolopax Novoboracensis*, Latham,—*American Ornithology*, v. ii., p. 337; in the *latter*, the Brown Snipe, of Pen-  
nant, and *S. grisea*, of Latham's *Index Ornithologicus*. It is mentioned, under the title of the New York Godwit, at p. 398 of *Northern Zoology*; and figured, under the article Snipe, in the Supple-

ment to Montagu's *Ornithological Dictionary*. Three specimens only of this bird have hitherto been killed in Europe. The criticism of Temminck on the elevation of the Grey Snipe to the head of a new genus, so strictly accords with our own views and opinions, that we shall transcribe it: "Leach has formed of this species a new genus, under the name of *Macroramphus griseus*, apparently on account of the minute membrane which unites the exterior to the middle toe,—the only difference which distinguishes this bird from the other European Snipes, of which it exhibits all the manners and habits. In isolating beings by such minute and anomalous characters, which do not relate to any of their animal functions, we create difficulties in artificial classification: the memory becomes uselessly burthened with a series of names; and method serves only to impart false notions on the nature and relations of animals."—*Manuel d'Ornithologie*, v. ii., p. 680.

PLATE XX.—The birds which compose the genus *Lestris*, have hitherto been confounded with the *Lari*; although sufficiently distinguished from them by peculiarities of external character and of habit. The *Gulls* are lazy and timid birds: the *Lestres* or *Skua*, on the contrary, are bold and fearless; rarely fish for themselves; but subsist on food which they compel the Gulls to disgorge. The genus, as now constituted, comprehends four European species,\* among which is the subject of the present plate, the Common Skua, *Lestris cataractes* (*Larus cataractes*, Linnæus, *Cataractes vulgaris*, Fleming),—Stercoraire Cataracte, Fr. This noble bird is figured in a style worthy of one in which the Eagle itself finds a formidable assailant.†

FOURTH PART.

PLATE I.—An admirable drawing of the Great Grey Shrike,—

\* See p. 103 of the present vol. of *The Analyst*.

† For the sake of brevity, we shall henceforth exhibit the *Recapitulation* at the close of the Analysis, of each Part, in the form of a Table.

PART III.

Plates.	Figures.		Genera.	Species.
6	one	6 adult male.	6	6
		2 diversities of age.		2
12	two	24 { 9 _____ sex.	11	9
		1 _____ season.		1
2	three	6 _____ sex and species.	2	4
—	—	—	—	—
20	—	36	19	22
—	—	—	—	—

*Collurio*—formerly *Lanius—meridionalis*,—Pie-Grièche Méridionale, *Fr.*; a native of Spain and South Europe: distinguished from *Collurio excubitor*, by superiority of size, and especially the fine vinous tinge of the breast-plumage; from *Lanius minor*, by its shorter wings and cuneiform tail. Habits and nidification unknown.

PLATE II.—We have here three exquisite figures of the Starling, —*Sturnus vulgaris*.—*E'tourneau vulgaire*, *Fr.*,—*Gemeiner Star*, *G.*,—exhibiting its peculiarities of plumage in the young—, and its seasonal variations in the adult bird. Verily may we assert that, until now, we have never seen justice done, by the hand of the artist, to this beautiful creature. The subject of our plate and *S. unicolor*, are the only European species of the Starling genus.

PLATE III.—The Avocet,—*Recurvirostra Avocetta*.—*Avocette à nuque noire*, *Fr.*,—*Avocetta o Becco Storto*, *It.*,—*der Blaufüssige Wasser Sabler*, *G.* Temminck's French designation of this elegant bird is peculiarly apposite: since the *black* colour of the *back of the neck* serves at once to distinguish the European Avocet from the three extra-European species,—*R. Americana*, *rubricollis*, and *orientalis*,—of this small genus. As the legs of the American species are of a "*light blue*" colour,—Wilson, *Amer. Ornithology*, v. iii., p. 30,—the German, *blaufüssiger*, is obviously inapplicable as a distinctive epithet of the European bird. The *C. alba*, of Gmelin, is not an Avocet.

PLATE IV.—The Snow-Finch,—*Fringilla nivalis*,—*Gros-bec niverolle*, *Fr.*,—*der Schnefink*, *G.*,—a male and female, charmingly delineated. Inhabits the Alps, Pyrenees, and other mountainous districts.

PLATE V.—The Harlequin Duck,—*Clangula—Anas—histrionica*,—*Canard à Collier, ou Histrion*, *Fr.*,—*Anatra con Collare*, *It.*,—*die Kragen-Ente*, *G.* A splendid bird, splendidly delineated in two figures, male and female.

PLATE VI. represents two species of Thrush,—*Turdus musicus*, —*Merle grive*, *Fr.*,—*Tordo Botaccio*, *It.*,—*Singdrossel*, *G.*; and *T. iliacus*,—*Merle Mauvis*,—*Rothdrossel*. The former, our favourite Song-Thrush, is principally distinguishable from the other British species by the *yellow*—, and the Redwing,—by the *black and yellow*—colour of the space between the bill and eye, and might aptly receive their respective specific designations from this invariable character.—See *Analyst*, vol. iii., p. 269. Both figures are beautifully executed by Mr. Gould; but the flank of *T. iliacus* is rather too highly coloured: and the tails of both, it strikes us, are unnaturally stunted.

PLATE VII.—The Water Rail,—*Rallus aquaticus*,—Rale d'Eau, Fr.,—*Gallinella palustris*, It.,—Wasser Ralle, G. In the general outline and character of this well-known bird, Mr. Gould has not exhibited his wonted talent and accuracy. The neck is much too thick, and the whole figure clumsy. The humble production of old Bewick's hand is far more expressive and characteristic. See *History of British Birds*, vol. ii., p. 126.

PLATE VIII.—Richardson's Lestris,—*L. Richardsonii*. A common species on the coasts of Britain, and her northern islands: hitherto confounded with *Larus parasiticus*, of Linnæus; and first discriminated by Dr. Richardson, whose name it bears. "It is a more robust and powerful bird than *Lestris parasiticus*; and the upper surface of its plumage is darker and more uniform in colour." Two finely-executed figures, illustrative of varieties of plumage dependent on age, are presented in this plate: PLATE IX.—An admirably executed figure of the Parasitic Gull,—*Lestris parasiticus*,—Stercoraire parasite, ou Labbe, Fr.,—*Stercorario di coda longa*, It.,—Struntmeve, G.,—adverted to in the preceding paragraph. It is the Arctic bird, of Edwards; *Larus parasiticus*, of Linnæus; and *Cataracta parasitica*, of subsequent naturalists. Its claim to the title of a British bird is very questionable.

PLATE X.—The Bearded Tit, or Reed-bird,—*Calamophilus biamicus*,—Mésange Moustache, Fr.,—Bartmeise, G. Our objections to the removal of this beautiful and interesting little bird from the genus *Parus*, with which it has been so long and naturally associated, are grounded on the principle which we have, on a former occasion, developed. The differences which it exhibits are not, in our view, sufficient to constitute a good generic character.\* The two figures, male and female, here presented, are among the most exquisitely drawn and coloured in the whole work.

PLATES XI, and XII.—Two species, formerly belonging to the *Anas* genus, now transferred, by Leach, to *Somateria*. The former represents the King Duck,—*S. spectabilis*,—Canard à Tête Grise, Fr.; the latter, the Eider-Duck,—*S. mollissima*,—Canard Eider, Fr.,—Oca Settentrionale, It.,—Eiterente, Eidergans, G. The trachea of the male bird, of equal diameter in its whole length, is composed of hard, entire, cylindrical rings, connected by membranes. The inferior larynx is dilated anteriorly, and forms on the left side,

\* In order to justify this opinion, we transcribe the generic characters of *Calamophilus*, as traced by Mr. Gould: "Beak nearly as in the genus *Parus*; but the upper mandible at the tip somewhat curved. Tail elongated, wedge-shaped. Legs very slender."

a bony protuberance, hemispherical and slightly elevated. The triangular base of the fundus of the glottis is very prominent. Sabine describes the trachea of the King Eider as exhibiting a similar structure. The following are the characters of the new genus, as traced by Gould: Beak swollen at the base, elevated, extending up the forehead, and divided by a triangular projection of feathers; towards the tip, narrow and blunt. Nostrils small, placed in the middle of the beak. The two figures, male and female, respectively exhibited in these plates, are drawn and coloured with inimitable correctness, grace, and splendour.

PLATE XIII.—The White-winged Crossbill,—*Loxia leucoptera*,—*Curvirostra leucoptera*, of Wilson. See *American Ornithology*, pl. 31, p. 42; and *Northern Zoology*, v. ii., p. 363. Of this beautiful bird, one specimen only has yet been taken in the British islands, and probably in Europe: since it is not mentioned by Temminck. The colouring of the male bird, by Gould, is exceedingly fine.

PLATE XIV.—The Ruffed Bustard,—*Otis Houbara*,—Outarde Houbara, *Fr.*,—Kragentrappé, *G.* The genus, *Otis*, comprehends only three European species,—*tarda*, *tetrax*, and the beautiful subject of the present most striking and superb plate; which, although occasionally met with in Spain and South Europe, is unquestionably a native of North Africa and Arabia. Persons who idly prate about the unrivalled superiority of Audubon's great work, will do well to gaze on this noble production of Mr. Gould's pencil, and confess their error.

PLATES XV. and XVI. exhibit the only two European species of the genus *Phalaropus*, in two figures each, illustrative of the peculiarities of the summer- and winter-plumage in the *first*, or Grey Phalarope,—*Phalaropus platyrhynchus*,—Phalarope Platyrhinque, *Fr.*; and of its sexual diversities in the *second*, or Red-necked Phalarope,—*Ph. hyperboreus*,—*Ph. Hyperboré*, *Fr.*,—Gemeiner und Rothalsiger Wassertretter, in its young and adult age, of the *Germans*. The *former* is the *Ph. lobatus*, of Fleming; and the *latter* has been transferred, by Cuvier, to a new genus, under the name of *Lobipes hyperborea*. The separation of birds so nearly allied in structure and in habits as the two European Phalaropes, appears to us highly objectionable: and yet more so, the designation *Lobipes*, by which Cuvier has sought to distinguish the newly-constituted genus. Is it right to select, as a ground of nomenclature for a new genus, a character not peculiar to the animal taken for the typical species; but exhibited by other species of the genus

from which such animal has been separated? And is not the Grey Phalarope a *lobe-footed* bird; and has it not, on that very account, received, from Fleming, the specific designation, *lobatus*? Differences in the figure of the bill are the pretext advanced, by Cuvier, as justifying the proposed innovation. Why then not compound, from the Greek or Latin, if a new genus there must needs be, a generic title for it, expressive of such peculiarity?

PLATE XVII.—The Black Tern,—*Sterna nigra*,—Hirondelle-de-Mer epouvantail, *Fr.*,—Schwarzgraue—, Schwarze und Schwarzkehlige Meerschwalbe, *G.*,—has unluckily fallen into the hands of the reformers, and shared the fate of divers of its predecessors. It is now the *Viralva nigra*, of Leach,—the black *Viralv*! of the Russell of ornithological reform.\* We subjoin a sketch of the generic characters of *Viralva*: Beak shorter than head, subulated, nearly straight, slightly compressed; tip a little inclined: upper mandible nearly straight. Nostrils oblong, basal. Wings long, tail slightly forked. Feet four-toed, slender: hind toe minute. Claws small. The “almost square” figure of the tail appears, after all, to constitute the principal character of this newly-constructed, but crazy and ephemeral, genus.

PLATE XVIII.—The Yellow-headed Wagtail,—*Motacilla Citreola*,—Bergeronette citrine, *Fr.*,—an *indigene* of Western Asia, occasionally visiting the adjacent districts of Europe, exhibits the prolonged hind-toe; and should consequently belong to the new genus, *Budytes*. The following is the marrow of Gould’s specific description of this rare and elegant bird: In size, inferior to *M. flava* and *neglecta*: distinguished, in its spring-plumage, by the fine citron yellow of the vertex, cheeks, and whole under surface. A crescent-shaped black band across the occiput. Upper plumage dark-ash colour, slightly tinged with grey. Middle and greater wing-coverts edged with white. Middle tail-feathers black: two external ones, on each side, white. The head and inferior parts of the female, according to Gould’s figure, are of a dusky greenish-yellow: occiput dusky, and apparently destitute of the black crescent. Food and nidification unknown.

PLATE XIX.—the Little Auk,—*Mergulus*—formerly *Alca alle*,—*Uria alle*, of Temminck,—*Mergulus melanoleucos*, of Ray,—Guillemot nain, *Fr.*,—*Uria minore*, *It.*,—der Kleine Alk, *G.* Two figures illustrative of the summer- and winter-plumage of the bird, delineated with great truth and spirit.

\* See *Analyst*, vol. iii., p. 211.

PLATE XX.—The genus *Procellaria*, as constituted by Linnæus, included all the sea-birds furnished with tubular nostrils. Subsequently, it has been parcelled out, by naturalists, into several genera; three of which, *Procellaria*, *Puffinus*, and *Thalassidroma*, contain European species. The concluding plate of Mr. Gould's *Fourth Part*, exhibits a nobly-executed figure of the typical species of the *first*,—the Fulmar Petrel,—*Pr. Glacialis*,—le Pétrel Fulmar, *Fr.* The following are the generic characters of *Procellaria*, as now restricted: Beak thick, dilated at the tip, sulcated: upper mandible hooked; lower straight and slightly truncated. Nostrils united in a single tube. Legs moderate: a claw in place of the hind-toe.

The cautious and “tardigrade” Temminck, we may, in conclusion, observe, distributed the species of the Linnæan genus, *Procellaria*, into three Sections or Sub-genera, respectively designated *Proper*—, *Puffin*—, and *Swallow Petrel*, and comprehending the following European species: 1. *Pr. Glacialis*; 2. *Pr. Puffinus*, — *Anglorum*, and — *obscura*; 3. *Pr. Pelagica*, and — *Leachii*. And it is, in our opinion, questionable whether the Dutchman's, after all, be not the best, as it is evidently the most natural, arrangement. The Fulmar Petrel constitutes the type of the new genus, *Fulmarus*, of “Mr. Mihi Stevens.”\*

P.

Paradise-street, Birmingham,  
May 30, 1836.

## \* PART IV.

Plates.	Figures.		Genera.	Species.
6	one	6	adult male.	6
			2 diversities of age.	2
13	two	26	9 ————— sex.	9
			1 ————— season.	1
			1 ————— species.	2
1	three	3	————— age and season.	1
<hr/>		<hr/>		<hr/>
20		35	17	21
<hr/>		<hr/>	<hr/>	<hr/>

From a retrospect of our Analysis of the first four Parts of Mr. Gould's splendid work, it will be seen that eighty-seven species of birds only have yet been delineated, instead of one hundred,—twenty-five in each Part,—as we were led, from the Prospectus, to anticipate. From the commencement, we were of opinion that the *Birds of Europe* could not be completed in less than twenty Parts. Mr. Gould has, at length, publicly confirmed the accuracy of our calculation. The last and twentieth Part will appear, we presume, in April, 1837.

## BIRMINGHAM FREE GRAMMAR SCHOOL.

Amongst the numerous establishments of this country dedicated to the instruction of youth, "THE BIRMINGHAM FREE GRAMMAR SCHOOL," founded the fifth of King Edward VI., is rapidly rising in importance. The following brief summary of its conduct, its laws, and its arrangements, is abridged from the Act of Parliament which regulates its management, and from other authentic sources.

Letters patent were granted on the second of January, 1552, for transferring the possession of a religious establishment entitled "The Guild of the Holy Cross," of the clear annual value of £21., to twenty inhabitants of Birmingham, who were created a body corporate and elective of themselves in perpetuity. The governors thus appointed possess a common seal, and, with the advice of the Bishop of the Diocese, have the government of the school—the appointment of masters, whose stipends they regulate—and the preservation and disposition of the revenues. In conformity with the charter, the governors were formerly chosen from the inhabitants of Birmingham alone; but by a recent enactment, persons duly qualified, whose residence does not exceed four miles from the town, are considered eligible to act in that capacity.

The Grammar School is conducted by a head master and second master, with an assistant to each, and likewise a writing master. The two first mentioned are required to be Masters of Arts of the Universities of Oxford and Cambridge, and in Holy Orders. The head master is permitted to take eighteen boarders, and the second master twelve.

The youths who are candidates for admission into the school are ineligible unless they can read and write English, and are above eight years of age; nor are they allowed to continue after they have completed their nineteenth year. Boys who are not sons of inhabitants of Birmingham are required to pay for their education such sum as the governors shall determine.

There are ten exhibitions of £50 a year each, paid half-yearly, to be held four years, with a certain residence, founded for boys who shall go to the Universities of Oxford or Cambridge; two exhibitions one year, and three another, alternately. The candidates are examined, and their names arranged according to their respective excellence in classical learning. In case no candidates appear for exhibitions who are sons of the inhabitants of Birmingham, the governors may assign them to any other candidates, provided they

shall have been three years in the school prior to the annual visitation. Should a death take place during the four years, the governors may re-appoint; but the exhibitions remain vacant if there are not a sufficient number of boys qualified.

An annual visitation is held in Easter week, at which three examiners attend, who are required to be resident members of one of the Universities of Oxford or Cambridge, of not less than seven years standing; and who have taken the degree of Master of Arts, or Bachelor of Civil Law. A general examination of the boys takes place at that time, to ascertain their proficiency in the classics, and their knowledge of the fundamental principles and doctrines of the Christian religion.

As some important changes in the system of instruction, calculated to extend the usefulness of the school, are now under the consideration of the governors, we defer entering upon that subject till the improved plans shall be matured.

A wise regulation has been enacted relative to publishing the accounts of this Institution. It is decreed—"That an abstract of the accounts of the income and expenditure of the revenues of the school estates shall be hereafter published by the governors once in the month of June, in every year, in some one newspaper printed within the said town of Birmingham." The gross annual revenue of this Institution at present amounts to about £4000 per annum; an income which is continually augmented by the termination of existing leases.

We present our readers with a north and south view, and likewise a ground plan, of the magnificent building now erecting for the Grammar School, engraved by T. Kearnan, under the direction of Mr. Barry; who has recently enhanced the fame his distinguished talents as an architect had previously acquired, by his much-admired designs for the New Houses of Parliament.

The accompanying illustrations so clearly define the character and plan of the building as to render any lengthened technical description of the designs unnecessary. We have, therefore, abridged an account of this beautiful edifice from *The Companion to the Almanack*.

"The design embodies an adaptation of the collegiate, and civil, and ecclesiastical pointed architecture of the third period of what is commonly called Gothic architecture, or more particularly of the time of the Tudor line of English sovereigns; and is a distinguished proof that novel and beautiful combinations may be made of classical materials, without either servile copying, or tame imitation.

“The structure resolves itself, externally, into a regular quadrangular figure, extending 174 feet in front, 125 feet in flank, and 60 feet in height. Internally, two courts, of the same figure, are formed, around and between which the several parts of the building are arranged. The main body of the front elevation is composed of two stories, which are indicated by series of windows, enriched with tracery of the period to which the composition belongs—the lower being comparatively low, with very flat arches of what are termed the four-centred, or obtuse-angled and contrasted form; the upper are lofty, with arches of similar form, but of higher elevation. These divide that part of the elevation into seven minor compartments, which are separated by buttresses, diminishing as they ascend, and terminating above an embattled parapet, in pinnacles, enriched with crockets and finials. The principal entrance is in the central compartment of the ground-story, and is formed by a characteristic porch, so designed as not to break up the harmony and continuity of the composition. The elevation generally, however, includes two wings, which stand so far forward as to range with the buttresses of the main body in the lower story, and running up to the height of the main body, terminate in small gables. These wings are enriched each by a lofty oriel window of two stories in height, corbelling from the level of the principal floor. The other windows are plain, rectangular, and mullioned, with label heads in collegiate style. The flanks exhibit three tiers, or stories, of windows similar to the ordinary windows of the wings in front. The rear front is of a similar composition to the principal front, as regards the wings. In the centre are seven large pointed windows, filled with mullions and tracery in the principal floor; and in the lower story there is a series of open arches, forming a covered play-ground, with a cloister for the boys during inclement weather.

“The principal entrance from New-street opens upon a vestibule, on the right and left of which are two subordinate school-rooms, occupying the ground or lower story of the main body of the front, from the windows of which they receive their light. Onward the vestibule leads into a gallery, or corridor, separating the two internal quadrangular courts, and out into the vaulted and groined ground-floor of the main body of the rear front, which communicates, by its open arcade, with the play-ground. Turning to the right, after passing through the entrance vestibule, there is a handsome stone staircase leading up to a corridor corresponding with that below, but of much greater height, according with the greater ge-

neral height of the story, and connecting the two principal rooms in the structure, which relatively occupy the main bodies of its principal and rear fronts. These are the library and the grammar school-room. The former is over the entrance vestibule and subordinate schools in front, and occupies the grand series of windows of the elevation. This room is 102 feet long, 25 feet wide, and 31 feet in height. The latter—the grammar-school—occupies the corresponding part within the rear-front, over the vaulted playground below; over one end there will be a gallery for the accommodation of visitors at public examinations; above which gallery the length of this room is 120 feet, its width 30 feet, and its height 45 feet. The roof will be carved and enriched with tracery in the manner of the roofs of Eltham, Crosby, and other ancient halls of the same period. In the wings of the fronts and the flanking-buildings from front to rear, are the residences for the head and second master, which include apartments for the accommodation of a limited number of private pupils. The building is entirely faced with a durable grit stone, of a fine colour, from Darley Dale, in Derbyshire. The interior of the vestibule, corridors, and staircases, all of which are highly decorative, and have groined ceilings, are entirely cased with stone.”

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## SKETCHES OF BRITISH ICHTHYOLOGY.

No. 1.—THE SYNGNATHIDÆ, OR FAMILY OF PIPE-FISHES.

By SHIRLEY PALMER, M.D.

ICHTHYOLOGY,\* or the study of fishes, although little prosecuted as a branch of Natural History in this country, has ever been, to me, a subject of the deepest interest. The delightful associations of my early years are inseparably connected with it; and have, perhaps, imparted to the study a charm which, with all its intrinsic attractions to the inquiring mind of the man of science and the naturalist, it might not otherwise have possessed. The “high-days and holidays” spent by the visionary and enthusiastic school-boy, in solitary rambles with the fishing-rod, on the brink of the tranquil

\* From ἰχθύς, a fish, and λόγος, a discourse.

stream, amid scenes over which the name of Home has thrown its undying spell, are never to be forgotten by the spirit of the man, however stricken and subdued, in after-life. They arise upon the memory, and beguile the imagination, with a soft and fascinating splendour which the storms and vicissitudes of the world, as they deepen and fluctuate around, may cloud or bury for awhile, but never can extinguish.

I have been induced to select for the subject of my first contribution, the present department of Ichthyology; because such selection will enable me to exhibit an Order of Fishes, and explain facts in their structure and economy, which are alike curious and little known, or imperfectly understood. And I am not without hope that some friend of *The Analyst*, more favourably circumstanced for observation, than myself, may take up the subject, and corroborate, and extend, the singular views developed respecting it, first by Mr. Walcott, and subsequently by Mr. Yarrell.

