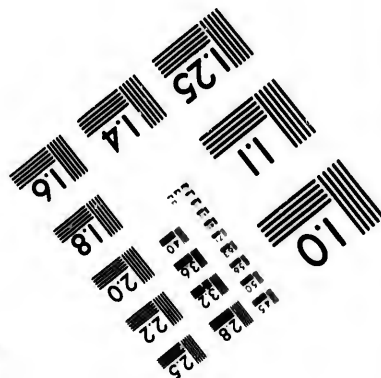
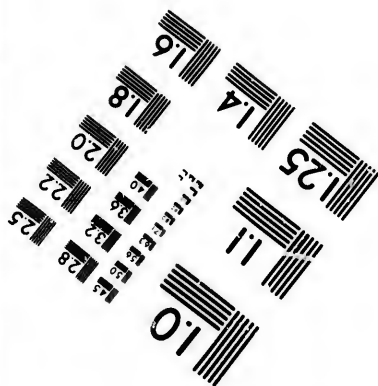
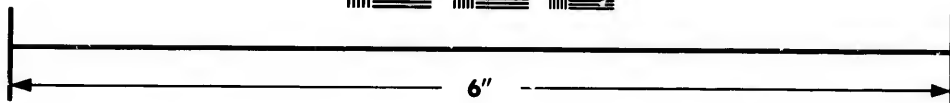
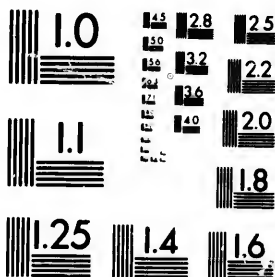


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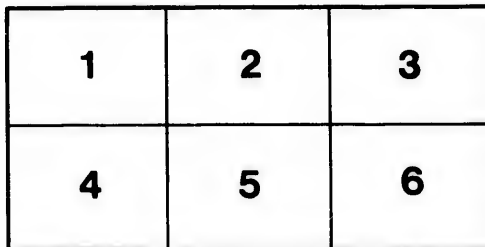
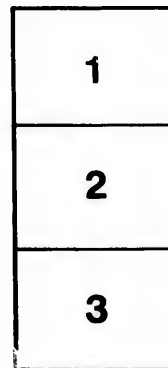
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MISCELLANIES

BY THE HONOURABLE

DAINES BARRINGTON.

Et si non profunt singula, juncta juvent!



LONDON,

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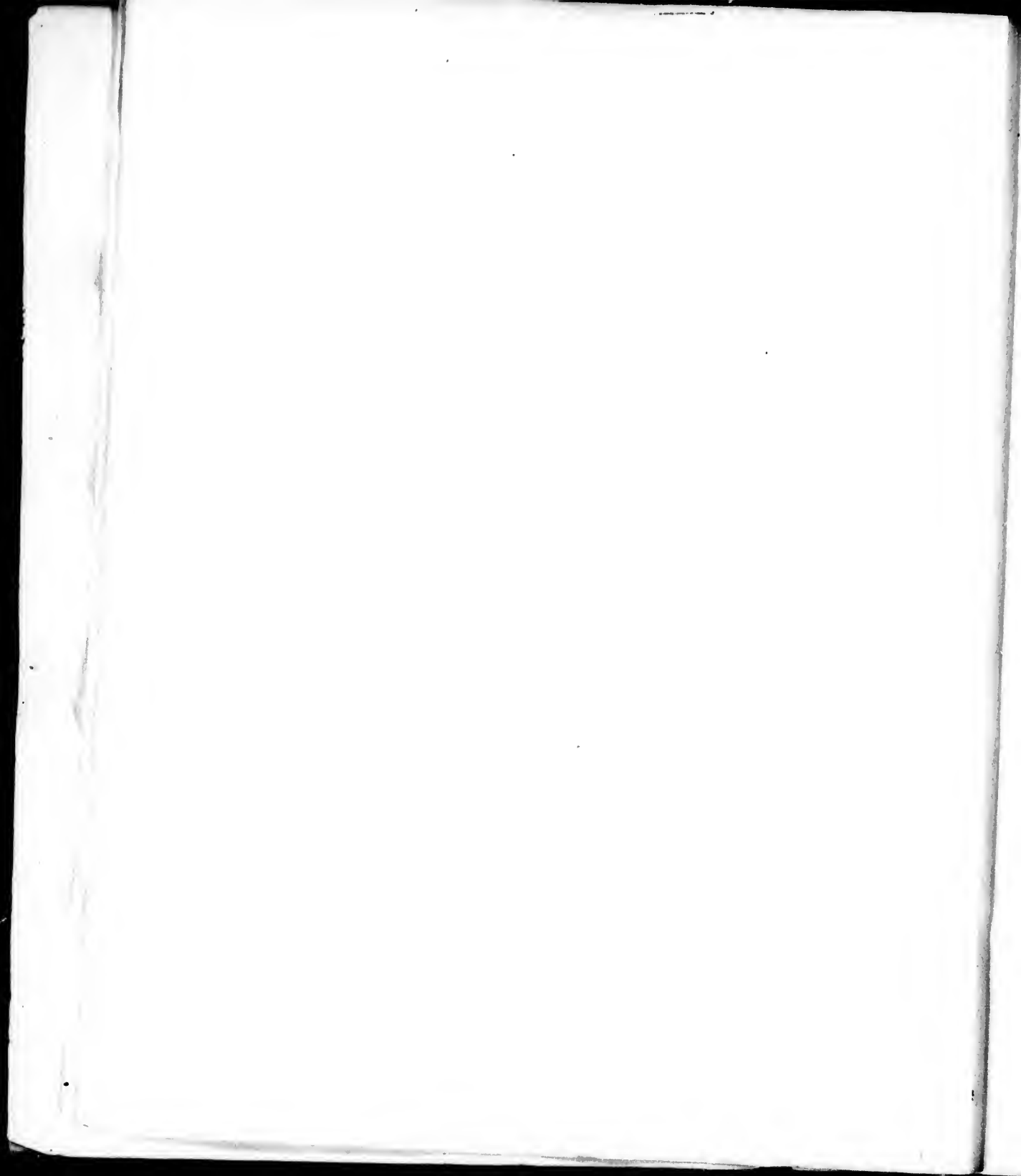
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THE
P O S S I B I L I T Y
OF APPROACHING THE
N O R T H P O L E
D I S C U S S E D.

Ρεία δὲ τοι καὶ τῆδε καταγραφόμενι θαλάσσει,
Οὐ μὲν ἰδὼν ἀπανεύθε ποταμοὺς, ἔνθι πέρασας,

Ἀλλὰ μὲ [γαιο]ζωφῶν φορεῖς νοεῖς, οἷτε δύνανται
Νοεῖν αἰλημοσύνης πολλὴν αἶλα μετοήσασθαι.

Dionysii, Orbis Descrip.



P R E F A C E

T O T H E

P O L A R T R A C T S.

THE following tracts relative to the possibility of near approaches to the Pole of our own hemisphere, as likewise of a communication between the Atlantick and Pacifick oceans in any Northern direction, were first published in 1775 and 1776.

I now think it right to print them a second time, because they contain many well-attested facts with regard to reaching high Northern Latitudes, which are not to be found elsewhere, and have a tendency to promote geographical discoveries. I am very ready to admit indeed, that the purposes of commerce can never be answered by the great uncertainty of a constant passage (even when such communication is discovered) in seas which are so frequently obstructed by the ice packing in vast fields. I find likewise that since the *Resolution* and *Endeavour* returned from their last voyage, many conceive a N. E. or N. W. passage to be impracticable, because our ships in two successive years were not able to penetrate beyond 71, by impediments of ice. Besides, however, that the ice packing in particular situations varies often in different

years; both these attempts were made in the month of August, which I flatter myself to have proved, is the very season of the year when the ice breaking up on the coast, is floating in every direction, and consequently often packs in masses of an immense extent.

These vast fields of ice, indeed, often are dispersed; but who hath, or indeed should have, the fortitude of waiting for this accident, whilst he is already in a high Northern Latitude, and the winter is fast approaching? If the ice, however, should thus pack in April or May (which I conceive it would not, as little must be left to float from the preceding summer), yet as the warm weather is then increasing from day to day, the navigator would wait with some degree of patience till his ship may be released from this temporary obstruction. The situation of the discoverer under these circumstances, may be compared to a traveller passing over a large tract of sea-sand, when the tide is flowing or ebbing. In the first instance he spurs his horse because the sea may be expected at his heels; in the latter he proceeds with great composure, as every instant he loses in point of time the sea is further removed.

Others again have despaired of a N. W. passage, from Captain Pickersgill not having succeeded in his attempt for this purpose, during the year 1776^a.

This voyage was intended for two purposes (at least as I have been informed); the first to protect some of our whale fishers on the coast of W. Groenland from the Americans then in rebellion; and the second (if the time after this service permitted) to join Captain Cook, should he have been so fortunate as to have ac-

^a In the *Lion armed Brig.*

complished:

complished his passage from the Pacifick Ocean, when he would probably have returned to England by Davis's straits.

This plan seems to have been very well laid, but that persevering navigator was delayed at the Cape by Captain Clark's ship not arriving till a considerable time after his own reaching that place of rendezvous, and in the further progress of his voyage by adverse winds, which drove him to the Friendly Islands instead of Otaheitee, so that he did not make his attempt of a passage till 1777.

Captain Pickersgill did not leave Scilly till the 10th of June, 1766, and consequently whatever obstructions he met with from floating or packing ice, might be reasonably expected when he reached the coast of West Greenland. It appears, however, by what I shall copy from the conclusion of his journal on the 31st of August, that he did not find these to be considerable, and that after the trial his hopes of a passage were very sanguine.

“ I shall conclude with a few observations on this part of the world (sc. Greenland) and so terribly represented by people, who, in order to raise their own merit, make dangers and difficulties of common occurrences, merely because the places are unknown, and there is little or no probability of their being ever contradicted. I do not mean this as a personal reflexion; but having discoursed with many of the masters of Greenland vessels as well as their employers, and heard such dreadful stories of those countries, I cannot help remarking it as tending to mislead those who from a laudable principle, would be benefactors to their country, but are deterred from it by these misrepresentations. I shall communicate observations on the ice, the atmosphere, the land of Forbisher, and the probability of a N. W. passage, in a short time^b.”

^b Ph. Transf. for 1778, Part II. p. 1063.

This.

This, however, hath unfortunately been prevented by Captain Pickersgill's death; but the Astronomer Royal, who communicated Captain Pickersgill's Journal to the Royal Society, hath informed me by letter, "That he had often heard this Navigator express himself as well assured of a N. W. passage; adding, that he received accounts of it from the inhabitants on the side of Davis's Straits, and that it was directly N. W. very different from Baffin's track.

"Captain Pickersgill likewise thought that *the best method to find the passage, was to get out early before the ice broke away in the upper part of Davis's Straits.*"

It thus appears that the last attempts of a N. W. passage ended with the officer's employed thereon, being thoroughly persuaded that it was not only practicable, but highly probable.

As the late geographical discoveries have given such general satisfaction, I have little doubt but that they will be further prosecuted when a peace takes place, and shall therefore here venture to throw out my poor thoughts with regard to the yet remaining desiderata for the more perfect knowledge of the planet which we inhabit. When we are informed by proper trials, that the attempt in any particular direction cannot succeed, we shall then be as much at rest as with regard to Lunar oceans or continents, if such there be.

I have mentioned in the following Tracts, that the Parliamentary rewards given for approaching within one degree of the North Pole are not likely to produce the effects intended, because the Greenland whale ships are all ensured; if they were therefore to go beyond the common fishing latitudes, it would be such

such a departure from the voyage ensured, that they would not be able to recover, if accidents happened in such a deviation.

I am informed, however, that there are some vessels employed in time of peace by government, to prevent smuggling on the Northern coast of Scotland. These ships might be instructed, when a promising wind blows from the Southward, to proceed as far North as the ice will permit. The crew of such a ship would be encouraged by expectations of the Parliamentary reward; and though one attempt might fail, another might succeed. The expence to the publick would be trifling, whilst the smugglers would not know how soon the ship might return to its station.

Our Commodore upon the Newfoundland station might also send a vessel, at a small expence, to explore all the Northern part of Hudson's Bay, with which we are so imperfectly acquainted at present.

Such attempts during peace might take place almost every summer; and I should suppose that this scientific and opulent nation would never hesitate (whilst there is the least dawning of hopes) to send proper vessels occasionally to make further trials both of a N. W. passage by Baffin's Bay, and a N. E. beyond Nova Zembla.

The coast of Corea, the Northern part of Japan, and the Lequieux Islands, should also be explored; the cheapest, and perhaps best method of doing this would be to employ a vessel in the India Company's service, which might be victualled at Canton.

Thus much with regard to discoveries, or better knowledge of the more unfrequented parts of the Northern hemisphere.

The desiderata in that of the South seem to be the following:

To make the compleat circumnavigation of New Holland, so as at least to be better acquainted with some parts of the coast of
this

this immense island, a vessel for this purpose might be victualled at the Cape of Good Hope, or Canton; nor is the voyage a distant one, when compared with those of Captain Cook. New Guinea also should be better explored.

We scarcely know more of the islands of Tristan da Cunha than their Longitude and Latitude; but their interior parts should be examined. Not vastly distant is *Sandwich Land*, which many on board Captain Cook supposed to be a vast continent. It may be objected indeed that if it is so, it will turn out to be a continent of ice and snow; I am not here, however, recommending discoveries for the purpose of commerce, but for the improvement of geography.

I should conceive that a voyage either from the Cape or Brasil would easily give opportunity of effectuating both these purposes.

Perhaps whilst discoveries by sea are thus dwelt upon, encouragement should be given to travellers by land, for procuring better information with regard to the central parts of Asia, Africa, and America. In short, let us endeavour to know as much as we may of our globe; nor should this be considered as a vain and trifling curiosity, though no benefits to commerce may result from these inquiries.

INSTANCES OF NAVIGATORS
WHO HAVE REACHED
HIGH NORTHERN LATITUDES.

Read at a Meeting of the Royal Society, May 19, 1774.

AS I was the unworthy proposer of the voyage towards the North Pole, which the Council of the Royal Society recommended to the Board of Admiralty, I think it my duty to lay before the Society such intelligence as I have happened to procure with regard to navigators having reached high Northern latitudes^a; because some of these accounts seem to promise, that we may proceed further towards the Pole than the very able Officers who were sent on this destination last year were permitted to penetrate, notwithstanding their repeated efforts to pass beyond eighty degrees and an half.

I shall begin, however, by making an observation or two with regard to the Greenland fishery, which will in a great measure account for our not being able to procure many instances of nearer approaches to the Pole than the Northern parts of Spitzbergen.

Fifty years ago such apprehensions were entertained of navigating even in the loose, or what is called *sailing ice*, that the

^a It is well known that there are many such accounts in print, but to these I need not refer the Society.

crews commonly continued on shore^b, from whence they only pursued the whales in boats.

The demand, however, for oil increasing, whilst the number of fish rather decreased, they were obliged to proceed to sea in quest of them, and now by experience and adroitness seldom suffer from the obstructions of ice^c.

The masters of ships, who are employed in this trade, have no other object but the catching whales, which, as long as they can procure in more Southern latitudes, they certainly will not go in search of at a greater distance from the port to which they are to return: they therefore seldom proceed much beyond N. lat. 80, unless driven by a strong Southerly wind or other accident.

Whenever this happens also, it is only by very diligent inquiries that any information can be procured; for the masters, not being commonly men of science, or troubling their heads about the improvement of geographical knowledge, never mention these circumstances on their return, because they conceive that no one is more interested about these matters than they are themselves. Many of the Greenland masters are likewise directed to return after the early fishery is over, provided they have tolerable success; so that they have no opportunity of making discoveries to the Northward.

To these reasons it may be added, that no ships were perhaps ever sent before last summer with express instructions to reach the Pole, if possible, as most other attempts have been to discover

^b There were houses still standing on Spitsbergen, where the Dutch used to boil their train oil. Martin's Voyage, p. 24. See also Callander, Vol. III. p. 723.

^c These particulars I received from Captain Robinson, whom I shall have hereafter occasion to mention.

a N. E. or N. W. passage, which were soon defeated by falling in with land, or other accident.

Having thus endeavoured to shew that the instances of ships reaching high Northern latitudes must necessarily be rare, I shall now proceed to lay before the Society such as I have been able to hear of since the voyage towards the N. Pole was undertaken during last summer.

When this was determined upon, and mentioned in the News Papers, it became matter of conversation amongst the crews of the guardships; and Andrew Leekie, an intelligent seaman on board the Albion (then stationed at Plymouth), informed some of the officers that he had been as far North as $84\frac{1}{2}$.

When he was asked further on this head, he said that he was on board the Reading; Captain Thomas Robinson, in 1766, and that, whilst he was shaving the captain, Mr. Robinson told him that he had probably never been so far to the Northward before, as they had now reached the above-mentioned degree of latitude.

Having happened to hear this account of Leekie's, on my return to London this winter, I found out Captain Robinson, who remembered his having had this conversation with Leekie, but said that he was mistaken in supposing that they had reached $84\frac{1}{2}$ N. lat. as they were only in $82\frac{1}{2}$.

