

called *Berkelſe-Sea*, whose bottom in many places is very mooriſh. This water is in Winter very clear, but about beginning or in the miſt of Summer it grows whitish, and there are then ſmall green clouds permeating it, which the Country-men; dwelling near it ſay is cauſed from the Dewſ then falling, and call it *Henry-dew*. This water is abounding in Fiſh, which is very good and favourable. Paſſing lately over this Sea at a time, when it blew a freſh gale of wind, and obſerving the water as above deſcribed, I took up ſome of it in a Glaſs-veſſel, which having view'd the next day, I found moving in it ſeveral Earthy particles, and ſome green ſtreaks, ſpirally ranged, after the manner of the Copper or Tin-worms, uſed by Diſtillers to cool their diſtilled waters; and the whole compaſs of each of theſe ſtreaks was about the thickneſs of a man's-hair on his head: Other particles had but the beginning of the ſaid ſtreak; all conſiſting of ſmall green globules interperſed; among all which there crawled abundance of little animals, ſome of which were roundiſh; thoſe that were ſomewhat bigger than others were of an Oval figure: On theſe latter I ſaw two legs near the head, and two little fins on the other end of their body: Others were ſomewhat larger than an Oval, and theſe were very ſlow in their motion, and few in number. Theſe *animalcula* had divers colours, ſome being whitish, others pellucid: others had green and very ſhining little ſcales; others again were green in the middle, and before and behind white, others grayiſh. And the motion of moſt of them in the water was ſo ſwift, and ſo various, upwards, downwards, and round about, that I confeſs I could not but wonder at it. I judge, that ſome of theſe little creatures were above a thouſand times ſmaller than the ſmalleſt ones, which I have hitherto ſeen in cheeſ, wheaten flower, mould, and the like.

*An Account of ſome Books.*

- I. *Die AFRICANISCHLE Landſchaft FETU beſchrieben durch Wilhelm Johan Muller von Harburgh; Gedruckt zu Hamburgh, 1673, in 120.*

**T**His piece, compoſed and printed in *High-dutch*, containing divers not inconfiderable obſervations made by an Author, that lived eight years in *Fetu*; it was thought, the Reader would not be diſpleaſed to find ſuch of the Obſervations as are ſutable with the deſign of theſe Papers, Engliſhed, and transferred hither.

The Province or Country of *FETU*, (the ſubject of this Book,) is ſituate about the middle of the Gold-coaſt in *Guiny*, in  $5\frac{1}{2}$  deg. Northern latitude: In length reaching from *Cabo Corſo* to the borders

ders of the Kingdom *Abraham Bu*; in breadth, from *Annoma Gruf-fu*, (a Sea-port between the mountain *Congo* in the Land of *Sabu*, and *Amamfro* or *Friedrichs-burg*, belonging to the King of *Denmark*,) to *Commende*. Through the middle of it runs a River, which discharges itself at *St. George della Mina* into the Sea.

The Author having discoursed at large of the Towns, Forts, and Villages of *Fetu*, describes the Nature and Quality of that Country and its Inhabitants. The Soyl so fertile, that there is a double Harvest every year, *viz.* in *July* and *December*; but the Air very unhealthy to strangers, especially in the rainy season, of *April*, *May*, and *June*; not so to the Natives, who are not afflicted with that pestilential Feavor, which commonly invades our *Europeans* living there; though they, as well as Forrainers, be troubled with a kind of Worm, that breeds in the flesh, which, in the opinion of the most intelligent, proceeds from the drinking of troubled and fetid waters, which the poorer sort, that cannot get or pay for their Palm-wine, must be contented with. For the cure of which worms they use Palm-oyl, wherewith they anoint the place which the insect will issue at, where when it appears, they wind it gently about a slender twig, and so fetch it out whole, being very careful that it break not.

As for the *Natives*, they are Black; though the Author observes, that their Children, when first born, are not so, but of a white-yellowish colour, which yet in a month or so changeth into black. They take great care of keeping their teeth very white and clean, chawing to that end little peeled favoury sticks, and therewith rubbing them; which wood is not named here, but is said to grow in *Azania*, a neighbouring Kingdom. These Blacks are here commended for their excellent memories, which they cultivate by the frequent repetitions of ancient actions and passages hap'd in their Country: To which is here added an Observation of their singular ability in casting, even large, accounts meerly in their heads, without using any writing or counters. Their whole year consists only of *Eight* months; and to avoid mis-reckoning, they tie eight knots in a string, one every time that a new Moon appears. And by these knots they also reckon their Age.