The two genera of British fishes which constitute the subject of my present sketch, belong to the Fifth Order, *Lophobranchii*, and Family, *Syngnathidæ*, of the illustrious Cuvier. The term, *Lophobranchii*, compounded of two Greek substantives, literally signifies *tuft-gills* :\* and I cannot better illustrate the propriety of this designation than by presenting an almost literal translation of Cuvier's account of the characters of the Order, from page 36 of the second volume of the *Règne Animal* : The fishes of this Order possess perfect and free jaws; but are, at once, distinguished by their *gills*; which, instead of exhibiting the ordinary pectinated form, † are separated into small round *tufts*, disposed by pairs along the gill-arches,—a structure of which no other fishes offer an example. The gills are enclosed beneath a large opercule, or gill-cover, attached, on all sides, by a membrane which leaves only a small orifice for the issue of the water, and exhibits, in its substance, but few vestiges of radii. These fishes are, moreover, distinguished by a body invested throughout with indurated plates (*écussons*) which give it almost invariably an angular figure. They are generally of small size, and almost destitute of flesh. Their intestine is of equal calibre, without cœca : ‡ their swimming-bladder slender; but proportionately large.

\* *λόφος*, a tuft, *βράγχια*, the gills of fishes.

† Disposed like the teeth of a comb, *pecten*.

‡ The Cœca of Fishes are intestinal appendices; which, varying in number, surround the pylorus, and open separately, or in groups, into the stomach either at that part, or over the whole surface of the organ. They secrete a fluid which is supposed to perform the office of the pancreatic juice

*Syngnathus*, the term employed to designate the genus of fishes which forms the type of the Tribe, or Natural Family, of the *Syngnathidæ*, is composed, also, of two Greek words; and implies an *union of the jaws*.\* The propriety of this designation will be, at once, obvious when I state that both *jaws* of all the species belonging to this genus and Family, are so *united* as to form a perfect tube, or pipe, through which food and water are absorbed by the animal. From this circumstance, or the pipe-like figure of the body, they have acquired, in England, the popular designation of *Pipe-Fish*. Consequently, *Syngnathus* may be regarded as a synonym of the Pipe-fish genus; and *Syngnathidæ*,—of the Family of the Pipe-fishes.

The Family, *Syngnathidæ*, contains, then, as I have before observed, only two genera of British fishes: the *Syngnathus*, or proper Pipe-fish, genus; and the *Hippocampus*,† or Sea-horse, genus. The species of the latter, formerly arranged under *Syngnathus*, have, only in modern times, been separated from it, and received the generic name of *Hippocampus*. I shall now proceed to describe, in regular order, as clearly and concisely as the subject will allow, the distinguishing characters of the two genera, and of all the British species which they respectively comprehend.

1. *Syngnathus*.—The following are its *Generic Characters*, as traced by Cuvier and Yarrell: Body elongated, slender, invested with a series of indurated plates arranged in parallel lines. Head long: both jaws produced, united, tubular. No ventral fin. Respiratory orifice situated towards the back of the neck. The fishes of this genus are the Needle-fish of the vulgar *English*,—*Aiguille de mer*, of the *French*—, *Aguglia*, of the *Italian*—, and *Nadel-fisch*, of the *German* language. They admit of distribution into two Sections, or Sub-genera, conspicuously distinguished from each other by the number of the fins with which they are respectively provided, and by the peculiar and extraordinary mode of development of their young.

A. The first sub-genus comprehends those Pipe-fishes which are provided with pectoral, dorsal, anal, caudal, but not ventral, fins. The male only has an elongated pouch, named *sub-caudal*, because situated *beneath the tail*; and closed by two folding membranes. It includes the two following British species.

in the process of chylification. In those cartilaginous fishes which, as the *Chondropterygii*, are provided with a pancreas, the pyloric coeca are not found. They exist most conspicuously in the Burbot, *Gadus lota*.

\*  $\Sigma\nu\nu$ , in composition, *union*,— $\gamma\nu\nu\alpha\theta\omicron\varsigma$ , the *jaw*.

† From the Greek,  $\text{ἰππόκαμπος}$ , a sea-horse.

1. The Great Pipe-Fish,—*S. acus*,—l'Aiguille.—The tubular jaws of this species are slightly compressed; and, in depth, but one third of that of the head at its deepest part, which is in a vertical line with the centre of the operculum, or gill-cover. The mouth, placed at the extremity of the tube, is small, and opens obliquely upwards. The lower jaw is longest. The eyes are large, and the bony orbits prominent. The operculum exhibits radiating striæ. The head, between the eyes, is flattened; and behind them, rises into a keel-like crest extending to the neck. From the pectoral fin to the anal aperture, or vent, the body is seven-angled; as there are three ridges on each side, and one along the abdomen, terminating at the vent. The surface is protected by a series of nineteen plates. Throughout the short extent of the dorsal fin, the body is hexangular (six-angled); the abdominal ridge being discontinued: afterwards, it is quadrangular, and tapers gradually, invested with forty-four plates, to the end of the tail. The pectoral fin consists of twelve rays: the dorsal, of forty rays, begins at two-fifths of the length of the body, and, in a vertical line, somewhat anteriorly to the anal aperture: the anal fin, of four rays, is very small: the caudal, of ten rays, rounded and fan-shaped. The prevailing colour of the fish is pale-brown, transversely barred with darker brown. Such are the principal specific characters of *S. acus*, as delineated by Mr. Yarrell, in the second vol., p. 330, of his admirable *History of British Fishes*. To the extraordinary uses of the sub-caudal pouch, peculiar to the male fishes of this sub-genus, we shall presently advert.

The motions of the Great Pipe-fish are very singular: they are performed horizontally, or perpendicularly with the head downwards or upwards, in every variety of contortion, in search of food, which consists of worms, and minute *Mollusca*, and *Crustacea*, and the ova of other fishes. It is a common species, found either among sea-weed on the recess of the tide, or in deep water. Figures of *S. acus* are given by Willughby, *Ichthyographia*, pl. i. 25, f. 6; Pennant, *British Zoology*, vol. iii., pl. 26, No. 60 (f. 1. a female, 2. a male); Bonnaterre, *Ichthyologie*, pl. 21, f. 71; and Yarrell, *History of British Fishes*, vol. ii., page 325.

2. The Deep-nosed, Shorter, or Lesser Pipe-fish,—*S. Typhle*,—la Trompette,—is distinguishable from the preceding by the more compressed and deeper figure of the jaws; and from the two larger species of the next Sub-genus, by the presence of pectoral, anal, and caudal fins. The united jaws are nearly as deep as the head. The body is hexangular, and the middle lateral angle, on each side, becomes, at the end of the dorsal fin, the upper angle of the quadran-

gular tail. The middle of the dorsal fin is nearly the middle of the whole length of the fish. The number of plates, from the shoulder to the vent, is about eighteen; from thence to the tail-end, thirty-seven. The abdomen is rounded. The pectoral fin has fifteen rays; the dorsal, thirty-nine: the anal fin, of three rays, is minute; the caudal, of ten rays, pointed. Prevailing colour, olive-green, mottled and spotted with yellow-brown and yellowish-white. Its habits resemble those of the preceding species. For iconographical delineations of the fish, see Willughby, 1. 25, fig. 1; Donovan, pl. 56; Bonnaterre, pl. 21, fig. 70; and Yarrell, vol. ii., p. 332.

B. In the *second* Sub-genus, are included those species of *Syngnathus* which exhibit only a dorsal fin. There is no sub-caudal pouch in either sex. It contains three British species.

3. The *Æquoreal* Pipe-fish,—*S. æquoreus*,—la Pipe,—measures, in length, from twenty inches to two-feet. The form of the body is somewhat compressed and angular: an acute dorsal and abdominal ridge, with three slight angles on each side, imparts to it an octangular appearance. That part of the body which extends from the gills to the vent, is nearly of equal size; and contains about thirty plates. The body, from the vent to the tail-end, is, at first, quadrangular; afterwards round and taper, and presents thirty-six plates. Three-fourths of the dorsal fin, which consists of forty rays, are situated anteriorly, measuring in a vertical line, to the vent; one fourth, posteriorly. The end of the tail is very small and compressed; and the rays not perceptible by the naked eye. The colour is yellowish, with transverse pale lines and dark margins, one on each side, and one down the middle of each plate; “giving it the appearance of possessing double the number of joints it really has.” These markings cease at the vent. This species inhabits the open sea; and, from the report of F. C. Lukis, Esq., occurs at Guernsey.

In this, and the two succeeding species, the male fish exhibits several distinct hemispherical depressions on the lower surface of the abdomen, anteriorly to the vent. The female is destitute of these depressions; the purposes of which I shall presently describe. Figures of *S. æquoreus* are given, by Montagu, *Wernerian Memoirs*, vol. i., pl. 4, fig. 1; and Yarrell, vol. ii., p. 335.

4. The *Snake* Pipe-fish,—*S. ophidion*,—le Serpent, ou Serpent de mer. The form of the body is octangular; but more slender and rounded than in the preceding species. Uniform, in size, from the gills to the vent, it afterwards tapers gradually to the tail, which has a slightly flattened extremity. The divisions in the series of transverse plates, and the angles of the body, are nearly obsolete.

The dorsal fin, of thirty-eight rays, is situated quite anteriorly to the middle of the fish: a line directed vertically from the vent passing through the fin at three fourths of the distance from its anterior extremity. The body, equal, in size, to a goose-quill, is of an uniform olive-green colour. The pupils of the eye are black; the irides red. The animal varies, in length, from eight to fourteen inches or more. It is figured by Bonnaterre, pl. 21, fig. 73; by Pennant, vol. iii, pl. 26, No. 61; and Yarrell, vol. ii., p. 338.

5. The Worm Pipe-fish,—*S. lumbriciformis*,—is the smallest of the British species; measuring, in length, from five to six inches. The nose is very short, and turned a little upwards: the eyes prominent. The form of the body is nearly cylindrical. The vent is situated at the end of the first third of the whole length, with three fourths of the dorsal fin, consisting of about thirty rays, in a vertical line behind it. From the vent, the body gradually tapers to the pointed tail. Anteriorly to the vent, there are nineteen —; posteriorly, about fifty plates. The surface of the body is smoother than in the two preceding species: the colour dark olive-green. *S. lumbriciformis* is found beneath stones, at Orkney, and on the Cornish coast; and is figured (a male specimen) by Pennant, vol. iii, pl. 26, No. 62; and Yarrell, vol. ii, p. 340.\*

II. *Hippocampus*. *Generic Characters*. The mouth is placed at the extremity of the united and tubular jaws. The body is compressed, short, and deep: the whole body and tail divided by longitudinal and transverse ridges, with tubercular points at the angles of intersection. There are pectoral and dorsal fins in both sexes; but no ventral nor caudal fin in either. The male only has an abdominal pouch; the female only, an anal fin. The genus contains but one British species.

1. The Short-nosed Hippocampus,—*H. brevisrostris*,—l'Hippocampe. The whole length from the apex of the nose to the extremity of the tail, is about five inches. The jaws are short: the eyes prominent, and irides straw-yellow. A single spinous tubercle pre-

\* Two other species of *Syngnathus* are recorded, as British, by Fleming, *History of British Animals*, v. i., p. 176. The first, *S. pelagicus*,—le Tuyau de Plume, is described, and figured, by Bonnaterre, *Ichthyologie*, pl. 21, fig. 72; and by Donovan, v. iii., pl. 58. *Specific Characters*: Body linear, heptangular. Taken, in winter-season, among sprats, on the English coast. The second,—*S. barbarus*,—le Sexangulaire: Bonnaterre, same page and plate, fig. 74. *Specif. Char.*: Body hexangular; tail quadrangular. Both species possess, according to Bonnaterre, a caudal fin: although Fleming expressly states that, in the latter, this organ does not exist. They both closely resemble *S. acus*; and apparently belong to the first sub-genus.

jects above each eye. The operculum exhibits striæ radiating from the front. The figure of the body is rendered heptangular by the existence of three angular lines on each side, and a seventh running along the abdomen. The back is flat: the transverse segments of the body are eleven in number. The pectoral fins, small and containing about eight rays each, are situated immediately behind the operculum. The dorsal fin consists of about sixteen rays: the anal fin, of four rays, is peculiar to the female. The abdomen measures twice the depth of the tail; which from the vent assumes a quadrangular figure, and terminates in a point: the number of its segments is about thirty. The general colour of *H. brevirostris* is pale ash-brown, with changeable iridescence, and variable tints of blue dispersed over the whole. It has been found on the southern shores of England, at Guernsey and the other Channel islands; and a most interesting account of its habits, communicated by F. C. Lukis, Esq., of Guernsey, appears in Mr. Yarrell's valuable work. It is figured, by Willughby, i. 25, fig. 3; by Bonnaterre, pl. 22, fig. 75; and by Yarrell, vol. ii., p. 342. The food of the Hippocampus, although not clearly ascertained, is supposed to be the same as that of the different species of the *Syngnathus* genus.

It now remains for me only to explain the peculiarities of structure and function to which I have before alluded, as characterizing the males of the different species which belong to the two genera of the *Syngnathidæ*, just enumerated and described. *First*, then, it had long been known that the ova of the female fish were received into the sub-caudal pouch which constitutes a sexual peculiarity in the two species of the first sub-genus of *Syngnathus*, and there developed; but these pouches were supposed to exist exclusively in the female: nor does any suspicion to the contrary appear to have entered the mind of Cuvier: for, in his description of the *Syngnathi*, he makes the following observation: "Leur génération a cela de particulier, que leurs œufs se glissent et éclosent dans une poche qui se forme par une boursouffure de la peau, dans les uns sous le ventre, dans les autres sous la base de la queue, et qui se fend pour laisser sortir les petits." See *Règne Animal*, vol. ii., page 362.

It was reserved for Mr. Walcott, author, I believe, of a *Synopsis of British Birds*, and of several other works upon Natural History, to discover that the sub-caudal pouch is peculiar to the *male* fish of *Syngnathus acus*; and that the female casts her roe into the false belly of the male, where it is retained, and subsequently developed. This extraordinary fact is supported by the evidence of several continental naturalists; and Mr. Yarrell has verified it by the unerring

test of dissection. It, moreover, appears probable that this pouch serves afterwards as a refuge to the young fry on the approach of danger: for Mr. Yarrell has been assured, by fishermen, that "if the young were shaken out of the pouch into the water, over the side of the boat, they did not swim away, but when the parent fish was held in the water, in a favourable position, the young would again enter the pouch." And below the figure of *S. acus*, copied by Willughby from Rondeletius, the young are represented swimming near the abdomen of the parent fish. Risso has, moreover, noticed the great attachment of the adult Pipe-fish to its young.

The abdominal pouch exists, also, in the male of *S. typhle*, and of *Hippocampus brevis*; and probably performs the same singular office as in *S. acus*: for identity of structure commonly implies identity of function. The anal fin, which characterizes the female of *Hippocampus*, is supposed, by Mr. Yarrell, to be connected with the transfer of the ova to the pouch of the male.

*Secondly.* The males of the three species of the second sub-genus of *Syngnathus*, exhibit, it will be recollected, instead of a pouch, several hemispherical depressions on the surface of the abdomen, anteriorly to the vent. Into these depressions, the ova of the female are received. Pennant, betrayed into the same error as Cuvier, has delineated a male of *S. lumbriciformis* with the ova adherent to the belly; and described it as a female. See *British Zoology*, vol. iii., pl. 26, No. 62, p. 187.

With the view of rendering as perfect as my limits will allow, this brief history of the *Syngnathidæ*, I shall cursorily notice two other genera of fishes, belonging to *Lophobranchii*. All the known species, which they include, inhabit the Indian ocean. 1. The genus, *Fistularia*, differs principally from *Syngnathus* in the possession of very large ventral fins situated behind the pectoral, and united with them and the trunk, so as to form a kind of apron, which (probably existing only in the male) serves, like the pouch of other of the *Syngnathidæ*, for the retention of the ova. There is, also, a dorsal fin, of few rays, but elevated figure, and situated near the back of the neck; a second small one on the root of the tail; and a large pointed caudal fin. In other respects, it closely resembles *Hippocampus*. The only species yet known, is *F. paradoxa*. The fishes of the other genus, *Pegasus*, have a projecting muzzle, composed of the same pieces as the preceding; but the mouth, instead of opening at the extremity, is situated below the base; and resembles, in its protractility, that of the Sturgeon. The body is protected, like that of the other *Syngnathidæ*: but the trunk is broad and depressed; the

gill-opening on the side ; and there are two distinct ventral fins behind the pectoral, which are frequently of large size, and, from their resemblance to wings, have suggested the name by which the genus is distinguished. The dorsal and anal fin are opposite each other. The intestine, lodged in a cavity more broad and short than that of the *Syngnathi*, forms two or three curvatures. The principal species, at present known, are *P. draco*, — *natans*, — *volans*, and — *laternarius*. The first and second are figured in plate 22, of Bonnatte's *Ichthyologie*.

Birmingham, June 12, 1836.

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CORRESPONDENCE.

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*To the Editor of The Analyst.*

SIR,

BEING anxious for the advancement of Natural History, I shall always be ready to explain difficulties which may be experienced by any of your correspondents, and be happy to remove unfounded objections which may be adduced either through ignorance or thoughtlessness ; and with this view I shall advert to a paper by Mr. Neville Wood, at page 109 of your last number.

The objections first brought forward relate principally to the *sound* of the names proposed in the list in vol. iii., p. 200. In this particular, much will depend on taste ; a fact which Mr. N. Wood seems to have overlooked. He states that "few will object to Pern," but that "the fastidious will not readily assent to Surn," (from the Latin *Surnia*). I should think such a "fastidious" objection as this deserving of but slight attention, even if advanced, which I think very unlikely. Mr. Wood will, however, find, by looking to the errata, that the latter name is not adopted. The name Toad-eater (the "Great Horned Owl" of authors), has not found more favor in the sight of our critic. Why, then, does he not object to Worm-eater, affixed, by Swainson, to a genus of birds in the Warbler family, or to Snake-eater, given to the Secretary Vulture of Latham. Again, *Abern* is pronounced to be unobjectionable ; but *Aptern*, from the Latin *Apternis*, is a "vulgar,

Rennie-like name," and "not sufficiently euphonious!" The same sentence is likewise passed on Zigzag Wryneck, although, at the same time, the epithet is pronounced to be "singularly appropriate." This is really, I think, carrying "fastidiousness" a little too far;—*fancy* is all very well with ribbons and gauzes, but is rather out of place in science. *Brakehopper* (first proposed by Mudie) is harsh to the ear of the "sound reformer" (the *r*, perchance, grating too roughly on the tympanum); and is forthwith pronounced "uncouth." Having thus exposed the first objection I take leave of it, wishing the critic all success in his errantry after dulcet sounds.

Leaving *sound* let us proceed to *sense*. "*Fern* Nightjar," we are told, "is not sufficiently exclusive;" and the epithets *European* and *Europeus* are now pronounced to be less objectionable, as applied to this species, than *Fern* and *melolontha*. What, then, becomes of the former declaration of our writer? In vol. ii., p. 421, of *The Analyst*, we are told—"The names proposed at p. 305 are excellent, and especially that of the *Caprimulgus Europeus*, of Linnæus. Your correspondent proposes to name it the '*Fern* Nightjar (*Vociferator melolontha*).' This name is infinitely preferable to my name, *V. Europeus*, which, besides being rather a vague and inexpressive specific name, is erroneous, as there is another *European* species." Here are two contradictory assertions by the same writer—which are we to believe? Mr. N. Wood tells us that the "Red-necked Nightjar is known in Europe only as a straggler" (a third species has since been discovered; but how can he tell that it is not plentiful in some parts? A few years ago only one species of Kinglet (*Regulus*), of Wren (*Anorthura*), of Pie (*Pica*), of Dipper (*Cinclus*), &c., were known as *European*; but now two or more of each of these genera are described as common in Europe. Audubon relates the same of many American species; which shews what an uncertainty must ever attend local names. Mr. N. Wood objects to Seedling as a generic name, on account of the seed-eating character being more or less observable throughout the family (*Fringillidæ*).\* The same objection would exclude Flycatcher, Diver, Sandpiper, Nightjar, &c. Your correspondent is right when he prefers Whin Linnet to Garden Linnet, but I cannot agree with him in thinking *Common* Gallinule admissible as applied to the

\* Ornithologists are not yet agreed on the type of this family: some think the Finches, others the Linnets, others the Goldwings, others the Grosbeaks; but on mature consideration Mr. Blyth's proposal of the Canaries (*Canaria*) seems the most correct;—the Canary family (*Canariadæ*).

*Gallinula chloropus* of Willughby : future research must establish a better.

The next topic to which Mr. N. Wood calls the attention of your readers is the spelling of the names, and on this point he shews more zeal than knowledge ; and as he does not, as he himself owns, "precisely comprehend" this point, I would refer him to page 118 of the last number, where he may gain more precise information on the subject. It seems, however, that it is not merely the orthography of the *birds'* names which is offensive to the eye of our critic, but neither does that of the *bird-describers* satisfy him. He prefers the appearance of Stephens to Stevens : but this is a matter of choice, for the latter is met with as frequently as the former. Also Bechstein and Bekstein, Temmink and Temminck, Bonaparte and Buonaparte : and we are told that there are *thirteen* different ways of writing Shakspeare's name, most of which were used indifferently by the immortal bard himself. Pity but Mr. N. Wood would inform the world as to the *correct* way. Our own naturalist, Ray, has, also, much to answer for : till he altered it, his name was written Wray. In my opinion, there is enough to learn in Natural History without amusing one's self with disquisitions on the mode of spelling author's names.

In vol. iii., p. 34, of *The Analyst*, I commented on Temminck's having included the Kinglets in the genus *Becfin* (*Treeling*). The author has since, however, published a third volume of his *Manuel d'Ornithologie*, in which he has adopted three or four new genera, and among them are the genera Kinglet, Wren, and Jay. A third edition of this work would be very valuable. Mr. Blyth has proposed to name the *Afedula rosea* (Longtailed Tit, of old authors) the Rose Muffin—a very expressive name. The Spring Oatear (*Budites verna*, W.), is *not* identical with the *Motacilla flava* of continental authors. The Gray Azle (*Cocizus cinerosus*, W.),—*Cuculus cinerosus*, of Temminck—should have come immediately after the Gray Cuckoo in the list at p. 205. For *Columba palumbus* read *C. torquata* ; the epithet *torquata* was applied to the Ring Pigeon, by Willughby, and has the advantage of expressiveness as well as priority. The *Falco candicans* of Gmelin has generic characters distinct from the Falcons : it may be separated under the designation White Jerlin (*Cataractes candicans*). It is very doubtful whether the Common Pheasant (*Phasianus colchicus*) and the Ring Pheasant, (*Ph. torquatus*) be distinct species.

It is much to be wished that your correspondent J. M. (p. 120) would give a scientific description of the bird he mentions. He

might, at least, establish the genus to which it belongs. From the few particulars he has given, I suspect it to be a species of Pipit (*Anthus*). Could he not procure a few specimens, and send them to some competent ornithologist? This would at once settle the point.

S. D. W.

June 14, 1836.

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FLORA OF SHROPSHIRE.