Captain Robinson then explained himself, that he had at this time computed his latitude by the run back to Hakluyt's Headland in 24 hours; from which, and other circumstances mentioned in my presence before two sea officers, they told me afterwards that they had little or no doubt of the accuracy of his reckoning. Mr. Robinson likewise remembers that the sea was then open, so that he hath no doubt of being able to reach 83, but how much further he will not pretend to say.

This same captain, in the ship *St. George*, was, on the 15th of June 1773, in N. lat. $81^{\circ} 16'$, by a very accurate observation with an approved Hadley's quadrant, in which he also made the proper allowance for the refraction in high Northern latitudes, at which time seeing some whales spouting to the Northward, he pursued them for five hours, so that he must have reached $81\frac{1}{2}$, when the sea was open to the Westward and E.N.E. as far as he could distinguish from the mast-head. His longitude was then 8 degrees E. from the meridian of London.

Captain Robinson is a very intelligent seaman, and hath navigated the Greenland seas these twenty years, except during the interval that he was employed by the Hudson's Bay Company^d.

I could add some other, perhaps interesting, particulars, which I have received from Captain Robinson, with regard to Spitzbergen and the Polar Sea; I will only mention, however, that he thinks he could spend a winter not uncomfortably in the most Northern parts we are acquainted with^e, as there are three or four small settlements of Russians in this country, for the sake of the skins of quadrupeds, which are then more valuable than if the animal is taken in summer.

^d He lived during this winter in Queen-street, near Greenland-dock, Rotherhithe: he hath sailed, probably, by this time on the Greenland fishery. With regard to his having been in N. lat. $81^{\circ} 30'$, in June 1773, he can prove it by his journal, if that evidence should be required.

^e See the Narrative of eight sailors who wintered in Greenland A. D. 1630, and who all returned in health to England the ensuing summer. Churchill's Voyage, vol. IV. p. 811.

They did not see the sun from the 14th of October till the 3d of February. By the last day of January however they had day-light of 8 hours. They wintered in N. Lat. $77-4^{\circ}$. Ibid.

The next instance I shall mention of a navigator who hath proceeded far Northward is that of Captain Cheyne, who gave answers to certain queries drawn up by Mr. Dalrymple, F. R. S. in relation to the Polar seas, and which were communicated last year to the Society.

Captain Cheyne states in this paper, that he hath been as far as N. lat. 82, but does not specify whether by *observation* or his *reckoning*, though from many other answers to the interrogatories proposed, it should seem that he speaks of the latitude by *observation*. Unfortunately Captain Cheyne is at present on the Coast of Africa, so that further information on this head cannot be now procured from him.

Whilst the ships destined for the N. Pole were preparing, a most ingenious and able sea officer, Lieutenant John Cartwright, told me, that twelve years ago he had been informed of a very remarkable voyage made by Captain Mac-Callam as far nearly as 84 N. lat.

This account Mr. Cartwright had received from a brother officer, Mr. James Watt, now a master and commander in the royal navy, who was on board captain Mac-Callam's ship.

I thought it my duty to acquaint the Admiralty with this intelligence, who would have sent for Mr. Watt, but he was then employed on the coast of America.

On his return from thence within the last month, Mr. Cartwright introduced a conversation with regard to Captain Mac-Callam's voyage, when Mr. Watt repeated all the circumstances which he had mentioned to him twelve years ago; after which Mr. Cartwright, thinking that I should be glad to hear the particulars from Mr. Watt himself, was so good as to bring him to my chambers, when I received from him the following information.

In

In the year 1751 Mr. Watt, then not quite seventeen years of age, went on board the *Campbeltown* of *Campbeltown*, Captain Mac-Callam, which ship was at that time employed in the Greenland fishery.

It seems that during the time the whales are supposed to copulate, the crews of the Greenland vessels commonly amuse themselves on shore.

Captain Mac-Callam however (who was a very able and scientific seaman) thought that a voyage to the N. Pole would be more interesting, and that, the season being a fine one, he had a chance of penetrating far to the Northward, as well as returning before the later fishery took place. He accordingly proceeded without the least obstruction to $83\frac{1}{2}$, when the sea was not only open to the Northward, but they had not seen a speck of ice for the last three degrees, and the weather at the same time was temperate; in short, Mr. Watt hath never experienced a more pleasant navigation.

It need be scarcely observed, that the latitude of $83\frac{1}{2}$ was determined by observation, as the great object of the voyage was to reach the Pole; the Captain therefore, the mate, and young Mr. Watt, determined the latitude from time to time, both by Davis and Hadley's quadrants: to this I may add, that their departure and return were from and to Hakluyt's Headland.

When they were advancing into these high Northern latitudes, the mate complained that the compass was not steady, on which Captain Mac-Callam desisted from his attempt, though with reluctance; knowing that if any accident happened, he should be blamed by his owners, who would be reminded certainly by the mate of the protests he had made against the ship's proceeding further Northward.

Several

Several of the crew however were for prosecuting their discoveries, and Mr. Watt particularly remembers the chagrin which was expressed by a very intelligent seaman, whose name was John Kelly; Captain Mac-Callam also, after his return from that voyage, hath frequently said, in the presence of Mr. Watt and others, that, if the mate had not been faint-hearted, the ship possibly might have reached the pole.

Both Captain Mac-Callam and the mate are now dead, and it is rather doubtful whether the ship's journal can be procured.

It remains therefore to be considered what may be objected to the credibility of this very interesting account.

I have stated that Mr. Watt was not at the time this voyage took place quite seventeen years of age; but I have also stated that he observed himself (as well as the master and mate) from time to time. Is it therefore more extraordinary he should remember with accuracy that, two and twenty years ago, he had been in N. lat. 83 $\frac{1}{2}$, than that, at the same distance of time, he might recollect that he had been at a friend's house, which was situated 83 miles and an half from London? Or rather indeed is not his memory, with regard to this high latitude, much more to be depended upon, as the circumstance is so much more interesting, especially as Mr. Watt was even then of a scientific turn?

To this I may add, that it being his first voyage, and so remarkable a one, Mr. Watt now declares that he remembers more particulars relative to it, than perhaps in any other since that time: other sea officers have likewise told me, that the circumstances of their first voyages are most fresh in their memory, the reason for which is too obvious to be dwelt upon.

If Mr. Watt's recollection however is distrusted, this objection extends equally to Captain Mac-Callam's frequent declarations, that,

that, if the apprehensions of the mate had not prevented, he might possibly have reached the N. Pole ; and how could he have conceived this, unless he had imagined himself to have been in a very high Northern latitude ?

But it may be possibly said, that this voyage took place above twenty years since, and that therefore at such a distance of time no one's memory can be relied upon.

It is true indeed that Mac-Callam made this attempt in 1751; but Mr. Watt continued his services the following year in a Greenland ship, and therefore, traversing nearly the same seas, must have renewed the recollection of what he had experienced in the preceding voyage, though he did not then proceed further than N. lat. 80.

This however brings it only to 1752; but I have already stated, that within these twelve years he mentioned all the particulars above related to his brother officer, Lieutenant Cartwright.

Mr. Watt also frequently conversed with Captain Mac-Callam about this voyage after both of them had quitted the Greenland ships; Mr. Watt rising regularly to be a Master and Commander in His Majesty's service, and Captain Mac-Callam becoming Purser of the Tweed man of war.

It so happened, that in the year of the expedition against Belisle, Mr. Watt, Captain Mac-Callam, and Mr. Walker (commonly called Commodore Walker, from his having commanded the Royal Family privateers in the late war), met together at Portsmouth, when they talked over the circumstances of this Greenland voyage, which Mr. Walker was interested in, by having been the principal owner of the Campbeltown.

Mr. Watt and Captain Mac-Callam met also eleven years ago in London, when they as usual conversed about the having reached so high a Northern latitude.

I now come to my last proof, which I received from the late Dr. Campbell, the able continuator and reviser of Harris's Collection of Voyages.

In that very valuable compilation, Commodore Roggewein's circumnavigation makes a most material addition, some of the most interesting particulars of which were communicated by Dr. Dallie, who was a native of Holland^f, and lived in Racquet-court, Fleet-street, about the year 1745, where he practised physick.

Dr. Campbell went to thank Dallie for the having furnished him with Roggewein's voyage, when Dallie said that he had been further both to the Southward and to the Northward than perhaps any other person who ever existed.

He then explained himself as to the having been in high Southern latitudes, by sailing in Roggewein's fleet^g; and as to his having been far to the Northward, he gave the following account:

Between fifty and sixty years ago it was usual to send a Dutch ship of war to superintend the Greenland fishery, though it is not known whether this continues to be a regulation at present.

Dr. Dallie (then young) was on board the Dutch vessel employed on this service^h; and during the interval between the two fisheries, the Captain determined, like Mr. Mac-Callam, to try whether he could not reach the Pole, and accordingly penetrated (to the best of Dr. Campbell's recollection) as far as N. lat. 88, when the weather was warm, the sea perfectly free from ice, and

^f He was a grandson of Dallie, who was author of a book, much esteemed by the Divines, intitled "*De Usu Patrum.*"

^g Roggewein reached S. lat. 62° 30'. See Harris.

^h Dr. Campbell does not recollect in what capacity he served; but, as he afterwards practised physick, he might probably have been the surgeon.

rolling like the bay of Biscay. Dallie now pressed the Captain to proceed; but he answered that he had already gone too far by having neglected his station, for which he should be blamed in Holland, on which account also he would suffer no journal to be made, but returned as speedily as he could to Spitzbergen.

There are undoubtedly two objections which may be made to this account of Dr. Dallie's, which are, that it depends not only upon his own memory, but that of Dr. Campbell, as no journal can be produced, for the reason which I have before stated.

The conversation, however, between Dr. Campbell and Dallie arose from the accidental mention of Roggewein's voyage to the Southward; and can it be supposed that Dallie invented this circumstantial narrative on the spot, without having actually been in a high Northern latitude?

If this be admitted to have been improbable, was he not likely to have remembered with accuracy what he was so much interested about, as to have pressed the Dutch Captain to have proceeded to the Pole?

But it may be said also, that we have not this account from Dallie himself, but at second-hand from Dr. Campbell, at the distance of thirty years from the conversation.

To this it may be answered, that Dr. Campbell's memory was most remarkably tenacious, as is well known to all those who had the pleasure of his acquaintance; and, as he hath written so ably for the promotion of geographical discoveries in all parts of the globe, such an account could not but make a strong impression upon him, especially as he received it just after the first edition of his compilation of voyages.

No one easily forgets what is highly interesting to him; and, though I do not pretend to have so good a memory as Dr. Campbell, I have scarcely a doubt, but that if I should live

thirty years longer, and retain my faculties, I shall recollect with precision every latitude which I have already stated in this paper.

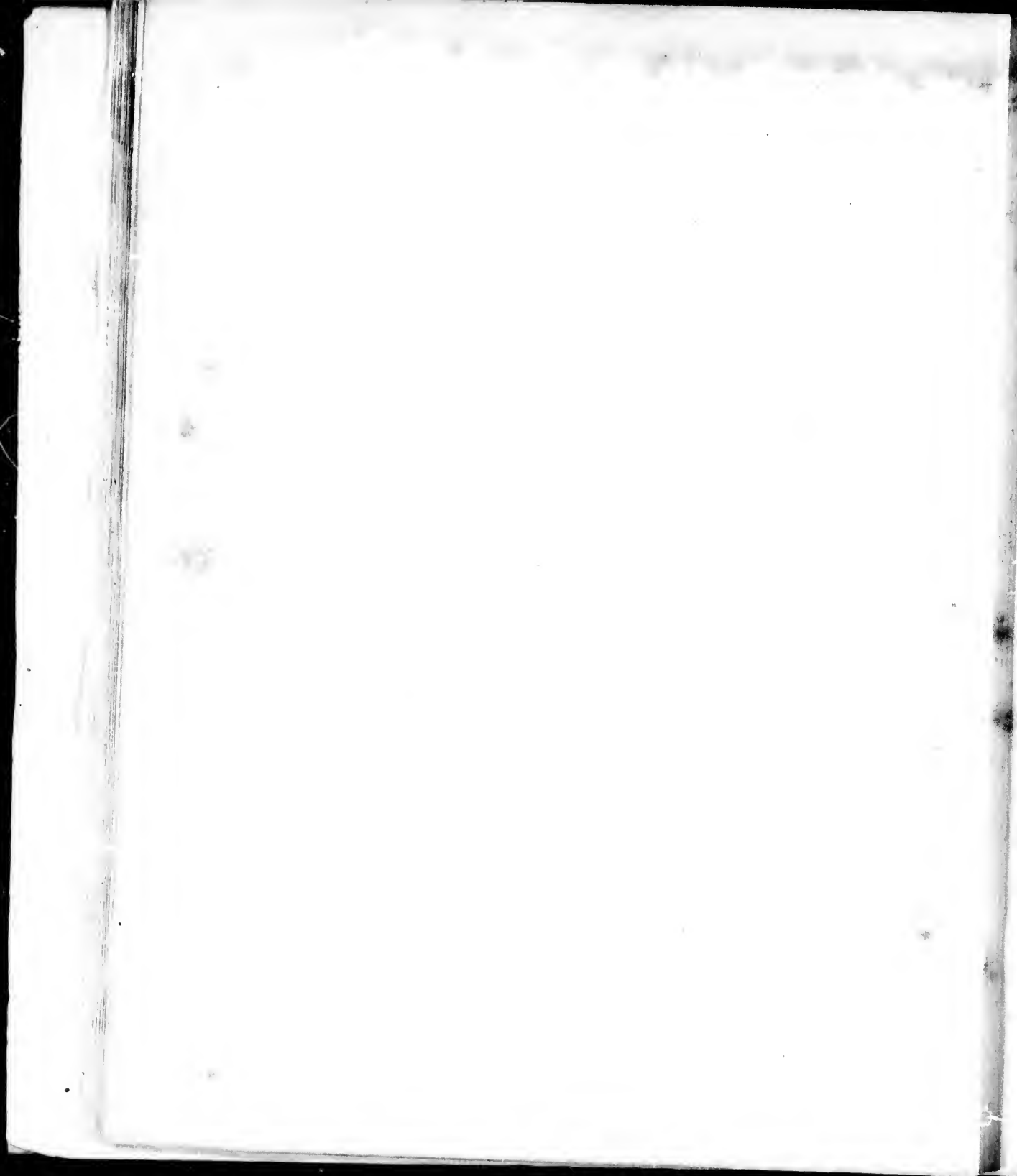
What credit, however, is to be given to all these narratives is entirely submitted to the Society, as I have stated them most fully with every circumstance which may invalidate, as well as support them; and if I have endeavoured to corroborate them by the observations which I have made, it is only because I believe them.

It should seem upon the whole of the inquiries on this point, that it is very uncertain when ships may proceed far to the Northward of Spitzbergen, and that it depends not only upon the season, but other accidents, when the Polar seas may be so free from ice as to permit attempts to make discoveries¹.

Possibly, therefore, if a king's officer was sent from year to year on board one of the Greenland ships, the lucky opportunity might be seized, and the Navy Board might pay for the use of the vessel, if it was taken from the whale fishery, in order to proceed as far as may be towards the North Pole.

¹ Captain Robinson hath informed me, that at the latter end of last April a Whitby ship was in N. lat. 80, without having been materially obstructed by the ice. Capt. Marshall was also off Hakluyt's Headland so early as the 25th of April, without observing much ice.

DAINES BARRINGTON, F. R. S.



A D D I T I O N A L
P R O O F S, &c.

Read at a Meeting of the Royal Society, Dec. 22, 1774.

AS I happen to have collected many additional facts since my paper, containing Instances of Navigators who had reached high Northern Latitudes, was read before the Society in May last, I shall take the liberty to state them according to chronological order; together with some general reasons why it may be presumed, that the Polar seas are, at least sometimes, navigable.

I think it my duty to do this, not only because I was the unworthy proposer of the Polar voyage in 1773, which was recommended by the Council of the Royal Society to the Board of Admiralty; but because it would not redound much to the credit of the Society, if they planned a voyage to reach the N. Pole, if possible, when a perpetual barrier of ice prevented any discoveries in the Spitzbergen seas to the Northward of 80 $\frac{1}{2}$, which is not a degree beyond the most common station of the Greenland fishers.

I must here, however, repeat, that no one is more entirely satisfied than myself of the great abilities, perseverance, and industry, with which the officers who were sent on this destination, attempted to prosecute their discoveries; but I conceive, from the arguments and facts which will follow, that they were stopped.

stopped by a most unfortunate barrier of ice (of great extent indeed), but which was only temporary, and not perpetual.

If such a wall of ice hath been constantly fixed in this latitude, and must continue to be so, there is an end to all discoveries to be made to the Northward of Spitzbergen; but if it is only occasional, the attempt may be resumed in some more fortunate year^k.

The point therefore being of so much importance to geography, I hope the Society will pardon me, if I more fully enter into the subject than I did in my former paper.

The English have long taken the lead in geographical discoveries. One of our ships of war is lately returned, after having penetrated into the Antarctic circle; and is it not rather a reflection upon a scientific nation, that more is not known with regard to the circumpolar regions of our own hemisphere, than can be collected from maps made in the time of Charles I. especially when the run from the mouth of the Thames to the N. Pole is not a longer one than from Falmouth to the Cape de Verde islands?

