

Accounts of Books. The Natural History of Staffordshire. By Robert Plott L. L. D. Keeper of the Ashmolean Musæum and Professor of Chymistry in the University of Oxford.

There is very little need to take notice of the Method of this work since it is drawn up according to the pattern laid down in the *Natural History of Oxford-shire* written some yeares since by our *Author*. He begins with the Heavens and Air, giving account of those unusual Meteors, which have sometimes appeared in this Countrey; such are the *Solar Rain-bow* observed by Mr. *Wolverstan* Dec. 4. 1680. which appeared at first about the *Azimuth* of Two, two hours before the Sun, and thro the thin diaphanus clouds was mistaken for another sun, but soon after exhibited the Usual colour of a solar Rainbow: as also several Lunar *Iris's*, and very severe Winter Tempests. Here he takes an occasion to deduce the cause of the circles in Grass called commonly *Fairy Walkes*, which he doth not think do owe their cause to the *Field Conventicles* of *Demons* and *Witches* nor to the subterraneous Courses of *Moles* and *Ants*, but rather to percussions made by *Lightnings*, which breaking out of the Clouds in Concave Cones have made Circles on the ground conterminous to the Rims of those Cones, and according as the Cones breaking forth from the clouds have had a greater or lesser inclination to the *Horizon*, and so have either touched with all the Base, or only dipt with the Lower part, have made Circles, or Quadrants, or Sextants, &c. Here likewise he relates the wonderfull Raines, which have brought Frogs, whose Generation cannot (says he) be referred to the Ordinary way by seed *Cap. I.*

He then comes to treat of Waters and the Texture of Ambient Air, the Conservatory of all the Exhalations, which are perpetually forced by the suns heat out of the Earth; as

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also of the wonderfull Intermittent Springs observed up and down in this country, which leads him to the Examination of the causes of the Rise of Springs and Wells, of which the World has had a Relation some time since, when we gave an Account of Dr. *Plott's* Latine Book *De Origine Fontium*, the Reasons whereof are here again at large repeated in *English*. Afterwards he particularly enumerates what Fountaines are Medicinal, as those at *Willowbridge*; what abound in Salt, as the Brine Pitts at *Weston*, which tho' inferiour to those in *Worcestershire* and *Cheshire* by reason of the weakness of the Liquor, yet after a tedious proceſſe to Crystalise the Salt, become very useful to the whole Countrey; and lastly, what are for Colour, or Taste, or any other Accident, remarkable, as a Well between *Over* and *Nether Tene*, which in Autumn sends up a great Quantity of small Bones of Frogs, which creeping into those Caverns, whence the Springs come, are killed by the Cold; and the acidity of the water corroding the flesh, those Bones are driven up and carried away by the streame of the Fountain. *Cap. II.*

From Waters our Author passes to Earths and Minerals: Of the first of which the Number is very great, especially of fine Clays for Pottery-Ware and Bricks: But the Coale-Workes with the Iron-Mines most deserve our consideration. The Coale-Mines are very accurately described, both as to their Inclining Position, or Dipping under the surface of the Earth, and as to their several differences in goodness and usefulness, such are those of *Cannal*, with which the Choire of *Litchfield* Cathedral is paved; those of *Wednesbury* most fit for Culinary Fires, &c. Upon this occasion the Nature of Damps is examined, which are resolved into the stagnation of the Air contained within the Rifts of the Coale, that are emptied of the running Water (which in Virgin-Mines always fills the Rifts, and keeps them from this stagnating Air) by the *Soughes* made for that purpose; or which sometimes are occasioned by working so deep, as that thereby the Intervention of the upper Air is wholly stoppt. *Cap. III.*

Before we come to the Iron-stones, our Author considers those great Quarries of Marble, Alabaster, and other usefull stones dispersed up and down the Country; all which he supposes to be made by a Petrification upon the meeting of the solutions of Aced and Alkalifate salts, which compound transparent, opake, and semiopake stones, as they are mixed with sulphures or Earths of different finesses. He considers Pebles and Firestones by themselves, as wherein the Sulphur is predominant; and therefore are they easily Calcinable. When he comes to the Iron-works he explains the way how their Fornaces are built, how they melt their Iron-stone, how the goodness is discernable, and the like. As for the Copper-mines tried by Sir *Rich: Fleetwood*, they would turn to no Account.