*To the Editor of The Analyst.*

SIR,

A considerable portion of my leisure time has, for several years past, been devoted to an accurate investigation of the botanical treasures of Shropshire, with a view to the collection of the necessary materials for the formation of a Flora of that county. Through the kindness of numerous botanical friends and my own exertions, I have been fortunate enough to have ascertained the localities of upwards of eight hundred and fifty flowering plants as indigenous to Shropshire, exclusive of innumerable varieties, and of any of the beautiful cryptogamic tribes (of which I also possess many habitats and particulars). Being still extremely anxious to render my collections as complete and extensive as possible, previous to their final arrangement for publication, I venture to use your extensively circulated magazine, which, doubtless, finds its way into the hands of many friends of science in this and the adjoining counties, as a medium to request the favour of their transmitting to me, as early as convenient, lists of the plants, whether rare or common, which may have occurred to their notice in any portion of the county. The communication of dried or living specimens of the rarer species, for the purpose of examination and description, would be highly desirable, where convenient, and which should be taken every possible care of, and, if requested, safely returned. It would also be esteemed a particular favour if persons resident in the more distant parts of the county would take the trouble of marking and forwarding lists of the plants observable in, or peculiar to, their respective neighbourhoods, with remarks on the particular soils and situations which they affect, the changes observed after cultivation, and any other particulars which may have been noticed. The wild,

or apparently wild, localities of our native trees, with anecdotes and memoranda of any which are remarkable for their size, beauty, or connection with the real or legendary history of the neighbourhood, would prove very acceptable. I need scarcely add that such communications will merit and receive my warmest and most grateful acknowledgements.

I am, Sir, your very obedient servant,

WILLIAM ALLPORT LEIGHTON.

Shrewsbury, May 23, 1836.

P. S.—I would also take the opportunity of remarking that I shall feel much pleasure in exchanging dried species of the rarer or more local species of the plants of Shropshire for those of any more distant county.

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*To the Editor of The Analyst.*

SIR,

I wish to pen a few remarks on a paper which appeared in No. XIV. of *The Analyst* (vol. iii., p. 291), not with a view of shewing Mr. Morris to be wrong, or his reviewer right, but simply to point out a few facts which both appear, in some measure, to have misunderstood; as nothing tends more to elucidate obscure points in science than discussion carried on in a philosophic spirit.

Mr. Morris begins his defence by saying—"He [the reviewer] asks me on whose authority I admit the *Picus medius* as a distinct species?—simply then on that of Linnæus, Temminck, Bewick, etc." I would here remark that Temminck and Linnæus are right in describing a species under that name, but that Bewick and other British authors are wrong: what they have mistaken for the *Picus medius* is the young of the Spotted Woodpecker (*Picus Maculosus*). The *P. medius* is not an inhabitant of Britain. The reviewer's question should, therefore, have been—Why is the *P. medius* admitted as a *British* bird?\*

Mr. Morris continues—"Secondly, I am asked why do I admit the *Emberiza chlorocephala* as a distinct species? I do so because Gmelin, Linnæus, Lewin, Brown, Montagu, and Fleming, have described it as a species; and I include it among the *British* birds,

\* On reference to vol. iii., p. 99, of *The Analyst*, it will be perceived these are the *exact* words used by the reviewer; and that they have been inexplicably misquoted by Mr. Morris.—E.D.

Bewick *alone* having mentioned five instances of its occurring in England." In this case both Mr. Morris and the reviewer are in the wrong; the former in giving *E. chlorocephala* (Greenheaded Bunting) as distinct from the *E. hortulana* (Ortolan Bunting), and the latter in supposing the Greenheaded Bunting to be an accidental variety of the Yellow Bunting (*E. citrinella*). That Mr. Morris should quote Fleming (!) Lewin (!! ) and Gmelin (!!!) in support of a doubtful species is rather singular, and reminds one of the drowning man catching hold of a broken reed.

"Thirdly," continues Mr. Morris, "on whose authority do I admit *Falco lithofalco* as different from the *Falco aesalon*? I reply, on that of Linnæus, Buffon, Bewick, &c. Mr. Morris might just as well have gravely quoted Pliny or Goldsmith in defence of a disputed point in Natural History. Upwards of twenty years ago, Montagu, with his accustomed acumen, pointed out the probability of the *F. aesalon* and the *F. lithofalco* being identical; and since that time his suspicions have been fully confirmed, and the species is now known under the name of Stone Falcon (*Falco lapidarius*, Willughby).

Mr. Morris, however, in placing the above duplicates in his list as distinct species, observes that he "fully expects that one (the *Regulus*), or more of them, will not remain considered as good species." The birds here alluded to are those mentioned by the reviewer, namely, the Whiteheaded Forktail (*Elanus albicapillus*), the Brown Nightling (*Noctua dasipus*), the Grayheaded Oatear (*Pecula neglecta*), and the Fire-crested Kinglet (*Regulus ignicapillus*). I may here mention, as Mr. Morris seems particularly sceptical about the right of the Firecrest to be considered as a distinct species from the Goldcrest, that Temminck expressly states his conviction of this being the fact; and Mudie, in his *Feathered Tribes*, has likewise given a detailed account of the specific differences of the two species; and so also has Jenyns.

Mr. Morris continues—"Whole Snipe your correspondent imagines to be a misprint (for *Large Snipe*, as I suppose); but, whatever its *market* name may be, it is by this name that the bird is known to sportsmen, from Lincolnshire to Hampshire; and therefore I see no reason, at present, to alter it." That an unmeaning or erroneous name must remain unaltered *because* in use among the sportsmen, is certainly not a very cogent reason.

Thus concludes the list of errors charged by the reviewer against Mr. Morris's *Guide*. After a "cursory inspection," however, I find many others of a more serious nature; some of which I will now

mention. In the first place, the order in which the birds are arranged violates the natural affinities of the birds. This, however, would not be of much consequence, as the collector has the option of erasing the figures attached to each label; but another defect is not so easily to be dismissed—errors of nomenclature, Latin no less than English. Of the truth of this assertion, the names of the species in the Treeling family (*Silviadæ*) afford a striking example. In the genus *Silvia* are ranked the two Redstarts (*Ruticilla*), the Whinling (*Melizopilus*), the Redbreast (*Rubecula*), the Nightingale (*Philomela*), the four Warblers (*Ficedula*), and two of the Treelings (*Silvia*); while the remaining Treeling (namely, the Garden Treeling, *Silvia melodia*, Blyth), is divided into two species, under the names *Curruca major* and *C. minor*, and ranked with the Reedings (*Salicaria*). And this arrangement, Mr. Morris expressly informs us, “he considers still to be the best!” but which I consider worse, if possible, than Fleming’s. I may also mention that the Spring Oatear (*Pecula verna*) is here called “*Motacilla flava*,” a name which should be no longer used for the Spring Oatear, since it is used for the Grayheaded Oatear (*Pecula neglecta*) by Temminck and continental naturalists. The “Red Lark (*Alauda rubra*),” which Mr. Morris has admitted into his catalogue, and about which there has been so much uncertainty, I am inclined to think no other than the Rock Pipit (*Anthus rupestris*). The Chaff Finch and the Bramble Finch, Mr. Morris has left without a generic name; by looking to the proper sources he would have learnt that *Fringilla* was the appropriate name. The Lanner Falcon (*Falco lanarius*) is not a British species. The *Asio ulula* and *Asio pinus* are, in the *Guide*, given the highly scientific and unobjectionable names, *Otus brachyotus* and *Otus aurita*—quite models for the nomenclator. The Common Pye is called *Pica caudata*; would not *Pica varia*, of Willughby, be preferable? *Glandarius vulgaris* is an unnecessary innovation, and the generic name of the genus Chuf is *Fregilus*, not *Graculus*. The *Sturnus solitarius* is the young of the *Sturnus varius*. With regard to the name *Bombicivora*, Temminck thus remarks in the third volume of his *Manuel*, lately published—“Il serait peut-être mieux vu de se servir du nom de *Bombiciphora*, dont j’ai fait usage, mais qui a subi la critique, par inadvertence de correction dans la texte du *Manuel*, ou il est écrit *Bombicivora*.” Temminck, in common with all other ornithologists, has adopted Brisson’s name, *Bombicilla*. The Goldcrested Kinglet (*Regulus auricapillus*, Selby), Mr. Morris has called *R. cristatus*; as if all the species of Kinglet were not crested. I have

not half exhausted the errors with which this catalogue teems ; and as to the English names, they are too bad to come within the pale of criticism : and I finally arrive at the same conclusion as the reviewer, when he states that the *Guide* “ would have been very serviceable in supplying a series of labels for an ornithological collection, had not the sins of commission which it exhibits been so numerous and glaring as greatly to impair, if not utterly destroy, its utility for such purpose.”\*

CHARLES THOROLD WOOD.

*Sudbury Hall, May 10, 1836.*

[Mr. Neville Wood, in his preface to *The British Song Birds*, very justly observes—“ No work treating of our ornithology, hitherto published, has been without its due share of errors and defects;” and further remarks—“ There is no more advantageous mode of improving our knowledge in this, and other departments of that delightful science, to which we ought all to pay more or less attention, than a correspondence between naturalists residing in distant parts of the country.” A concurrence in these observations has induced us to prolong this discussion by inserting the above communication.—Ed.]

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## PROCEEDINGS OF PROVINCIAL SOCIETIES.

### BIRMINGHAM ROYAL SCHOOL OF MEDICINE AND SURGERY.

The great utility of an Institution of this nature, in the centre of so important and populous a district, is daily becoming more manifest ; and the high estimation in which the School is now held by the medical profession in the metropolis, must be extremely gratifying to all who take an interest in its progressive improvement.

The examination of the different classes for the Prize Medals, took place on the 12th of May, in the presence of the governors and friends of the Institution, and was conducted by Dr. Quain, of London ; Dr. Conolly, of Warwick ; Dr. Thomson, of Stratford ; and Dr. Melson, of Birmingham. The successful candidates were—

*Anatomy.*—First silver medal, Mr. T. C. Roden, Kidderminster ; second silver medal, Mr. John Bagnall, Smetbwick.

*Materia Medica.*—First silver medal, Mr. A. Martin, Birmingham ; second silver medal, Mr. T. Fletcher, Team, Staffordshire.

*Chemistry.*—First silver medal, Mr. T. Welch, Kidderminster ; second silver medal, Mr. C. Somerville, Stafford.

\* In our literary notices an Ornithological Guide is announced.

*Practice of Physic.*—First silver medal, Mr. A. Martin, Birmingham; second silver medal, Mr. Edwards, Kidderminster.

*Surgery.*—First silver medal, Mr. A. Baker, Birmingham; second silver medal, Mr. F. Allday, Birmingham.

*Midwifery.*—First silver medal, Mr. A. Baker, Birmingham.

Previous to the commencement of the proceedings, the Rev. W. M. Lawson delivered his inaugural address, as mathematical lecturer. The following is a brief outline of this truly eloquent and classical composition, which, at the request of the governors, is intended for publication.

In following the usual course of a lecturer, on taking his seat for the first time in the chair of a public Institution, Mr. L. commenced his labours by explaining the nature of the department of studies which he had undertaken. He should best describe to others the system he intended to adopt, by laying before his audience the method he himself pursued in determining it. When he sat down to consider what kind of lectures the governors were desirous of providing for the Institution, he began to seek for authoritative documents on the subject, as forming the best data from which to investigate the precise character of the lectures required. In *Aris's Gazette*, of the 11th of April, where the summer course of lectures at the Institution is advertised, he found quoted words, which, so far as Mathematics and Natural Philosophy are concerned, were as follows:—

“The Royal College of Surgeons, Edinburgh, strongly urge their own fellows, as well as all other practitioners, not to take any young man as an apprentice, until he shall have gone through a *preliminary course of mathematics.*”

“Every candidate for the diploma of the Royal College of Surgeons, Edinburgh, either *previous* to, or during, his medical education, must have received regular instruction in the elements of *mathematics.*”

“The Court of Examiners of the Society of Apothecaries renew their recommendation to Parents and Guardians, that the youth about to be apprenticed should have *previously* been instructed in the elements of *mathematics* and *natural philosophy.*”

From the manner in which the words “previous,” “preliminary,” “mathematics,” “natural philosophy,” here occur, he thought he might fairly affirm that the above passages include the following proposition, viz.:—that “a course of *mathematical natural philosophy* is a desirable *foundation* for the study of *medicine* and *surgery.*”

He then quoted the following passages from Lord Bacon to the same effect:

“*Medicina autem in philosophia non fundata res infirma est!*”

“Desideratur nimum *philosophia naturalis vera* et activa cui *medicina scientia* inædificetur.”

“*Multa siquidem nature partes, nec satis subtiliter comprehendendi, nec satis perspicue demonstrari, nec satis dexterè et certò ad usum accommodari possint, sine ope et interventu mathematica.*”

In identifying the *mathematical natural philosophy* of the Surgeons and Apothecaries with that alluded to by Lord Bacon, the lecturer conceived that he should be best explaining the former, by interpreting the character of the latter from legitimate authorities. He therefore adduced quotations from that profound mathematician, Roger Cotes, in illustration of the different classes of philosophers :

“Qui physicam tractandam susceperunt,” says Cotes, “ad tres ferè classes revocari possunt.”

He mentions, as those of one class, the sticklers for occult qualities and the school doctrines of Aristotle and the Peripatetics : but as it was conceived that there was little danger, in modern days, of philosophy resuming that character, all further notice of such would be dismissed in Cotes’s own words :—“Cumque toti sint in rerum nominibus, non in ipsis rebus ; sermonem quendam philosophicum censendi sunt adinvenisse, philosophiam tradidisse non sunt censendi.”

Speaking of a second class he says, “Qui speculationum suarum fundamentum desumunt ab hypothesibus ; etiãmsi deinde secundum leges mechanicas accuratissimè procedant ; *fabulam* quidem elegantem fortè et venustam, *fabulam* tamen concinnare dicendi sunt.”

He next proceeds to describe the third class—that of *true natural philosophers* : “Relinquitur ades tertium genus, qui philosophiam scilicet experimentalem profitentur. Hi quidem ex simplicissimis quibus possunt principiis rerum omnium causas derivandas esse volunt : nihil autem principii loco assumunt, quod nondum ex phænomenis comprobatum fuerit. Hypotheses non comminiscuntur, neque in physicam recipiunt, nisi ut quæstiones de quarum veritate disputetur. Duplici itaque methodo incedunt, analyticâ et syntheticâ. Naturæ vires legesque virium simpliciores ex selectis quibusdam phænomenis per analysin deducunt, ex quibus deinde per synthesin reliquorum constitutionem tradunt.”

According to this account, given by Cotes, we may affirm of *true natural philosophy*—the “*philosophia naturalis vera*,” of Lord Bacon—the following propositions :

1. It is, in some degree, experimental ; inasmuch as it assumes nothing as a principle which is not proved by observed phenomena.
2. It either excludes hypotheses altogether, or only admits them as questions of probability.
3. It endeavours to derive the causes of all things from the simplest possible principles.
4. The methods of conducting its researches are two—the analytical and the synthetical.

Each of these propositions was then illustrated in turn. As examples of the first, it was shewn, how in the sciences of Optics and Electricity a few experiments were taken as a foundation ; and by assuming the facts which they established as principles, that these sciences were gradually evolved by the means of mathematical reasoning,—“ope et interventu mathematicæ.”

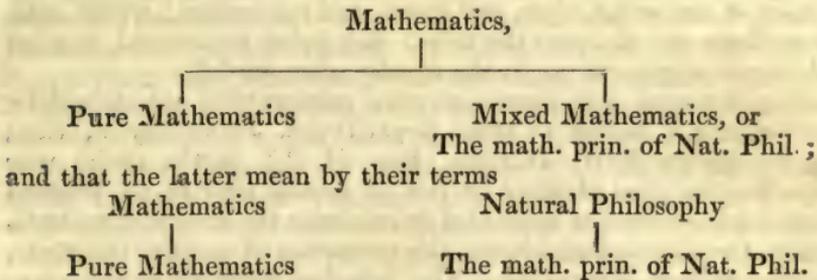
With respect to the second of these propositions, considerable

quotations were adduced from Sir Isaac Newton, to shew how desirous he was of keeping his system of philosophy clear of hypotheses: amongst which was the following—"Hypotheses non fingo. Quicquid enim ex phænomenis non deducitur, hypothesis vocanda est; et hypotheses seu metaphysicæ, seu physicæ, seu qualitatum occultarum, seu mechanicæ, in *philosophia experimentalis* (meaning mathematical natural philosophy based upon experiment) locum non habent." Some remarks were here also made respecting the Undulatory Theory of Light, and upon Hypothetical Theories in general; after which the lecturer quoted Sir Robert Boyle, to shew the difficulty of framing a good hypothesis, and the danger there was of its being overthrown by facts in future times. This view of an Hypothetical Theory—of what Cotes, in the gaiety of his wit, expressed by the word "*fabulam*"—coincides with the still more facetious saying of Voltaire—"Une théorie est une souris: elle était passée par neuf trous, un dixième l'arrête." The lecturer concluded his observations on this part of his subject by recommending to the attention of his pupils the maxim of Des Cartes—"Primum erat, ut nihil unquam veluti verum admitterem nisi quod certo et evidenter verum esse cognoscerem; hoc est, ut omnem præcipitantiam atque anticipationem in judicando diligentissimè vitarem; nihilque amplius conclusione complecterer; quam quod tam clarè and distinctè rationi meæ pateret, ut nullo modo in dubium possem revocare."

Several illustrations were given, in the next place, to shew that true natural philosophy is always endeavouring to derive the causes of all things from the simplest possible principles. As an effect of this, it was mentioned that the two formerly distinct sciences of Electricity and Galvanism had become identified, and that philosophers were every day drawing closer the connection between Electricity and Magnetism; so that future times might see them answering to the same name, and as it were, matrimonially merged into one flesh.

The last of the characteristics of "*true natural philosophy*" had reference to the methods by which its researches were conducted—viz., the analytical and the synthetical. These were each illustrated and explained: after which, the lecturer proceeded to delineate the course which he intended to pursue with his pupils. In order that the designs of the governors in instituting these lectures might be fulfilled, by supplying the desiderata acknowledged in the regulation of the Royal College of Surgeons, Edinburgh, and the recommendation of the Society of Apothecaries, already quoted; it would be necessary for his scheme to comprehend both "*mathematics*" and "*natural philosophy*." Now these terms were frequently used in such a vague sense, that he dared not interpret the former as meaning *pure mathematics only, i. e.*, mathematics unconnected with physics; nor should he be warranted in understanding by the latter, *exclusively that philosophy which, if it deserve the name, consists in a mass of ill-connected experiments, without involving any logical*

*deductions from them*, “ope et interventu mathematicæ;”—a philosophy of amusement and recreation, rather than of instruction and discipline. He must take the former word, therefore, in its most general sense, and the latter one in its most dignified; and then he should not only obtain what he considered the most eligible result, but should also fix exactly the same meaning upon the desideratum of the Surgeons as upon that of the Apothecaries, viz., that the former mean by their term



As to the designation of these lectures, he should feel inclined to adopt the term “Mathematics,” used by the Royal College of Surgeons, Edinburgh; since it is the most simple, and there is no etymological reason why that word should be limited to comprehend *abstract science* only; since it is used in the universities of this land and on the continent, also to comprehend *physical science*; and, lastly, because such an interpretation exactly coincides with the definition given by Lord Bacon:—“*Mathematica aut pura est aut mixta. Ad puram referuntur scientiæ, quæ circa quantitatem occupatæ sunt, a materia et axiomatibus physicis penitus abstractam. \* \* \* Mixta habet pro subjecto axiomata et portiones physicas: quantitatem autem considerat, quatenus est ad ea elucidanda et demonstranda et actuanda auxiliariis.*” As then the term mathematics, in this sense, includes two departments—*Pure Mathematics* and *Mixed Mathematics*—and as the time during which students are required to attend the lectures at this institution comprehends two summers; it appeared that he should be following the most natural process, if he allotted to the students of the first year, and to those of the second year, these two departments respectively. He should therefore divide the whole of his pupils into two classes; one of them, containing pupils in their first year, to be lectured in “*Pure Mathematics*;” the other, consisting of pupils in their second year, who, having attended in their former year the former course, would be then qualified to be lectured in “*Mixed Mathematics.*”

The lecture was concluded by some observations on the advantages of such a course as he had projected, in the way of mental and moral discipline; in confirmation of which, were brought forward the two following quotations; the former from Lord Bacon, the latter from Bishop Berkley:—“*Si cuiquam ingenium tale sit, quale est avium, ut facile abripiatur, nec per moram (qualem oportet) intentum esse sustineat, remedium huic rei præbebunt mathematica,*

in quibus si evagetur paulo mens, de integro renovanda est demonstratio."

"Geometry is an excellent logic, and it must be owned, that when the definitions are clear—when the postulata cannot be refused, nor the axioms denied—when, from the distinct contemplation and comparison of figures, their properties are derived by a perpetual well-connected chain of consequences, the objects being still kept in view and the attention ever fixed upon them,—there is acquired a habit of reasoning, close, and exact, and methodical; which habit strengthens and sharpens the mind, and being transferred to other subjects is of general use in the inquiry after truth."

The lecturers and examiners were subsequently entertained by the students at dinner, at Dee's Royal Hotel, James Taylor, Esq., (in the absence of W. Dugdale, Esq., M. P.), in the chair; who expressed the great pleasure he felt at seeing men of all political parties and sentiments assembled to celebrate the success of an institution, the object of which was the promotion of science, literature, and the welfare of mankind. The principal speakers on the occasion were, the Chairman; the Vice-president; J. Webster, Esq.; Drs. Eccles, Booth, Birt Davies, and Dr. Jones Quain; the Rev. W. Lawson; W. Sands Cox, F.R.S.; G. B. Knowles, F.L.S.; and Messrs. Ingleby, E. T. Cox, Elkington, Woolrich, Edwardes, E. Armfield, Spilsbury, T. C. Roden, J. E. Piercy, and Harmar.

Dr. Jones Quain, in acknowledging "the health of the examiners," observed—"they had received the greatest possible gratification from the extent of information which the students had evinced in each of the departments over which they had presided, and on no other occasion did they recollect to have witnessed more precision and accuracy, both in style and manner, or more extended information and practical knowledge, than upon the present. He was gratified beyond measure to witness the progress and great advances which medicine and surgery had made in the provinces. From a private school, the institution had risen to an extensive public seminary, and he hoped that, ere long, it would become a chartered and established collegiate institution."

During the evening the Prize Medals were presented to the successful candidates; and the harmony and conviviality of the meeting were kept up until a late hour.

At the quarterly Board of Governors, held June 1st, it was resolved, as a mark of respect to the President (Dr. Edward Johnstone), to postpone the annual meeting until the 26th of September—his eightieth birth-day. The following arrangements, in reference to the prize essays to be contended for by the students, were determined upon:—the Essays "*On the Influence of Air and Soil, as affecting Health*," premium ten guineas, offered by the Rev. Dr. Arnold; "*On Injuries of the Head*," premium five guineas, offered by John Meredith, Esq.; *Clinical Reports*, premium five guineas, offered by Dr. Booth; to be sent in on or before the 1st of September next: the Essays "*On the Influence upon Health of Alcoholic*

*Drinks, as an article of Diet; including the consideration whether any quantity of any kind be necessary for the maintenance of health, even in those who are engaged in laborious occupations,*" premium ten guineas, offered by the Rev. J. Angel James, to be sent in on or before the 1st of January next, and to be awarded by the Rev. Chancellor Law, the Rev. Dr. Jeune, Rev. W. M. Lawson, the Rev. J. A. James, Dr. Booth, and Mr. W. S. Cox: the Essays "*On the Capillary Vessels, viz., their division, conformation, situation, modes of communication, structure, physical and vital properties, functions, and morbid anatomy,*" premium ten guineas, offered by James Uphill, Esq., to be sent in on or before September, 1837.