Though I have the honour to be a Fellow of a Society instituted for the promotion of Natural Knowledge, the prejudices of an Englishman are so strong with me, that I cannot but wish the discoveries to be made in the Polar seas may be achieved by my countrymen; but if we are determined to abandon the enterprize, science is to be honoured from whatever quarter it may come, and it hath therefore given me great satisfaction to hear,

^k Upon the first return of the King's Ships from the Polar Voyage, this notion of a perpetual barrier of ice at N. Lat. 80° had prevailed so much, that some very distinguished Philosophers of this country had shewn thoughts of proceeding to the Pole over the ice, in such a wind boat as the Dutch have sometimes made use of.

that *Monf. de Bougainville* is soon to be sent on discoveries to the Northward¹.

In the outset of my former paper, I said I should not trouble the Society with any instances of navigators having reached high Northern latitudes, which had appeared in print. During the course of this summer, however, I have happened to find three such accounts which were never before alluded to, and which are extracted from books that are not commonly looked into, or at least often consulted upon points of geography.

When the Royal Society was first instituted, it was usual to send queries to any traveller who happened to reside in England, after having been in parts of the world which are not commonly frequented^m,

In the year 1663, *Mr. Oldenburg*, then secretary of the Society, was ordered to register a paper, entitled, "Several Inquiries concerning Greenland, answered by *Mr. Grey*, who had visited those parts."

The 19th of these queries is the following :

"How near any one hath been known to approach the Pole?"

Answer. "I once met, upon the Coast of Greenland, a Hollander, that swore he had been but half a degree from the Pole, shewing me his journal, which was also attested by his mate; where they had seen no ice or land, but all waterⁿ."

¹ I have since been informed, that this intended voyage was dropt, by the French minister for the marine department being changed.

^m *Richard Hakluyt* rode 200 miles to hear the narrative of *Mr. Thomas Butt's* voyage, temp. Hen. VIII. from England to Newfoundland. *Hakluyt*, P. III. p. 131.

ⁿ *Mr. Boyle* mentions a similar account, which he received from an old Greenland master on the 5th of April, 1675. See *Boyle's Works*, vol. II. p. 397 to 399. folio. The whole of this narrative is very circumstantial, and deserves to be stated at length. The title is, *Experiments and Observations made in December and January 1662.*

After which Mr. Oldenburgh adds, as from himself, "This is
"incredible °."

It may not be improper, therefore, after mentioning this first instance of a navigator's having approached so near to the Pole, to discuss upon what reasons Mr. Oldenburgh might found this his very peremptory incredulity.

Was it because the fact is impossible upon the very stating it ?

This puts me in mind of the disbelief which is generally shewn to a passage in Pliny, even after the actual fact hath shewn not only the possibility, but easy practicability, of what is alluded to. Pliny informs us^p, that Eudoxus flying the vengeance of king Lathyrus failed from Arabia, and reached the Straits of Gibraltar: yet no one scarcely will believe this account of Eudoxus's navigation, notwithstanding this course is so often followed.

Was it because no Englishman had then been so far to the Northward ?

It is very easy, however, to account why such attempts should rather be made by the Dutch than the English in the infancy of the Greenland fishery.

° See Dr. Birch's History of the Royal Society, vol. I. p. 202. These queries are nineteen in number, to which the answers are very circumstantial. I had an opportunity of reading them over to three very intelligent masters of Greenland ships, who confirmed every particular. One circumstance I think it right to take notice of, though it does not immediately relate to the point in discussion, which is, that there are coals in Spitzbergen, by which seven of Mr. Grey's crew were enabled to bear the severity of the winter, having been left behind by an accident. One of the Greenland masters, to whom I read Mr. Grey's answers, confirmed this particular; saying, that he had burnt himself Spitzbergen coals, and that they were very good.

^p L. II. ch. 67.

The

The Southern parts of this country were discovered by Sir Hugh Willoughby, A. D. 1553; after which, no English ships were sent on that coast for nearly fifty years. In the beginning of the last century, however, a competition arose between the English and Dutch, with regard to the whale fishery, and the English drove the Dutch from most of the harbours, under the right of first discoverers^r, in which they were supported by royal instructions; so that the Dutch were obliged to seek for new stations, whereas the English were commonly in possession of the Greenland ports, which they considered as their own^s.

Did Mr. Oldenburgh disbelieve the Dutchman's relation, because ice is frequently met with to the Southward of N. lat. 80?

Ice is commonly seen upon the great bank of Newfoundland, and the harbour of Louisburgh is often covered with it, which is only in N. lat. 46; yet Davis and Baffin have penetrated, under nearly the same meridians, beyond 70.

I will now suppose the tables changed between the two hemispheres of our globe, and that a Southern discoverer, meeting with ice upon the banks of Newfoundland, returns to his own hemisphere fully impressed with the impossibility of proceeding much to the Northward of N. lat. 46; would not his countrymen be

^r It is also assigned in the Supplement to Wood and Martens' Voyages, p. 179, 8vo. 1694. as a reason why the English never proceeded further than 78 on the E. coast of Spitzbergen, because the Dutch were commonly superior on that side of the island.

Robert Bacon of Crowmers in Norfolk was the first discoverer also of Iceland. See the Itinerary of William of Worcester, p. 311. Cambridge, 1778, octavo.

^s See Purchas, *passim*. Whilst these disputes continued, the Dutch often sent ships of war to protect their Greenland traders, which accounts for Dr. Dalling's sailing in such a vessel to 88. as I have stated in my former paper.

deceived by the inferences which were drawn from what had been observed in the seas of the Northern hemisphere ?

Bouvet, in 1738, failed to 53 S. lat. and in a meridian 5 degrees to the W. of the Cape of Good Hope, in which situation he fell in with floating ice ; after which he did not proceed any further. Our two ships of war, lately sent upon discoveries to the Southward, however, have been some minutes within the Antarctic circle, upon a no very distant meridian from that in which Bouvet failed.

Must the fact be disbelieved because all the ice in the Polar seas comes from the Northward ? But this is not so, as Mr. Grey informs us¹, that the S. E. wind brings the greatest quantity of ice to the coasts of Spitzbergen ; which indeed is highly probable, as this wind blows from those parts of the *Icy Sea* into which the great rivers of Siberia and Tartary empty themselves². My own poor conception, with regard to the floating ice in the Spitzbergen seas, is, that these masses come almost entirely from the same quarter, as it is so difficult to freeze any large quantity of salt water. These pieces of ice, therefore, being once launched into the *Icy Sea*, are dispersed by winds, tides, and currents, in every direction, some of them being perhaps carried to very high Northern latitudes, from which they are again wafted to the Southward.

But allowing, for an instant, that all the ice may come from the Northward, must not then an open sea be left in the higher

¹ Dr. Birch's Hist. R. Soc.

² The ice is said to be never troublesome in the harbour of Newport (Rhode Island, N. America); because no fresh water rivers empty themselves by this port; whereas the harbour of N. York (though much to the Southward) is often obstructed by the ice, which floats down from Hudson's River.

Northern latitudes, from which these masses of ice are supposed to have floated ?

Was it because the more one advances towards the Pole, vegetation invariably is diminished ?—But this is not the fact.

Nova Zembla, situated only in N. lat. 76, produces not even any sorts of grass^w ; so that the only quadrupeds which frequent it are foxes and bears, both of which are carnivorous. In the Northern parts of Spitzbergen, on the other hand, they have reyn-deer, which are often excessively fat ; and Mr. Grey mentions three or four plants, which flower there during the summer^x.

Was it because no one had ever conceived it possible to proceed so far as the Pole^y ?

Thorne, however, a merchant of Bristol, had made such a proposal in the reign of Henry VIII. and I shall now also shew, that not only Mr. Oldenburgh's contemporaries continued to believe such a voyage to be feasible, but many great names in science who lived after him.

Wood failed on the discovery of a N. E. passage to Japan in 1676 ; and, in the publication of his voyage, he hath stated the grounds upon which he conceived such a voyage to be practicable ; the strongest of all which, perhaps, is the relation of Captain Goulden, with regard to a Dutch ship having reached N. lat. 89. Though this account hath often been referred to, I do not recollect to have seen it stated with all the circumstances which

^w Purchas, vol. I. p. 479.

^x Dr. Birch's Hist. R. Soc. vol. I. p. 202. *et seq.*

^y A Map of the Northern Hemisphere, published at Berlin (under the direction of the Academy of Sciences and Belles Lettres), places a ship at the Pole, as having arrived there according to the Dutch accounts.

seem to establish its veracity beyond contradiction : I shall therefore copy the very words of Wood ^a.

“ Captain Goulden, who had made above thirty voyages to Greenland, did relate to his majesty, that, being at Greenland some twenty years before, he was in company with two Hollanders to the eastward of Edge’s island ^a ; and that the whales not appearing on the shore, the two Hollanders were determined to go further Northward, and in a fortnight’s time returned, and gave it out that they had failed into the lat. 89, and that they did not meet with any ice, but a free and open sea ; and that there run a very hollow *grown* ^b sea, like that of the Bay of Biscay. Mr. Goulden being not satisfied with the bare relation, they produced him four journals out of the two ships, which testified the same, and that they all agreed within four minutes ^b.

^a Moxon’s account of a Dutch ship having been two degrees beyond the Pole, was also much relied upon by Wood, which hath never been printed at large, but in a now very scarce tract of Moxon’s, and in the second volume of Harris’s Voyages, p. 396. In confirmation of this very circumstantial and interesting narrative, I have only to add, that Moxon was hydrographer to Charles II. and hath published several scientific treatises. See the Catalogue of the Bodleian Library.

^a Edge’s island was discovered, A. D. 1616, by Captain Thomas Edge, who had made ten voyages to those seas. See the Supplement to the N. E. Voyages, London, 1694, 8vo. Wyche’s Island, so called from a Gentleman of that name, was discovered in the following year. Ibid.

^b Wood’s Voyage, p. 145. *Grown Sea*, is the expression in the original. “ Which is not practicable in these tempestuous high *grown* seas.” Dr. Halley, in his Journal, p. 45. Wood’s Voyage was published by Smith and Walford, Printers to the Royal Society in 1694, together with Sir John Narborough’s, Marten’s, and other Navigators. The book is dedicated to Pepys, Secretary to the Admiralty ; and he is complimented therein for having furnished the materials.

Having

Having thus stated Wood's own words, it should seem, that they who deny the authenticity of the relation must contend that the crews of both these Dutch ships entered into a deliberate scheme of imposing upon their brother whale fishers, and had drawn up four fictitious journals accordingly, because so many are stated to have been produced out of the two ships to Captain Goulden, whilst each of them varied a few minutes in the latitude; whereas, if they had determined to deceive Captain Goulden and his crew, the journals would probably have tallied exactly. I must beg leave also to make an additional observation on the account as stated by Wood, which is, that the Dutch ships only went to the Northward, in search of whales, but did not give it out that they intended to make for the Pole, which if they had done, it might possibly have been an inducement to carry on the deception by forgeries and misrepresentations. To this it may likewise be added, that the Dutch are not commonly jokers.

I have already remarked; that Wood makes this account one of the principal reasons for his undertaking the N. E. passage to Japan. Wood therefore (Mr. Oldenburgh's contemporary) was not a disbeliever before his voyage of the possibility of reaching so high a Northern latitude, nor of any of the circumstances stated in this narrative.

But Captain Wood is not a single instance of such credulity, as, the very year before he failed on his voyage, we find in the Philosophical Transactions for 1675 the following passage: "For it is well known to all that sail Northward, that most of the Northern coasts are frozen up many leagues, though in the open sea it is not so, *No nor under the Pole itself*, unless by ac-

“cident.” In which passage, the having reached the Pole is alluded to as a known fact, and stated as such to the Royal Society.

Wood indeed, after not being able to proceed further than N. lat. 76, discredits in the lump all the former instances of having reached high Northern latitudes, in the following words :

“So here the opinion of William Barentz was confuted, and all the Dutch relations^d, which certainly are all forged and abusive pamphlets, as also the relations of our countrymen.”

In justice, however, to the memoirs of both English and Dutch navigators, I cannot but take notice of these very peremptory and ill-founded reflections, made by Wood ; and which seem to be dictated merely by his disappointment, in not being able to effect his discovery.

Wood attempted to sail in a N. E. direction between Spitzbergen and Nova Zembla, but was obstructed by ice, so that he could not proceed further than the W. coast of Nova Zembla in N. lat. 76. Thinking it, therefore, prudent to return, he at once treats as fabulous, not only the ideas of that most persevering seaman William Barentz, but likewise all other accounts of ships having reached high Northern latitudes. Now that the ice which obstructed Wood in N. lat. 76. was not a perpetual, but only occasional barrier, appears by the Russians having not only discovered, but lived several years in the island of Maloy Brun,

^d The Dutch made three voyages for the discovery of the N. E. passage in three successive years, the third being in 1596, which last was by the encouragement of a private subscription only. See Gerard de Veer, p. 13. Amsterdam, 1609. folio.

^e Wood's Voyage, p. 181.

which

which lies between Spitzbergen and Nova Zembla, and extends from N. lat. $77^{\circ} 25'$ to $78^{\circ} 45'$ ^f. The Dutch also sailed round the Northern coast of Nova Zembla, and wintered on the Eastern side in 1596^g.

As for Wood's treating all discoveries towards the Pole, from the Northern parts of Spitzbergen, as fabulous, he had not the least foundation, from what he had observed on his own voyage, for this unmerited aspersion upon their veracity; because, if Wood's barrier between Spitzbergen and Nova Zembla, in N. lat. 76, had been perpetual, what hath this to do with the course of a ship sailing from the Northern parts of Spitzbergen upon a meridian towards the Pole?

I cannot, however, dismiss Wood's voyage without making some further remarks on his concluding that the obstructions which he met with in N. lat. 76 were perpetual.

Almost every voyage to seas, in which floating ice is commonly to be found, proves the great difference between the quantities, as well as size, of these impediments, to navigation, though in the same latitude and time of the year.

^f See the English Translation of professor Le Roy's account of this island, p. 85. London, 1774, 8vo, printed for C. Heydinger. As also the Sieur de Vaugondy's *Essai d'une Carte Polaire Arctique*, published in 1774, who represents this island as extending from N. lat. $77^{\circ} 20'$ to $78^{\circ} 30'$, its longitude being 60 degrees E. from Ferro.

^g See the map of the circumpolar regions which accompanies Wood's voyage. The Northern point of Nova Zembla, in this map, is in 77 nearly. There were factions in Holland, with regard to the method of discovering the N. E. passage. Barentz, infligated by Plancius the Geographer, was for making the trial to the N. of Nova Zembla; the other two ships which sailed on that expedition of discovery were to attempt passing the Weygartz. *Recueil des Voyages au Nord*, tom. IV. Linschoten's Preface.

Davis, in his two first voyages to discover the N. W. passage, could not penetrate beyond 66; but in his third voyage, in 1587, he reached 72° 12' ^b.

In the year 1576, Sir Martin Frobisher passed the Straits (since called from their first discoverer) without any obstructions from ice: in his two following voyages, however, he found them in the same month, to use his own expression, "in a manner shut up with a long mure of ice!"

In the year 1614, Baffin proceeded to 81, and thought he saw land as far as 82^k to the N. E. of Spitzbergen, which is accordingly marked in one of Purchas's maps. During this voyage he met, near Cherry island, situated only in 74 N. lat. two banks of ice; the one, 40 leagues in length, the other 120; which last would extend to 25 degrees of longitude in N. lat. 76, where Wood fixes his barrier.

It need therefore scarcely be observed, that such a floating wall of ice, 120 leagues long, by being jammed in between land, or other banks of ice, might afford an appearance indeed of forming a perpetual barrier, when perhaps, within the next 24 hours, the wall of ice might entirely vanish.

Of the sudden assemblage of such an accumulation of ice, I shall now mention two, rather recent, instances.

I have been very accurately informed, that the late Colonel Murray happened to go, in the month of May, from one of our Southern colonies to Louisburgh, when the harbour was entirely open; but on rising in the morning, it was completely filled

^b See Hakluyt and Purchas, vol. I. p. 84.

ⁱ Purchas, *ibid.*

^k See also the Supplement to Wood and Marten's Voyages, in the 8vo publication of 1694, in which point Purchas is stated to be in N. Lat. 82.

with

with ice, so that a waggon might have passed over it in any direction¹.

I have also received the following account from an officer in the royal Navy, who was not many years ago on the Newfoundland station.

In the middle of June, the whole straits of Bellisle were covered in the same manner with the harbour of Lewisburgh, and for three weeks together a carriage might have passed from one shore to the other; but during a single night the ice had almost entirely disappeared. Such is the sudden accumulation of ice, in latitudes 24 and 30 degrees to the Southward of Wood's situation.

Linschoten asserts, that, being in the straits of Weygate the last day of July, he was told by the Samoieds on that coast, that in ten or twelve days afterwards the ice in the straits would be all gone, though they were then quite blocked up with it. When he repassed these straits afterwards on the 13th of August, he found not the least vestige of it, so quickly do these huge masses dissolve after they once begin to thaw^m.

On the other hand, Callander admits, that by accumulation of floating ice places are now inaccessible which were not formerly so, and instances the eastern coast of Greenland, as also Frobisher's straitsⁿ. Kergulen, in his account of Iceland, likewise mentions, that the sea between Iceland and Greenland was entirely closed during the whole Summer of 1766.

¹ On the 19th of December, 1759, the Potowmack, in a part where it was two miles broad, and nearly in N. lat. of only 38, was frozen entirely over in one night, when the preceding day had been very mild and temperate.—Burnaby's Travels through N. America, p. 59.