Concerning the Dispositions of these *Blacks*, they are humane and kind when not provoked, and liberal enough (according to our Author,) and very compassionate to one another, having also a great sense of gratitude: Mean time they are idolaters, revengeful and choleric when provoked; luxurious, thievish, false, and masters

masters in palliating or maintaining falsities; wherein our Author notes them to be so stubborn, that they will rather suffer themselves to be tortur'd to death, than confess the truth. On which occasion, 'tis here related, that a Youth endured a very sharp whipping with thorny rods, together with a rubbing of his wounds with Salt and Limon-juice, and a burning of the middle of his fingers and toes with a lighted Match, rather than that he would confess the thing he was accused of.

Touching their *Worship*, and Civil Government, the particulars thereof are very largely described here, but are besides our purpose. It seems, (to touch so much in short,) that they, upon occasion, by their Priests consult their Idol, call'd *Oboffum*, *Summan*, or *Fitifo*, and receive Answers from him, that they sacrifice to him, keep Holy days in honor of him, and eat and drink certain things in his name. They have a *King* over them, who yet may decree nothing but by the approbation and consent of the chief persons of the Nation. He proceeds in the administration of Justice not according to any written Laws, but received Custom, punishing Murther and Theft with death, as also such Adultery as is comitted by a Concubin; a true wife being, in that case, repudiated. In their Warrs they use Musquets, Bows, and Arrows, Zables, Javelins; and for their Trumpets they employ great Elefants-teeth. They poison their darts with a preparation of Crocodils-gall.

As to their Oeconomy, our Author relates their manner of Building, Householdstuff, Washings, Cloathing, Painting, Meat, and Drink, Marriage, Weddings, Education of Children. 'Tis somewhat strange, that they relish their Fish most, when such of them as are unsalted have layn several days expos'd to the Sun, and are become stinking. Elefants-flesh is also a great delicacy, amongst them, even after it has been dead many days, and stinks like carrion. Their drink is Water, Palm-wine, and Bier, which latter they make of the great Millet and Water; after they have malted their Millet, by infusing it in water, and so letting it shoot or sprout, and then exposing it to the Sun to dry. They are exceedingly addicted to drink French Brandy, in comparison of which they despise all strong Waters made of Corn, and all that sort which comes hither from the *Barbadoes*, call'd *Kill-devil*.

Discourfing of their Marriages and Weddings, he taketh notice of an Herb, (which yet he names not) bearing a yellow flower, which is shut in the morning and the whole day, but opens about evening;

evening; wherewith their women wash and rub their bodies before they are bedded the first time, from a persuasion that it maketh fruitfull.

They have a very barbarous custome amongst them, to kill those of their children, that are born with the least monstrosity or defect in any of their limbs; as also one of such twins, as are born of different sexes, *viz.* that which they like worst; though, when twins are of one and the same sexe, they preserve them both alive. Their Women brought to bed, are generally able to go abroad the second or third day, and to betake themselves to their ordinary work and labour again. They never swaddle their children, but loosely put about them a piece of lincloth, and so lay them upon a straw-matt to the mother.

What concerns their *Husbandry*, they have chiefly two sorts of Corn, which our Author calls the great and small *Millet*, but by his description seems to be the same with Turkey-wheat; of which one grain often produces two or three ears of Corn, which not seldom yield five or six hundred grains. They use no Plow, but a Mattock, for sowing; making therewith a furrow of three or four fingers deep with one hand, and fetching the seed out of a little sack, tyed about their body, with the other. And instead of a Sith they make use of a great knife.

The Juyce of their Palm-trees is very agreeable both to the tast and smell, when drunk fresh; and grows so strong by standing but one night, that it will soon intoxicate. 'Tis used, when recent, against Obstructions, it being then considerably laxative; and 'tis likewise so very diuretique, that very few among the Blacks are afflicted with the Stone or Gravel. Besides, it causes no head-ach, though it be drunk plentifully. There is two sorts of them, of which they count, the one Male, the other Female, *this* bearing a fruit resembling peeled Plums, and yielding an Oyl by expression; the *other* bearing no fruit at all. The Oyl is both medicinal, esculent, and serving for Lamps. The trunk of this Tree is good fuel; the branches serving for the covering of their houses; the Leaves for thred to sew their cloaths withal.