The Museums of Natural History and Comparative Anatomy, have been enriched by the following stuffed specimens and skeletons: *Felis concolor*, *Felis discolor*, *Felis panthera*, *Didelphis marsupialis*, *Canis aureus*, *Meles lotor*, *Mus zibethicus*, *Marmotta alpina*, *Vespertililio spectrum*. Lord Viscount Lifford and Sir H. Halford, Bart. have been enrolled in the list of honorary governors; and the names of upwards of twenty gentlemen have been added to the list of annual subscribers.

### BIRMINGHAM PHILOSOPHICAL INSTITUTION.

The Literary and Philosophical Society of this Institution began the third session of its summer meetings on Monday, May the 2nd, when the president for the last year, the Rev. S. Bache, delivered an address to the members, which has since been printed by the society, for distribution amongst the members. A paper was afterwards read to the society, by Mr. Russell, on the structure and habits of the *Teredo navalis*. At the second meeting of the society, held on Monday, the 6th of June, Dr. Ogier Ward read an account of an experiment made by Mr. W. Hawkes on the effects of the slow cooling of melted basalt. As this experiment was conducted throughout with great care, by Mr. Hawkes, and as the quantity of basalt melted—exceeding a ton and a half—was more than four times as great as that employed in the well-known experiments of Mr. Gregory Watt, we have inserted an abstract of Dr. Ward's paper on the subject:—

The author of the paper began by giving a general description of basalt in the mass, as exhibited at Rowley, and Barrow Hill, near Dudley, and at Pouch Hill, near Walsall, in which places it assumes the columnar configuration; and then proceeded to describe the intimate structure of the stone as fine grained and confusedly crystalline; its hardness superior to that of glass, but inferior to feldspar; its action on the magnet strong, but without polarity; its spec. grav. from 2.864 to 3.225; its colour iron-grey, approach-

ing to black ; as opaque, but reflecting light from numerous brilliant points and facets of hornblende and feldspar. Dr. Kennedy says it is composed of silica 48, alumina 16, lime 9, soda 4, oxide of iron 16, mur. acid 1, water 5.

Of this substance 31cwts. were melted in a reverberatory furnace, heated to the usual degree for puddling iron, in  $4\frac{1}{2}$  hours ; and every precaution was taken to ensure the slow cooling of the mass, by filling the furnace with fuel, and closing every aperture. At the end of a fortnight, the fuel was all consumed, and, the furnace having been taken down, the basalt was found in a solid mass, still too hot to hold, above 5 feet long, 4 feet wide, and 18 inches thick.

Upon breaking it, the following were the appearances presented : an upper stratum of vesicular stony matter, about an inch in thickness ; evidently the production of the ebullition of the liquid matter, caused by the escape of its gaseous constituents from the action of the heat. Next, a layer of black glass, from two to eight inches thick, on the side of the mass that was exposed to the air from the doors of the furnace ; elsewhere, immediately under the vesicular covering, the solid stone occurred, interspersed, however, here and there, with air bubbles, but otherwise very little different from the structure of the basalt before it had been submitted to the fire ; possessing the same crystalline appearance, but distributed in a more regular manner, for, in most instances, the crystals and facets seemed to radiate from central spots.

As the quantity of basalt melted was greater than has ever been before experimented on, and as the slow cooling of the bulk was ensured by the gradual consumption of the supply of fuel, it was hoped that something analogous to, if not resembling, the columnar structure, might be discovered, upon breaking the mass. But although this expectation was frustrated, yet several varieties of structure were observed intermediate to the black glass and the perfect stone, which the writer considered worthy of being pointed out to the society, particularly as they differed, in some degree, from the results obtained by Mr. Gregory Watt from a similar experiment.

From the experiment of melting basalt, originally made by Sir James Hall, and repeated by Mr. Watt, Dr. Corrie, and Dr. Ward, it is certain that basalt melted and cooled quickly always becomes a black glass ; and that its return from the vitreous to the stony state depends entirely upon the rate of its cooling. The melting point of basalt is about  $38^{\circ}$ , Wedgewood ; and if it be suddenly lowered from this degree to  $21^{\circ}$  it becomes a black glass ; but if gradually lowered to  $28^{\circ}$  it then begins to crystallize, and becomes stony, and this stony structure is the more perfect the longer the mass is kept at the same temperature, and the more gradually it passes through the intermediate degrees between 28 and 21. The same rule holds in an increasing as well as in a decreasing temperature : thus, the glass heated to  $21^{\circ}$ , and raised slowly to  $28^{\circ}$ , assumes the crystalline state, but not if the heat be augmented rapidly. It is remarka-

ble that the crystallization takes place at a much lower temperature ( $21^{\circ}$ ) than that necessary to fuse the glass, which is considerably above  $30^{\circ}$ ; and this is the case not only with the glass of basalt, but also in common green-bottle glass, which, when held in the fire for some time, in a heat just sufficient to soften it, loses its vitreous form, and becomes a substance of a mixed glassy and crystallized structure, known as Reaumur's Porcelain.

In the specimens of the melted mass exhibited by Dr. Ward, these changes were very distinctly traceable. The first appearance observed in the glass was that of exceedingly minute, distinct, or clustered globules, or spherules, of a grey colour, which, when examined by a lens, exhibited a radiating structure, and a radiant brilliancy, similar to that of wave-lite or zeolite. As they increased in number they pressed upon each other, till they became so numerous and closely set as to resemble fish-roe; and a still greater degree of compression gave the whole mass the appearance of jasper or plumbago, though the separate globules might still be traced in it. Such was the result where the development of the spherules was equal and synchronous; but in many parts of the glass they were observed to be distinct, and these seemed to grow, by the addition of concentric coats, to the number of three or more, like the coats of an onion, but preserving their radiated structure. In the jasperine substance, also, some spherules appeared to outstrip the rest in their growth, and to absorb them, as it were, into themselves, by shooting out their radii all round, and comprising them within the circuit of their new layers. But as the radii extended outwards, the centre became more stony and amorphous in its appearance and texture; its colour deepened, and some appearance of crystals was recognizable. The spherules, when of a certain size, but smaller in the jasperine matter than in the glass, changed, also, in the colour of their radii, which now assumed a brownish rusty tinge, somewhat resembling brown hæmatite, from their being apparently covered by a thin coating of rust, which was also observable where two or more were in contact, at the line of junction. Many of the spherules, by their mutual compression, were formed into irregular polygons; and it was from observing this structure that Mr. Gregory Watt framed his theory of the formation of basaltic columns. But at this period the stony basaltic structure is not completed, for the radii and concentric circles are still distinguishable, whereas in the columns nothing of the kind is discernable. The last change remarked was the coalescing of the polygons into one mass, leaving the only trace of their separate formations in their centres, now radiated in crystals, and no longer in lines. This last form was not attained nor believed to exist by Mr. Watt, as his experiment—being made upon a less quantity of basalt, which was cooled more rapidly than Dr. Ward's specimens—stopped short at the formation of the polygons. Dr. Ward concluded his paper with a comparison of the crystals and spherules of basalt with those observed in slags of glass, iron, and other metals; and hinted the possibility of imitating, by

slow cooling, combined with pressure, many crystalline bodies. He also suggested (from the observation of the gradual increase of magnetic power in basalt in passing from the glassy to the stony structure) the idea that crystallization, if not dependent upon, may be much influenced by, electricity.

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CHELTENHAM  
LITERARY AND PHILOSOPHICAL INSTITUTION.\*

DURING the past session, Dr. Conolly has delivered two highly interesting lectures on "Physical Education." After adverting to the system adopted among the nations of old, especially the Greeks and Persians, and having given a general outline of the aim and end of physical education, Dr. Conolly considered its principles with reference to *food, air, and exercise*; examining and explaining the laws which should regulate each, in order to secure the bodily and mental health of the patient. He further divided his subject, with reference to age, into *infancy, childhood, and adolescence*, to the first of which his observations in his introductory lecture mainly applied; childhood and adolescence being reserved for the second lecture. The discussion of such subjects as *diet, clothing, and cleanliness*, afforded the lecturer an opportunity to reprobate many of the prevailing errors and deep-rooted prejudices which even still continue to retain their hold upon society; concerning the early training and education of infants; and to advocate sounder and more rational views in these respects; as well as to throw out many practical hints and suggestions for the moral government and regulation of the temper and disposition of children generally. In the second lecture the learned doctor confined himself to an application of the principles already laid down in reference to *youth and adolescence*. The evils pertaining to the present systems of physical education, particularly as regards females, were described at some length, and their injurious consequences strongly deprecated. The differences of the modes of training generally adopted in the education of boys and girls were pointed out, and their respective advantages and disadvantages commented upon, and illustrated by instances of daily occurrence. The paramount importance of a due attention to the *exercise* of young ladies at school was insisted upon, in language at once forcible and convincing. The eloquent lecturer then proceeded to inquire into the causes of that precocity of intellect which is so frequently observable in youth, and explained the methods which, in reference to the education of children thus distinguished, should be pursued, as also those which should be employed

\* Abridged from *The Looker-On*.

in the opposite cases, of dullness, and a tardier intellectual development. Some very important observations on the clothing of the young of both sexes were offered; and the lecture concluded with a brief review of the principal features comprehended by the subject of physical education, as treated of upon the present occasion.

At a subsequent meeting of the members of the Institution, Mr. C. Hale delivered a lecture on the Natural History of the Salmon, which proved highly interesting, from the number of important facts and piscatorial anecdotes with which it was interspersed. Disclaiming, in his introduction, all pretensions to originality on a subject which had been already so ably treated of in many published works upon the subject, and to several of which he referred for those scientific details unnecessary in such a popular view as he then proposed bringing before the meeting, Mr. Hale took the evidence given in the Parliamentary Report upon our Salmon Fisheries as the basis of his discourse; and treated successively of the peculiar habits and instincts of this fish, the seasons of its visiting our bays and rivers, and the methods of catching pursued in different countries, many of which were highly curious. He also inquired into the causes of the superior flavour for which the salmon of certain rivers had ever been celebrated, particularly those of the Severn and the Thames; the reasons of the annually increasing scarcity of the fish, and the consequent increase of price: in short, the lecturer touched upon all those points best adapted to afford pleasing information to his audience, without dwelling too long or too minutely upon any one in particular.

Mr. Wilderspin has delivered two lectures on Infant Education: in the first he took a review of the rise and progress of the system, and discussed, with his accustomed ability and address, several of its leading principles and modes of instruction. The graver portions of the lecture were enlivened with a variety of highly interesting anecdotes, illustrative of the views propounded and explained. In the second the able and benevolent lecturer resumed the consideration of his subject, and explained the methods adopted in training the minds of his juvenile scholars to a right apprehension of the principles of virtue, and the moral obligations of society. He also further developed the working of the system in its connexion with the duties and objects of education; and concluded a most highly interesting and instructive lecture by some valuable hints to parents and instructors generally.

Considerable interest was excited by the discourse delivered by Dr. Boisragon, the president of the Institution, "On the Progress of Physical Science, with some considerations on the Doctrine of Final Causes, with the Relation of Man to the Material World." An elaborate and eloquent introduction, in which the full scope and objects of the discourse were beautifully explained, presented the learned president an opportunity of glancing at the nature of the evidence afforded by the ruins of primeval creation, in illustration of the doctrine of final causes, and of rapidly reviewing the state of physical

science in the ancient world. The laws and instincts which first impelled and directed man in his inquiries into the causes of those appearances, and the state of things observable around him, were inquired into, and the various phenomena in nature which must have first attracted his attention, and excited his curiosity to search into their hidden causes, as leading the way to correct and scientific knowledge in matters of science, were ably, though of necessity briefly, discussed. This division of the subject comprehended a review of the origin and rise of the study of natural history, the laws of motion, and the most celebrated theories of mathematical and astronomical science entertained by the ancients; from which the discourse passed on to a consideration of the progress of modern philosophy, in its principal and most important branches; the recent discoveries in respect of light and optics being selected as an illustration of the progress which physical science was now making. The structure of the world we inhabit, through all its states and changes, invited, nay, commanded, man to exercise his intellectual faculties in the discussion of subjects like the present, conducting him, as such discussions must do, to a right appreciation of the great first cause. The efforts of modern philosophers in directing attention to the doctrine of final causes, were warmly applauded, and their valuable discoveries, in physiology and geology especially, were referred to, as affording abundant evidence in proof and illustration of the value and importance of such efforts. The doctrine of final causes was further illustrated by the beautiful discoveries of Harvey on the circulation of the blood, and in botanical science by the changes which plants undergo in accommodating themselves to climates and latitudes not naturally congenial to them. The structure of the eye, in a great variety of animals, was adduced as another proof, and explained by a series of appropriate transparencies, for the loan of which the lecturer acknowledged himself indebted to Mr. Wright, whose able lectures on comparative physiology had been delivered before the society in the early part of the session. The extent and importance of modern discoveries, as conducing to the general happiness and prosperity of mankind, were brought into striking contrast with the ignorance of past ages; and the satires of Swift, and the witticisms of the wits of Queen Anne's days, afforded a legitimate opportunity for a forcible and eloquent appeal in behalf of the progress of physical science, and deprecativ of those false views in philosophy which, for so long a period, had deluded men, under the sophism of "the wisdom of our ancestors." In conclusion, the learned president passed in review the principal features of the discourse—alluded to the important discoveries daily making in the application of the power of steam—in the infant science of geology, and the various physical phenomena which are developed in the different strata and their distinguishing fossil remains—to astronomy, and particularly to the discovery of the double stars—and, finally, to electro-magnetism, and the splendid investigations of Dr. Faraday.

The session closed with a very brilliant lecture from Mr. R. Winterbotham, "On the Pleasures and Objects of Taste;" in the course of which the lecturer defined the word "Taste," which he considered an *acquired* quality of mind; and then proceeded to give illustrations of the very different manner in which the same scenery in the external world are regarded by different beholders. He next adverted to the pleasure which may be derived, by the cultivated mind, from the *associations of history*, the associations of *our personal experience*, and the associations of literature.

We regret our limits will not permit us to give an analysis of this interesting discourse.

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#### SHROPSHIRE AND NORTH WALES NATURAL HISTORY AND ANTIQUARIAN SOCIETY.

THIS Society held their first scientific meeting at the Museum, on Tuesday, the 5th of January. The chair was taken, soon after 7 o'clock, by Dr. Du Gard, vice president, who, after a few prefatory observations on the order which was to be observed in the proceedings of the meeting, commenced the reading of portions of a paper in refutation of one by Mr. Trimmer, read before the Geological Society, relative to the supposed remains of a forest, underlying a deposit of sea sand abounding in recent species of shells, which had been exposed to view by the late alterations in the London Road, near the Horse-shoe public house, seven miles from Shrewsbury. Dr. Du Gard, in company with Mr. Murchison, had carefully examined the spot, and had succeeded in extracting the remains of one of the supposed trees, which proved to be a pile, of considerable length, which, with other hewn pieces of timber, had, at some early period, been employed in the construction of a dam. The author, in comparison of the relative position of the Roman station Uriconium and the exposed deposit, came to the conclusion that it had probably formed a portion of the Roman Watling-street road, and that the sand had been removed from the deposit which more or less prevails all over the plain of Shropshire, to fill up some previously existing hollow.

Mr. T. C. Eyton next read an interesting paper, illustrated with drawings, on the beautiful adaptation of form to habit observable in the bill of the adult and young bird of the Common Oyster-Catcher (*Hæmatopus ostralegus*, Linn.) The bill of the adult bird was of a taper wedge-like form, with the edge placed vertically, and admirably adapted for striking off the rocks, at one blow, the limpets upon which it feeds; whilst the bill of the young bird, whose proper food was small mollusca, crustacea, and marine insects,

was slightly hooked at the point, and, except in length, perfectly similar to that of the soft-billed or insectivorous birds.

An elaborate paper, by Mr. Henry Pidgeon, was next read, on the Ancient History of the Hundred and Manor of Stottesden, county Salop, in which the descent and property of the manor was, with considerable ability, clearly and satisfactorily traced, from the earliest to the present times. Mr. P. also intimated his intention of resuming the subject at some future period.

Afterwards, an excellent paper on the Sleep of Plants was read by Dr. Henry Johnson, which excited great interest and attention. The author, after briefly reviewing the opinions of preceding writers as to the cause of the phenomenon proved by a series of careful observations and experiments, that the sleep of plants was quite independent of the humidity of the atmosphere, and the absence or presence of solar light; and deduced that the cause would, in all probability, be found in the relative degree of light, or in the transition from a greater to a less light; and that those motions which produce the phenomena of sleeping and waking of plants, depend on irritability, and are governed by all the rules which influence, in other cases, this vital property.

Mr. R. A. Slaney then read some highly interesting observations on a pair of Choughs, which had been partially domesticated, and whose habits, in consequence, he had been enabled to observe.

Mr. T. C. Eyton afterwards offered some remarks on the systematic classification of the Chough.

Mr. W. A. Leighton made a few passing observations in introducing to the Society a specimen of *Erica Mackaiana*, (Bab. MSS.), a species of Heath, new to the British Flora, which had been found during the month of August, 1835, in Connemara, in the West of Ireland, by Mr. C. C. Babington, of Cambridge, an honorary member of the Society. This species holds an intermediate station between *Erica tetralix* and *E. cinerea*, partaking of the flowers of the former, and the delicate ciliato-glandulose leaves of the latter.

After the usual vote of thanks to the chairman, the meeting separated.

*March 2nd.*—Dr. Du Gard, V. P., in the chair.—An interesting Paper, by Mr. J. E. Bowman, of Gresford, was read, giving an account of the structure and affinities of a new fossil vegetable, named *Favularia nodosa*,\* discovered by him in the roof of the lowest workable coal, at Flint Marsh Colliery, on the estuary of the Dee. A fine specimen of this beautiful fossil, presented by the discoverer, was exhibited, on which the undulations and pencillings of the areolæ to which the bases of the leaves had been attached were as clear and sharp as the impression from a seal, and even required the lens to shew their delicate inequalities.

Mr. T. C. Eyton commenced the reading of a catalogue of the

\* Since engraved (most miserably) in Lindley's and Hutton's *Fossil Flora*, part 20.

vertebrate animals of Shropshire and North Wales, interspersed with brief but excellent remarks on their varieties and habits. This first portion comprised the Order Mammalia, in which 23 animals, exclusive of varieties, were enumerated as existing in the district.

Mr. W. A. Leighton read a Paper, illustrated with drawings, on the structure of the mummy-cloth of the Egyptians; and shewed, from a microscopical examination of the unravelled fibres of the bandages enveloping the mummy presented to the Society by the Venerable Archdeacon Butler, that the same was linen; and not cotton, as had been supposed by many writers. The fibres of the mummy-cloth, and those of flax, proving to be cylindrical tubes, articulated like a cane; whilst those of cotton were plain cylindrical transparent tubes, without joints.

Dr. Henry Johnson followed, with a Paper on the chemical composition of the Egyptian mummy-case; and exhibited to the Society, by several interesting analyses, the peculiar nature of each of the substances composing the bituminous matter in which the body was enveloped, and the different colours employed in the beautiful paintings with which the cases were adorned.

Dr. Du Gard presented the Society with a Paper, containing a detailed account of the French botanist, Dutrochet's, observations relative to the phenomenon named by him endosmose; the principle, according to him, by which the circulation of the sap in plants is carried on.

The phenomenon endosmose consists in the mutual affinity exerted towards each other by two fluids of different densities placed on opposite sides of a membrane; an immediate intermixture taking place, the denser fluid passing through the membrane, and its place being supplied by the less dense fluid, until the density of the two fluids becomes equal. An instrument, termed an endosmometer, was exhibited, in which the phenomenon was going forward, and by which the comparative velocity of the current of the fluids was ascertained; that of a syrup three times the density of water producing an endosmose capable of sustaining a pressure equal to the weight of three atmospheres.

Mr. H. Pidgeon concluded his paper (the former portion of which was read in January) on the History of Stottesden, with an account of the advowson, and a description of the church.

Among the more interesting donations received by the society lately, were the following: Skull of the red-deer, boar's tusks, and iron instruments, found sixteen feet below the surface, in excavating the foundations of the New Town Hall, Shrewsbury, presented by the Venerable Archdeacon Butler. Sixty species of Land and Fresh-water Shells, by Mr. H. Bloxam, of Ellesmere. Injected Preparations of the Head and Leg of the Ass (*Equus Asinus*), and twenty skins of Foreign and British Birds, by Mr. T. C. Eyton. A case containing two Idols, from the East Indies, by Mr. J. Ross. Leaf of the Talipot Palm, from Ceylon, by the Rev. L. Ottley. Roman Fibulæ and Lachrymatories, from Pontesbury and Wrox-

ter, by the Rev. William Vaughan. Sixty skins of Birds, from Australia, presented by Major Wakefield, of Minworth, near Coleshill, Warwickshire; and various Books by Dr. Goldie, Mr. John Davies, Mr. T. C. Eyton, and Mr. W. A. Leighton.

May 3.—Dr. Du Gard, V. P., in the chair.—A letter from the Rev. Mr. Huntley, of Alberbury, was read, explanatory of the engines used in ancient warfare for propelling stone balls and other missiles, and illustrated with drawings of the three in most general use—the mangonel, the tricolle, and the ribandequin.

Some brief remarks, by Mr. Henry Pidgeon, were next read, on the opening of a tumulus, called the Round Low, near Swinnerton, Staffordshire. The mound consisted of various kinds of stones, collected from the neighbourhood and promiscuously thrown together. Some of these, which were of sandstone, appeared to have been subjected to the action of fire, and on their tops, as well as on all sides of the tumulus, lay bones, intermixed with charcoal. In the centre of the mound, large irregular sandstones, of from thirty inches to three feet in size, occurred, in an upright position, forming an octagon of about twenty feet in diameter. The soil within the stones, to the depth of three feet, consisted of mixed sands of different colours, below which were other large stones. As the investigation, which was undertaken by the occupier of the land for the mere purpose of rendering the mound available for cultivation, was not further prosecuted, it is quite evident that the proper deposit of the tumulus, which in most, if not in all, cases occurs at some depth below the level of the adjacent surface, remains yet unexplored. Similar tumuli, called the Saxon Low, Blake Low, White Low, and Barrow Bank, exist in the immediate vicinity.