Camden, in his Annals of Elizabeth, asserts, that Davis reached 83, where the straits, called after him, were narrowed to 40 leagues—See Camden, Anno 1585. We have not since been able to proceed so far to the Northward.

^m Callander's Pref. p. 38.

ⁿ Ibid.

I shall now endeavour to shew, that Dr. Halley was no more incredulous with regard to the possibility of reaching high Northern latitudes, than Captain Wood was before the ill success of his voyage on discovery.

Mr. Miller, in his Gardener's Dictionary, hath the following passage, under the article, THERMOMETER :

“ Mr. Patrick has fixed his thermometer to a scale of ninety degrees, which are numbered from the top downwards, and also a moveable index to it. The design of this is to shew, how the heat and cold is changed from the time it was last looked upon, according to the different degrees of heat and cold in all latitudes. As by the trial of two thermometers, which have *been regulated abroad*; the one by Dr. Halley, in his Southern voyage; and the *other by Captain Johnson, in his voyage to Greenland*; the first hath a heat under the equinoctial line, and the other *a degree of cold in 88 degrees of N. latitude.*”

I have taken some pains to find out a more full account of this voyage of Captain Johnson's; but have only met with the following confirmation of it perhaps, in the 1st vol. of Monf. de Buffon's Natural History°.

“ I have been assured, *by persons of credit*, that an English captain, whose name was Monson, instead of seeking a passage to China between the Northern countries, had directed his course to the Pole, and had approached it within two degrees, where there was an open sea, without any ice.”

As the Captain *Monson* mentioned in this passage, reached exactly the same degree of latitude with Captain *Johnson*, I should rather think, that this is the same voyage; especially, as it is well known, that the French writers seldom trouble themselves about the orthography of foreign names.

° Vol. I. p. 215, quarto.

If this, however, should not be the case, it must be admitted to be an additional instance of a ship's having reached N. lat. 88, as well as *Monf. de Buffon's* giving credit to such relation [¶].

Having therefore not been able to pick up any other circumstances in relation to Captain Johnson's voyage, I shall now state what seems to be fairly deducible from the passage which I have copied from *Miller's Gardener's Dictionary*.

Dr. Halley made his voyage to the Southward in 1700; on the return from which, he probably employed Patrick, as the most eminent maker of weather glasses [¶], to graduate a thermometer according to the heat he had experienced under the equator. It was very natural therefore, when such a point of heat was to be marked upon the instrument, to make the scale either for high Southern or Northern latitudes.

It should seem, then, that Dr. Halley had procured Captain Johnson (who was master of a Greenland ship) to carry a thermometer on his voyage to Spitzbergen, and that he fortunately was able to reach so high a degree of latitude as 88.

If the thermometer had been calculated only for imaginary degrees of heat and cold, it would have been marked for the Equator and the Pole; whereas it was only regulated for 88 degrees of N. latitude, which Captain Johnson therefore had as clearly reached, as Dr. Halley had the Equator.

[¶] To this list of credulous persons (as perhaps they may be considered by some) I shall beg leave to add the names of *Maclaurin* and *Dr. Campbell*. The former of these was so persuaded of the seas being open quite to the Pole, that he hath not only advised this method of prosecuting discoveries, but, as I have been told, was desirous of going the voyage himself.

[¶] I have been informed, that his shop was in the Old Bailey, and that he died about fifty years ago. Patrick was a great ringer, and some of the most celebrated peals were invented by him more than fifty years ago.—He styled himself, in his advertisements, *Terricellian Operator*.—*Sir John Hawkins's History of Music*, vol. IV. p. 154.

At all events, Patrick's thermometer must have been made under Dr. Halley's inspection; and would he have permitted it to be marked for 88 degrees of N. latitude, according to Captain Johnson's voyage, if he had disbelieved his narrative?

My third and last instance, from any printed authority, but in a book which is not commonly to be met with, is that of Captain Alexander Cluny, as by a map, engraved under his direction, the very spot is marked to the Westward of Spitzbergen, and in somewhat more than 82 degrees of N. latitude, where he saw neither land nor ice.

Before I proceed, however, to state several other instances of reaching high Northern latitudes, which have never appeared in print, and which I have collected since my last paper on this head, I must beg the indulgence of the Society, whilst I lay before them some additional reasons why the Polar seas may be conceived to be navigable.

Speculative geographers have supposed, that there should be nearly the same quantity of land and sea in both hemispheres, in order to preserve the equilibrium of the globe.

* See the American Traveller, London, 1769, quarto; as also, the Sieur de Vaugondy's *Essai d'une Carte Polaire Arctique*, published in 1774; in which, however, he lays down this spot from Cluny's map in little more than 81, whereas it is fully in 82. The longitude of this spot is 30 degrees E. from Ferro.

† I have received a letter from the Rev. Mr. Tooke, Chaplain to the Factory at St. Petersburg, dated December 30, 1774, which he concludes in the following manner: "I have a fact or two to communicate, which seem to indicate, if not to a certainty, yet at least to a degree of probability, that the sea is open to the Pole the year throughout; but my paper will not hold them." From the accuracy with which several other interesting particulars are stated in this letter, I have great reason to regret, that I have not an opportunity of laying the facts alluded to before the Public, with all their circumstances, as I suppose that Mr. Tooke's information came from Archangel seamen.

It is possible, indeed, that this may be accounted for by the Antarctic seas being more shallow than those near the North Pole; as we do not know this, however, by the actual soundings, but are informed by Captain Furneaux, that there is no land even as far as the Antarctic circle, upon the meridian in which he sailed, as also that no land was observed during the course of his circumnavigation in 55 S. lat. at a medium, it seems necessary, as the quantity of land so greatly preponderates in the Northern hemisphere, that from N. lat. 80 $\frac{1}{2}$ to the Pole itself must be chiefly, if not entirely, sea^t.

Let us now consider, whether such a sea is probably at all times in a state of congelation.

I do not know, whether it hath been settled by thermometrical observations, that there is any material difference between the heat under the Equator, and that which is experienced within the Tropics; most travellers complain indefinitely of its excess in such latitudes.

As this point, therefore, seems not to have been settled by the thermometer, let us have recourse to what is found to be the freezing point upon mountains, situated almost under the Equator, and compare it with the same height on the Pic of Teneriff, which being in N. lat. 28, is five degrees to the Northward of the tropical limits.

The French Academicians suppose, that the freezing point, at which all vegetation ceases, and ice takes place, commences on Cotopaxi, at 1411 toises above the level of the sea; or, by our measure, at the height of about a mile and three quarters.^u

Mr.

^t It is now known that Captain Cook also found very little land during his persevering attempts to the southward.

^u Cotopaxi is the highest mountain of the Andes, at least in the neighbourhood of Quito. The plain of Carabuca, from which it rises, is

Mr. Edens, on the other hand, hath given us a very particular account of what he observed in going to the top of Teneriff^w; and so far from seeing snow or ice (except in a cave) his coat was covered, during the night, with dew, at the very summit, which, according to Dr. Heberden's computation, is 15,396 feet high, or wants but 148 yards of three miles^r.

Now as it is thus settled, that the Pic of Teneriff is nearly three miles high, which exceeds by more than a mile the height of the freezing point on Cotopaxi, situated under the Equator, it should seem that there is no material difference between the heat under the Equator and within the Tropics; for if it is urged, that Teneriff is more surrounded with sea than Cotopaxi, it must on the other hand be recollected, that this mountain is situated 5 degrees to the Northward of the Tropic, at the same time that the summit exceeds the freezing point on Cotopaxi by more than a mile; both which circumstances should render it colder than the freezing point on Cotopaxi.

The inference to be drawn from this comparison seems to be, that, as the heat varies so little between the Equator and the tropical limits, it may differ as little between the Arctic circle and the Pole.

Nothing hath been supposed to shew more strongly the wisdom of a beneficent Creator, than that every part of this globe should (taking the year throughout) have an equal proportion of the Sun's light.

1023 toises above the level of the sea, and the height of the mountain above this plain is 1268 toises, making together 2291 toises. If 880 toises therefore are deducted from 2291, 1411 toises become the height of the freezing point upon this mountain. See Ulloa's Account of S. America.

^w Phil. Transf. Abr. vol. V. p. 147. Sprat's Hist. R. Soc.

^r See Hawkesworth's Voyages, vol. II. p. 12. Goats also reach the very summit, which must be in search of food, as they do not bear cold well.

It is admitted, that the equatorial parts have rather too much heat for the comforts of the inhabitants, and those within the Polar circles too little; but, as we know that the tropical limits are peopled, it should seem that the two Polar circles are equally destined for the same purpose; or if not for the benefit of man, at least for the sustenance of certain animals.

The largest of these, in the whole scale of Creation, is the whale; which, though a fish, cannot live long under water, without occasionally raising its head into another element, for the purpose of respiration: most other fish also occasionally approach the surface of the water.

If the ice therefore extends from N. lat. $80\frac{1}{2}$ to the Pole, all the intermediate space is denied to the Spitzbergen whales, as well perhaps as to other fish; and is that glorious luminary, the Sun, to shine in vain for half the year upon ten degrees of latitude round each of the Poles, without contributing either to animal life or vegetation? for neither can take place upon this dreary expanse of ice.

If this tract of sea also is thus rendered improper for the support of whales, these enormous fish, which require so much room, will be confined to two or three degrees of latitude in the neighbourhood of Spitzbergen; for all the Greenland masters agree, that the best fishing stations are from 79 to 80 , and that they do not often catch them to the Southward.

I will now ask, if the sea is congealed from N. lat. $80\frac{1}{2}$ quite to the Pole, when did it thus begin to freeze, as it is well known, that a large quantity of sea water is not easily forced to assume

y " Sometimes the ice is *fixed*, when there are but few whales seen, for " underneath the ice they cannot breathe." Martens's Voyage to Spitzbergen.

The whales likewise are supposed to come from the North; but how can this be, if there is an incruited sea over them?

the

the form of ice? Can it be contended, that ten degrees of the globe round each pole were covered with frozen sea at the original creation? And if this is not insisted upon, can it be supposed, that, when the surface of the Polar ocean first ceased to be liquid, it could have afterwards resisted the effects of winds, currents, and tides?

I beg leave also to rely much upon the necessity of the ice's yielding to the constant reciprocation of the latter; because no sea was ever known to be frozen but the Black Sea, and some small parts of the Baltic^b, neither of which have any tides, at the same time that the waters of both contain much less salt than those of other seas, from the great influx of many fresh water rivers. For this last reason, it may likewise

^a "There are three kinds of ice in the Northern seas. The first is like melted snow which is become partly hardened, is more easily broken into pieces, less transparent, is seldom more than six inches thick, and when dissolved, is found to be intermixed with salt. This first sort of ice is the only one which is ever formed from sea water.

"If a certain quantity of water, which contains as much salt as sea water, is exposed to the greatest degree of cold, it never becomes firm and pure ice, but resembles tallow, or suet, whilst it preserves the taste of salt, so that the *swcet* transparent ice can never be formed in the sea. If the ice of the sea itself, therefore, confined in a small vessel without any motion, cannot thus become true ice, much less can it do so in a deep and agitated ocean." The author hence infers, that all the floating ice in the Polar seas comes from the Tartarian rivers and Greenland, as I have before contended. See a Dissertation of Michel Lomonosof, translated from the Swedish Transactions of 1752. *Collection Académique*, Tom. XI. p. 5. & seq. Paris, 1772, quarto. The Dissertation is entitled, "*De l'Origine des Monts de Glace, dans la Mer du Nord.*"

^a If there had been a fixed barrier of ice from the time of the creation, extending from 80 $\frac{1}{2}$ to the North Pole, the height of such ice must have been excessive, by the accumulation of frozen snow from winter to winter. Martens therefore observes, that the ice mountains in Spitzbergen are constantly encreasing by the snow and rain which falls freezing, and which seldom melts at the top, p. 43.

^b To these perhaps may be added the White Sea.

be presumed, that the circumpolar seas are very salt, because there is probably no such influx beyond N. lat. 80, Spitzbergen itself having no rivers.

Having thus given some general reasons, why the sea should not be supposed to be frozen in the ten highest degrees of latitude, I shall now proceed to lay before the Society, several instances, which I have lately collected, and which prove that it is not so covered with ice considerably to the N. of $80\frac{1}{2}$.

I shall, however, previously make two observations; the first of which is, that every instance of exceeding N. lat. $80\frac{1}{2}$, as much proves that there is no perpetual barrier of ice in that latitude, as if the navigator hath reached the Pole. The second is, that as four experienced Greenland masters have concurred in informing me, that they can see what is called the *blink of the ice*, for a degree before them, they never can be off Hakluyt's Headland, which is situated in $79^{\circ} 50'$, without observing this effect of the ice upon the sky, if there was a perpetual barrier at $80\frac{1}{2}$, which is not much more than half a degree from them, when in that situation. Now Hakluyt's Headland is what they so perpetually take their departures from, that it hath obtained the name of *The Headland* by way of preeminence.

This mountain also is so high, that it can be distinguished at the distance of a degree: in such instances, therefore, which I shall produce, that do not settle the latitude by observation, whenever the reckoning depends upon the approach or departure from this Headland, the account receives the additional check of

* This is described to be an arch formed upon the clouds by reflection from the *packed ice*. Where the ice is *fixed* upon the sea, you see a snow-white brightness in the skies, as if the sun shined, for the snow is reflected by the air just as a fire by night is, but at a distance you see the air blue or blackish. Where there are many small ice fields, which are as meadows for the seals, you see no lustre or brightness of the skies.—Martens's Voyage to Spitzbergen.

the mountain's being increased or diminished gradually to the eye of the observer.

My second previous remark shall be, with regard to all instances of reaching high Northern latitudes, for which the authority of the ship's journal may be required, that it is almost impossible to procure this sort of evidence, except the voyages have been recent; not only for the reasons I have given in my former paper, but because I find, that if the ship's journal is not wanted by the owners in a year or two (which seldom happens) it is afterwards considered as waste paper.

Without the least impeachment also of the knowledge in navigation of the Greenland masters, when they are in the actual pursuit of fish, they do not trouble themselves about their longitude or latitude; they are not bound by their instructions to sail to any particular point, and their only object is to catch as many whales as possible; the ship's situation therefore, at such time, becomes a matter of perfect indifference. It will appear, however, that they not only keep their reckonings, but observe, when they are not thus employed in fishing.

Having made these previous remarks, I shall now proceed to lay before the Society, such instances of navigators having penetrated beyond 80°, as I have happened to procure since the reading of my former paper on this subject, in May last.

James Hutton (then belonging to the ship London, Captain Guy) was, thirty years ago, in N. lat. 81½, as both the captain and mate informed him; but did not observe himself. A very intelligent sea officer was so good as to take from him this account, together with the following particulars, which perhaps may be interesting to Greenland navigators.

Hutton hath been employed in the whale fishery nearly these forty years, during which he hath been several times at the Seven Islands, and the Waygat Straits. In some of these voyages the sea hath been perfectly clear from ice, and at other times it hath

hath set in so rapidly towards the Waygat^d, as to oblige the vessels which happened to be thereabouts, to force all sail possible, to escape being inclosed.

This hardy old tar likewise supposes, that he hath been further up the Waygat than perhaps any person now living; for he was once in a ship which attempted to pass through it, nor did the master desist, till they shoaled the water to three fathoms, when the sea was so clear, that they could distinguish the bottom from the deck.

Mr. John Phillips, now master of the Exeter, but then mate of the Loyal Club, in the year 1752, reached N. lat. 81 and several minutes by observation, which circumstance was confirmed by another person on board the Exeter last summer, on her return from the Greenland fishery. Captain Phillips added, that it was *very common* to fish in such latitudes.

Mr. George Ware, now living at Erith in Kent, served as chief mate in the year 1754, on board the Sea Nymph, Captain James Wilson, when, at the latter end of June, they sailed through floating ice from 74 to 81; but having then proceeded beyond the ice, they pursued the whales to 82° 15', which latitude was determined by Mr. Ware's own observation.

As the sea was now perfectly clear, as far as he could distinguish with his best glasses, both Mr. Ware and Captain Wilson had a strong inclination to push further towards the Pole; but the common sailors hearing of such their intention, remonstrated, that if they should be able to proceed so far, the ship would fall into pieces, as the Pole would draw all the iron work out of her.

^d The Weighgatt is so called from the wind which blows through this strait, [*weiben*, to blow] because a strong S. W. wind blows out of it. Another name for it is *Hindelopen*.—See Martens's Voyage, p. 27.

On this Captain Wilfon and Mr. Ware desisted, as the crew had these very singular apprehensions; especially as they had no whales in sight to the Northward, which alone would justify the attempt to their owners^c. It need scarcely be observed, however, that the notion which prevailed among the crew shews, that the common seamen on board the Greenland ships conceive, that the sea is open to the Pole; they would otherwise have objected on account of the ice being supposed to increase. It should seem also, that the practicability of reaching the Pole is a point which they often discuss amongst themselves.

In *this same year and month*, Mr. John Adams (who now is master of a flourishing academy at Waltham Abbey, in Essex) was on board the Unicorn, Captain Guy, when they anchored in Magdalena Bay^f, on the Western coast of Spitzbergen and N. lat. $79^{\circ} 35'$.