Other stones have been sometimes found in *Staffordshire*, which have had a determinate Form, as the *Asteria* of a Pentagonall surface, with Rayes issuing from the Center, and to each angular point. These are either such as resemble Animals or some of their Parts: so one was found like a Pullets heart, others like most Testaceous fishes, which have been long thought to be petrified shells, tho some Naturalists are perswaded to the contrary; or else such as are like Vegetables, whereof in mineral stones and Oares there is great Variety. Gold Oare hath resembled Branches of Trees, and *Wormius* had a piece of silver Oare exactly like a Vine; which Figures are ordinary in *Bobemia* as *Balbinus* informs us, and when he afterwards speakes of the *Entrochi* and *Trochit* he explains very curiously several Figures not taken notice of by Mr. *Beaumont*. Cap. 5.

Next he comes to Plants, tho' there he owns little can be added to what Mr. *Ray* had found in his accurate Catalogue of *English* Plants, yet he found some few omitted by him, as a sort of *Cup-Mosse* with Scarlat Heads, and some *Fungi* [tho the *Fungus Phalloides* is described, and a *Cutt* annexed in the 2d. Edit. of Mr. *Rayes* Catalogue] together with some few Trees, which Mr. *Ray* took for strang-

ers to our soil, as the Firrs, which Dr. *Plott* seems to thinke are Natives here, which he grounds upon the great Numbers that have bin digged up in the *Mosses*, and can by no means be allowed to have bin under ground ever since the *Flood*; but were rather Trees, which being felled and not presently used, gathered and kept in the Rain Water, which in time bred there a *Marsh*, and being buried in earth by those frequent *Deferrations* from the adjoining Hills, in time were so far covered, as we now see them. Some Trees he finds of wonderfull Growth in this Countrey, as the *Wiche-Elme* cutt down in Sr. *Harvey Baggot's* Park, that weighed near 100, Tuns: and that this may not be thought incredible, all the Demensions are set down with Attestations of Workmen and of Sr. *Harvey* himself. *Cap. 6.*

Under Brutes our Author comprehends all the irrational liueing Creatures. amongst birds he takes notice of a Swan with Red Legs, and a sort of *Colymbus* or *Ducker* not described by Mr. *Willughby*. The Pewet-Catching in *Norbury* Pond, with their way of Living, and their affection to the Family of the *Skrymsbeers* is exactly described. Of Insects he describes a water *Eruca*, a white Earwig and several more. He found amongst Fishes a *Mustela Fluviatilis* with yellow spots, not observed by Naturalists. Speaking of Eels, he observes many which goe from one Pond to another in search of Provender, and then shews by the concurrent suffrage of Natural Historians, that it is no such strange thing; as is not also the finding of Toades in Trees and stones, whereof many instances are produced, which principally (says our Author) comes from a Toades being enclosed in a narrow Rift in winter, which afterwards closing too hard, imprisons them there, without killing them; Toades having little blood, and very viscous juices, require not much perspiration. In discoursing of sheep, he solves the Problem why the Testicles and Horns *se mutuo ponunt ac tollunt*, because those excrementitious juices which form hair, horns and wooll are more vigorously thrown out in Males than in Females,
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and in those when uncastrated, than when guelt; All a long, many Monsters and *Lusus naturæ* are described, and many cutt in Brasse. *Cap. 7.*

The next Chap. is of men and women. And first he speakes of a man in *Stafford-shire* who married being 108 years of Age, and had a child extremly like him: next of a woman who had a Monstrous Birth, with a Bagg filled with *Grinder-Teeth*, and very hairy: of another woman who was brought a-bed without Knowing she was with child. [This *Dr. Plot* sayes is a case he never before met with, but it may be confirmed by the like instance of a young Woman, the wife of *Philip Baker jun.* of *Wrentham* in the County of *Suffolk*, who was also brought to bed of her second child, a lusty Boy, last Year, without any suspicion of being with child; for about three days or a week before, she took Physick for a *Tympathy*, which the good Women of her acquaintance perswaded her she was troubled with] Then our Author speakes of Famous men born in the County, as Arch Bishop *Sheldon*, Mr. *Ashmole*, &c. And afterwards of those who are otherwise memorable for odd and occasionall things, as the Boy of *Bilson*, who counterfeited being bewitched (where our Author takes occasion to differ very materialy from the old Relations); *Mary Foster* who recovering of a Fright, slept 14 days and nights: severall deaf men who could understand what was said by the motion of the speakers Lips: then he mentions others eminent for Piety, particularly in building Churches, as Mr. *Cbetwind* who built a noble Church at *Ingestre*, and others whose deliverances from dangers are very remarkable, as our Late Dread Sovereign *K. Charles* the seconds Preservation by *Coll. Lane*, &c. Afterwards when he comes to speake of the Corporation of *Masons* he fully confutes the Fabulous Accounts, they give of their Charter Privileges; the rise whereof they date from *St. Amphibalus* alias *S. Albans Cloake*: he concludes with a numerous Catalogue of men and women, who have lived to an Extraordinary Age. *Cap. 8.*