An admirable Paper was next read by Mr. Thomas Blunt, of Shrewsbury, on the Iron Mines and Works of Shropshire. The author prefaced his observations with some concise historical notices, tracing the rise and progress of the manufacture of iron in England, from the earlier days of the ancient Britons—when this metal bore a comparatively high value, in consequence of the difficulty of reducing the ore—through the Saxon and chivalric ages—when its manufacture into arms and armour attained to a high degree of perfection—down to the 16th century, when not fewer than 300 smelting furnaces were in operation, yielding annually 180,000 tons of metal. The fuel employed until 1615, when coke was first made from pit-coal, was charcoal, of which nearly a ton was requisite to reduce the same quantity of iron: and hence, doubtless, the scarcity of timber trees around our Shropshire iron-works; the localities of which still preserve in their names the remembrances of extensive woods and forests long since swept away: for instance—Madeley Wood, Donnington Wood, Dawley Wood, &c. From the period of this important discovery, little improvement occurred until the introduction of steam-engines enabled our English iron-masters to manufacture the present amazing quantity of 700,000 tons of iron annually.

The more profitable iron ores are of two kinds—the spatous and the argillaceous. The former is the richer, and affords a superior metal, and is largely smelted in the iron-works of Yorkshire and the north of England. The latter occurs in detached nodules of from two inches to a foot in diameter, imbedded in soft bluish clay, or shale, and generally contains a nucleus of portions of the animal or vegetable forms of the primeval ages. The author alluded to an interesting discovery which had been lately made in this ironstone in the vicinity of Madeley, in this county, of some undescribed species of coleopterous insects, of the forked antennæ family, one of which had been named *Curculioides Ansticii*, in honour of the discoverer, Mr. Anstice; and the other *Curculioides Prestwichii*, after Mr. Prestwich, a gentleman who has devoted great attention to the geology of the Shropshire coal-field.

The argillaceous iron-stone is usually of a brown or bluish-grey colour, and holds the metal in a state of protoxyde, varying from 25 to 60 and 70 per cent. The ore in Shropshire, in the neighbourhood of Wellington, Coalbrookdale, Broseley, and Shiffnal, is of this character; and occurs in continuous strata, varying in thickness, and more or less inclined to the plane of the horizon. The principal deposits of argillaceous ironstone in Shropshire, are in the coal-measures, (although they frequently occur above them) in the strata of shale, clays, sandstone, and slate, alternating with coal. Extensive fields of this character occur between Wellington and Shiffnal; which are bounded on the east and north-east by a broad line of sand and calcareous free-stone of the upper formation, abounding with fossil stems of *Calamites* and *Stigmaria*.

The coal-mines of Shropshire have been extensively worked for several centuries; for Leland, in 1538, makes mention of the coal-works near Shiffnal and Madeley, and of their being entered by adits or levels in the side of the hill. Within the last forty or fifty years only, they have entered by shafts, or pits, and their contents raised perpendicularly.

The Shropshire iron-mines have, however, only been opened about 150 years, and their produce was, for a long period, very trifling. The Shropshire iron-masters have now between sixty and seventy blast-furnaces in constant operation, producing nearly seventy tons of iron per week.

The author next detailed the mode of reducing the ore, which is first roasted in heaps for five or six days, and thus deprived of its sulphur, carbonic acid, and other inflammable substances, and generally loses from twenty to thirty per cent. The furnace is then sufficiently heated with coal cinders, or coke, alone, and the charging or filling commences, in the proportion of four tons of coke, three tons of ore, and one of limestone. After the furnace is once heated, the filling may be continued at intervals for many years. The metal, when completely fused, is run into moulds, constituting the pig-iron of commerce. In this operation, the coke not only acts as fuel, but attracts the oxygen from the ore, and enters into combination

with the iron in the state of pure carbon : whilst the lime acts as a flux. The slag, or scoriæ, which, by its specific gravity, floats on the surface of the liquid metal, is occasionally removed, and employed in repairing the roads. After the furnace is blown out, the lower part, which is formed of fine brick, is removed for repair, and the semi-vitrified mass, termed by the workmen "*the bear*," frequently contains portions of titanium.

In conclusion, the author impressed on his auditors the beneficent design and wise adaptation of the Great Creator, in this singular combination of the iron ore, coal, and lime in the same district ; thus rendering peculiarly applicable the exclamation of the Psalmist, "the earth is full of Thy riches."

It was announced to the Society that DR. WILSON, the intelligent Curator of Botany, had most liberally acceded to the wishes of several members of the council, to deliver a course of LECTURES on BOTANY and VEGETABLE PHYSIOLOGY during the present and succeeding months.

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#### WORCESTERSHIRE NATURAL HISTORY SOCIETY.

THE third anniversary meeting of the Worcestershire Natural History Society was held at the Guildhall, on the 24th of May, John Williams, Esq., president, in the chair. The meeting was most respectably attended, including T. A. Knight, Esq., president of the Horticultural Society ; Dr. Buckland, Professor of Mineralogy and Geology in the University of Oxford ; M. Brongniart, Member of the French Institute, and Professor of Mineralogy in the *Jardin des Plantes* ; Dr. H. Milne Edwards, Professor of Natural History to the College of Henry IV., at Paris ; with the Hon. and Rev. J. S. Cocks, the Hon. and Rev. J. Fortescue, and the Rev. E. W. Ingram, Prebendaries of Worcester ; Sir Charles Throckmorton, Bart., Sir Thomas Phillips, Bart., &c., &c.

The chairman opened the proceedings by stating that it was his first duty to call on the secretary to declare the election of officers.

Mr. Evans, honorary secretary, then read the minutes of proceedings of the Society, which announced that the Right Rev. the Lord Bishop of Worcester had been elected president for the ensuing year ; Dr. Field, and F. A. Walter, Esq., honorary curators ; Mr. Evans re-elected treasurer and honorary secretary ; and that the following gentlemen had been chosen from the body of the subscribers to form, with the proprietors, the council of the society for the following year : Jabez Allies, Esq., Rev. W. Holden, Walter Jones, Esq., Omwell J. Lloyd, Esq., Edward Morris, Esq., James Nash, M.D., Rev. John Pearson, Henry Sherwood, Esq., J. P. Sheppard, Esq.,

R. J. N. Streeten, M. D., John Walcot, Esq., and J. H. Walsh, Esq. Mr. Walsh then proceeded to read the report of the council for the past year, which was an extremely interesting document.

Dr. Buckland, in moving that the report be received and printed, observed that it was honourable to the character of the present age that the public were now beginning to apply to the study of this long neglected science, the attention to which it was so justly entitled.

The Hon. and Rev. J. S. Cocks seconded the resolution, which was carried unanimously.

Dr. Hastings then moved, after some prefatory remarks, "That it is a matter of high congratulation to the members of this society that the illustrious French philosopher, M. Brongniart, and Dr. Milne Edwards, Professor of Natural History in the College of Henry IV., Paris; together with our own universally celebrated geological discoverer, Dr. Buckland, and Mr. Knight, the distinguished president of the Horticultural Society, should be present at our meeting, to sanction the proceedings of this day," which was seconded by Dr. Streeten, and carried with acclamations.

A vote of thanks was unanimously passed to Mr. Evans, the honorary secretary and treasurer; to Mr. E. Lees, and Mr. F. A. Walter, the honorary curators, for their valuable services in their respective departments; to the members of the late council; and to the Rev. J. H. Webb, of Tretire, near Ross; H. S. Boisragon, Esq., M. D., of Cheltenham; J. H. Walsh, Esq., of Worcester; Edward Morris, Esq., M.R.C.S., of Worcester; E. Blyth, Esq., of Tooting, Surrey; and Jabez Allies, Esq., of Worcester; for their great kindness in coming forward to deliver lectures, and contributing several important scientific papers during the past year.

The Rev. J. Pearson then proceeded to read a highly interesting paper on the Geology of the Mountains of Merionethshire, by the Rev. Thomas Pearson, of Great Witley; which was followed by a paper, evincing great science and research, by the Rev. T. W. Webb, of Tretire, Herefordshire, on the comet of Halley, which appeared in 1835, read by Dr. Streeten; and a very valuable paper on the Geology of the Neighbourhood of Presteign, in Radnorshire, by Dr. Davies of that town, read by Mr. Morris.

A vote of thanks to John Williams, Esq., the president of the society for the past year, for the very efficient manner in which he had discharged the duties of his office, having been acknowledged in apposite terms by that gentleman, the meeting separated.

## WARWICKSHIRE NATURAL HISTORY AND ARCHÆOLOGICAL SOCIETY.

It is with feelings of sincere gratification we announce the formation of a Society for the cultivation of the delightful and instructive science of Natural History in this county. A most highly respectable meeting took place at Warwick, on the 24th of May, with the view of completing the arrangements so ably and zealously commenced by the honorary secretaries, Dr. Conolly, of Warwick, and Dr. Lloyd, of Leamington.

The Rev. Sir Henry Dryden, Bart., presided on the occasion, and after reading the resolutions passed at a previous meeting, and congratulating the promoters of the Society on the success of their exertions, proceeded to remark that he considered [the results contemplated by this, and similar institutions, were threefold:—firstly, the general advancement of science; secondly, the increased intercourse of gentlemen resident in the provincial districts, of congenial pursuits and tastes; thirdly, the benefit of public example, in exciting in the youth and less educated classes of the neighbourhood a desire for knowledge, and stimulating them to turn their attention to those departments of science which it was the object of the Society to promote. The worthy Baronet next adverted to the number of scientific societies which had been already established in different parts of the kingdom—pointed out, in a very persuasive manner, the pleasure to be derived from the intercourse of residents in the county whose tastes and pursuits were of a kindred nature, and the advantages resulting from the encouragement of science, created by the formation of these institutions. The chairman very justly observed, the peculiar feature of the present age was, the rapid and general extension of education; and it was the duty of the higher and more educated classes, not only to assist in promoting that great object, but to give a direction to that appetite for the acquisition of knowledge which now began so widely to prevail, and to further the particularly increased and increasing amount of knowledge which existed amongst the inferior classes. Education was now being diffused throughout the land; and when they compared the present with former ages, he thought those who lived in this century might congratulate themselves upon the pleasing result which had been attained by their unceasing exertions.

The Report of the Committee was then read by Dr. Conolly, who next proceeded to allude to the numerous communications he had received from various quarters, containing the strongest assurances of support, and promises of specimens for the Museum from several distinguished Naturalists.

The attention of the meeting was then called by Dr. Lloyd to the primary object of the Society, which is “to investigate and illustrate the Natural History of the county of Warwick, and, aided by

the liberality of the nobility, clergy, and gentry, of the county, to collect and arrange specimens of the natural productions of this part of England, and of such remains of antiquity as throw light upon the past habits, customs, dialect, &c., of the inhabitants of the county." One department of the Museum being devoted to the above objects, another will be open for the reception of specimens illustrative of every branch of Natural History, which it may be in the power of the Society to procure from any part of the kingdom, or any part of the world.

The Society is denominated "The Warwickshire Natural History and Archæological Society," and consists of a Patron, a President, Vice Presidents, Secretaries, Curators, a Treasurer, and Members. The Earl of Warwick was requested to become the Patron, and the following gentlemen were unanimously elected officers of the Society for the ensuing year:—

*President*—Chandos Leigh, Esq.; *Vice Presidents*—the Rev. Sir Henry Dryden, Bart., William Staunton, Esq., the Rev. W. T. Bree, the Rev. Thomas Blyth, Thomas Sharp, Esq., the Rev. G. L. Cooke, and John Greaves, Esq.; *Honorary Secretaries*—John Conolly, M.D., John Twamley, Esq.; *Honorary Curators*—Dr. Lloyd, M. D., Henry Blenkinsopp, Esq.; *Treasurer*—Edward Greaves, Esq.; *Council*—the Rev. H. A. S. Attwood, Thomas Cotton, Esq., Dr. Luard, W. Collins, Esq., H. L. Smith, Esq., James Startin, Esq., W. E. Buck, Esq., the Rev. G. Childe, the Rev. J. Boudier, D'Arcy Boulton, Esq., Owen W. Williams, Esq., C. B. Nankivelle, Esq.

In the course of the proceedings, the following letter from the committee of "The Midland Natural History and Archæological Society," was read by T. Sharpe, Esq.

*Birmingham, Saturday, May 21, 1836.*

"Gentlemen.—The committee who have been for some months occupied in making arrangements for the institution of a Society, to be called "The Midland Natural History and Archæological Society," having learnt that a similar institution is in progress of formation at Warwick, feel desirous of effecting an union of the exertions of the two Societies in prosecuting an extended investigation, and forming a scientific arrangement of the various Zoological, Botanical, and Mineralogical productions of the fertile and important Midland District.

"With this view the committee of the Midland Natural History Society, at a meeting held this evening, have unanimously determined to submit to the consideration of the committee of the Warwickshire Natural History Society, the following propositions:—

"First, that the two Societies be in regular communication with, and afford every practical assistance to, each other, in the formation of complete and systematic collections, and the arrangement of the natural productions of the Midland District.

"Second, that the exchange of duplicate specimens of these productions be made from time to time; and an interchange of the scientific essays and communications read at the meetings of the respective Societies, regularly take place.

"Third, that the members of the two Societies be allowed gratuitous admission to the respective Museums, Libraries, and Lectures; but be

restricted from attendance on any meetings of the council and committee of that Society to which they do not belong.

"The committee of the Midland Natural History and Archæological Society request the favour of your introducing these propositions to the notice of the general meeting of the Warwickshire Natural History Society, which will be held on Tuesday next: and we hereby constitute Mr. Holl, one of the most active of the Midland Society, the official organ of communication with the members of the Warwickshire Society, upon the present occasion.

"Signed, on behalf of the meeting,

"T. OGIER WARD, M.D., Chairman."

"To the Committee of

"The Warwickshire Natural History Society."

Thomas Sharpe, Esq., in proposing the 11th resolution—"that this meeting warmly responds to the sentiments contained in a letter from the "Midland Natural History and Archæological Society, just read; and very cordially accedes to the propositions it contains"—observed, that he had peculiar pleasure in reading this communication, and hoped it was an earnest of a most cordial co-operation which would take place between the two Societies. The resolution was seconded by Dr. Conolly, and passed unanimously.

After the usual vote of thanks to the chairman, the meeting broke up; when the greater part of the individuals present were enrolled members of the Society.

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## NOTTINGHAM AND NOTTINGHAMSHIRE SOCIETY

FOR THE CULTIVATION OF NATURAL HISTORY.

THE want of a rallying point where scientific men could meet to receive and impart knowledge, and a museum to deposit collections of specimens in the various departments of Natural History, having been long felt at Nottingham, a highly respectable meeting took place on the 5th of April last, with the view of establishing an Institution for promoting "The cultivation of Natural History, the formation of a museum illustrative of the science in all its branches, and especially as relates to the county of Nottingham." The mayor, T. Wakefield, Esq., presided on the occasion; and the result of the proceedings was most gratifying to all present at the meeting, but more particularly to those who had devoted their time and best energies in effecting so important and desirable an object.

The Duke of Newcastle has become the patron of the society, and the following gentlemen have accepted the office of honorary curators: Ornithology—The Rev. J. Wolley, J. C. Williams, M.D.; Entomology—Godfrey Howitt, M.D.; Geology and Mineralogy—Mr. A. F. A. Greeves; Statistics—Mr. Booth Eddison.

A general meeting of the subscribers and friends of the institu-

tion will take place in August next, when the other officers of the Institution will be appointed, the rules and regulations by which the society is to be governed adopted and printed, with the names of the subscribers, which are already extremely numerous and daily increasing. Rooms suitable for the museum have been taken, and will speedily be fitted up for the reception of specimens; and when this infant society is fairly established, we shall have great pleasure in devoting a portion of our pages to recording their proceedings, and giving publicity to the essays and papers of the talented naturalists with which that district abounds, who may favour us with the result of their scientific investigations.

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### CRITICAL NOTICES OF NEW PUBLICATIONS.

*A Dictionary of Terms employed by the French, in Anatomy, Physiology, &c.; with their derivations from the Greek and Latin; and their Synonyms in the Greek, Latin, French, German, and English.* By Shirley Palmer, M.D. Part II. London: Longman & Co. Birmingham: Barlow. 1836.

IF there be a labourer in the *Campus literarius* more neglected than another, it is the lexicographer; beheld as a mere collector of other men's goods, industry is regarded as his only merit. But a dictionary is susceptible of a higher character than that of a mere conservatory: it is a work in which wisdom, gathered from the records of time, is condensed within a few pages; giving an extension to knowledge otherwise unattainable, and making every one its possessor by the facility of that attainment. The genius of man elevates the most humble occupation, and gives it an importance unexpected and permanent. The labour of Johnson as a lexicographer raised this department of literature into celebrity; and while he worked out a new source of national improvement, he added a new lustre to the annals of our literature. The value of a book is not what it *will fetch*, but what it will communicate; whether it be momentary amusement, or permanent utility. Works of fiction, poetry, and romance, are dictionaries of their kind; they record feelings and actions which have had a thousand precedents; nor can they exhibit anything new beyond the expression of them: but while the universal mind is but the unchangeable reflection of the same image, its desires and propensities will be the same; and those sounds which are the echoes to its own feelings will always be listened to. Thus, the love of fiction, either in prose or verse, is universal; that of science exclusive and particular. The former is coeval with its cause; the latter arises out of our wants,

and exists only so long as the demand. While one man will read Cuvier, a thousand will read and re-read Scott. Creation is certainly the highest effort of intellect; but it requires no ordinary powers to collect from the vast mass of knowledge; to distinguish between right and wrong, and to work it up into a systematic form, that it may be a reference for the scholar.

The character of a people is determined by their productions. Books are the flowers of time, and exhibit in their character, not only national, but individual qualities. A few centuries ago, when the means of acquiring knowledge were confined to the cowed and secluded priest, the phenomena of Nature and the discoveries of Science were alike unknown. When the light of truth was absorbed in the gloomy jargon of Monachism, that made ignorance a virtue, the books then produced were the labours of strenuous idleness, that served but to confirm and perpetuate the evil. By slow degrees, knowledge struggled through the dim obscure, creating as it arose, the means for its promulgation, elementary works, compendiums, cyclopædias, lexicons, dictionaries of language, of science, and art; all issuing from the original source as so many devaricating streams, until a moral and intellectual change became a national characteristic.

The demand for elementary works, and the numerous additions to our books of reference, are particular signs of the age; it bespeaks a general desire for knowledge. No longer content with that small modicum of learning which was handed from father to son as a species of oral tradition, Englishmen see that they must think for themselves, and that their success and happiness depend upon the solidity of their judgment. Might is no longer right. The competition is now with powers which acknowledge no visible opponent; and ignorance becomes synonymous with defeat. To supply the means adequate to success is the object of every one; and thus, whatever hope of fame the lexicographer may have, he is, at least, certain of selling his work, and communicating intelligence to thousands, however backward they may be in acknowledging the debt.

Works of reference are daily increasing, and must continue to do so, since they register successive discoveries. During the last twenty years, elementary works have multiplied almost beyond calculation, while the advancement of science and art gives constant encouragement to a further circulation. On the continent the same spirit prevails. The French produce with a facility that seems to distance competition: it is true their compilations are a sort of joint-stock company: rather than trust to the formality of one person, they engage seven or eight "Docteurs en Medecine;" and hence their "Dictionnaire des Termes" is built up with far less skill and precision than the work now under review. With a slight remaining touch for the speculative and the absurd, les Docteurs Françaises combine the hypothetical with the rational, error with truth, and much that is useless and unnecessary. What are such words as Aabam, Abarnahas, Abraxas, Abracadabra, Abracalan, and a hun-

dred other uncouth cabalistic terms, to do for the student whose search is for truth, and truth only? Dr. Palmer has wisely omitted every term but such as are necessarily connected with the sciences.

In reviewing works of reference, the common rules of criticism are altogether inadequate: the unities hold no controul over such productions; nor can we measure their excellence by the height or depth of intellect. A dictionary is an Augean labour, requiring much learning, and more perseverance; a record of nature and art, in which hypotheses, however brilliant, are repudiated, since the laws of nature cannot be contradictory to themselves: it is, therefore, a history of *facts*. How far Dr. Palmer has fulfilled his task, no individual can determine: the merit of a book which especially becomes the property of the public, must and will be decided by the public use of it.

The compilation of such a work as this of Dr. Palmer's, by the unassisted labour of an individual, exhibits a power of mind which few possess, and which very few would be bold enough to exercise. Dr. Palmer has certainly accomplished his undertaking with great credit: the work exhibits all the excellences required. The articles in Natural History are admirably written, presenting, as it were, a medico-zoological grammar. The articles in Physiology, Pathology, Practice of Medicine, &c., &c., are highly satisfactory; while those on Anatomy and Botany are correct and concise. The whole style is chaste and perspicuous; and the scholar will find very few classical errors: while the German and French synonyms render the work invaluable to the student. If there be a fault, it is in the omission of the Italian, which we could have wished to have seen introduced. The style in which the book is printed, and its exemption from typographical inaccuracies, reflect great credit on the enterprising publisher. We would particularly call the attention of our readers to the articles Cote, Estomac, Femur, and Glande, in illustration of Human and Comparative Anatomy; in Morbid Anatomy, Granulation and Hématode; in Medicine, Epilepsie, Fièvre; in Surgery, Hernia; Obstetrics, Grossesse; Materia Medica, Graisse, Hippanthropie, Huille; Medical Zoology, Gymnote and Hirudinées; Medical Botany, Hellebore; Medical Chemistry and Mineralogy, Fer and Hermatite; Miscellaneous, Crépuscule, Encyclopédie, Géographie, Gymnase, and Histoire Naturelle. The following extracts will afford a fair specimen of the work:—

“FOIE, s. m.,—ἥπαρ, —hepar, jecur, n. L.,—leber, n. G.,—liver: in Human and Comparative Anatomy, a large abdominal gland, the organ of the biliary secretion; existing, under divers modifications of form and structure, in all the animal series, from Man to the Molluscum. The *liver* exhibits the peculiarity of receiving, by a distinct apparatus of veins,—see VEINE PORTE,—all the returning blood from the chylopoietic organs. The purposes of this disposition are unknown. Venous blood is not essentially requisite for the secretion of bile: since this fluid exists in the *Mollusca*, where the vena-portal system is deficient; and has been found in the gall-bladder of a human subject in whom the vena portarum passed to the vena cava, without entering the liver. And, again, the large quantity of blood, supplied

to the organ by the hepatic artery,—see HÉPATIQUE,—would seem to be more than sufficient for the mere purposes of its nutrition.”

“GLUTEN, s. m.,—n. L., and E.,—κίλλα,—kleber, n. G. : an immediate principle of vegetables, the peculiar substance which remains after the farina of wheat has been exhausted of its starch ; so named, on account of its glutinous properties. Taddei regards it as composed of two distinct principles,—one soluble in alcohol,—see GLIADINE ; the other insoluble,—see ZIMOME : and indicates it as an antidote to the poisonous effects of Oxymuriate of Quicksilver ; alike preferable, from its chemical and physical operation, to the albumen proposed by Orfila. Four scruples of an “emulsive powder of gluten” are sufficient to neutralize twelve grains of the deuto-chloride. He, also, eulogizes a compound glutinous mercurial preparation as the best *antisiphilitic* : for the sublimate, although thus reduced to the condition of a proto-chloride, still retains so much of the properties of the deuto-chloride, as rarely to induce salivation or diarrhœa.”