Their chief and best fruits are, the *Banannas*, *Baccoses*, *Enjamos*, *Patattas*, *Aggwivre*, *Crosse*, *Turreba*, *Aduba*, *Malaguettes*, *Colà*, *Cocos*, *Brambas*, *Anassas*.

The *Banannas* grow on a Tree having no wood at all, but only meer leaves, which twist together, sometimes to a stem of a German Ell thick, which when 'tis grown up two or three such Ells high, it

shoots forth other leaves, &c. And as oft as new leaves grow out of this Tree, the former dry up, until the Tree do arrive to its full growth, and the fruit to its due perfection; which how it grows, and how pleasant it is both to the Eye, Taſt, and Smell, is here largely deſcribed.

The *Baccos* differ from the former only in this, that this fruit is ſhorter and thicker, and within whiter; the taſt alſo and ſmell more pleaſing. Of it 'tis noted, that being cut thorow into ſlices, it preſents a perfect Crucifix. Whether Imagination do not herein help Superſtitious men, I muſt leave to the Autopſy of ſevere Examiners of truth.

*Enjamos* is like to the greater ſort of our European Turnips, though not ſo juicy and ſweet as they. Their *Patattas* are ſo good, that if they be boyled with unfalted fleſh, it gives the broath and meat ſo agreeable a taſt, as if Roſe-water had been put to it.

*Aggwiore* is their Sugar-Cane. *Croſſe* is like our Haſel-nuts, but hath no hard ſcale. *Turreba* is a ſort of Earth-apple. *Aduba*, a kind of Bean. *Malaguette* is their pepper, inferior to that of the *East-Indies*. *Colà* is as bitter a fruit as bitter Almonds, growing upon tall trees, and in coats like Cheſtnuts: The *Blacks* that take no Tobacco, uſe it to make a cup reliſh. *Brambas* is a ſmall round Limon, of much juyce, and a thin ſhell, bearing leaves of an admirable fragrancy when rubbed. The expreſ'd juyce of it, ſaith this Author, is ſent into *Europe* not only for a condiment to meat, but alſo for the uſe of *Dying*. The *Anaſſas* is in the Authors Judgment ſo excellent a fruit, that he thinks it cannot be ſufficiently commended, for its pleaſingneſs, both to the Eye, Taſt, and Smell, inſomuch that he little ſcruples to affirm it to be the beſt Vegetable production of the Earth; obſerving, that the Engliſh at *Capo Corſo* call it the Pine-apple, and that it grows to the bigneſs of a Melon, changing its greenneſs into an Orange-colour when ripe. The taſt of it ſweet-piquant.

Speaking of their *Fiſhery*, he reckons up many ſorts of Fiſh, they are ſtored with, among which are the *Dorado*, *Bonito*, *Oyſter*, and *Eſſua* or *Tubaron*; of which latter ſort he obſerves, that they emit no ſeed into the water, but couple together like Whales, he having ſeen a *Female-Tubaron* taken, and ſix or ſeven of her young ones cut out of her belly.

They have Oxen, Cows, and Goats, but they are no good meat; yet their Sheep well-taſted, but very dear. *European* Hoggs, Geefe, Ducks and Hens will not thrive there. They abound in Deer, Tiggers,

gers, Porcupins, Civet-cats, which latter the more they are fed with pulse of meal and honey, the more Civet they yield.

Discourfing of their *Salt*, he takes notice, that they let in Sea-water, which having flood awhile, is in great Earthen vessels put over a great fire, and boyled to Salt, which they let dry in the Sun, often stirring it; whereupon 'tis found both fo strong and white, that 'tis inferior to no European Salt whether in taft or whitenefs.

Speaking of the Commodities, bought of the Europeans by thofe of *Fetu* and their Neighbours of *Acania*, he obferves, that they are by Slaves carried to *Affingrud* in *Acania*, and from thence through *Alance* to *Accabel*, which he faith is another and a potent and opulent Country, twelve dayes Journey behind *Acania*, and that very Country, wherein are thofe rich *Gold mines*, out of which comes the moft and beft Gold, for which the European Commodities are brought, &c.