In the next Chap. our Author treats of the most curious things relating to Arts in this County, such as in Water-Works is the Jack turned by Water falling vpon a Wheel after the manner of an Overshoott Mill. So in Agriculture he examines all sorts of Compost, wherewith they improve their Ground, as Marles, Lime-stones, Esse or Turf burnt to Ashes, and Turfes and Dung. He shews what Land requires any particular Compost; and what increase, when well manured, they usually produce. From Husbandry he passes to Buildings, where he describes the Cathedral at *Litchfield*, and upon account of its declination from East. towards N. he discourses of the reasons that induced *Pagans* and *Christians* to build their Temples E. & W. He curiously describes the stairecase to the steeple of the Collegiate-Church at *Tamworth*, which is made with two *Cocblea's* winding one within the other round the same *Cylinder*, so that one may ascend in one *Cocblea*, and another in the other, unseen by each other: One *Cocblea* opening to the Church-yard and the other in the Church. He then tells of those curious Iron Works, Locks, Boxes, Spurs, &c. for which *Wolverhampton* in particular, and this whole County in General is so much admired by strangers. Amongst other things he describes that remarkable Bridle for *Scolds* used in some parts of the County, which put into their mouths hinders their speakeing, and effectually shames them, whilst they are carryed over the whole Town where they live, thus *Gagged*. *Cap. 9.*

The Antiquities of this County are either *British*, *Roman*, *Saxon*, *Danish* or *Norman*. Near *Wrottesley* there is a Ditch 4 Miles in Circumference, cross which there are to be seen Remains of Streets, and here and there Foundations that seem to be of *British* Original; as also these Instruments of Stone like Darts and Arrow Heads, used by the *Britans*, which are here sometimes seen up and down. The Principal *Roman* Monuments are, *Watling-street*, and *Icknild-street*, which cross each other in this County, on which were the Stages where they lodged their Troops; as *Etesetum*, now *Wall*, and *Pen-nocrasium*

nocrasum now *Stretton*. In the *Saxon* time we find *Litchfield* raised by *Wlphere* K. of the *Mercians* to the Honour of *St. Ciadda*; *Wlphere* Castle at *Berry-bank* has yet some Ruines which are vifible: *Tamworth* was K. *Offa's* Seat; and *Wolverhampton*, or *Wulphrunes-Hampton*, called fo from *Wulphrunes* Wife to *Athelm* Duke of *Northampton* in K. *Edgar's* Reign, was by her endowed with a *Deanary* and *Prebends*; and feveral *Lows* or fulphurous *Hillocks*, raised by the *Saxons* are to be feen up and down, Marks of thofe *Bloody Engagements* between them and the *Danes*. There are no *Danifh* Antiquity, more remarkable than their wooden *Almanacks*, ftill in ufe in *Denmark* and *Staffordfbire*; one of which ufed in this County, our Author accurately defcribes, and explains its deviations from thofe now made in *Norway*. Laftly he clears many *Customs* and *Tenures* brought in by the *Normans*, as the Chufing the King of the *Minftrels*, and the *Bull-running* (inftituted by *John of Gaunt*) at *Tulbury*, the claiming of the *Gammon* of *Bacon* at *Whitchnover*, and feveral others. *Cap. X.*

2. *SCIOTERICUM TELESCOPICUM* or
a new Contrivance of adapting a Telescope to a
Horizontall Diall, for obferving the moment of time
by day or night, by Will: Molineux Esq. R. S. S.
Dublin, 1686 in 4to.

THE Author dividing this Book into XI Chapters, he firft declares the Ufe & Advantage of this new Contrivance, which he conceives fo great, that fince the firft mention of *Dials*, he hath not heard of a more plain and eafy addition for their advancement; efppecially, when the Obfervation of the exact moment of time is fo neceffary, that neither *Geography*, *Navigation*, or *Astronomy* can be brought to perfection, nor the *Longitude* or the Truth of *Astronomical* Tables