“FAISAN, s. m. : a genus, in Ornithology, *Phasianus* (*Gallinacées*, Cuv. ; *Gallina*, Linn.), L.,—der Fasan, G.,—Pheasant ; containing several species. Of these, the common *pheasant*,—*Ph. colchicus*,—*le fais. vulgaire*, F.,—φασιάνες,—der gemeine fasan, G.,—and the domestic fowl,—*Ph. gallus*,—*le coq*,—(ὁ ἀλίπταρος, καὶ ἡ ἀλεστρογίς, —cock and hen),—der haushahn,—of Indian origin, and comprehending numerous varieties, are the principal. The *flesh* of both species affords a grateful and highly nutritious *aliment*. The young, especially in a state of domestication, are subject to a destructive malady, termed *Gapes*, resulting from the irritation of an entozoary animal,—*Fasciola trachea*, Montagu,—*Distoma trachea*, Rudolphi : which, attaching itself to the membrane of the windpipe, induces suffocation. Tobacco-fumigations are said to be its specific remedy. See Montagu, *Ornithological Dictionary, Supplement*, Art. *Pheasant* ; or Rennie's *Edition*, p. 370. The assumption of the male plumage and the spur by the hen-birds of these species, on cessation of the generative functions, constitutes an interesting and curious physiological fact ; to which a parallel may be observed in the beard developed on the chin of the human female, in the decline of life. See the *Wernerian Transactions*, v. iii., p. 183. The *Pheasant* derives its designations, generic and specific, from *Phasis*, a river of *Colchis*, the modern *Mingrelia* : whence this valuable bird was first brought into Europe, by the Argonauts, on their return from the celebrated expedition into Asia.”

“GINSEN, ou GINSENG, s. m. ; in Botany and *Materia Medica*, the supposed root of a plant, *Panax quinquefolium*, (*Polyandria, monoec.* ; *Araliaceæ*), L. ;—which grows in Chinese Tartary, Japan, and has since been discovered in Canada. The term, *Gen-seng*, literally signifying, *first of plants*, appears, however, to have been indiscriminately applied, in China, to the roots of species of several other genera, in addition to those of *Panax*. See *Dictionnaire Universel de Matière Médicale*, v. iii., Art. *Gen-seng*. The root of *P. quinquefolium* is moderately *stimulant* and *tonic* ; but has not sustained, in European practice, the extravagant reputation, as an *aphrodisiac*, and *panacea*, conferred upon it, in numerous monographs, by the *Chinese* physicians : and has, at length, fallen into merited neglect.”

“GRAPHITE, s. m.,—graphites, m. (γράφω, to write), L.,—graphit, m., reissblei, n. G. : in Mineralogy, the designation of the *per-carburet of iron*, employed in the manufacture of the “black-lead pencil.” *Plumbago* is *medicinally* used, on the continent, both as an internal and topical remedy, in cutaneous diseases. “Der *Graphit*, ein art kohlensaures eisen, bewährt sich als ein vorzügliches mittel in *hautkrankheiten*.” Otto, *Reise durch die Schweiz*, etc., p. 59.”

“HOMME, s. m.,—homo, m. L.,—ἄνθρωπος, —mensch, m. G.,—man : in Zoology, the sole genus belonging to the Order *Bimanus*, in the Class *Mammifera*, of Vertebrated Animals ; and the only real biped of that Class. *Man* alone, gifted with the power of language, is capable of communicating his ideas and emotions by conventional sounds and signs. His brain is much more complicated, and more fully developed in its anterior portion, than that of other

animals. None of the *Quadrumanæ* possess, like him, a peculiar muscle for the extension of the fore- or pointing-finger,—see *EXTENSEUR*, 5. He alone prepares his food by subjecting it to the action of fire: and, having acquired the means of protecting his body, by artificial coverings, from the influence of atmospheric vicissitudes, is fitted to inhabit every accessible region of the globe. The species, the only one of the genus to which he belongs, will be found to exhibit the six following races: the *Caucasian*,—*race Caucasiqne* ou *Arabe Européene*, F.; the *Northern*,—*Hyperboréene*; *Mongolian*,—*Mongole*; *American*,—*Américaine*; *Malay*,—*Malaie*; and the *Negro* or *Ethiopian*,—*Nègre* ou *E'thiopienne*. Each of these races, or varieties, is distinguishable by peculiar characters drawn from the figure of the skull, the features of the face, texture of the hair, and colour of the skin. See Lawrence, *Lectures on the Physiology, Zoology, and Natural History of Man*, 8vo., London, 1819; and Prichard, *Researches into the Physical History of Mankind*, 2 vol. 8vo.

*British Song Birds; being popular Descriptions and Anecdotes of the Choristers of the Groves.* By Neville Wood, Esq. London: Parker, West Strand. 1836.

*The Ornithologist's Text-Book: being Reviews of Ornithological Works; with an Appendix, containing Discussions on various topics of interest.* By Neville Wood, Esq. London: Parker, West Strand. 1836.

NATURAL HISTORY, amongst the enlightened and contemplative, is now so universally studied that every writer on the subject, however small may be the portion which he offers to the general stock, is looked upon with more than complacency—he is welcomed as a valuable fellow-labourer in this pleasing and instructive science. If such, then, be the reception extended to an ordinary writer, with how much more favour may we consider the emanations of an author to be entitled, who, well versed in theory and in practice, devoting his assiduous attention to an almost exclusive study, and discarding the fanciful illusions of mere abstract contemplation, draws his conclusions from the unerring source of vigilantly applied personal investigation.

Natural History is no longer a subject confined to observation, but by recent discoveries it has become one of the deepest philosophic investigation—consequently it is a far loftier and more difficult study than formerly. To Mr. Neville Wood the science of ornithology is greatly indebted; his various publications in scientific journals, which have been numerous, attest his capability and knowledge; and his recently published works, now before us, are evidences of his powers of investigation, his accuracy of description, and his practical experience, which will always insure him a high standing amongst the votaries of ornithological science.

From *The British Song Birds* we give the following graphic account of the Longtailed Tit, which will afford an interesting specimen of the mode in which the author has treated his subject:—

“This beautiful and somewhat remarkable looking bird, is equally widely and abundantly distributed throughout the British islands with the four pre-

ceding species, but appears to be but little noticed, except by the ornithologist, on account of the nature of its haunts—the midst of extensive woods and forests, abounding with thick shrubs and trees. Its favourite trees appear to be the holly and the fir, and amongst these—especially the former—it may confidently be looked for, even in the neighbourhood of houses. But in open unconcealed spots, or in gardens, it occurs much less frequently than its congeners, though it occasionally mingles with these in severe winters.

“I am not aware that this bird possesses even the shadow of a song, and its only note is loud, shrill, and clear, and has, not unaptly, been compared to the sound of a bell, though the notes are perfectly distinct, and by no means uttered in a hurried manner. It is audible at a considerable distance, and, when once heard, is not easily forgotten.

“The nest of the Longtailed Tit is a most extraordinary piece of architecture, and often requires a long time to complete, though, in cases of emergency, I have known the whole structure to have been erected in less than a week. It is usually situated in the holly or hawthorn tree, where two or more branches meet, and also, though not so frequently, in fir trees; I have likewise seen one in a thick hedge in an unfrequented spot.” It consists of various kinds of lichens, moss, wool, and other substances, lined with a warm coating of feathers. When completed, it is a perfect model of symmetry, and is of an oval shape, with a small hole near the top. The whole surface is studded over with white lichens, and sometimes with spiders’ webs, or some substance of a like nature, which gives a beautiful finish to the structure, and renders it more similar to the branches on which it is situated, than it would otherwise be. It is so firmly fixed on the branches, that it would be impossible to take down the nest without cutting also the twigs on which it is fastened. In a museum it is a very handsome object, with the holly branch on which it was situated, but, if torn off from this, its beauty is entirely spoiled.

“According to Selby, there are two holes in the structure, through one of which it protrudes its long tail. Now, though I am by no means inclined to doubt that it may occasionally be found (and of course Selby has such specimens), yet I am convinced that they are of extremely rare occurrence. Mr. Blyth informs me that he never met with a nest of this description, nor have I, amongst the great number that I have examined—both on the bush and in museums—ever seen more than one hole, and that but a small one. My learned correspondent, Shirley Palmer, M.D., of Birmingham, is also of opinion that two holes seldom or never occur.

“Rennie and others designate this species by the vulgar name “Bottle Tit,” on account of the nest being occasionally found in the shape of a bottle; and a specimen of this description is figured in Rennie’s popular compilation, the *Architecture of Birds*, p. 332. It is, however, much more frequently met with in a plain oval shape, without any neck, and with a hole near the top. Longtailed Tit, is, consequently, a far more correct appellation.

“Unlike most of the other British Tits, it is entirely insectivorous, being never observed to feed on carrion of any kind. It seeks its insect prey amongst the branches and foliage of trees, with the same assiduity as its congeners, hanging on the undersides of the twigs, and frequently running up and down the branches, in the same manner as the Goldcrested Kinglet. Sometimes it associates with the Blue and Coal Tits, but is more commonly observed in flocks of twelve or fourteen, probably constituting the family party. Its flight, though never continued for any length of time, is straight and rapid. The eggs, from nine to twelve—and sometimes even more—in number, are very small, and white, spotted at the larger end with reddish-brown dots.

“‘I have often endeavoured,’ says Dr. Liverpool, ‘to preserve the

“\*I have seen one beautifully situated on the thickly-blossomed branch of a wild crab.—  
E. BLYTH.

Longtailed Tit in confinement, but have never yet succeeded. A pair of old birds which I once caught in a trap-cage, were extremely shy and obstreperous, and would eat nothing but insects. As it was soon found to be impossible to supply them with a sufficiency of this food, they did not long survive. I have had no better success with individuals taken from the nest, and the species appear little fitted for confinement.' ”

“The covering of the Longtailed Tit looks more like hair than feathers; and this, as well as its small size, renders it a difficult matter to stuff it in a satisfactory manner. Country bird-stuffers, indeed, will hardly undertake the task.”

The style is, in most instances, modelled according to the nature of the subject; and wherever an opening is made for critical observation, it has usually arisen from the necessity of being somewhat technical in particular descriptions. Altogether, it is impossible, in our judgment, for a scientific work to be better adapted to the capacities of every description of readers; and we have not the least doubt of its circulation becoming very general. In its execution, that is, as relates to the printing, paper, &c., this volume has more than ordinary pretensions to the claim of neatness.

*The Ornithologist's Text Book* is a work which has been much wanted; for without some guide in the choice of books, the student is unable to grapple with his subject in the direct way which his anxiety and impatience require. By looking over this review of ornithological publications, it will be clearly seen which work merits attention and which would be a waste of time in the perusal. There are some volumes alluded to in this Text Book which we scarcely think it necessary to have noticed; but Mr. Neville Wood has done so evidently with the intention of setting them up as beacons against which to guard the inexperienced collector. It must be admitted that the observations, generally, are dictated by the most scrupulous impartiality; but we are bound to dissent from the somewhat harsh observations directed against the talented author of *The Selection of British Birds*. Criticism should, in all cases, be divested of the least tincture of asperity; and even if the author had not been a lady—an accomplished and a literary one, too—we should still have been of the same opinion as that expressed in a former number, wherein we endeavoured, in our critical notice, to do justice to the talent which, in our estimation, that work exhibited.

We quit this subject with again expressing our admiration of the ability which has been so conspicuously manifested in the two volumes which we have thus so cursorily noticed; and with the hope that we shall ere long again have to welcome another work by the same acute and intelligent writer, on a theme so interesting to ornithologists, we close this confessedly too brief commentary on two most valuable publications.

*History of Upper and Lower Canada*: by Robert Montgomery Martin, F.S.S. London: Mortimer, Wigmore-street, Cavendish-square. 1836.

*History of Austral-Asia: comprising New South Wales, Van Dieman's Island, Swan River, South Australia, &c.*: by Robert Montgomery Martin, F.S.S. London: Mortimer, Wigmore-street. 1836.

*The British Colonial Library*, by Robert Montgomery Martin, is a work of such talent and utility, that we are neither surprised at the popularity it has attained, nor the praise which it has received from most of the critical commentators by whom it has been noticed. In its first form, this library was by far too bulky for common perusal, and to the author much merit is due for having himself undertaken the task of reducing his voluminous works, for the purpose of bringing them within the reach of the general reader. Such abridgment is always better performed by the author than by a stranger, because his deep attention to every minute circumstance and the powers of his mind fixed on a subject which he had explored with a perseverance far beyond that of a simple narrator, must enable him to bring forward the more prominent parts with greater clearness and vigour, than he who reads simply for the sake of abbreviating within the limits of a given space. We hardly need say, therefore, that Mr. Montgomery Martin has completely succeeded in his undertaking, and has exemplified his success in the two volumes of "*The Canadas*," and "*Australia*," now under consideration.

From the first-named volume—that treating on the Canadas—it appears, notwithstanding the great influx of settlers from England, Scotland, and Ireland, that Upper Canada, in particular, still holds out an eligible situation for emigrants of the higher class, and abundance of employment for those of the labouring community. On the policy of encouraging emigration, we shall not now speak—but Mr. Martin has made it clear that persons of small capital, and skilful mechanics and labourers, have an opportunity of improving their condition in the Canadas, most beneficially for themselves and families. The rate of wages is very high, and good and steady artizans are in great request. Connected with this subject, the information is altogether extensive and interesting.

Notwithstanding the pains taken by Mr. Martin, to shew the salubrity of the climate, as instanced by the numerous settlers who have attained a very advanced age, there can be no doubt of its extreme rigour during the long months of winter. What must be the feelings of an Englishman, freshly arrived, who, while engaged in viewing the country to which he has exiled himself, should be suddenly accosted by an inhabitant with this sort of salutation? "*Sir, excuse me, (rubbing a handful of snow in his face), but if you do not take most especial care, your nose will drop off! it has already begun to be frost-bitten, and if not instantly checked, to-morrow morn-*

*ing you will be minus a nose!* This is a drawback which even the most robust have to dread, for the frost attacks alike the strong and the weak; and should an injudicious application be applied—for instance, warm water, instead of cold water or snow, which latter is the better remedy—the sufferer would inevitably lose, not only his nose, but a great part of the circle surrounding it. In the eastern provinces, or Lower Canada, the greater severity of the weather is partly owing to its N. E. position, and partly to the N. E. range of lofty mountains. In the more northern part of the province, the snow commences in November, but seldom continues many days on the ground before December, when the whole country is covered for several feet deep, and it does not entirely disappear before the beginning of May! The thermometer usually ranges, during the months of December, January, February, and March, from 32 to 25 *below* zero, Fahrenheit; in 1790, mercury froze at Quebec. It is often 60° Fahrenheit below the freezing point—20° is the average. During the cold frosty nights, the woods creak as if ten thousand *bucherons* were at them with their hatchets. The entire face of the country is covered with snow, and even the mighty river, St. Lawrence, is arrested in its course. From Quebec to Montreal, the St. Lawrence ceases to be navigable, and serves as a road for the snow carriages, called sleighs and carriages. Upper Canada, however, it appears, has a somewhat less rigorous climate—neither being so cold in winter as Lower Canada, nor so hot in summer as New York; for, in the Newcastle district, a man may work in the woods, the whole winter, with his coat off, as in England; and the summer heat is tempered by a cool breeze, which sets in from the S. W. about ten a. m., and lasts generally, till three or four, p. m.

So great is the fertility of the soil in Canada, that fifty bushels of wheat per acre are frequently produced on a farm where the stumps of trees, which probably occupy an eighth of the space, have not been irradicated. Some instances of sixty bushels per acre occur; and near York, in Upper Canada, one hundred bushels of wheat have been obtained from a single acre! In some districts, wheat has been raised successively, on the same ground, for twenty years, without manure.

The true Canadian is represented to be, in every sense of the term, one of the finest specimens of our race, fulfilling, with a sacred fidelity, every social duty which the obligations of society impose; demonstrating how much the originally noble character of man is debased and depraved by the poverty and starvation which crush to the earth, in misery and vice, the greater part of the European community. Of the Canadian ladies, our author thus speaks:—"The beauty of a Canadian is peculiar—neither English nor French, but combining the more exquisite elements of each: she possesses more of vivid *emotions* than *ideas*; and, though deficient in the nervous intellect of the Scotch, she exhibits the ardour of the Italian, and the vivacious archness of the Parisian: the quick and varied impulses of her inward soul, are mirrored in the piquant

glance of her dark, expressive and, passionate eye, whose lambent fire is ever kindling into flame." They are represented to be passionately fond of finery and society; with wit sparkling and in constant exercise, more satirical than sarcastic, delighting rather than wounding, but withal remarkable for a kind of good-natured maliciousness. All who have visited the Canadas, assert that the society there is extremely agreeable, perfectly freed from unnecessary forms, giving to life an air of delightful ease, and to private intercourse a charming tone and colouring. To sum up all, they profess to be a pious people and to set an extraordinary value upon the scrupulous performance of the rights of religion. It would seem, therefore, from all accounts, oral and written, that Canada only wants a genial climate to make it a perfect paradise: but this want, unfortunately, comprises nine-tenths of the ingredients of which human happiness is composed. No rock-ribbed ice, no life-destroying winds, no desolating blasts, ever shed their baleful influence on the sunny regions of the garden wherein dwelt our first parents. As a place well suited to the wants and wishes of a redundant population, like Ireland, it appears in every way calculated to answer the salutary end; and if men are careful, and adopt all the rules prescribed for ameliorating the inclemency of the long winter season, it must be a desirable land of refuge from the storms of an adverse home. Land is purchasable on very easy terms; and until the means of obtaining it be confirmed, employment for all descriptions of artisans is always ready for the new settler. We are not aware of any other publication which contains so much useful information to emigrants; and we can unscrupulously recommend it to general perusal.

*The History of Austral-Asia*.\*—(as Mr. Martin writes it,) next claims our attention, comprising the vast tract of country of New South Wales, Van Dieman's Island, Swan River, South Australia, &c. and, as far as climate is concerned, is certainly preferable to the Canadas; but civilization has not made the advances of our North American neighbour's; society is not on the same footing either with regard to intelligence or manners, and then it is the country of the outcasts of society, of expatriated felons. These are drawbacks for which no climate, however favourable, can compensate. To a certain order of settlers, however, who may not be so nice on these points as others, this region possesses many advantages, particularly in soil, in situation, and in climate. The arts of civilized life have already been introduced under the most favourable auspices, commercial towns on a large scale, have reared their imposing attitude, where a few years ago the morass and the wilderness were alone distinguishable. Churches, schools, and many useful institutions have been established, necessary to the social and moral condition of man, and, in fact, every thing has been accomplished to render this part of the world habitable and alluring to emigrants. Its popu-

\* By *Austral-asia* is understood all the settlements in this quarter; the term *Australia* signifies New Holland alone.

lation is annually increasing—its public buildings are equal to many of the same class in the country towns of England, and intelligence is making rapid strides through all the departments of the arts and sciences—men distinguished for their talents and learning, men who would be so distinguished in this country, are to be met with in most of the principal towns—and in a few years there is every probability of their becoming as polished and enlightened as the intellectual Canadians.

As a proof of the salubrity of New South Wales, Mr. Martin states that of a community of 1200 persons, only five or six have been known to be sick at a time, and at some of the military stations, seven years have elapsed without the loss of a man. Old people arriving in the colony from Europe, have suddenly found themselves restored to much of the hilarity of youth, and there are many persons now living upwards of 100 years of age. Amongst these ancients is a woman now living as a servant at a public house, on the Sydney and Paramatta road, who is said to be 125 years of age, and yet performs her daily work with the agility of her younger years.

Half a century ago—less than half a century ago—the territory of New South Wales was a pathless forest, and its denizens wild and roving savages—and now its surface is covered with excellent roads and bridges, (the former, in some places, crossing lofty mountains, and rivalling the far famed *Simplon*) along which there is a daily increasing traffic, bringing into close intercourse the remotest part of the colony, while the introduction of locomotive power, by sea and land, will tend to accelerate the progress of a civilization of which every Briton must feel proud. There is a regular post to every part of the colony—a general two-penny post in Sydney—there are also mails and four-horse coaches, caravans and steam-vessels, printing offices in which newspapers are printed—and a college in Sydney called the Australian College, and numbers of primary, parochial, and private schools. A mechanic's school of arts was instituted in 1833, and a female school of industry owes its origin to Mrs. General Darling, when her husband was governor of the colony. Societies connected with religion, humanity, literature and science, abound also in the different towns.—The staple products of New South Wales, are wool, whale oil, cattle, and provisions, of which the first is the most valuable, and promises at no distant day to bring great wealth to the colony. At present the Australian colonies furnish nearly one-tenth of the entire importation of foreign wool into the ports of London and Liverpool; and such are the great improvements in navigation, that the expense of sending the fleece to London from Australia, a distance of 15000 miles, is not more than  $3\frac{3}{4}d.$  per lb., including freight, insurance, brokerage, commission, dock, and landing charges; while the expense of transmitting German or Spanish wools is from  $4d.$  to  $4\frac{3}{4}d.$  per lb. The bank of Australia, discounts from £10,000 to £12,000 weekly, at 10 per cent., which is the current rate of interest in New South Wales; and there is another banking firm, established by a London company, called the Bank of Austral-asia, with a capital of £200,000.

According to the view which Mr. Martin takes of this country, the position of the colony admirably adapts it for the seat of a great empire in the southern Hemisphere, while the numerous fertile islands with which it is surrounded, and its contiguity to India, South America, and Africa, place it in the centre of countries which will hereafter exercise a powerful influence over the destinies of the earth. There is abundance of land within the present boundaries of the colony, to say nothing of that which is adjacent, capable of supporting millions of our fellow creatures, and a field of emigration presents itself, where the industrious agriculturist or mechanic will obtain remunerating employment. The small capitalist can nowhere find a more lucrative place for the increase of his property; and when the feelings respecting emigrants and emancipists shall have passed away, society may become as pleasing as it is represented to be in other colonies.

The other parts of this volume comprise descriptive particulars of Van Diemen's Island, Swan River, South Australia, &c., full of information as that part on which we have so long dwelt. We cannot now however pursue this subject interesting as it is, in our present number, nor even allude to the geology, mineralogy, vegetable productions, animals, &c. At a future time, perhaps we may again bring it before the view of our readers, and draw some of the inferences which we had purposed doing in this notice, had we not been prevented by want of room. These volumes are exceedingly neat, whether as relates to typography, paper, plates, or maps—they are the first published of twelve intended volumes on the History of the British Colonies—and it must be acknowledged that the entire execution reflects great credit on the spirited publisher.

*A History of British Fishes*, by William Yarrell, F.L.S. Numbers 14, 15, and 16. London: J. Van Voorst.

WE have so frequently alluded to this valuable work (in terms of commendation it so richly deserves) without having given our readers any extracts, to enable them to judge of the intrinsic merits of the publication, that we shall, in the present number, refrain from any comments of our own, and devote a few pages to the author's description of the *Muraenidae*, or Eel-shaped Fishes.

“The genus *Anguilla*, including our common Eel, is the first of this order, and its appearance is so well known, and so unlike that of most other fishes, as to require but a slight description; yet it was not till a period of very modern date that naturalists became acquainted with the fact that the fresh waters of several countries produce three or four distinct species which had previously been confounded together. Thus the first edition of the *Règne Animal*, published in 1817, included but one species of common fresh-water Eel as well known: the second edition, published in 1829, contains a short notice of four different species; three of which, if not all four, are found in this country.