II. *The firft Book of the ART of METTALS, written in Spanish by Alonfo Barba, &c. and Englifht by the R. H. Edward Earl of Sandwich. London, 1674. in 8°.*

**T**HIS Piece being originally written by one, that had lived a confiderable time in *Peru* at *Potosi*, and having been thought worthy to be Englifht by fo noble and intelligent a perfon, as the late Earl of *Sandwich*, we cannot but take notice and give fome account of it to the Curious in this argument; paffing by thofe particulars that are obvious and common, about the affociating fubftances of *Mettals*, (fuch as *Stones*, *Earths*, *Juyces*,) and their various qualifications, and confining our felves to thofe that are lefs fo, *viz.*

1. *That the Provinces of the West-Indies do as much abound in Salt, as they do in Mettals; that a piece of the Sea between the Lipas did coagulate into a Crystallin Salt; that the Salt-pits, call'd Garci Mendoza, are forty leagues long, and (where narroweft) fixteen broad; that in the Lipas, four leagues from the Mines of St. Chriftopher de Achocolla, in the middle of a Lake, on the top of a Hill, the water boyling up, there is one fmall gutter, where it running over, the water ifued forth becomes red Salt, as it runs along in little channels, and proves a mighty ftrong Salt, having double the vertue of common Salt in the working of Metals. Which Salt being an excellent remedy for the Dyfentery, 'tis thought to have a mixture of a kind of red Allum, found alfo in thofe parts.*

2. *That that Sulphureous liquor Naphtha and Petreolum will take fire at a great diftance from the flame; here confirm'd by a fad*

instance, in which it came to pass, that a Nobleman, having a Well in his ground, the water whereof was mixed with *Petreeol*, and much of this water, by some cracks in the wall, running to waste, commanded it to be repaired by a labourer, who being let down into the bottom of the Well with a candle (in a Lanthorn,) to see this work, the *Petreeol* immediately through the holes of the Lanthorn sucked, (as they speak) the flame to itself, and set fire on the whole Well, which instantly discharg'd it self like a piece of Cannon, and blew the poor man into pieces, and took off an arm of a Tree hung over the Well.

3. That, though *Albertus M.* and others do think, *Marcasites* contain no mettall in them; yet Experience has taught the contrary; seeing that the diggers of the Mines of *Monferrat en los Chichas* found the Ore to contain as much Silver as it did of *Marcasite*; and that in the Mountain of *Potosi* there is a fine sort of this *Marcasite*, which is incorporated with the black Silver-ore, and is a certain sign of its richness.

4. That where *Orpiment* is found, 'tis a certain sign of a Mine of Gold, whereof also it always contains some little particle.

5. That there is a water in *Peru*, near *Guancavelica*, of which all the cattle that drink it dye; and which they take and put into moulds of what form and bigness they please, which being for a few days expos'd to the Sun, is thereby made perfect stone, with which they build their houses: And that in the mountain *Pacocava*, a league from the Mines of *Verenguela de Pacagues*, there are springs (that are whitish, inclining to a yellow) of so petrifying a nature, that as the water runs along, it concretes into very hard and weighty stones, of different shapes.

6. That there is a stone in the province of *Atacama*, that is six palmes (or about four foot) in length, and four inches and a half in breadth, and two inches thick; in form like a Table, full of delicate clouds, made by the composition of its colours; some being red, and shining, others more obscure, as black, yellow, green, and white: Upon the blackest spot in all the stone is resembled Snow, as 'twere, falling upon it, or Milk, according as the White happens to be mixt with shadow.

7. That, whereas concerning those stones, call'd *Conchites*, resembling in their lineaments the Cockles of the Sea, some are of opinion, that those Shell-fishes lying a long time in a petrifying Soyl, the petrific liquor converted them into stone; grounding their opinion upon that other, that the Sea in former times hath overflow'd such

Land:

Land; All colour of reason is taken away from that conceit by the wonderful veins of stone found in the high-way going from *Potosi* to *Oranes* down the hill; where stones are gathered having upon them impressions of divers sorts of figures in them, so much to the life, that none but the Author of nature (*sai'th our Author*) could have produced such workmanship: Amongst with stones one may see (*sai'th be further*) Cockles of all sorts, with the smallest lineaments of those shells drawn in great perfection; and this place in the heart of all the Country, and the most double mountainous land therein, where it were madness (as he speaks) to imagine that ever the Sea had there only prevailed and left Cockles only in this one part of it.