They continued in this bay for three or four days, and then stood to the Southward, when the wind freshning from that quarter, but the weather foggy, they proceeded with an easy sail for four days, expecting to meet with fields of ice, to which they might make fast; but they did not encounter so much as a piece that floated. On the fifth day the wind veered to the Westward, the weather cleared up, and Mr. Adams had a good observation (the Sun above the Pole^g) by which he found himself three degrees to the Northward of Hakluyt's Headland, or in N. lat. 83.

Captain Guy now declared, that he had never been so far to the Northward before, and crawled up to the main-top mast head,

^c This circumstance of not seeing any whales in that direction accounts for Captain Guy's desisting, in the following instance, from sailing to the Northward, as also in many others which I shall have occasion to state.

^f The Greenland masters most commonly call this bay Mac-Helena.

^g The old navigators to these parts call this a *South Sun*.

accompanied

accompanied by the chief mate, whilst the second mate together with Mr. Adams went to the fore-top mast head, from whence they saw a sea as free from ice as any part of the Atlantic ocean, and it was the joint opinion of them all, that they might have reached the N. Pole.

The ship then stood to the Southward, and twelve hours afterwards Mr. Adams had a second good observation (the Sun beneath the Pole) when their latitude was $82^{\circ} 3'$. In both these observations, Mr. Adams made an allowance of $5'$ for the refraction, which, he says, was his captain's rule, who was now on his 59th or 60th voyage to the Greenland seas.

In the year 1756, Mr. James Montgomery, now a merchant in Precot-street, Goodman's-fields, but then master of the Providence, followed the whales during the month of June till he reached N. lat. 83, by observation. Another Greenland master informs me, that he remembers well the ice packed much to the Westward, but that the sea was open to the Northward during that summer.

In 1762, David Boyd, then mate of the brig *Betsy*, was driven by a gale of wind from 79 to 82, odd minutes, by observation; during all which time he was beset in ice. A Greenland master has likewise told me, that he recollects many other ships were driven to the N. E. from their fishing stations during that season.

Mr. Jonathan Wheatley, now master of a Greenland ship, was in 1766 off Hakluyt's Headland^b, whence, not meeting with success, he sailed N. W. to $81\frac{1}{2}$, in which latitude he could see no ice in any direction whatsoever from the mast head, though there was a very heavy sea from the N. E.

Mr. Wheatley also informs me, that whilst he was off the Coast of Greenland, three Dutch Captains told him, that a ship

^b He was then on board a ship called the *Grampus*.

of their nation had been in 89, and they all supposed, that the sea in such a latitude might be as free from ice as where they were fishing. This account probably alludes to the Dutch man of war, on board of which Dr. Dallie happened to be, the circumstances of which voyage I have stated in my former paper.

This same captain is so thoroughly persuaded of being able to approach the Pole, that he will attempt it whenever an opportunity offers of doing it, without prejudice to his owners. On such a voyage of discovery, he would not wish a larger vessel than one of 90 tons¹, nor more than ten hands. I find, indeed, that this is the size of the ship, in which most of the early navigators attempted to proceed far to the Northward.

In 1769, Mr. John Thew, now master of a Greenland ship called the Rising Sun, was in lat. 82, and 100 leagues to the W. of Hakluyt's Headland. The circumstances by which he supposed himself to have been in this situation, were stated to me in the presence of a very able sea officer, who told me afterwards, that he was perfectly satisfied with the accuracy of his account.

Captain John Clarke, of the Sea Horse, at the latter end of June 1773, sailed from the Headland N. N. E. to $81\frac{1}{2}$, which he computed by his run from the Headland in 18 hours, having lost sight of it. At this time there was an open sea to the Northward, and such a swell from the N. E. that the ship would not stay, being under her double reef'd topsails, whilst the wind blew fresh.

During this run from the Headland, Mr. Clarke fell in with Captain Robinson in $81^{\circ} 20'$, whom I mentioned in my former paper as having reached $81\frac{1}{2}$ in the same month and year, by a very accurate observation.

¹ Clipperton reached China in a bark not much exceeding ten tons, as did also Funnell, in another such vessel. Callander, vol. III. 223.

This same Captain Robinson, on the 28th of June last, passed by Hakluyt's Headland, lying off and on for several days, during which he was sometimes a degree to the Northward of it, and till the 20th of July following, there was no obstruction to his proceeding Northward; to which, however, he had no inducement, as he caught two large whales in this latitude^k.

Captain John Reed, of the Rockingham, also in July last, pursued some whales 15 leagues to the Northward of the Headland, and confirms Captain Robinson's last account, by saying, he could then see no ice from his mast head.

Captain Reed was brought up in the Greenland fishery, and remembers well, that whilst on board his father's ship, the *Thistle*, the mate told him, that they had reached $81^{\circ} 42'$, when there was indeed a good deal of ice, but full room to sail in any direction.

Mr. Reed likewise hath informed me, that about 15 years ago, a Dutch Captain (whose name was Hans Derrick) told him, whilst they were together in the Greenland seas, that he had been in N. lat. 86, when there were only some small pieces of floating ice to be seen. Hans Derrick moreover added, that there were then five other ships in company, which took one with another eighteen small whales.

I have great reason to expect several other instances of the same kind, in a short time, from the different parts of this kingdom where there is any considerable Greenland trade: I shall not, however, trouble the Society with them, till I know whether they would wish any further information on this head.

I shall now recapitulate the different latitudes which have been reached by the several navigators whose names I have mentioned.

^k The second part of Martens's voyage (who received certain queries from the Royal Society) begins almost by saying, "We failed to the 81^{st} degree, and no ship ventured further that year," viz. 1671.

in this and my former paper. I shall also take credit for nearly a degree to the Northward of their several situations, because the *blink or glare* of the *packed ice* is to be distinguished at this distance, when the weather is tolerably fair.

- 80°. 45'. Captain John Reed.
 81°. For three weeks together, Captain Thomas Robinson.
 81°. odd minutes, Captain John Phillips.
 81°. 30'. Four instances; *viz.* James Hutton, Jonathan Wheatley, Thomas Robinson, John Clarke.
 82°. Two instances; *viz.* Captains Cheyne and Thew.
 82°. odd minutes. Two instances; *viz.* Cluny and David Boyd.
 82°. 15'. Mr. George Ware.
 83°. Two instances; Mr. John Adams and Mr. James Montgomery.
 83°. 30'. Mr. James Watt, lieutenant in the royal navy.
 86°. Five ships in company with Hans Derrick.
 88°. Two instances; Captain Johnson and Dr. Dallic; to which, perhaps, may be added Captain Monson, as a third.
 89°. Relation of the two Dutch masters to Captain Goulden^e.
 89°. 30'. Dutch relation to Mr. Grey.

DAINES BARRINGTON, F. R. S.

^e This instance, however, hath before been relied upon, though never, perhaps, circumstantially stated, but by Captain Wood.

POST-

P O S T S C R I P T.

January 8, 1775.

HAVING procured the three following instances before the reading of my paper was finished, it may not be improper to add them in a postscript.

In Harris's Voyages^b is the following passage, "By the Dutch Journals they get into N. lat. 88° 56', and the sea open."

I have within these few days asked Dr. Campbell, the very able compiler of these voyages, upon what authority he inserted this account? Who informs me, that he received it from Holland about 30 years ago, as being an extract from the journals produced to the States General in 1665, on the application for a discovery of the N. E. passage to Japan, which was frustrated by the Dutch East-India Company.

In the *Journal des Savans*, for the month of October 1774ⁱ, is likewise the following paragraph:

"To these instances produced by Mr. Barrington" [of navigators having reached high Northern latitudes], "our countrymen" (*viz.* the Dutch) could add many others. An able officer in the English service hath in his custody the journals of a Greenland ship, wherein he hath remarked, that in the month of May he had penetrated as far as 82° 20', when the sea was "open."

My third and last instance is that of Captain Batefon, who sailed in 1773, from Liverpool, in a ship called the Whale, on the Greenland fishery, and who, on June 14, reached N. lat.

^b Vol. II. p. 453.

ⁱ Part II. p. 503.

82° 15', computed by his runback to Hakluyt's Headland^k. As this happened so recently, Captain Bateson (as well as many of the other masters, whose accounts I have before mentioned) hath his journal to produce, if it should be required.

This seems to be the strongest confirmation of both Captain Robinson and Captain Clark's having been, during this same year and month, in 81½; as also of their having met each other in 81° 20', according to what I have already stated.

I must not lose this same opportunity of laying before the Society the information which I have just now received from M. de Buffon, in relation to what I have cited from his Natural History of Captain Monson's having reached N. lat. 88°, "*as he was told by persons of credit.*"

Upon my taking the liberty to inquire, *who those persons of credit were?* Mons. de Buffon refers me to Dr. Nathan Hickman, who in 1730 travelled as one of Dr. Ratcliff's fellows^l; and who supposed, that Captain Monson's journal might have been at that time procured in England. Mons. de Buffon also recollects, that a Dutchman was then present, and confirmed the account.

^k His inducement to proceed so far North, was the pursuit of whales. I have shewn the extracts from Captain Bateson's journal to a very able sea officer, who is perfectly satisfied with the accuracy of it.

^l He was also a fellow of the Royal Society in 1730.

ADDITIONAL PAPERS

FROM

H U L L.

WHILST I was waiting in expectation of several additional instances of Dutch ships, which had been in high Northern latitudes, I received the following answers to certain queries relative to the Greenland seas from a very eminent merchant of Hull, and which he is so obliging as to permit me to lay before the public. March 31, 1775. *D. B.*

I. From Captain JOHN HALL of the *King of Prussia.*

Answer to 1st Query, *viz.* How near hath any ship approached the Pole?

I have known ships go into the latitude of 84° North, and did not hear of any difficulty they met with; but it is not often that the ice will permit them to go so far North.

N. B. On enquiring of Captain Hall what ships he had known proceed so far? He replied, they were some Dutch ships he heard had done so, but knew no particulars.

2d Query. When are the Polar seas most free from ice?

The seas are most incumbered with ice from about the 1st of September to the 1st of June following; and in consequence, between the 1st of June and September, the ice lieth furthest from Spitzbergen. And I know no other precaution to be taken,

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respecting

respecting the Pole, than that they must watch the opportunity when the ice lieth furthest from the land.

3d Query. How far to the Southward have you first seen ice ?

In the space of twenty years, I have twice known that we met with the ice in the latitude of $74^{\circ} 30'$ North, and could not find a passage to the Northward till the month of July, and then got into the latitude of 78° with much difficulty, in running through the openings of great bodies of ice ; and some years we find a passage to the latitudes 79 and 80° North, without much difficulty from the ice. Some years I have known ships go round the North part of Spitzbergen, and so come out between Nova Zembla and the South part of Spitzbergen ; but this passage is seldom to be found free from ice.

4th Query. From what quarter is the wind coldest whilst off Spitzbergen ?

Northerly and E. N. E. winds are most frosty ; but snow and frost we have very common with all winds, except during part of June, July, and August. If the winds be Southerly the weather is milder, but subject to snow, sleet, and thick weather. The winds, currents, and the ice are very variable.

The opinion of the old seamen is, that we may proceed further North than ever has been yet attempted ; but this must be done with caution. An opportunity is to be watched for in those seas. The most likely time for such discoveries to be made is in the months of July and August, when the ice is most commonly furthest from the land ; but some years not to be found open at all from the land. And when it is open, they must observe the ice to lay a long way from the North part of Spitzbergen ; for I have known ships that made attempts to go to the
Northward,

Northward, and before they returned back, the ice set in with the land, so that they have been obliged to leave the ships to the East of Spitzbergen.

N. B. The ice always sets in with the land the back of the year.

II. From Captain HUMPHRY FORD of the *Manchester*.

1st. I was once as high as the latitude $81^{\circ} 30'$ North, in the ship *Dolphin* of Newcastle, in the year 1759 or 60, and have been several times since as high as the latitude 81° in the ships *Annabella* and *Manchester*, in which latitude I never met with any uncommon circumstances, but such as I have met with in the latitudes 75, 76, 77, 78, and 79° ; if to the westward, I was commonly incumbered with large quantities of ice.

2d. I suppose that the Greenland seas are most incumbered with ice in the months of December, January, February, and March; for in the latter part of April, and the first of May, the ice generally begins to separate and open; and in the months of June and July, we generally find the Greenland seas most clear of ice.

3d. The only precaution to be taken, in order to proceed towards the Pole, is to fit out two strong ships that are handy and sail fast, well equipped, and secured in the manner of those that are generally sent to Greenland on the whale fishery. Such ships should be manned with about forty able seamen in each, and victualled for eighteen months or two years, and be entirely under the command of some expert, able, and experienced seaman, who has frequented those seas for some time past. They should sail from England about the middle of April, in order to

be

be in with the edge of the ice about the 10th of May, when it begins to separate and open.

4th. There is not the least reason to suppose, that the seas to the West, North-west, and North of Spitzbergen are covered with permanent and perpetual ice, so as never to be opened by the operation of the winds: for daily experience shews us, that a Northerly wind, when of any long duration, opens and separates the ice, so as to admit of ships going amongst it in sundry places to a very high latitude, if attempted.

N. B. I never was to the Eastward of Spitzbergen; but am of opinion, that the ice is much the same there as to the North and North-west of Spitzbergen.

I generally find that Northerly winds bring frost and snow; on the contrary, Southerly winds bring mild weather and rain; but none of those winds appear to be periodical, except close in with the land, called Fair Foreland, where I generally find the winds in the months of June and July to blow mostly from the S. S. W. and very often excessive strong.

It is my opinion, by observing the above, that in some years ships might sail very nigh the Pole; if not, the impracticability must arise from the large quantity of ice that lies in those seas.

III. From Captain RALPH DALE of the *Ann and Elizabeth.*

I am willing to give you my opinion, in regard to the queries received of you, so far as my observations will justify.

1st. In the year 1773, I sailed North 81° , when I was much incommoded with large fields of ice, but the air was not sensibly

sibly different there from what I found it a few more degrees Southerly.

2d. I have for many years used the Greenland fishery; and have, by experience, found those seas the least incumbered with ice betwixt the forepart of May till July.

3d. The same year I sailed to the latitude above-mentioned, I found in May, to the West of Spitzbergen, a fine open sea, the wind then blowing South-west, and the sea (as far as I could observe from the mast-head) was little incumbered with ice, which fully convinced me that there was a probability of proceeding to a very high latitude.

4th. I have observed, that let the wind blow from what quarter it will, it is at times impregnated with frost, snow, &c.; but when most so I am not able to determine. As for rain, I do not recollect ever seeing any there. The weather I have generally found mildest when the wind blows Southerly. As for periodical winds, I do not suppose there are any in Greenland.

IV. From Captain JOHN GREENSHAW.

In regard to the Queries sent to me, all I have to say is, that if a passage to the North Pole is ever to be accomplished, my opinion is, it must be obtained by going betwixt Greenland and Nova Zembla, as I myself have been to the Westward of Greenland, and reached so far to the Northward as 82° of North latitude, and to the North and North-west of that found nothing but a solid body of ice: my opinion, therefore, is, that it is impossible ever to obtain a passage that way. Captain John Croft, in the South Sea Company's time¹, was once so far as 83°

¹ The South Sea Company sent a small number of ships, for about nine years, on the Greenland fishery.

North

North latitude, and to the Northward of Greenland, and met with nothing but a solid field of ice. And in regard to the winds and weather, it freezes continually; but the wind from the Southward doth commonly bring rain and thick foggy weather, which is chiefly in the latter end of June and July. If you are to the Northward and Westward of Greenland, the wind from the N. W. and N. N. W. doth always open the ice; but at the same time, if it come to blow any time from that quarter, packs it close in with the land; and the winds from the Southward have the contrary effect.

V.

The Queries answered by ANDREW FISHER, master of a Greenland ship at Hull, who has been twenty-four voyages from England to the Greenland seas.

1st. Said Andrew Fisher says, that in the year 1746, being on board the ship Ann and Elizabeth from London, on a voyage to the Greenland seas, he steered from Hakluyt's Headiand in Spitzbergen North and N. N. W. in clear water till they were in latitude $82^{\circ} 34'$, where they met with a loose pack of ice, and made their fishery, or otherwise they might have got through that loose ice, and doubt not, but that they might have gone considerably further North; they returned, however, in clear water to Spitzbergen.

2d. Best seasons of the year are, to be at or near Spitzbergen from the 15th of May to the 1st of June, though the years differ, and the laying of the ice exceedingly; some years it is not possible to get North of 80° ; at other times you may meet with very little ice, which is chiefly owing to the weather in winter, and the winds in April and May.

3d. There

3d. There is not any reason to suppose, that there is any permanent ice, either North or West of Spitzbergen, so far as 90° ; and it hath been always found, by able and experienced navigators, that there is not near the quantity of ice, nor so liable to set fast to the North of Spitzbergen, as there is to the South of 80° as far as 74° , owing to the continent of America (called Gallampus land by the sailors) and Spitzbergen, which makes a narrow passage in proportion to what it is to the North of Spitzbergen. The land of America is sometimes seen by our Greenland traders from latitude 74° to 76° ; and as it is not seen any further North, is supposed to round away to the North-west, which makes it imagined by many, that there is not any land near the Pole.

4. South winds bring most snow; North winds bring frost; but that is in the month of April and two-thirds of May; after that time, to the 1st or 10th of July, it is in general mild, fine, clear, sun-shine weather, and winds variable; after that again, often thick fogs and high winds.