“The form of the Eel, resembling that of the serpent, has long excited a prejudice against it, which exist in some countries even to the present time;

and its similarity to snakes has even been repeated by those who, from the advantages of education, and their acquirements in natural history, might have been supposed capable of drawing more accurate conclusions. There is but little similarity in the snake and the Eel except in the external form of the body: the important internal organs of the two animals, and the character of the skeleton, are most decidedly different.

“Eels are in reality a valuable description of fish: their flesh is excellent as food; they are very numerous, very prolific, and are found in almost every part of the world. The various species are hardy, tenacious of life, and very easily preserved. In this country they inhabit almost all our rivers, lakes, and ponds; they are in great esteem for the table, and the consumption in our large cities is very considerable. The London market is principally supplied from Holland by Dutch fishermen. There are two companies in Holland, having five vessels each: their vessels are built with a capacious well, in which large quantities of Eels are preserved alive till wanted. One or more of these vessels may be constantly seen lying off Billingsgate; the others go to Holland for fresh supplies, each bringing a cargo of 15,000 to 20,000 pounds’ weight of live Eels, for which the Dutch merchant pays a duty of 13*l.* per cargo for his permission to sell.

Eels are not only numerous, but they are also in great request, in many other countries. Ellis, in his *Polynesian Researches*, vol. ii., page 286, says: ‘In Otaheite, Eels are great favourites, and are tamed and fed until they attain an enormous size. These pets are kept in large holes, two or three feet deep, partially filled with water. On the sides of these pits they generally remained, excepting when called by the person who fed them. I have been several times with the young chief, when he has sat down by the side of the hole, and, by giving a shrill sort of whistle, has brought out an enormous Eel, which has moved about the surface of the water, and eaten with confidence out of its master’s hand.’

“Most of the writers on the habits of the Eel have described them as making two migrations in each year: one in the autumn to the sea; the other in spring, or at the beginning of summer, from the sea. The autumn migration is performed by adult Eels, and is believed to be for the purpose of depositing their spawn; it is also said that these parent fish never return up the rivers. The spring migration is commonly supposed to be confined to very small Eels, not more than three inches in length, and in reference to the fry alone, it is too well known, and too often recorded, to be a matter of doubt. The passage of countless hundreds of young Eels has been seen and described as occurring in the Thames,\* the Severn, the Parrett, the Dee, and the Ban. I am, however, of opinion, that the passage of adult Eels to the sea, or rather to the brackish water of the estuary, is an exercise of choice, and not a matter of necessity; and that the parent Eels return up the river as well as the fry.’ \* \* \*

“During the cold months of the year Eels remain imbedded in mud; and large quantities are frequently taken by Eel-spears in the soft soils of harbours and banks of rivers, from which the tide recedes, and leaves the surface exposed for several hours every day. The Eels bury themselves twelve or sixteen inches deep, near the edge of the navigable channel, and generally near some of the many land-drains, the water of which continues to run in its course over the mud into the channel during the whole time the tide is out. In Somersetshire the people know how to find the holes in the banks of rivers in which Eels are laid up, by the hoar-frost not lying over them as it does elsewhere, and dig them out in heaps. The practice of searching for Eels in mud in cold weather is not confined to this country; Dr. Mitchell, in his paper on the fishes of New York, published in the Transactions of the Literary and Philosophical Society of that city, says, ‘In the winter Eels lie concealed in the mud, and are taken in great numbers by spears.’ \* \* \*

\* \* See an excellent account by Dr. William Roots, of Kingston, published in the second series of Gleanings in Natural History, by Edward Jesse, Esq. p. 50.

“The mode by which young Eels are produced appears to have long been a subject of inquiry, and the notions of the ancients as well as of some of the moderns were numerous and fanciful. Aristotle believed that they sprang from the mud; Pliny, from fragments which were separated from their bodies by rubbing against rocks; others supposed that they proceeded from the carcases of animals; Helmont believed that they came from May-dew, and might be obtained by the following process:—‘Cut up two turfs covered with May-dew, and lay one upon the other, the grassy sides inwards, and thus expose them to the heat of the sun; in a few hours there will spring from them an infinite quantity of Eels.’ Horse-hair from the tail of a stallion, when deposited in water, was formerly believed to be a never-failing source of a supply of young Eels. It was long considered certain that they were viviparous: this belief had its origin probably in the numerous worms that are frequently to be found in various parts of the bodies of the Eels, sometimes in the serous cavities, at others in the intestinal canal. Rudolphi has enumerated eight different species of entozoa common to fresh-water Eels. The enormous number of young known to be produced by Eels is a good negative proof that they are oviparous; viviparous fishes producing, on the contrary, but few young at a time, and these too of considerable size when first excluded. Having devoted time and attention to the close examination of numbers of Eels for many months in succession, the further details of which will be found in Mr. Jesse’s second series of *Gleanings in Natural History*, I need only here repeat my belief that Eels are oviparous, producing their young like other true bony fishes.\* \* \*

“There is no doubt that Eels occasionally quit the water, and when grass meadows are wet from dew, or other causes, travel during the night over the moist surface in search of frogs and other suitable food, or to change their situation. Some ponds continually produce Eels, though the owners of these ponds are most desirous of keeping the water free from Eels, from a knowledge of their destructive habits towards the spawn and fry of other fishes. Other ponds into which Eels have been constantly introduced are obnoxious to them from some quality in the water; and they are known to leave such places during the night, and have been found on their passage to other retreats. Dr. Hastings, in his *Illustrations of the Natural History of Worcestershire*, says at page 134: ‘I will here mention a curious confirmation of the opinion in favour of the overland migration of Eels. A relative of the late Mr. Perrott was out in his park with his keeper near a large piece of water on a very beautiful evening, when the keeper drew his attention to a fine Eel quietly ascending the bank of the pool, and with an undulating motion making its way through the long grass: on further observation he perceived a considerable number of Eels quietly proceeding to a range of stews, nearly the distance of a quarter of a mile from the large piece of water from whence they started. The stews were supplied by a rapid brook, and in all probability the instinct of the fish led them in that direction as a means of finding their way to some large river from whence their ultimate destination, the sea, might be obtained. This circumstance took place at Sandford Park, near Enstone.’ \* \* \*

“The Eel is a voracious feeder during certain months of the year. In winter the stomachs of those which I examined were empty: by the middle of March I found the stomachs of others distended with the larvæ of various insects, and the bones of small fishes. They are known to consume a large quantity of spawn and will attack large Carp, seizing them by the fins, though without the power of doing them further injury. Occasionally they eat vegetable substances, and have been seen swimming about the surface of water, cropping the leaves of small aquatic plants. By means of a long and capacious air-bladder, Eels rise to various elevations in the water with great ease, and sometimes swim very high even in deep water. When Whitebait-fishing in the Thames, I once caught an Eel in the net in twenty-six feet depth of water, though the Whitebait-net does not dip more than about three feet below the surface.

"Eels appear to be slow of growth, not attaining greater length than twelve inches during the first year, and do not mature roe till the second or third year. The sharp-nosed species, however, acquires a large size. I saw at Cambridge the preserved skins of two which weighed together fifty pounds; the heaviest twenty-seven pounds, the second twenty-three pounds. They were taken on draining a fen-dyke at Wisbeach."

*The Physiology of Digestion, considered with relation to the Principles of Dietetics.* By Andrew Combe, M.D., F.R.C.P.E., and Physician in Ordinary to the King and Queen of the Belgians. 8vo. Edinburgh and London. 1836. pp. xxij. and 332.

Dr. Combe's present volume is essentially a continuation of his excellent work, *The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education*. His object is the same in both the treatises—namely, to lay before the public a plain and intelligible description of the structure and uses of the more important organs of the human body, and to shew how information of this kind may be usefully applied in practical life. His reasons for dedicating a whole volume to the consideration of subjects relating chiefly to the principles of dietetics and the function of digestion, are manifest and conclusive. The more, he says, we reflect on the real complication of this function—the extensive influence which it exercises, at every period of life, over the whole bodily organization—the degree to which its morbid derangements undermine health, happiness, and social usefulness, and especially the share which they have in the production of scrofulous and consumptive, as well as of nervous and mental, affections,—we shall become more and more convinced of the deep practical interest which attaches to a minute acquaintance with the laws by which it is regulated. In infancy, errors of diet, and derangement of the digestive organs, are admitted to be the principal causes of the striking mortality which occurs in that period of life: in youth and maturity, he adds, the same influence is recognized, not only in the numerous forms of disease directly traceable to that origin, but also in the universal practice of referring every obscure or anomalous disorder to derangement of the stomach or bowels. Hence, too, he concludes, the interest which has always been felt by the public in the perusal of books on dietetics and indigestion; and hence, also, the prevalent custom of using purgations as remedies for every disorder, very often with good, but not unfrequently with most injurious, effects. In a general way, he observes farther, we all acknowledge that diet is a powerful agent in modifying the animal economy; yet, from our *conduct*, it might justly be inferred that we either regarded it as totally devoid of influence, or remained in utter ignorance of its mode of operation; being left to the guidance of chance alone, or of notions picked up at random, often at variance with reason, and, it may be, in contradiction with our own daily experience. It is, indeed, from their being left in this way, without any guiding principle to direct their experience, and

to test the accuracy of the precepts laid down to them for the regulation of their conduct, that many persons begin by being bewildered by the numerous discrepancies which they meet with between facts and doctrines, between counsel and experience; and end by becoming entirely sceptical on the subject of all dietetic rules whatever, and by regarding them as mere theoretical effusions, based on fancy, and undeserving of serious consideration. Now, the true remedy for this state of things is, not to turn away in disgust and despair, but to resort to a more rational mode of inquiry; certain that, in proportion as we advance, some useful result will reward our labours. Such, accordingly, has been Dr. Combe's aim in the present publication; and, we may venture to affirm, in the execution of his undertaking, he has far excelled all his predecessors.

Dr. Beaumont, an American writer, has published a singularly valuable work, which contains an authentic record of some of the most curious and instructive observations\* that have ever been made on the process of digestion. That enlightened physiologist had the rare good fortune to meet with a case where there was an artificial opening into the stomach, through which he could see everything that took place during the progress of healthy digestion; and, with the most disinterested zeal, and admirable perseverance, he availed himself of the opportunity thus afforded of advancing human knowledge, by engaging the patient to live with him for several years, and to become the subject of numerous and carefully conducted experiments. From the results of these, Dr. C. acknowledges his having derived the utmost advantage; and he has not scrupled to make the freest and most ample use of them, both because they illustrate almost every important point connected with digestion, and because (*since Dr. B.'s book is still inaccessible to the British public*) it is a bare act of justice towards him, and also the best way of fulfilling the objects he has in view, to make its contents known as widely as possible: for, Dr. C. delightedly avers, wherever they are known, they will be acknowledged to redound to Dr. Beaumont's credit, not less as a man than as a philosopher.

All the writings of Dr. Combe, are distinguished by a remarkable precision and perspicuity of arrangement. His "*Physiology of Digestion*" possesses this excellent quality in a very characteristic manner: it is distributed into two PARTS, or primary divisions, which again undergo a sub-division into chapters, or natural sections. These altogether are twelve in number, and bear the following distinctive titles,—introductory remarks; the appetites of hunger and thirst; mastication, in salivation, and deglutition; organs of digestion, the stomach and the gastric juice; theory and laws of digestion; chylification and the organs concerned in it; times of eating; the proper quantity of food, and its kinds; conditions to

\* We encourage the hope of being able to gratify our readers with a comprehensive analytical view of these observations in the next number of our Journal.

be observed before and after eating; drinks; the proper regulation of the bowels. This list necessarily leads us to infer that Dr. Combe's pages embrace a great diversity of investigation, bearing directly and strongly on the health, and consequently on the happiness of mankind. We greatly admire his method of communicating physiological and practical knowledge, and would gladly enhance the value of this article, by drawing largely on the Doctor's rich stores of erudition and well digested experience: but, on this occasion, our limits preclude us from attempting more than the introduction of a few desultory sketches, as inducements to a careful and repeated study of the "*Physiology of Digestion and the Principles of Dietetics*," as subjects essentially conducive to the conservation of health and the prevention of disease.

By reflection on numerous authentic facts, Dr. C. establishes the induction—that, in every department of nature, expenditure of material is inseparable from action; and that, in living bodies, waste goes on so rapidly and by so many different channels, that life could not be maintained for any length of time without an express provision being made for compensating its occurrence. Wherefore, in surveying the respective modes of existence of vegetables and animals, with a view of ascertaining by what means this compensation is effected, the first striking difference between them which we perceive, is the fixity of position of the one, and the free locomotive power of the other. The vegetable grows, flourishes, and dies fixed to the same spot of earth from which it sprang; and, however external circumstances may change around it, it must remain and submit to their influence. If the earth to which its roots are attached be removed, if it be deprived of moisture, and solar heat, and light, it cannot go in search of them, but must remain to droop and to perish. But it is otherwise with animals. These not only enjoy the privilege of locomotion, but are compelled to use it, in search of food and shelter; consequently, if their vessels of nutrition were like those of vegetables, in direct communication with external substances, they would be torn asunder at every movement, and the animals themselves exposed either to die from starvation, or to forego the exercise of the higher functions for which their nature is adapted. But the necessity for a constant change of place being imposed upon them, a different arrangement became indispensable for their nutrition, and the method by which the Creator has remedied the inconvenience is no less admirable and simple. To enable them to move about and at the same time to maintain a connexion with their food, He has provided them with a stomach wherein they may store up a supply of materials from which sustenance may be gradually elaborated during a period of several hours. The possession of a receptacle for food is accordingly a characteristic of the animal system as contrasted with that of vegetables; and it is found even in the lowest orders of zoöphytes which, in other respects, are so nearly allied to plants. From the details of this interesting comparison, Dr. C. seems to confirm and elucidate this proposition—

that, the sole object of nutrition being to supply waste and to promote growth, nature so provided that, within certain limits, it is always most vigorous when growth or waste advances with the greatest rapidity. In vegetables, this relation is distinctly observable; and it is no less strikingly apparent in animals. The very possession of a stomach, with its exclusive office, necessarily implies the co-existence of some watchful monitor, such as *appetite*, to enforce attention to the wants of the system, with an urgency not easy to be resisted. For example, if this were not the case in man, if he had no motive more imperative than reason to oblige him to take food he would be constantly liable, from indolence and thoughtlessness, or the pressure of other occupations, to incur the penalty of starvation, without being previously aware of his danger. But the CREATOR, with that beneficence which distinguishes all HIS works, has not only provided an effectual safeguard in the sensations of hunger and thirst, but, moreover attached to their regulated indulgence a degree of pleasure which never fails to insure attention to their demands.

Dr. Combe, begins the following observations at his eighteenth page. If, he remarks, the body be very actively exercised, and a good deal of waste be effected by perspiration and exhalation from the lungs, the appetite becomes keener and more urgent for immediate gratification; and, if it is indulged, we eat with a relish unknown on other occasions, and we afterwards experience a sensation of internal comfort pervading the frame, as if every individual part of the body were imbued with a feeling of contentment and satisfaction, the very opposite of the restless discomfort and depression which come upon us and extend over the system, when appetite is disappointed. There is, in short, an obvious and active sympathy between the condition and bearing of the stomach and those of every part of the animal frame, and by virtue of this sympathy, hunger is felt very keenly when the general system stands in urgent need of repair, and it is felt very moderately when little waste has been suffered. The effects of exercise shew this connexion very clearly. If we merely saunter out for a given time every day, without being actively enough engaged to quicken the circulation and induce increased exhalation from the lungs, we come in with scarcely any change of feeling or condition: whereas, if we exert ourselves sufficiently to give a general impetus to the circulation, and bring out moderate perspiration, but without inducing fatigue, we feel a lightness and energy of a very pleasurable description, and generally accompanied by a strong desire for food. Hence the keen relish with which the fox-hunter sits down to dinner after a successful chase. This intimate communion between the state of the system and that of the stomach, is a beautiful provision of nature, and is one of the causes of the ready sympathy which has often been remarked as existing between the stomach and all the other organs—in other words, of the readiness with which they accompany it in its departure from health, and the corresponding aptitude of their disorders to produce derangement of the digestive function.

In discoursing on the "Times of Eating," Dr. C. concludes that food ought to bear a relation to the mode of life and circumstances of the individual, and not be determined by a reference to time alone. It is his advice that delicate persons should breakfast early: his observations on the "best time for dinner," are excellent, and we recommend them to the serious attention of parents and the heads of educational institutions. When considering the "propriety of supper," he introduces an important practical hint: if, he says, in adopting the precepts of ultra-temperance, we dine early, live actively, and go to bed with the stomach entirely empty, we *may* sleep, but our dreams will scarcely be more pleasant, or our sleep more tranquil, than if the stomach were overloaded. A gnawing sense of vacuity is felt in such circumstances, and this is apt to induce restlessness, and nervous impatience and irritability: but these unpleasant symptoms may be dispelled, and sound sleep obtained, by taking a cupful of arrow-root, or a moderate portion of some light nutritious preparation, an hour before bed-time. In short, he says, the grand rule in fixing the number and periods of our meals is, to proportion them to the real wants of the system, as modified by age, health, and manner of life, and as indicated by the true returns of appetite: and, as an approximative guide, to bear in mind that, under ordinary circumstances of activity and health, three, four, or five hours are required for the digestion of a full meal, and one or two hours more of repose before the stomach can again become fit for the resumption of its labours. If the meal be temperate, and the mode of life natural, digestion will be completed in from three to four hours, and one hour of rest will serve to restore the tone of the digestive organ; but if the quantity of food be great, or the general habits be those of indolence, digestion may be protracted to five or six hours, and two or more will be necessary for subsequent repose.

Having previously given a comprehensive view of the agents employed in effecting digestion, and of the changes produced by it on various nutriments, Dr. Combe finds another important subject of investigation, immediately connected with the process, in the comparative digestibility of different kinds of food. This branch of his inquiry is very instructive as well as interesting; and we would advise the perusal of the results of the experiments instituted for the purposes of its elucidation, exhibited in the table, page 127 of the work.

By these brief notes, our readers will be enabled to anticipate the advantages to be derived from judicious and frequent reflection on the precepts of Dr. Combe's *Physiology of Digestion*: we, therefore, conclude this imperfect account of his aim and its execution, with recommending his work as perfectly sound in principle, most conclusive in doctrine, and beautifully perspicuous in elucidation.

*A Guide through the Town of Shrewsbury*, interspersed with brief notices of the more remarkable objects in the Environs, and embellished with twenty-one engravings. Shrewsbury: Davies. 1836.

There are innumerable Guide-books in this kingdom: every town, and almost every village, has its printed *Guide*; and, on inspection, a very worthless set of books they usually prove. It is quite a treat to see a well arranged and readable *Guide* to any town or watering-place of the least consequence; and although we picked up this *Shrewsbury Guide* under the accustomed impression, that it would hardly recompense the time consumed in reading it, we are now free to confess that this *Guide through the Town of Shrewsbury* is not only an exception to those common-place publications, but, in every particular, a well-arranged, comprehensive, correct, and intelligent book of reference. There is no town in England better known by name than Shrewsbury—from its cakes and annual shew, to its famed grammar-school and useful institutions: but this *Guide* will make both natives and strangers better acquainted with its antiquity, its internal regulations, and the character of its inhabitants, than could have been derived from any previous publication of the kind. It goes so minutely into particulars, traces sources with so much industry and accuracy, and details events with so much vividness and perspicuity, that it should be called *A miniature History of Shrewsbury*, and not a mere *Guide* to its streets and curiosities.—With respect to the printing and the wood-cuts (of which there are twenty-one in number), we scarcely know which most to admire; the former would do credit to the London press, and some of the latter remind us of the exquisitely-wrought designs of the celebrated Bewick. We trust that all future writers of *Guides* will take a lesson from this very commendable specimen, and thereby infuse a portion of that interest which every book, however trifling its subject, must possess, if it be the object of the author that it should be generally read. In addition to the usual matter, there is appended a list of the eminent natives of Shrewsbury, with references to works in which their biographies are detailed; and the names of a few of the rarer species of plants growing in a wild state in the immediate vicinity of the town.

*Magazine of Natural History. Gardener's Magazine. The Architectural Magazine. Arboretum Britannicum.* Numbers for April, May, and June. London: Longman & Co.

The original articles which have appeared in these publications during the last three months, possess more than usual interest. In the *Magazine of Natural History* we would more particularly point out the valuable papers by Dr. Johnston, of Berwick-upon-Tweed, E. Forbes, Esq., C. C. Babbington, Esq., F.L.S., J. Marshall, Esq., and Mr. W. H. White. The *Gardener's* and the *Archi-*

*tectural Magazines*, contain a fund of information, and may be consulted with advantage by the respective classes for whom they are designed. In the latter publication Mr Fox's Essay on the construction of skew arches, is deserving the attention of practical men. In the formation of the London and Birmingham railway, the bridges intersecting the canals and roads, have been constructed on this improved principle; as the substitution of the oblique arch, for an arch of much larger dimensions required for the common square bridge, is attended with a considerable saving of expense. The publication of the *Arboretum Britannicum* is now drawing to a close, and we would advise all who are interested in the science of arboriculture, to secure copies of this cheap and valuable work *previous* to the issue of the 24th part, as the price of each number will subsequently be raised.

*The Elysium of Animals: a Dream:* by Egerton Smith. London: J. Nisbet, Berner's-street, 1836.

This production, so highly creditable to the author, originally appeared in a miscellaneous collection of pieces in prose and verse, entitled *The Melange*, from which it has been detached and published in a separate form, at the request of some benevolent men in London, honourably distinguished for their exertions to improve the moral character of the community, through the medium of a periodical under the title of *The Voice of Humanity*. Mr. Smith has most successfully exposed the wanton cruelty to which the brute creation are subjected by the tyranny and caprice of the ignorant and depraved; and we most earnestly wish to see his humane endeavours to mitigate the sufferings of defenceless animals followed up by the publication of this interesting pamphlet, in the shape of a class book to be *universally adopted* in schools. If children were early taught the wickedness and inhumanity of inflicting unnecessary torture on the animal creation, the disgusting and revolting scenes now so frequently witnessed would be comparatively of rare occurrence.

*Thoughts on Physical Education, and the true mode of improving the condition of man; and on the study of the Greek and Latin Languages*, by Charles Caldwell, M.D. Edinburgh: Adam and Charles Black. London: Longman and Co.

From the cursory glance we have been able to bestow on this Work, (which was only received on the eve of publication,) the subject of the first treatise—on *Physical Education*—appears to be discussed in far too philosophical and able a manner to be dismissed with the brief notice our present confined limits would necessarily require; we shall therefore revert to this production of the talented writer in our next number.—In the second treatise, entitled—*Thoughts on the study of the Greek and Latin languages*, the author

expresses the fallacy of constituting the classics an *essential* part of a liberal education, to the *exclusion* of more useful knowledge, in a masterly and eloquent style.

We earnestly recommend to all who have children to educate, an attentive perusal of these *Thoughts*, which are admirably calculated to subvert the absurd arguments of the few who still pertinaciously adhere to the antiquated belief, that the acquisition of the classics is preferable "to pursuing a course of instruction calculated to prepare the mind, by expanding and invigorating *all* its faculties for the highest achievements of which it is capable, in science and letters, as well as in the learned professions and the arts."\*

*The Cheltenham Looker-On.* Parts 3 and 4. H. Davis, Montpellier Library.