8. That abundance of *Brimstone* in Mines is an especial good sign of their richness: A considerable instance whereof is the Rose-colored Ore of the famous mountain of St. *Isabella* of new *Potosi*, in the rich Province of the *Lipes*, which is almost all Plate, and bred among such abundance of *Brimstone*, that the cavities in the rocks are presently all on fire, if a lighted candle touch them.

9. That the opinion confining the Number of Metals to *Seven* is very uncertain, since 'tis very probable, that in the bowels of the Earth there be more sorts than we yet know; and that in the mountains of *Sudnos* in *Bohemia* there was some years ago found a metal, by them called *Bismuto*, which is a metal between Tin and Lead, and yet distinct from them both.

10. That many excellent Mines have been found out by chance, and many others by Art and Industry; concerning which latter divers wayes and signs are here deliver'd, ch. 24, 25.

11. That from Experience the *first* place for riches of metals may be assigned to those Veins that run North and South on the North-side of the mountain; and that the four principal Mines in the Mountain *Potosi* do observe this point of the Compass with a very little declination Westward: That from the same ground, the *second* place for that abundance may be given to them that run North and South, on the South-side of the Hills; the best veins of the second famous Mine of that Kingdom, *Oruro*, running parallel to that point of the Compass: That in divers places very rich Mines of metal run East and West, and also to several other points of the Compass; so that the best rule to go by in this matter, is to follow the metal as it discovers itself, and to pursue it, as long as one gains thereby or at least saves himself, because being sure to loose nothing one hath, the Vein may lead him to great riches: And if the vein be large, and have any signs of Gold or Silver in it  
though



though for the present it should not quit cost, yet men ought to go on courageously with hopes of gaining at last great profit; it having been confirm'd by Experience in all the Mines of those Provinces: A fresh Instance whereof our Author alledges in the rich Mine of *Chocoma*, where after the Miners had follow'd its Veins forty years with very little profit, at length they met with that extraordinary riches, as is notorious to all people of that Kingdom.

12. That if the Metal be found clinging about stones, and be found likewise in the hollows of them in grains like corns of Gunpowder (being that which the *Spaniards* call *Plomo*, and is Silver unrefined,) though these grains be but few, and the rest of the metal have no Silver in it, 'tis nevertheless a sign of the riches of the vein, when it meets with more moisture; as it fell out in that great Mine of St. *Christopher* of the *Lipes*, which they call the *Poor mans treasure*. If, as they dig forwards, they meet with more abundance of those grains *de plomo*, 'tis a sign that the rich Ore is very near.

13. That *Carabaya* in *Peru* is a Country stored with plenty of the finest Gold, as fine as the finest Gold of *Arabia*, it being of the fineness of 23 Carats and 3 grains; which though formerly it hath only been gather'd up in fragments, wash'd off by rains, yet 'tis now wrought by following the veins of it underground: That the Country *Tipuane*, inhabited by savage *Indians*, next unto *Larecaja*, is by many eye-witnesses reported to be so rich in Gold, that thence 'tis call'd *Gbacra*, that is, the Farm of Gold; where, in the time of the rains, the boys often pick up gold in the streets in small bits, like apple-kernels: That the bounds of *Ghayanta* are full of Veins of Gold, and that the River of St. *Juan*, running at the bottom of the Province of the *Chiques*, abounds in the same metal, &c.

14. That in the circuit of the *Gbarcas* there is such abundance of *Silver*-mines, that they alone, if there were no other in the world, were sufficient to fill it with riches; in the middle of the jurisdiction of which stands *Potosi*, surrounded almost with abundance of rich Mines, whereof the famous one of the *Ingas*, called *Porco*, was the first, out of which the *Spaniards* dug any Silver: That those very ancient Mines of *Andacava* are admired by all Miners for their vast depth, strange contrivance, and plenty of Ore, which is such that it promises continual employment for half the *Indians* of that Kingdom: That the Lake, near to *Tobaco Nunio*, contains so much water, as would make a running River all the year long; with which there are driven night and day an hundred *Silver*-mills, grinding

grinding the Ore gotten from its own banks. The places and names of the many particular Mines of that Country, see in chap. 27. and 28.