5. It is very possible, by steering North or N. N. E. by the ship's compass, (if it can be so contrived as to have the card on the needle steady, and the winds prove favourable,) with a little perseverance, a ship may get near the Pole, if they do not meet with rocks.

VI.

S I R,

IN the year 1766, trade being dull, I fitted a ship at my sole expence to the Greenland seas; and the said ship returned with one fish, eleven feet bone. Finding the trade could be conducted better in private hands than a company's, I was induced to send

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a second

a second ship in 1767, and as I had other concerns in shipping, thought it most prudent (being brought up to the sea, and having made an easy fortune from it) to go a voyage to the Greenland seas, to see with my own eyes what chance there might be of making or losing a fortune. So sailed from Hull the 14th day of April, in my ship the British Queen, with an old experienced master, and on the 24th and 25th of April was in the latitude of 72° , catching seals amongst great quantities of loose ice. As we did not choose to stay in that latitude, we made the best of our way North; and after sailing through loose ice, which is commonly the case, about the 6th of May we were as far North as latitude 80° , (which is near what the masters call *a fishing latitude*) and about 15 leagues West of Hakluyt's Headland. I found the further North the less quantity of ice; and from the enquiry I made, both from the English and Dutch, which was very considerable, there is a great probability of ships going to the Pole, if not stopped by meeting land or rocks. It appeared to me, that the narrowest place in those seas was betwixt Spitzbergen and the American shore, where the current is observed to come always from the North, which fills this narrow place with ice, but in general loose and floating in the summer, though I believe congealed and permanent in winter. Those from whom I enquired informed me, that the sea was abundantly clearer to the North of Spitzbergen, and the further North the clearer. This seems to prove a wide ocean and a great opening to the North, as the current comes from thence that fills this passage as aforesaid. The best method of reaching the highest latitude in my opinion is, to hire two vessels of about 250 tons burthen each, and if done on a frugal scheme, the same ships might be fitted for the whale fishery, and premiums given both for the use of the ship and crew, in proportion to their approach to the Pole, which,

from

from many circumstances that may intervene, might be two or three years before they could complete their wishes. And it is more likely they might make their fishery sooner than to the Southward; as, if they met with ice, the fish would be undisturbed; if clear water and a good wind, they very soon might reach the Pole. What I mean by two vessels is, one to forefail the other at the distance of three or four leagues, as the latter may avoid the dangers the first might run into; and to be always ready, on seeing and hearing proper signals, to aid and assist, and by that means secure a retreat. I am also of opinion, that such ships being sent on discoveries are much more likely to succeed than his majesty's ships and officers. The above hints I have pointed out for your consideration; and if I can be of any further service, may command, Sir,

Your most humble servant,

SAM. STANDIDGE.

Hull,
March 4, 1774.

ITAKE this opportunity of laying before the Public the following letter from Captain MARSHALL, master of a Greenland ship, to Captain HEATH, of the 41st Regiment, who formerly made two voyages to Spitzbergen.

S I R,

IN compliance with your request of Wednesday last, I acquaint you, that six years ago I was as high as eighty-two degrees, thirty minutes, North latitude, by observation, which is the highest I have ever been in; at that time I was mate of the Royal Exchange Greenlandman, of Newcastle. I do not know of any one who has been in a higher degree; but it has been reported at Newcastle (with what truth I cannot say) that Captain Green-
shaw,

shaw, of London, had told his friends, that he had been as high North as eighty-four degrees.

The Dutch, I have been informed, have proceeded to eighty-three degrees, thirty minutes; but I have it only by hear-say.

In respect to your second query, I remember, that about five years since, when I was master of the above-mentioned ship, I was in eighty-one degrees, North latitude, by observation, when there was a clear sea to the Northward, as far as the eye could reach from the mast-head; and I could not help observing to my people, that if it had happened that we were then upon discovery, we might have had a fine run to the North, as the wind blew fresh at South. The like clear sea I have observed several times during the time I have been in the Greenland service, which is now about twenty-one years. I have no doubt but that a navigator might reach a higher latitude than I have been in, provided he was well acquainted with the currents and the ice, for much depends thereon; and took the advantage of a favourable season. I have remarked, that when the frost has been severe in England, and to the southward^m, there has been a great deal less ice to the northward, the ensuing summer than usual; and the weather has been remarkably fine in Greenland. I have, for this reason, great expectations that the approaching season will produce a successful fishery, and that it will also afford an opportunity for a trial to reach the poleⁿ.

^m I conceive that this arises from the ice becoming of a greater thickness during such severe winters, and consequently cannot be so soon broken up, or observed by the Greenland ships which return to the Southward, before the ice can have floated to them in the Spitzbergen seas.

ⁿ I am sorry to have been informed, since the Bill for promoting discoveries passed, that the attempts to penetrate to the Northward will not be so frequent as I had flattered myself; because, most of the Greenland vessels being insured, if any accident should happen to a ship which is not prosecuting the whale fishery, the owners will not be entitled to recover.

But

But the greatest difficulty attending a navigator in very high latitudes is how to get back again, for, should he be beset there in the ice, his situation would be very dangerous; for he might be detained a long time, if not for the whole winter. I speak this from experience, for I was once beset for three months, and was given up for lost, and with difficulty got out.

Any further information in respect to the land, the currents, ice, or other particulars, you may wish to have, I shall very readily communicate it, and am,

S I R,

Your very humble Servant,

JAMES MARSHALL.

No 5, Spring-street,
Shadwell, Feb. 25
1776.

Captain Heath, to whom I am indebted for this communication, also informs me, that on the 15th of December, 1777, he minutely the following particulars from a person employed in the whale fishery.

“ That being on board the Prince Frederick of Liverpool in 1765, commanded by James Bisbrown, he reached the latitude of $83^{\circ} 40'$, where he was beset in ice for three weeks to the Southward, but that he saw, during this time, an open sea to the North.”

The Astronomer Royal having been so good as to furnish me with the following memorandum, which he made at the time it bears date, I here subjoin it, as a well authenticated instance of a Navigator's having reached 84 degrees and a half of Northern latitude.

Mr.

Mr. Stephens, who went many voyages to the East-Indies, and made much use of the Lunar method of finding the Longitude, in which he is very expert, tells me this 16th of March, 1773, that he was formerly two voyages on the Greenland fishery; that in the 2d, in the year 1754, he was driven off Spitzbergen, together with a Dutch ship, by a S. S. E. wind, N. N. Westerly by compass into latitude 84 degrees and a half, or within 5 degrees and a half of the Pole, in which latitude he was near the end of the month of May. They saw no land after leaving Hackluits Headland, (or the Northern-most part of Spitzbergen,) and were back in the month of June. Did not find the cold excessive, and used little more than common clothing; met with but little ice, and the less the further they went to the Northward: met with no drift-wood. It is always clear weather with a North wind, and thick weather with a Southerly wind; nevertheless they could take the Sun's altitude for the latitude most days. The sea is quite smooth among the ice, as in the river Thames, and so they also found it to the North of Spitzbergen. Met with no ice higher than the ship's gunnel. Imagines it would hardly have been colder under the Pole, than they experienced it; although he thinks the cold rather increased on going Northward. Thinks the currents are very variable, and have no certain or constant direction. Says he has often tasted the ice, when the sea water has been let to run or dry off it, and always found it fresh. That the sea-water will freeze against the ship's bows and rigging, but he never saw it freeze in the ship. That it never freezes in the pumps. A little piece of ice detained under a large piece of ice, when it gets loose from it and comes up to the surface of the water, is very dangerous, it emerging with a force which will sometimes knock a hole in the bottom of the ship. The Dutch ship which was driven with theirs from
Spitzbergen

Spitzbergen ran against a large piece of ice, and was lost, the ships being then separated to a considerable distance. The winds in these seas are generally Northerly; the Southerly winds are commonly damp and cold.

Having thus stated the memorandum as I received it from Dr. Maskelyne, I shall now make some observations on the contents.

It appears by the preceding pages, that in this same year, *viz.* 1754, both Mr. Ware and Mr. Adams^o failed to 82° and an half, and 83 degrees during the month of June, and both of them conceived that they might have reached the North Pole.

Mr. Maister, by letter from Hull, dated February 24, 1777, hath procured me the following information from a friend of his, who, at my desire, inquired at Whitby with regard to any ships having reached high Northern latitudes.

“ Captain Brown of the *Freelove* says, that in the year 1770, “ he was certainly in 82° North latitude, when the water was “ clear. Captain Cole also of the *Henrietta* says, that in 1776, “ he was near the latitude of 81° North, and after he was certain “ of being in that latitude, he was, with strong South East gales, “ drove for three days to the Northward, but as he had thick “ weather, the distance was uncertain. In the course of this “ drift he met with nothing but loose ice.”

It appears also by the above account that Mr. Stephens had proceeded as far as 84° and an half, the sea being open to the Northward a month earlier in this same year.

From this and other facts of the same kind, I cannot but infer that the attempt should be made early in the season; if I am right also in what I have before supposed, that the ice which often packs near the coasts of Spitzbergen comes chiefly from the rivers, which empty themselves into the Tartarian

^o See the Probability of reaching the North Pole, p. 42, &c.

sea, it seems highly probable that this is the proper time of pushing to the Northward, as the ice in such rivers cannot be then completely broken up. What other ice therefore may be seen at this time is probably the remains of what was dis-embogued during the preceding summer.

Another proof of this arises from what happened in 1773, for the Carcase and Race Horse were obstructed, at 80° and an half, by an immense bank of ice, during part of the months of July and August; but four Greenland masters were a degree further to the Northward, during the ^p months of May and June, in the same year.

No one winters in Spitzbergen, but some few Russians, from whom however we have not been informed what happens during that season, though it should seem from the observations of Barentz, those of the Russians in Maloy Brun, and a ship having pushed into the Atlantic, from Hudson's Bay, during the midst of December^q, that the Northern Seas are then navigable.

For the same reason probably Clipperton^r, who passed the Straits of Magellan in the midst of winter, saw no ice, which is so frequently met with at Midsummer by those who sail to the Southward of Cape Horn.

I take this opportunity of recapitulating the years since 1746^s, during which it appears from the instances I have stated, that the sea to the North of Spitzbergen hath been open, so as to permit

^p See the Probability of reaching the North Pole, p. 4, 45, 46, and 57.

^q See *ibid.* p. 83.

^r See Callander's Collection of Voyages, vol. III. p. 461. Frezier was as far South as 58° in the middle of May, and saw no ice, though he speaks of a S. E. wind as cold.

^s Viz. 1746, 1751, 1752, 1754, 1756, 1759, 1763, 1765, 1766, 1769, 1771, and 1773.

attempts of approaching the Pole, which will shew that such opportunities are not uncommon, and it is hoped that they will be more frequently embraced, from a parliamentary reward of 5000*l.* being given to such of his Majesty's subjects as shall first penetrate beyond the 89th degree of Northern latitude; the Bill for which purpose hath already passed both Houses of Parliament †.

AS it appears, by the two first collections of instances, that I have had much conversation with the officers of the royal navy, as well as masters of Greenland ships, about a Polar voyage, I shall now state several hints which have occasionally dropped from them, with regard to prosecuting discoveries to the Northward.

The ship should be such as is commonly used in the Greenland fishery, or rather of a smaller size, as it works the more readily when the ice begins to pack round it.

There should, on no account, be a larger complement of men than can be conveniently stowed in the boats, as it sometimes happens, that the Greenland vessels are lost in the ice; but the crews generally escape by means of their boats. The crew also should consist of a larger proportion of smiths and carpenters than are usually put on board common ships.

As it may happen, that the crews in boats may be kept a considerable time before they can reach either ship or shore,

† By the same Bill, a reward of 20,000*l.* is given to such of his Majesty's subjects as shall first discover a communication between the Atlantic and Pacific Oceans, in any direction whatsoever of the Northern Hemisphere

there should be a sort of awning, to be used occasionally, if the weather should prove very inclement.

As it is not wanted that the boats should last many years, it is advised, that they should be built of the lightest materials, because on this account they are more easily dragged over the packed ice ^u.

As it is possible also, that the crew may be obliged to winter within the Arctic circle, it is recommended, that the ship should be ballasted with coals.

That there should be a framed house of wood on board, to be made as long as possible, for the opportunity of exercise within doors ^v.

That there should be also a Russian stove, as a fire in a common chimney does not warm the room equably.

It appears, by the accounts of the Dutch who wintered in Nova Zembla ^x, as well as the Russians who continued six years in Maloy Brun, that during this season there are sometimes days of a tolerable temperature; snow shoes, therefore, should be provided, as also snow eyes, not to lose the benefit of air and exercise during such an interval ^y. The beard likewise should be suf-

^u General Oglethorpe informs me, that the Dutch vessels on the Greenland fishery have three boats fastened on each side of the ship, which may be sufficient to contain the whole crew in case of accidents; and that the early discoverers had always what was called *a ship in quarters* on board, which might be put together when a creek, &c. was to be explored. He also advises, that the sailing of the two ships, to be sent in concert on discoveries, should be previously tried, as there should not be too great a disparity in that circumstance.

^v On the Labradore Coast the furriers raise a wall of earth all round their huts, as high as the roof, which is found to contribute much to warmth within doors, so as to want little more heat than arises from the beam of lamps. Such wall is commonly three feet thick.

^x The Russian Hereticks, *of the old faith*, as they are stiled, sometimes winter in Nova Zembla.—Account of Maloy Brun.

^y A barrelled organ, which plays a few country dances, might amuse during the dark months, as also be of use in the first intercourse with the savages, musick being a sort of universal language; and Sir Francis Drake for that reason carried out musicians with him.

ferred

ferred to grow on the approach of winter, from which the Russian couriers are enabled to support the severity of the open air.

Russian boots, and the winter cap of the furriers of North America, are also recommended; but recourse should not be had to this warmest cloathing upon the first approach of winter, for by these means the Russians do not commonly endure cold so well as the English; because when the weather becomes excessively severe, they cannot well add to their warmth.

When the weather is very inclement, leads for the hands, dumb bells, and other such exercises, should be contrived for within-doors.

In order to prevent the scurvy likewise, frequent use of the flesh-brush is recommended; as also occasionally a warm bath, from which James's crew received great benefit, when they wintered on Charlton Island.

With regard to the provisions, I shall here insert a method of curing meat, communicated to me by Admiral Sir Charles Knowles, the good effects of which both himself and others have frequently experienced².

The

² So soon as the ox is killed, let it be skinned and cut up into pieces, fit for use, as quick as possible, and salted whilst the meat is hot; for which purpose, have a sufficient quantity of salt-petre and bay-salt pounded together, and made hot in an oven, of each equal parts; with this sprinkle the meat, at the rate of about two ounces to the pound. Then lay the pieces on shelving boards to drain for 24 hours; which done, turn them and repeat the same operation, and let them lay for 24 hours longer, by which time the salt will be all melted, and have penetrated the meat, and the juices be drained off. Each piece must then be wiped dry with clean coarse cloths, and a sufficient quantity of common salt, made hot likewise in an oven, and mixed (when taken out) with about one-third brown sugar. The casks being ready, rub each piece well with this mixture, and pack them well down, allowing half a pound of the salt and sugar to each pound of meat, and it will keep good several years.

The flour should be kiln-dried, and put into tight barrels which are capable of holding liquids*. Flour thus preserved and packed hath been perfectly good for more than three years, without the least appearance of the weevils.

To make the best use of flour thus preserved, there should be both a biscuit-maker and an oven on board.

With regard to liquors, a large quantity of shrub from the best spirits and fruits is recommended, which should also be made just before the voyage takes place; the stronger the spirit, the less stowage. Dampier preferred Vidonia to other wines, on account of its acidity; and perhaps Old Hock might still answer better.

I should stand in need of many apologies, for having suggested these hints to Northern discoverers, had I not received them from officers of the royal navy, as well as Greenland masters, and eminent physicians; if any one of these particulars, however, would not have been otherwise thought of upon fitting out the ship for such a voyage, and should be attended with any good effects, it will become my best excuse.

In order also to promote such a voyage of discovery, I should conceive, that extending the parliamentary reward of twenty thousand pounds by 18 G. II. c. 17. for the passage to the Pacific Ocean through Hudson's Bay, to a Northern communication

N. B. It is best to proportion the casks or barrels to the quantity consumed at a time, as the seldomer the meat is exposed to the air the better. The same process does for pork, only a larger quantity of salt, and less sugar; but the preservation of both equally depends on the meat's being hot when first salted. Sir J. h. Narborough salted young seals, and Sir Richard Hawkins many barrels of Pengwyns, both of which are said to have been wholesome and palatable: fish likewise caught at the approach of winter might be so cured, or indeed preserved, by the frost without any salt. Captain Cook's precautions need not be here alluded to.

* Woodes Rogers observes in his voyage, that the water which he had brought with him from England on his arrival at Juan Fernández, was all spoiled by the casks being bad. Callander 3. p. 259.

between

between the Atlantic and Pacific Oceans in any direction whatsoever, might greatly contribute to the attempting such an enterprize.

To this, another incitement might be perhaps added, by giving one thousand pounds for every degree of Northern latitude which might be reached by the adventurer from 85° to the Pole, as some so very peremptorily deny all former instances of having penetrated to such high latitudes. An Act hath accordingly passed for the first of these purposes; and for the second, with this variation, that a reward of 5000*l* is given only for approaching within a degree of the Pole.