THERE is a decided improvement in the second, and enlarged, series of "The Note Book of Sayings and Doings" of this fashionable place of resort; and the manner in which this very useful and amusing publication is conducted reflects great credit on the spirited publisher. We have gleaned from its pages a brief notice of the proceedings of the Cheltenham Literary and Philosophical Institution, which appears in that division of *The Analyst* devoted to scientific information.

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## FINE ARTS.

*Scotland*, by William Beattie, M.D., *illustrated in a series of Views*, by Thomas Allom, Esq. Parts 6 to 10. London: Virtue.

THE plates comprized in the second quarterly part of this beautiful work, if possible, exceed the former ones in interest of subject, and picturesque grandeur: it stands without a rival in the world of modern landscape illustrations, either of romance or reality. The view of "Loch Katrine" is a perfect gem; the scene is truly worthy of the fair Ellen's fairy-like guardianship, and we almost expect to see her light skiff shoot into sight at the bugle-blast of Fitz-James, who is introduced in the picture standing beside his fallen charger, and calling back his hounds, "the sulky leaders of the chace," from their now vain pursuit.

" Gleaming with the setting sun,  
One burnish'd sheet of living gold,  
Loch Katrine lay beneath him roll'd.

\* *Thoughts on the study of the Greek and Latin languages*, p. 251.

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High on the south, huge Ben-venue  
Down on the lake, in masses, threw  
Crag, knolls, and mounds, confusedly hurl'd.

\*   \*   \*   \*   \*

While on the north, through middle air,  
Ben-an heaved high his forehead bare.

This plate is as finely engraved as it is beautifully and characteristically drawn; the distant mountains, the clear waters of the loch, the gnarled trunks and crisp foliage of the foreground trees, have all the effect of colour. The "Interior of Roslyn Chapel," that renowned relic of highly-ornamented architecture, with its elaborate and fanciful carvings, is represented with a fine effect of light and shadow; bringing out, in strong relief, all the peculiar features of the style in which it is built. "Holyrood Chapel" is another beautiful, but now ruinous, scene; the faint moonlight by which Mr. Allom has appropriately shewn us its mouldering grandeur, harmonizes well with the impressive solemnity of such spots, and the train of deep and sombre thought into which we are led by the contemplation. The most remarkable antiquity depicted in this volume is, the singular "Roman Bridge over the Moose;" consisting of one immense and lofty arch, spanning a romantic glen, through which the river flows in a placid brightness, greatly contrasted by the usual noisy, picturesque character of Scottish streams. The view of "Loch Lomond, from the road above Inversnaid Mill," gives a splendid mountain prospect, and is animated by some fair equestrians, mounted on shaggy Highland ponies, and guarded by an escort of plaided and kilted gillies. "Lock Oich, with Invergarry Castle," is a clear sunshiny picture, and "Loch Leven, looking towards Balahneist Ferry," a spot of exquisite beauty, comprising wood, mountain, and lake scenery; besides having historical associations of no small interest to enhance its natural attractions: the extreme and middle distances are engraved with peculiar delicacy. "The Castle of Doune," a stern old feudal pile, is rendered pictorially and historically interesting by an admirably disposed group of spirited figures: "Prince Charles Stuart's disposal of his Prisoners after the Battle of Falkirk." The field of Culloden is delineated in all the horrors of war, crowded with the wounded, the dying, and the dead; while the view of "Stirling Castle and Town" has, in the foreground, a group of the fiery warriors of Sauchie Burn, mingled together in deadly combat; to which strife and angry clamour is presented a glad relief in the clear calm sky and distant view. "Bracklin Bridge" is, in truth, an unco fearsome-looking pathway over the cataract of many falls, which foams and dashes among the huge rocks beneath it: surely tradition has not been idle in such a scene, for his satanic majesty may quite as justly lay claim to the airy fabric of Bracklin, as to the more substantial erection, which seems, by common consent, ascribed to his canny hand in Wales. "Bonniton Lynn," and the "Fall of Foyers," are

two more beautiful cascades, but inferior in wild grandeur to the one above mentioned. "The Eastern Pass of Glencoe" gives a more stern character to this grand scenery than any picture we have yet seen; and the dreary desolation is heightened by the appearance of a deep snow, and the hurried retreat of a party of Highlanders from an enemy's forces, who are entering the glen beneath the stupendous mountain, which, girt with storm-clouds, towers high above its rocky mates. "Cawdor Castle" forms an exceedingly fine plate: is it the Cawdor of which Macbeth became thane?—

"Glamis thou art, and *Cawdor*, and shalt be  
What thou art promised."

"Altsay Burn," a wild, wooded glen-scene, all darkness and dread, is succeeded by a glimpse of such bright summer-sky beauty, in the view of "Dunolly Castle," that "bare winter suddenly is changed to spring," and we are absolutely envying the ladies their intended sail in the little boat now moored under the rocks to receive its fair freight: it is an exquisite picture. "Inverlochy Castle" is invested by the painter with such terrible signs of fire and slaughter, that we feel we *ought* to remember the incident, either romantic or historical, which is thereby perpetuated; we, however, plead guilty to the crime of forgetfulness, and here venture to hint to the publisher of this most beautiful and *covetable* work, that the addition of a line to each plate, alluding to the event represented by the figures introduced, whether they are of Scottish history or of Scott's romance, would greatly aid the peruser in his enjoyment of the picture, and certainly could not detract, in any way, from their individual beauty. "The Drhuim on the Branby River" is a strange and wildly beautiful scene of rocks, wood, and water; picturesque and strikingly *natural*, fresh, and uncontaminated by parasol pic-nics or dandy felicity-hunters; a few quiet-looking cows cooling their legs in the water, and a solitary heron watching his finny prey, from a stone, are the sole denizens of the spot. We have rarely seen heighth and depth so faithfully described on paper, as in the view of "Stirling Castle," which concludes the graphic portion of this part; the castle-crested rocks seem really above your head, while the far-sketched plain beneath lies like a map before down-gazing eyes, making them dizzy in imagination. To utter in print all our feelings of admiration for this work of beauty, were impossible, but, with anxious hopes for its success, we bid it go on and prosper.

## LITERARY INTELLIGENCE.

The Rev. Professor Henslow, of Cambridge, has engaged in a new work, to be called *The Botanist*. It will be conducted by Mr. Maund, the author of *The Botanic Garden*, and is to combine all interesting points of the science, with popular and practical information.

Shortly will be published, *An Ornithological Guide*, with the view of supplying the Collector with a series of Labels, affording the Ornithologist a choice of systems. The work will also contain a chapter on Nomenclature, Reviews, and other topics relating to that branch of Natural History.

## ABRIDGED LIST OF NEW PUBLICATIONS,

*From March 8, 1836, to June 8, 1836.*

- A popular view of the Progress of Philosophy among the Ancients, by Joshua Toulmin Smith.
- Alexander's Commentaries on Puerperal Fever, &c. &c., 8vo., 5s.
- Alison's History of the French Revolution, Vol. V., 8vo., 15s.
- Armitage's History of Brazil, 1808—1831, 2 vol. 8vo., 24s.
- Back's (Capt.) Artic Land expedition in 1833—4—5, 8vo., 30s., 4to, 63s.
- Barrow's (John) Tour Round Ireland, sm. 8vo., 14s.
- Britton and Brayley's History of the late Houses of Parliament, 8vo. 1l. 1s., roy. 8vo. 2l. 2s., 4to. 4l. 4s.
- Combe's (Dr. A.) Physiology of Digestion, sm. 8vo., 7s. 6d.
- Continental (The) Traveller, &c., by a Travelling Lawyer, 6s. 6d.
- Cooke's (John) Sermons, at Birmingham, 8vo., 12s.
- Cottage Husbandry, 8vo., 4s.
- Edinburgh Cabinet Library, vol. 18 (China, vol. 1), 12mo., 5s.
- , vol. 19, (China, vol. 2), 12mo., 5s.
- , vol. 20, (China, vol. 3), 12mo., 5s.
- Eyton's History of the Rarer British Birds, 8vo., 10s. 6d., roy. 8vo., 21s.
- Catalogue of British Birds, 8vo, 3s 6d., roy. 8vo, 7s.
- Family Library, vol. 56 (Wesley's Natural Philosophy), 18mo., 5s.
- Forster's Life of Bishop Jebb, 2 vol. 8vo., 26s.
- Gardiner's Journey to the Zoolu Country, S. Africa, 8vo, 20s.
- Gould's (John) Birds of the Himalaya Mountains, imp. folio, 14l 14s.
- Europe, Pts. 1 to 15, imp. folio, each, 3l 8s.
- Monograph of the Ramphastidæ (Toucans) imp. folio, 7l 7s.
- Trogonidæ (Trogon), Pts. 1 & 2, each 2l 10s.
- Greenwood's History of the Germans, (Barbaric Period,) 4to, 52s 6d.
- Harding's Sketches at Home and Abroad, imp. folio, 6l. 6s., hf.-bd.
- Hill (Fred.) on National Education, 2 vol. 12mo., 12s.
- Johnson's (Rev. G. H. S.) Optical Investigations, roy. 8vo., 10s.
- Landor's (W. S.) Pericles and Aspasia, 2 vol. sm. 8vo., 21s.
- Langton's (R.) Narrative of a Captivity in France, 1809 to 14, 2 vol. post 8vo., 21s.
- Lardner's Cyclopædia, vol. 77 (Stebbing's History of the Reformation, vol. 1), 6s.
- , vol. 78, (British Statesmen, vol. 2,) 12mo., 6s.
- , vol. 79, (Russia, vol. 1,) 12mo. 6s.
- Latham's (Dr. P. M.) Lectures on Clinical Medecine, 12mo, 6s. 6d.
- Little's (Dr.) Treatise on Pulmonary Consumption, 8vo., 6s.
- Macneil on Railways and Locomotive Engines, 8vo., 5s.
- Macnish's Introduction to Phrenology, 18mo., 2s. 6d.

- Martineau's Rationale of Religious Enquiry, 12mo., 5s.  
 Mayo's Outlines of Human Pathology, 8vo., 18s.  
 Nichols' Collectanæ Topographica et Genealogica, vol. 3, royal 8vo., 21s.  
 Palmer's (Dr. S.) Dictionary of French Terms in Anatomy, &c., Part 2. 8vo., 6s.  
 Passavant's Tour of a German Artist in England, 2 vol. sm. 8vo., 21s.  
 Phrenology Simplified, 18mo., 2s. 6d.  
 Quain's Anatomical Plates of the Muscles, roy. folio, 2l 16s.  
 Random Recollections of the House of Lords, post 8vo., 10s. 6d.  
 Rankin's White Man's Grave; a Visit to Sierra Leone, 1834, 2 vol. sm. 8vo., 21s.  
 Raumer's (Von) England in 1835, translated by Sarah Austin, 3 vol. sm. 8vo., 24s.  
 Ross's Appendix to his Second Voyage, &c., 4to, 30s—l. p. 35s.  
 Silvertop's Geology of Granada and Murcia, &c., 8vo., 10s. 6d.  
 Smith's Catalogue Raisonnée, vol. 8 (Rembrandt), roy. 8vo., 26s.  
 Travelling Opinions and Scetches in Russia and Poland, sm. 8vo, 7s 6d.  
 Weber's Anatomical Atlas, complete, folio, 7l. 7s.  
 Wild's Sketches in Belgium and France, imp. 4to, 16s—India 21s.  
 Wood's Ornithologist's Text Book, fcap., 3s 6d.  
 ——— British Song Birds, fcap., 7s.

## METEOROLOGICAL REPORT.

Of the three months constituting the spring quarter of 1836, it may be remarked that they were strongly characterised by the proverbial uncertainty and rapid change of our English climate; in fact, throughout Europe, all accounts agree in relating the wet, wintery, and boisterous weather of March and April. In the former month, with the exception of two or three days about the middle, there were constantly heavy gales, with rain, snow, and a low temperature—and the latter was almost as wet and cold, but with less wind; several heavy snow and hail storms were experienced during the month, and it snowed heavily the whole of the day on the first. May, on the other hand, has been altogether a dry month, with a great majority of clear and cloudless days; but the wind throughout has hardly varied from North, N. E., and East—and, consequently, it has been very harsh, dry, and cold, together with a hot sun. The natural result has been, that the whole of the surface water has disappeared; and, notwithstanding the immense quantities of previous wet, vegetation is now suffering much from drought: the productions of the garden, with all kinds of spring crops, and the grass particularly. The nights have been constantly cold; and very frequently, in low situations, there have been sharp frosts. During several nights, both in April and May, strong auroral appearances have been witnessed: there was a considerable display on the evening of the 6th of the latter month, and also on the 19th.

Sunday, May 15, the day on which the late great eclipse of the sun occurred, was a beautiful day, hardly a cloud made its appearance in the sky. The first contact took place about *a quarter to two*; at *forty minutes past two* Venus was distinctly visible to the naked eye, a few degrees south of the zenith. At the period of greatest obscuration there was a subdued and solemn tone of colouring thrown over the landscape, and the strong shadows cast by the little crescent of light, were curiously softened at their edges, giving to them an unusual character, which the most ordinary observer could not fail of remarking. At this time the atmosphere was perfectly calm, the

sky of a deep-blue colour, and the tranquillity of the scene was broken only by the repeated crowing of the cock, and the lowing of some neighbouring cattle. The following is a table of the observed heights of the thermometer during this eclipse, which lasted two hours and forty-eight minutes:—

No. 1.—A thermometer, with the bulb blackened and placed in the sun's rays in a little recess against a south wall; No. 2—a delicate little thermometer, N. E. aspect, in the shade.

The hygrometer, at the beginning of the eclipse, was at 43°, and at the termination, 44°. Barometer, 29.905.

No. 1.	No. 2.	Time.	No. 1.	No. 2.	Time.
126°	70°	1h. 45m. p. m.	86°	65°	3h. 5m. p. m.
123	69.5	2h. 5m.	81	63	greatest obscura.
118	68	2h. 25m.	89	65	3h. 40m. p. m.
100	67	2h. 45m.	100	65	4h. 0m. p. m.
89	66	3h. 0m.			

Observers who witnessed the annular appearance of this eclipse, remark—“that the light of the sun, although sufficiently diminished to render both Venus and Jupiter visible, was far too powerful to allow any of the fixed stars to be seen.” Jupiter, notwithstanding his situation was accurately known, was vainly searched for at Malvern. From the preceding account, great doubt must be entertained respecting the stories of eclipses, where the birds have retired to roost, and domestic animals have appeared terrified; for anything darker than the obscuration from an annular eclipse, must last so short a period, that by the time the birds had perched themselves upon their roost, the fast-increasing light would call them on the wing again: at all events, these occurrences would not happen except in eclipses central and total.

Great Malvern, June 1.

MARCH.

1836 Mar.	Barometer.		Thermometer		Day.	Remarks.		Wind.
	Morn.	Even.	Max.	Min.		Night.		
1	28.620	28.465	45	37	Clouds, rain	Rain		S. W.
2	28.900	29.000	47	36	Sun, clouds, fine	Rain		Westerly
3	29.155	29.230	50	35	Fine, sun, clouds	Fine		Wstly., light
4	29.200	28.835	47	36.5	Fine, cloudy	Fine		Wstly., strng
5	28.880	28.890	48	35	Heavy showers	Light rain		S. W.
6	28.655	28.720	45	33	Heavy showers	Fine		S. W.
7	28.860	28.910	45	32	Showery, hail	Fine		S. W.
8	28.930	29.035	43	33	Sun, clouds	Fine		N. W.
9	28.895	28.670	41	31	Rain	Fine		S. E.
10	28.880	28.635	43	36	Cloudy, showers	Fine		Northerly
11	28.535	28.700	48		Heavy showers			S. W., v. h.
12	28.670	28.730	44	39	Heavy showers	Very windy		Westerly
13	29.135	28.965	47	36	Fine, sun, showers	Hvy. showers		S. W.
14	28.680	28.780	47	41	Showers	Hvy. shs., wdy.		W.N.W., bois
15	28.600		47	36	Rain, snow, hail			S. W.
16	29.270	29.500	45	33	Fine, sun and clouds	Very windy		Westerly
17	29.330	29.625	51.5	37	Fine, cloudy, showers			Wstly., bois.
18	29.830	29.840	57.5	47	Fine, cloudy	Fine		S. W.
19	29.710	29.640	57.5	43	Fine, all sun	Cloudy		S. W.
20	29.700	29.710	59.5	47	Fine, all sun	Fine		Light, Norly.
21	29.590	29.450	52.5	46	Fine, clouds, and sun			Light, Norly.
22	29.400	29.410	51	46	Showers	Fine		Light, Norly.
23	29.155	28.970	46	35.5	Cloudy	Fine		Strly, light
24	29.000	28.930	46	37	Hail, snow, and wind	Fine		S. W. strng.
25	28.490	28.640	45		Snow showers			S. W., strng.
26	28.720	28.980	42	34.5	Snow, and sun	Fine		N. W., bois.
27	29.000	28.710	44	28	Ground cov'd with snow	Fine		Westerly
28	28.235	28.620	39.5	33	Heavy rain	Heavy rain		N. W., strng.
29	29.050	29.100	45	32	Cloudy, rain p. m.			N. W.
30	28.900	28.850	51	39	Rain, clouds	Rain		S. W., bois.
31	29.200	29.375	47	39	Very windy	Showery		Wstly. bois.

Mean Max. 47.3      37.0 Mean. Min.

## APRIL.

1836 April	Barometer.		Thermometer.		Day.	Remarks.		Wind.
	Morn.	Even.	Max.	Min.		Night.		
1	29.125	28.800	43	34	Snow, the whole day			Southerly
2	28.905	29.270	42	30.5	Snow and rain			Westerly
3	29.410	29.710	46.5	29	Fine, sun, clouds			Norly., high
4	29.770	29.690	51.5	31	Fine, sun	Fine		Norly., light
5	29.500	29.245	48	38	Light showers, fine	Fine		S. W.
6	29.240	29.030	49	40	Showery	Rain		Norly., light
7	28.640	28.360	50	37	Clouds, sun, rain p. m.	Rain		Westerly
8	28.390	28.590	40	35	Rain and snow	Heavy rain		Northerly
9	28.710	28.810	45	37	Heavy showers	Showers		Northerly
10	28.970	29.065	48	38	Cloudy and sun	Rain		Northerly
11	29.090	29.100	54	37	Fine, all sun	Fine		Northerly
12	29.080	29.160	54	39	Cloudy, fine			S. W.
13	29.140	29.220	55		Cloudy, showers a. m.			S. W.
14	29.315	29.440	57	40	Cloudy, sun p. m.			Southerly
15	29.515	29.515	59	50	Fine, sun, clouds	Fine		Northerly
16	29.505	29.505	57	47	Fine, cloudy	Fine		Southy clm.
17	29.510	29.505	57	43	Cloudy	Cloudy		N. E.
18	29.455	29.460	53	40.5	Fine	Fine		Westerly
19	29.430	29.365	54	40	Cloudy, light rain p. m.	Fine		Westerly
20	29.260	29.160	52	45	Strong wind, rain p. m.	Cloudy, fine		S. W., strong
21	29.250	30.110	52.5	37	Cloudy	Light rain		Westerly
22	29.005	29.245	56	43	Fine, sun	Rain		Westerly
23	29.185	29.005	53.5	40	Showers, hail	Fine		Westerly
24	29.035	29.380	45	35	Rain	Rain		Northerly
25	29.490	29.505	55.5	32	Fine, all sun	Fine		Northerly
26	29.400	29.190	54.5	40	Cloudy, hail & rain p. m.	Fine		Northerly
27	29.220	29.370	47	32.5	Clouds, showers, sun	Fine		Northerly
28	29.285	29.265	52	33	Fine, shower	Fine		N. W.
29	29.290	29.195	45	32	Light snow showers	Fine		N. W.
30	29.145	29.145	50	28	Clouds and sun	Very clear		Northerly
Mean Max. 50.8.			37.3 Mean Min.					

## MAY.

1836 May	Barometer.		Thermometer.		Day.	Remarks.		Wind.
	Morn.	Even.	Max.	Min.		Night.		
1	29.205	29.345	48.5	33	Sun, clouds	Fine, clear		Northerly
2	29.380	29.505	51	34	Windy, sun, cloud	Fine, clear		N. fresh
3		29.300	52	32	Windy, sun, cloud	Fine, clear		N. fresh
4	29.130	29.120	51	38.5	Cloudy, shower	Cloudy		N. E., fresh
5	29.105	29.285	49	38	Clouds, heavy showers	Fine		N. Ely.
6	29.450	29.640	54	40	Cloudy, showers	Rain		N. Ely.
7	29.650	29.650	56	35.5	All sun	Fine		N. N. E.
8	29.650	29.645	59	39	All sun	Fine, clouds		N. Ely.
9	29.630	29.600	58	39	All sun	Fine		N. Ely.
10	29.600	29.550	56	38	All sun	Fine, clear		N. Ely.
11	29.520	29.515	67	44	All sun	Fine, clear		Westerly
12	29.530	29.625	64.5	43	All sun	Fine, clear		Variable
13	29.700	29.800	65	40	All sun	Fine, clear		Northerly
14	29.910	29.920	66	44	Sun, few clouds	Fine, clear		Northerly
15	29.920	29.905	45	45	Sun, few clouds, <i>eclipse</i>	Fine		Northerly
16	29.905	29.890	65	47	All sun	Fine, clear		Northerly
17	29.890	29.800	70.5	45	All sun	Fine, clear		Northerly
18	29.710	29.660	73	51.5	Sun, few clouds	Fine clear		N. Ely.
19	29.640	29.510	60	44	All sun	Fine		Northerly
20	29.415	29.320	68.5	48	Sun, cloudy	Fine, clear		Northerly
21	29.355	29.360	64	49	Mostly all sun	Fine		N. Ely.
22	29.305	29.220	58	42	All sun	Fine		Easterly
23		29.380	53	40.5	Cloudy, slight shower	Cloudy		Easterly
24	29.475	29.590	55	42.5	All sun	Cloudy		East, fresh
25	29.605	29.610	58	39.5	All sun, <i>cold wind</i>	Fine, clear		E. sterly
26	29.660	29.700	57	41	Fine	Fine, clear		Easterly
27	29.725	29.705	60	38	All sun	Fine, clear		Calm, vble.
28	29.720	29.705	61.5	42	All sun	Fine, clear		Easterly
29	29.705	29.700	61	46	All sun	Fine, clouds		Easterly
30	29.655	29.540	61.5	45	All sun	Fine, clear		Easterly
31	29.450	29.345	60	45	All sun	Fine, clear		N. E.
Mean Max. 59.5			41.5 Mean Min.					

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ERRATA.—Page 70, line 4, for *fogorum*, read *fagorum*. In part of the impression, page 119, line 13, for *carescens*, read *canescens*. Page 198, last line but three, for *Ist.* read *Hist.* Page 199, line 36, for *mendacium*, read *mendacium*. Page 200, line 7, for Virgil, read Vergil. Page 293, line 29, for *Fistularia*, read *Solenostoma*; line 37, for *F. Paradoxa*, read *S. (Fistularia) Paradoxa*.

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