28. That the Mine call'd *Osloque* in the *Lipes* was at the top, in a manner, all *Copper*, & every Spades depth as they dug downwards, the Ore grew more and more rich in *Silver*, until it came to be pure *Silver* at the bottom of the Mine, where the water increasing to a man's height stopp'd them from prosecuting its further riches: *That* there are many Mines of *Copper* in these Provinces, and that the bottoms of all the Mines, out of which *Silver* hath been taken, have been found to yield great store of it; so that how many *Silver*-mines there are, so many mines there are esteem'd to be whence *Copper* may be got also.

16 That those Provinces are not destitute of *Iron*, though none employ their labour to seek it out or work it, because there is such abundance of *Silver* that engages their industry. The places and names of divers *Iron*-mines in that Country are particulariz'd chap. 30.

17, That there hath been no *Silver*-mine discover'd in all that Kingdom, wherein some *Lead* hath not been found; which metal is rarely found mingled with *Gold*, most commonly with *Silver*, and sometimes with *Copper*.

18. That *Tin* also is not wanting in those rich Provinces; there being a Farm of Mines, nam'd *de Colquiri*, not far from the hill of *St. Philip de Austria de ORURO*, which is famous for the abundance and excellency of *Tin*, gotten there, wherewith they have furnish't all that Kingdom. See other *Tin*-mines marked ch. 32.

19. That the *Quick-silver*, come to *Potosi* for collecting the *Silver* out of the Ore, and registred upon the King of *Spain* s account *A. 1574.* and from that time till 1640, amounted upwards of 204600 quintals, besides a vast quantity brought in upon other accounts: *That*, to supply the excessive expence of this Mineral, they have discover'd the famous Mine of *Guanacabellica*; and that there are other *Quick-silver* mines in the Provinces subject to the *Cbaccras* in *Challatiri*, and near to *Guarina*, &c.

There is a *second* book annexed to the first; about the Refining of *Silver* by *Quick-silver*; which we must refer to another opportunity.

III *The ROYAL ALMANACK*, &c. by N. Stevenson, one of his Majesty's Gunners. London, for 1675. in 12°.

**T**His full and very ingeniously contrived *Diary*, contains *first* the true Places of the Sun, Moon, and other Planets together with their Rising and Setting. *Secondly*, the *High-water* at London-bridge, with Rules to serve other places after the *New-Theory* of Tides, and Directions of that knowing and public-minded Gentleman Sir *Jonas Moor*, Kt. *Thirdly*, the Eclipses; as also the Tables of the *Suns* Rising, *Moons* Southing, *Moons* Rising and Setting. *Fourthly*, the *Moons* and the other Planets *Appulses* to the Fixt Stars for the *Meridian* of *London*, procur'd from the Learn'd and Industrious Astronomer, Mr. *John Flamsted*, here deliver'd in *Latin* (as the like have been done by the same for some former years, and were then inserted in these Tracts,) because it may also be of use to Strangers abroad; who are desired to impart their Observations of this nature to Mr. *Hook*, Professor of *Geometry* at *Gresham-Colledge*, or to one of the Secretary's of the *Royal Society* in *London*.

*Advertisement.*

Having already given an account both of *Antonile Grandhis institutio Philosophiæ secundum principia R. des Cartes*, and of Mr. *Kersey's* Body of *Algebra* in English: of the one, in *Numb.* 80; of the other, in *Numb.* 90. and 91, of these Tracts: These are to give notice, that the former is now reprinted with many and very considerable additions, for Mr. *Martyn* at the *Bellin St. Paul's Churchyard*; the other, finish't, in all its four Books; much commended by competent Judges; and to be had at the same Shop.

Errata in Numb. 107.

P. 151. l. 19. r. Salt as when. p. 154. l. 23. r. censure with an. p. 166. l. antepen. r. Urine for Wine. p. 168. l. 20. r. Numb. 106. for Numb. 120.

Errata in this Numb. 108.

Pag. 174. l. 5 r. or their. p. 178. l. 12. r. a meer phantafme.

L O N D O N.

Printed for *John Martyn*, Printer to the *Royal Society*. 1674.