I shall conclude, however, in answer to their incredulity, by the following citation from Hakluyt:

“ Now, lest you should make small account of ancient writers, or of their experience, which travelled before our times, reckoning their authority amongst fables of no importance, I have, for the better assurance of those proofs, set down part of a discourse written in the Saxon tongue, and translated into English by Mr. Nowel, servant to master secretary Cecil, wherein is described a navigation, which one Ochter made in the time of king Alfred, king of West Saxe, anno 871; the words of which discourse are these: ‘ He sailed right North, having always the desert land on the starboard, and on the larboard the main sea, continuing his course till he perceived the coast bowed directly towards the east, &c.’ Whereby it appeareth, that he went the same way that we do now yearly trade by St. Nicholas into Muscovia, which no man in our age knew for certainty to be sea, till it was again discovered by the English in the time of Edward VI.

“ Nevertheless, if any man should have taken this voyage in hand, by the encouragement of this only author^b, he should
“ have

^b Perhaps the same sea is alluded to in the following line of Dionysius:

Πόντου μὲν καλῶσιν, ὠκεανὸν ἄρα, κρητικὸν, &c.

As the name of *Frozen* can scarcely be applied to that of the Baltic.

As

“ have been thought but simple, considering that this navigation
 “ was written so many years past, in so barbarous a tongue, by
 “ one only obscure author; and yet, in these our days, we find
 “ by our own experience, his reports to be true.”

As for the Thule of the ancients, about which so many conjectures have been made, it seems to have most clearly been Ireland, from the manner in which Statius addresses a poem to Crispinus, whose father had carried the Emperor's commands to Thule :

—tu discere patrem, quantusque nigrantem
 Fluctibus occiduis, fessoque Hyperione Thulen
 Intravit mandata gerens.

It should also seem, from other parts of the same poem, that this General had crossed from Scotland to the North of Ireland, or Thule :

Quod si te magno tellus franata parenti
 Accipiat, quantum ferus exultabit Araxes?
 Quanta Caledonios attollet gloria campos?
 Cum tibi longævus referet trucis incola terræ,
 Hic suetus dare jura parens, hoc cespite turmas
 Affari; nitidas speculas, castellaque longæ.
 Aspicias? ille dedit cinxitque hæc mœnia fossâ.

Statius, v. 14.

Crispinus's father, therefore, must have resided some time in Scotland, from whence he went to Thule or Ireland; for the Hebrides (the only land to the West except Ireland) could not have been of sufficient consequence for the Emperor's commission, or the fortifications alluded to; besides, that the expression of *fessoque Hyperione* implies, that the land lay considerably to the Westward.

T H O U G H T S

O N

The PROBABILITY, EXPEDIENCY, and
UTILITY, of discovering a PASSAGE by the
NORTH POLE^c.

THE possibility of making discoveries in this way (that is, by steering directly North) though now treated as paradoxical by many, was not, as will hereafter appear, formerly looked upon in that light, even by such as ought to be reputed the properest judges. There have been a variety of causes that at different times have retarded undertakings of the utmost importance to the human species. Among these we may justly consider the conduct of some great philosophers, who, as our judicious Verulam wisely observes, quitting the luminous path of experience to investigate the operations of nature, by their own speculations, imposed upon the bulk of mankind specious opinions for incontestable truths; which being propagated by their disciples, through a long series of years, captivated the minds of men, and thereby deprived them of that great instrument of science, the spirit of enquiry^d. In succeeding ages a new impediment arose from the setting up profit as the ultimate object of discovery; and then, as might well

^c I have lately received these reflections from a learned friend, who is now deceased, and who permitted me to print them, though not to inform the public to whom they are indebted for this very valuable communication. D. B.

^d Baconi Opera, tom. IV. p. 100. *et alibi passim*. But these passages may be found collected in Shaw's Abridgement of Bacon's Works, vol. II. p. 52.

be

be expected, the preferring the private and particular gain of certain individuals to the general interests of the community, as well as to the interest of the whole world, in the extension of science. This it was that induced the States General, at the instance of their East India Company, to discourage all attempts for finding a North East passage, and to stifle such accounts as tended to shew that it was practicable. We may add to these, the sournes of disappointed navigators who endeavoured to render their own miscarriages proofs of the impracticability of any like attempts. This was the case of Captain Wood, who was shipwrecked upon Nova Zembla, and who declared, that all endeavours on that side were, and would be, found vain; though Barentz, who died there in a like expedition, affirmed, with his last breath, that, in his own opinion, such a passage might be found.

That the earth was spherical in its form, was an opinion very early entertained, and amongst the learned generally admitted. It seemed to be a plain deduction from thence, that a right line, passing through the globe, would terminate in two points diametrically opposite. Plato is thought to be the first who spoke of the inhabitants (if such there were) dwelling at or near those points, by the name of Antipodes. This doctrine occasioned disputes amongst philosophers for many ages; some maintained, some denied, and some treated it as absurd, ridiculous, and impossible*. Whoever will examine impartially the sentiments of these great men, weigh the contrariety of their opinions, and consider the singularity of their reasonings, will see and be convinced how unsatisfactory their notions were, and discover from

* *Lucr. de Natura Rerum, lib. I. ver. 1063. Cicer. Acad. Quæst. lib. V. Plin. Hist. Natural. lib. II. cap. 65. Plutarch. de Facie in Orbe Lunæ. Macrob. de Somn. Scip. lib. II.*

thence,

thence, how insufficient the subtle speculations of the human understanding are towards settling points like these, when totally unassisted by the lights of observation, and actual experience.

The division of the globe by zones being agreeable to nature, the ancients distinguished them very properly and accurately into two frigid, the Arctic and Antarctic circles; two temperate, lying between those circles and the tropics; and the torrid zone within the tropics, equally divided by the equinoctial. But judging from their experience of the nature of the climates at the extremities of the zone which they inhabited, they concluded, that the frigid zones were utterly uninhabitable from cold, and the torrid from intolerable heat of the Sun. Pliny laments very pathetically upon this supposition, that the race of mankind were pent up in so small a part of the earth. The poets, who were also no despicable philosophers, heightened the horrors of these inhospitable regions by all the colouring of a warm and heated imagination^f; but we now know, with the utmost certainty, that they were entirely mistaken as to both. For within the Arctic circle there are countries inhabited as high nearly as we have discovered; and, if we may confide in the relations of those who have been nearest the Pole^g, the heat there is

^f Cicero in Somnium Scipionis. Virgil. Georg. lib. I. Ovidii Met. lib. I. Tibullus Panegy. ad Messalam, lib. IV. Plin. Hist. Natural. lib. II. cap. 68. Pomp. Mela de Situ Orbis, lib. I. cap. 1. Claudian. de Raptu Proserpinæ, lib. I.

^g That the earth had inhabitants even under the Poles, seems to have been believed by many at the latter end of the 16th Century, from the following lines:

“ Fond men! if we believe that men do live
 “ Under the zenith of both frozen poles;
 “ Though none come thence advertisements to give,
 “ Why bear we not the like faith of our souls.

Sir John Davis's *Noſce te ipſum*, probably written in 1596, from a compliment to Lord Keeper Egerton on his first receiving the Great Seal. D. B.

very considerable, in respect to which our own navigators and the Dutch perfectly agree. In regard to the torrid zone, we have now not the least doubt of its being thoroughly inhabited; and, which is more wonderful, that the climates are very different there, according to the circumstances of their situation. In Ethiopia, Arabia, and the Moluccas, exceedingly hot; but in the plains of Peru (and particularly at Quito) perfectly temperate, so that the inhabitants never change their cloaths in any season of the year. The sentiments of the ancients therefore in this respect are a proof how inadequate the faculties of the human mind are to discussions of this nature, when unassisted by facts.

The Pythagorean system of the universe revised, and restored near two hundred and fifty years ago by the celebrated Copernicus, met with a very difficult and slow reception, not only from the bulk of mankind, for that might have been well expected, but even from the learned; and some very able astronomers attempted to overturn and refute it^h. Galileo Galilei wrote an admirable treatise in its support, in which he very fully removed most of the popular objectionsⁱ. This, however, exposed him to the rigour of the inquisition, and he was obliged to abjure the doctrine of the earth's motion. Our noble philosopher, the deep and acute Lord Verulam, could not absolutely confide in the truth and certainty of the Copernican system; but seems to think, that its facilitating astronomical calculations was its principal recommendation, as if this had not been also a

^h Amongst the most considerable of these was John Baptist Riccioli, who published his *Almagestum Novum* with this view. Yet afterwards, in his *Astronomia Reformata*, he found himself obliged to have recourse to the doctrine of the earth's motion, that he might be able to give his calculations with a proper degree of exactness.

ⁱ This celebrated work of his was entitled, *Dialoghi de Sistemi di Tolomeo, e di Copernico*. This is much better known to the learned world by a Latin translation, which so clearly proved the superiority of the Copernican system, that the only means of refuting it was by the censures of the church.

very strong presumption at least, if not a proof, of its veracity^k. It was from this consideration that the church of Rome at length thought fit so far to relax in her decisions, as to permit the maintaining the earth's motion in physical and philosophical disquisitions. But Sir Isaac Newton, who built upon this basis his experimental philosophy, hath dispersed all doubts on this subject, and shewn how the most sublime discoveries may be made by the reciprocal aids of sagacity and observation. On these grounds, therefore, all enquiries of this nature ought to proceed, without paying an implicit submission to the mere speculative notions even of the greatest men; but pursuing steadily the path of truth, under the direction of the light of experience.

It may be urged, in excuse of the ancients, and even of our ancestors in former times, that, as they were unassisted by facts, they could only employ guesses and conjecture, and that consequently their conclusions were from thence erroneous. But to waive the visible impropriety of deciding in points (where observation was so obviously necessary) without its direction; let us see whether this plea of alleviation may not be controverted in both cases. Cornelius Nepos reports, that some Indians being cast on shore in Germany were sent by a prince of the Suevi to Quintus Metellus Celer, then the Roman proconsul in Gaul^l. A very learned writer in discussing this point hath shewn, that it was possible for these Indians to have come by two different routs into the Baltic. He thinks, however, that it is very improbable they came by either, and supposes that they were either Norwegians, or some other wild people to whom, from their savage appearance, they gave the name of Indians^m. But though this

^k Shaw's Abridgment of Bacon's Works, vol. II. p. 21. where the doctor endeavours to defend this opinion.

^l Plin. Hist. Nat. lib. II. cap. 67.

^m Huet Histoire de Commerce, et de la Navigation des Anciens, p. 531.

observation may well enough apply to the Romans, who at that time had no knowledge of these Northern people, yet it is not easy to conceive, that the Suevi could fall into this mistake; or, if they did not, that they should attempt to impose upon the Romans. It appears incontestably, that, in the time of king Alfred, the Northern seas were constantly navigated upon the same motives they are now; that is, for the sake of catching whales and sea-horses*. Nicholas of Lynn, a Carmelite friar, sailed to the most distant islands in the North, and even as high as the Pole. He dedicated an account of his discoveries to King Edward the Third, and was certainly a person of great learning and an able astronomer°, if we may believe the celebrated Chaucer, who, in his Treatise on the Astrolabe, mentions him with great respect.

After Columbus discovered America under the auspices of Ferdinand and Isabella, the sovereigns of Europe, and especially Henry the Seventh, turned their thoughts towards, and gave great encouragement to discoveries. Mr. Robert Thorne, who resided many years as a merchant in Spain, and who was afterwards mayor of Bristol, wrote a letter to Henry the Eighth, in which he strongly recommended a voyage to the North Pole. He gave his reasons more at large in a long memorial to our ambassador in Spain, which shew him to have been a very judicious man, and for those times a very able cosmographer; and accompanied this memorial with a map of the world, to prove

* See Barrington's Translation of Orosius from the Anglo-Saxon of king Alfred, part II. p. 9.

° Leland. Comment. de Script. Britan. cap. 370. Bale, vi. 25. Pits, p. 505. His description was intitled, *Insentio Fortunata*; besides which, he wrote, amongst other things, a book, *De Mundi Revolutione*, which possibly may still remain in the Bodleian Library. This friar, as Dr. Dee asserts, made five voyages into these Northern parts, and left an account of his discoveries from the latitude of 54° to the Pole.

the practicability of his proposal^p. Though this project of his was not attended to, yet a variety of expeditions were made for discovering a passage by the North-west, and others by the North-east, into the South Seas on the one side, and into the Tartarian Ocean on the other, until at length both were declared impracticable by Captain James, and Captain Wood; soured by their own miscarriages, and being strongly persuaded, that, as they did not succeed, none else could. But even these unsuccessful voyages were not unprofitable to the nation upon the whole, as they opened a passage to many lucrative fisheries, such as those in Davis's Straits, Baffin's Bay, and on the Coast of Spitzbergen. Besides this, they laid open Hudson's Straits and Bay with the Coast on both sides, which have been already productive of many advantages, and which, in process of time, cannot fail of producing more, in consequence of our being in possession of Canada, and being thereby sole master of those seas and coasts.

It is, however, very remarkable, that notwithstanding the views, both of our traders and of such great men as were distinguished encouragers of discoveries, the ablest seamen (who without doubt are the best judges) were still inclined to this passage by the North, such as Captain Poole, Sir William Monson^q, and others; and this was still the more remarkable, as they were entirely guided therein by the lights of their own experience, having no knowledge of Mr. Thorne's proposal, or of the sentiments of each other. From the reason of the thing, however, they uniformly concurred in the motives they suggested for such an undertaking. They asserted, that this passage would be

^p Hakluyt's Voyages, vol. I. p. 212—220. The letter to Dr. Ley, who was the king's ambassador in Spain, is dated *A. D.* 1527. This Mr. Thorne's father was engaged, with others, in the discovery of Newfoundland.

^q Naval Tracts, p. 435.

much shorter and easier than any of those by the North-west or North-east; that it would be more healthy for the seamen, and attended with fewer inconveniences; that it would probably open a passage to new countries; and, finally, that the experiment might be made with very little hazard, at a small expence, and would redound highly to our national honour, if attended with success. It may be then demanded, why it has not hitherto been attempted, and what objections have retarded a scheme so visibly advantageous? These objections, as far as they can be collected, are the fear of perishing by excessive cold, the danger of being blocked up in ice, and the apprehension that there could be no certainty of preserving the use of the compass under or near the Pole.

In respect to the first, we have already mentioned that the ancients had taken up an opinion, that the seas in the frigid zone were impassable, and the lands, if there were any, uninhabitable. The philosophers of later ages fell into the same opinion, and maintained that the Poles were the sources and principles of cold, which of course increased and grew excessive in approaching them^r. But when the lights of experience were admitted to guide in such researches, the truth of this notion came to be questioned, because from facts it became probable, that there might be a diversity of climates in the frigid as well as in the torrid zone. Charlton Island, in which Captain James wintered, lies in the bottom; that is, in the most Southern part of Hudson's Bay, and in the same latitude with Cambridge, and the cold there was intolerable. The servants of the Hudson's Bay Company trade annually in places ten degrees nearer the

^r In the language of those times, the Pole was stiled *Primum Frigidum*; and it was by such groundless phrases that men pretended to account for the operations of nature, without giving themselves the trouble of experimental enquiries.

Pole, without feeling any such inconvenience. The city of Moscow is in the same latitude with that of Edinburgh, and yet in winter the weather is almost as severe there as in Charlton Island. Nova Zembla hath no foil, herbage, or animals; and yet in Spitzbergen, in six degrees higher latitude, there are all three; and, on the top of the mountains in the most Northern part, men strip themselves of their shirts that they may cool their bodies^s. The celebrated Mr. Boyle, from these and many other instances, rejected the long received notion that the Pole was the principle of cold. Captain Jonas Poole, who in 1610 failed in a vessel of seventy tons to make discoveries towards the North, found the weather warm in near seventy-nine degrees of latitude, whilst the ponds and lakes were unfrozen, which put him in hopes of finding a mild summer, and led him to believe, that a passage might be as soon found by the Pole as any other way whatever; and for this reason, that the Sun gave a great heat there, and that the ice was not near so thick as what he had met with in the latitude of seventy-three^t. Indeed, the Dutchmen, who pretend to have advanced within a degree of the Pole, said it was as hot there as in the summer at Amsterdam.

In these Northern voyages we hear very much of ice, and there is no doubt that vessels are very much hindered and incommoded thereby. But after all, it is, in the opinion of able and experienced seamen, more formidable in appearance than fatal in its effects. When our earliest discoveries were made, and they reached farther North than we commonly sail at present, it was performed in barks of seventy tons, with some trouble, no doubt, but with very little hazard. At this day it is known, that in no part of the world there are greater quantities of ice seen than in Hudson's Bay, and yet there is no navigation safer,

^s See Marten's Account of Spitzbergen, p. 105.