Tables fully discovered. The Methods which commonly are used for observing the Moment of Time, are either by Dials, or by taking the Suns Altitude by day, or that of Stars by night; or by observing the *Altitude* and *Azimuth* of the Sun or Stars; or by the *Transits* of the Sun or Stars through the *Meridian*, or the coming of some Circumpolar Stars in the same Verticle with the Pole-Star. All which Methods are attended with many inconveniencies and difficulties, the which our Author believeth his Way will avoid; at least the most material ones, which commonly arise in the Practice. For whereas Dials must be very large, if there shall be any division for Minutes made discernable, so the uncertainty of the Shadow cast from a large Gnomon renders them useles for niceness, when also their service is only by Day, and when the Sun shineth. All which hindrances are taken off by this new contrivance of our Author, where also there is no need of any Calculation of Oblique Spherical Triangles, all being done by a plain and simple Observation, and by the Addition and Substraction of two or three small Numbers; and that to such exactness, that not a quarter of a Minute, or 15 Seconds shall be wanting, performable also both by day or night. Describing therefore his Instrument in the 3^d. Chap. he tells, that the contrivance consisteth in making a very large *Horizontal Dial*, adapted to the Latitude of the place where the Observation is to be made, capable of receiving divisions into minutes, and parts of a minute, fitted with a large, strong, and double Gnomon: He calls that a double Gnomon that castes its Morning Shadow from its Western Edge, and the after-noon Shadow from its Eastern Edge, and the Noon-shadow by its Thickness. This Dial is to be furnished with two pair of Sights or Rules, one is to serve in the Morning, or for Stars on the Eastern side of the Meridian, the other to serve in the afternoon, or for Stars on the Western side of the Meridian. Each of these consists of two moveable Rulers; one he calls the *Horizontal Ruler*, the other the *Gnomonick*, or *Stile-Ruler*. These two Rulers must
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be so adapted that their two Edges, which are next to the *Gnomon*, may be perpetually in the same Plane with their correspondent edge of the *Gnomon*. On the *Stile-Ruler* he puts *Telescopic Sights*, with *Cross-hairs* in their due place. This Instrument is represented by a large Scheme annexed to the end of the Book. How every part of this Instrument must be framed, and the *Stile-Nut* and *Ruler-Joynt* composed, is at large described in the 4th Chapter. As for *Telescopic Sights*, and their true adjusting; he tells Chap. 5. how to put in the *Mensurator*, or to place the intersection of the *Cross-Hairs*, so that they may stand neither too high nor too low, nor too much to the right or left hand, which else would produce Errors in the *Azimuths* and *Altitudes*: also for making the *Line of Sight* or *Collimation* parallel to the sides of the *Ruler*, he applyeth two Pins, which will serve in the same manner for finding the Declination of the Magnet, whereas the Ways proposed by Mr. *Hauterville* and *Sturmius*, seem to be defective. The way of setting the dial to his true Position, is explained in the 6th Chap. where he tells that two things are requisite, first that the plain of the Dial be in an exact Horizontal Posture, by accurate Levels, and secondly, that the Meridian, or 12 a Clock-Line, be exactly towards South and North; for that being 12 minutes of a Degree ill placed, will make a Dial err a minute of Time, in the Latitude of 53 Degrees: and for this Reason he shew'd Chap 7. how to find the Meridian Line by his Instrument, in taking several equal Altitudes of the Sun in the fore and afternoon, and having drawn the *Azimuths* thereto, the Bisection of the included Angles, will shew the true Meridian Line, which also may be found after the same manner at night by the Stars. But coming finally in the 8th Chap. to the manner of observing the Time, after the Dial is justly levelled and stated; he shews it to be done by looking at the Sun through the *Telescopic* or *Stile Ruler*, and bringing the *Mensurator* upon the Sun's Center; and then the Horizontal *Ruler* shall cut the hour, minute, and part of a mi-

nute most exactly in the Dial. By the same Telescopicall Sight, the motion of the Sun will be perceived so quick and nice, that two beats of a *Second-Pendulum* may be determined, and the time of the day or night to 3, 5, or 7 Seconds discerned. The way of using this dial on the Stars by Night is much the same, only that for these are requisite certain Tables (put at the end of the Book) of the Sun and Stars temporary Right-Ascensions: For in looking at the Star through the Telescopic-Ruler, the Horizontal-Ruler cuts the Stars horary distance from the Meridian, to which adding the Stars Right Ascension, and from the sum subtracting the Suns Right Ascension, the remainder gives the Hour, Minute, and Second of the Night; and by this Method inverted, the Author thinketh the Right Ascension of any Star may be easily had. The way to calculate the Suns and Stars Ascensions, he declareth in the 9th. Chap. and also Chap. 10, the Equation of Time, upon supposition of the equability of the Earths Revolutions; he shows also by a Calculus how to correct the length of the *Pendulum* of a Clock, and giveth in the 11th. and last Chap. Tables of the Circumpolar Stars their Calculation and Uses.

L O N D O N,

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