^t Purchas's Pilgrims, vol. III. p. 702.

the company not losing a ship in twenty years, and the seamen who are used to it are not troubled with any apprehensions about it. It is no objection to this, that we hear almost every season of ships lost in the ice on the whale fishery; for these vessels, instead of avoiding, industriously seek the ice, as amongst it the whales are more commonly found, than in the open sea. Being thus continually amongst the ice, it is no wonder that they are sometimes surrounded by it; and yet the men, when the ships are lost, generally speaking, escape. But in the seas near the Pole, it is very probable, there is little or no ice, for that is commonly formed in bays and rivers during winter, and does not break up and get into the sea till the latter end of March or the beginning of April, when it begins to thaw upon the shores. It is also, when formed, very uncertain as to its continuance, being broken and driven about by the vehemence of the winds. As a proof of this we have an instance of a vessel frozen in one of the harbours of Hudson's Bay, which, by the breaking of the ice, drove to sea, and, though it was Christmas, found the Straits quite free from ice^u, which are frequently choaked with it in May and June, and made a safe and speedy passage home. All our accounts agree that in very high latitudes there is less ice. Barentz, when his ship was frozen in Nova Zembla, heard the ice broken with a most horrible noise by an impetuous sea from the North, a full proof that it was open. It is the invariable tradition of the Samoides and Tartars, who live beyond the Waygat, that the sea is open to the North of Nova Zembla all the year; and the most knowing people in Russia are of the same opinion. These authorities ought certainly to have more weight than simple conjectures.

^u Mr. Dobbs's Account of Hudson's Bay, p. 69, 70.

The notion that approaching to a passage under the Pole would destroy the use of the compass, is a popular opinion without any just grounds to support it. For it presumes that the needle is directed by the Pole of the World; which it certainly is not, as appears from the needle's variation, and even the variation of that variation, which if this notion was true could never happen. In Sir Thomas Smith's sound in Baffin's Bay, the variation was found to be fifty-six degrees Westward, the greatest yet known. Captain Wood is very clear upon this point, and maintains, that no danger was to be apprehended from this cause*. Those who asserted, that they had advanced within a degree of the Pole, estimated the variation there at five points of the compass. Captain Wood, in stating the account given of the Dutch seamen's voyage by Captain Goulden, omits one very material point, of which we are informed by Mr. Boyle, which is, that one of the Dutch captains coming over to England, Captain Goulden carried him to some of the Northern Company, who were perfectly satisfied as to the truth of his relation*. On the whole, therefore, whether we respect reason or facts, there are no just grounds for apprehensions on this head, more especially as there are other means by which the true situation of a vessel might be determined, and the difficulty, if any arose, would be but of very short continuance. But as such a voyage could not fail of affording many new lights in respect to astronomy and geography, so in this respect also it must necessarily ascertain fully what is at present only matter of doubt and conjecture.

* Wood's Voyage for the Discovery of a North-east Passage, p. 139.

† See the honourable Mr. Boyle's History of Cold, in respect to this and a multitude of other curious particulars, which shew with how much industry and care he struggled to deliver truth from vulgar errors, and fiction.

As notions long received acquire from thence a degree of credit due only to truth; and as new opinions, contrary to these, and in other respects perhaps extraordinary in themselves, meet from these causes with slow and difficult belief, however they may appear to be supported by arguments, authorities, or facts (which it is presumed have been freely and fairly urged in the present case, to a degree that may at least entitle the matter to some attention); let us now proceed one step further. This shall be to shew, that what seems to be so repugnant to the common course of things (*viz.* that near the North Pole the cold should relax, and the ice be less troublesome) is perfectly conformable to the laws of nature, or, which is the same thing, to the will and wisdom of our great Creator. If this can be proved, there can be no farther dispute as to the possibility of this passage; more especially when it shall also appear, that this affords a full solution of all the doubts that have been suggested, and at the same time clearly accounts for, and effectually confirms, the facts and reasonings deduced from them, which have been already advanced upon this subject. To come then at once to the point.

Sir Isaac Newton, who it is universally allowed was equally accurate, cautious, and judicious, in his philosophical decisions, hath demonstrated clearly, that the figure of this our earth is not spherical, but of an oblate spheroidal form, the diameter at the equator being the greatest, and at the axis the least of all the lines that can pass through the center. He also determined, by a most curious calculation, the proportion of these diameters to be as two hundred and thirty to two hundred and twenty-nine. These sentiments of his have been experimentally verified by the means which he also pointed out, *viz.* observing the motion of pendulums in very different latitudes, and the actual measurement of a degree at the equator and under the Arctic circle.

This

This last evidently proved the dépression of the earth's surface towards the Pole, which no doubt gradually increases. The very learned and sagacious Dr. Hooke asserted, in one of his lectures, and brought very strong reasons to shew, that there is nothing but sea at the Poles^y. These points then, being maturely considered, will be found to militate in favour of a free passage this way, and at the same time give much light into other things that have been advanced in the course of this enquiry, by shewing the true causes of those facts that, at first sight, have appeared to many very strange and unaccountable. For example, if there be no land near the Pole, then there can be no bays in which ice can be formed to interrupt the navigation. Again, the rays of the Sun falling on so flat a surface, and being continually reflected from the water, must afford a great degree of heat to the air. At the same time this will account for the Sun's being seen by the Dutch in Nova Zembla a fortnight earlier than he should have appeared, according to astronomical calculations^z. Many other circumstances might be mentioned, but these will doubtless occur to the intelligent, and therefore it is unnecessary to dwell longer upon them.

The great injustice of rejecting opinions, on account of their appearing, at first sight, paradoxical, or somewhat inconsistent with notions commonly received, having been clearly shewn, and the mischievous consequences flowing from it by various instances pointed out; the foundation of this conjecture, that there may be a passage near the Pole, having been fairly stated, the popular objections to it clearly removed, the general advantage (that might be expected from thence) placed in a proper light, and the consistence of all the circumstances relative

^y Hooke's Posthumous Works, p. 351.

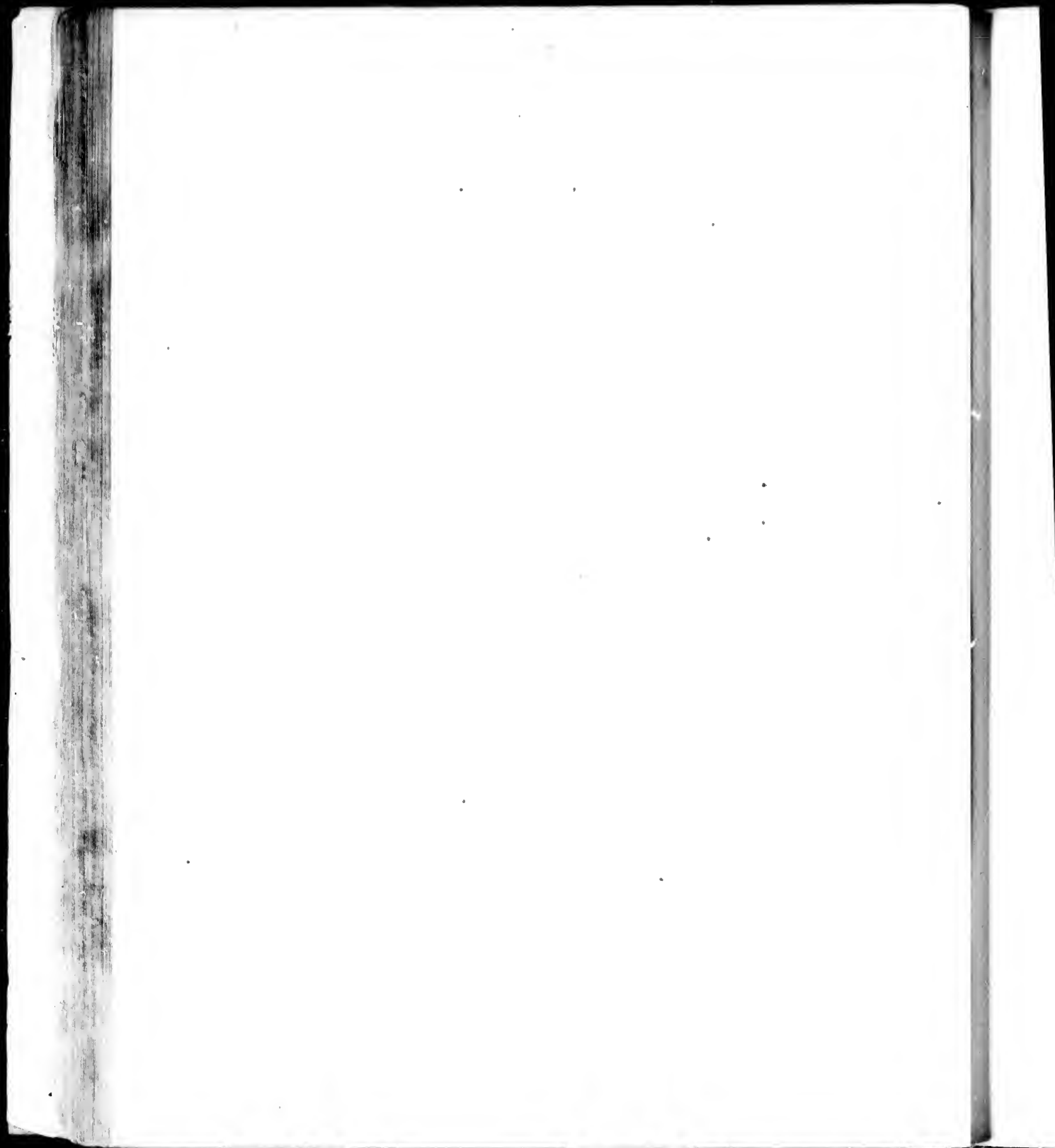
^z See Purchas, vol. III. p. 499, 500.

thereto, with the established course of nature, having been also rendered evident; there can be nothing more looked for respecting this matter merely in the light of a philosophical speculation. But if supporting this had been the only motive, these reflections had not employed the time of the writer, or trespassed so long upon the reader's patience. What then remains? To demonstrate, that as the possibility, practicability, and facility, of such an undertaking have been insisted upon, its national utility should be shewn to deserve consideration; and that, as it is an object of the greatest importance to the public welfare, its execution should be no longer delayed. There is unquestionably no country in Europe so well situated for such an enterprise as this. The transit from Shetland to the Northern parts of Asia would, by this way, be a voyage only of a few weeks. The inhabitants of these islands and of the Orkneys are, and have been for many years, employed in the Greenland fisheries, and the natives of these isles are the persons mostly sent to the establishments in Hudson's Bay. By these means they are inured to cold, to ice, and hard living, and are consequently the fittest for being employed in such expeditions. When this shall be once executed with success, it will necessarily bring us acquainted with new Northern countries, where ordinary cloaths and other coarse woollen goods will probably be acceptable, new channels of commerce would be thereby opened, our navigation extended, the number of our seamen augmented, without exhausting our strength in settling colonies, exposing the lives of our sailors in tedious and dangerous voyages through unwholesome climates, or having any other trade in prospect than that of exchanging our native commodities and manufactures for those of other countries. This, if it could be brought about, would, in the first instance, convert a number of bleak and barren islands

into

into cultivation, connect them and their inhabitants intimately with Britain, give bread to many thousands, and, by providing suitable rewards for many different species of industry, encourage population, and put an easy and effectual period to the mischiefs and scandal of emigrations. The benefits derived from these discoveries, and the commerce arising from them, will necessarily extend to all parts of our dominions. For however fit the poor people of those islands may be for such enterprizes, or however commodious the ports in their countries may be found for equipping and receiving vessels employed in these voyages, yet the commodities, manufactures, &c. must be furnished from all parts of the British empire, and of course be of universal advantage. These, as they are true, will it is hoped appear just and cogent reasons for wishing, that a project which has dwelt in the mouths and memories of some, and in the judgement and approbation of a few, from the time of Henry the Eighth, should be revived, and at length, for the benefit of his subjects, carried into effect, under the auspices of GEORGE the Third.

I HAVE



I HAVE mentioned in the preceding sheets^a, that I expected some additional instances of Dutch ships, which had been in high Northern latitudes; but, though I delayed the publication for some weeks, they did not arrive time enough to appear with the others. I have however since received them from Professor Allamand of Leyden, F. R. S. by means of Mr. Valltravers, F. R. S. &c. and take the earliest opportunity to lay them before the public as a valuable addition to the former papers.

To the Honourable DAINES BARRINGTON.

S I R,

HAVING made inquiries (agreeable to your desire) from Professor Allamand of Leyden, F. R. S. with regard to Dutch navigators, who have reached high Northern latitudes; he has been so kind to send me the following account, drawn up by Captain William May, a very distinguished and experienced sea officer in the Dutch service, which begins with a letter from Mr. John Walig to his owners, who has been master of a Greenland ship ever since the year 1740. I am, &c.

ROD. VALLTRAVERS.

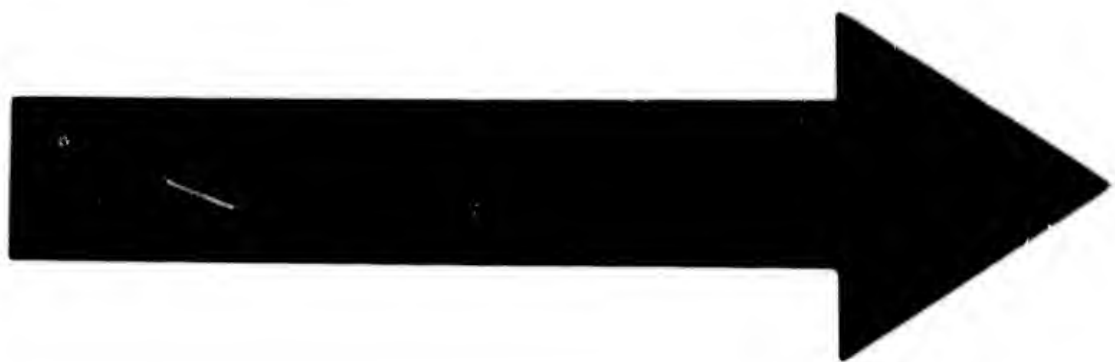
“ To Messrs. NIC. and JACOB VAN STAPHORST.

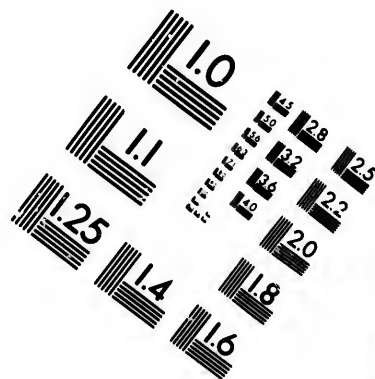
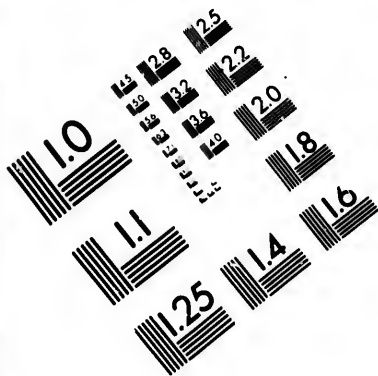
“ Helder, Jan. 3, 1775.

“ I N answer to your letter of the 22d of December, concerning the question, whether we have been nearer to the Pole than 80 deg. and a half, I must inform you, that we have been often to 81 deg. near the Seven Islands, to the Northward of the North-East land, and some have been in 82 deg.

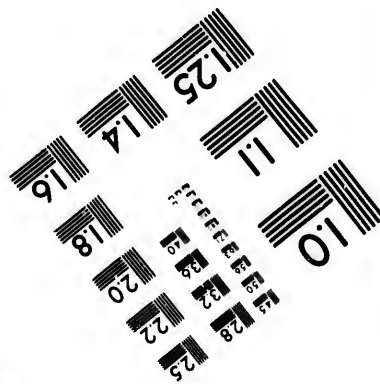
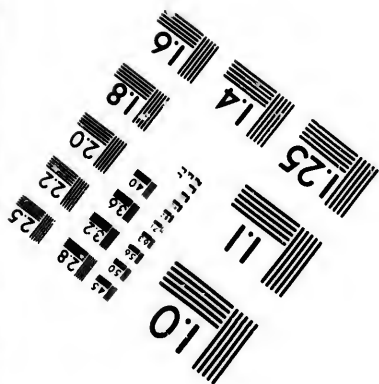
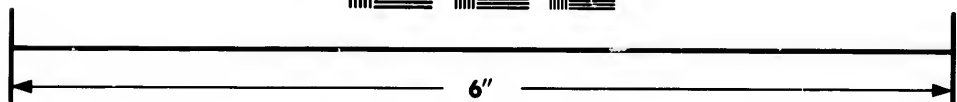
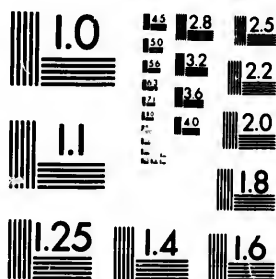
^a Page 52, in the additional papers from Hull.

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“ but then not clear from ice, in which they drove about. I
 “ never heard of any discoveries made there, as they have always
 “ been fishers, who, driving with the ice to the Northward, leave
 “ that direction upon getting room; and when now and then the
 “ sea has been free from ice, that has happened commonly in the
 “ months of June and July. In 1763, I spoke with a Scotch
 “ Captain in Greenland, who told me he had been to 83 deg.
 “ that the sea was then free from ice, but that he had made no
 “ discoveries, without mentioning any more particulars, for we
 “ ask after nothing but Whales. When I spoke to him it was
 “ in July, and then we could get no further North than 79 deg.
 “ 30 min. for the ice. In short, we can seldom proceed much
 “ higher than 80 deg. and a half, but almost always to that
 “ latitude, for it seems that the conjunction of the currents
 “ often fastens the ice there. I fished last year from 80 deg.
 “ 25 min. to 80 deg. 35 min. according to the land we made
 “ afterwards.

“ But in the year 1707, Captain Cornelis Gillis, having gone
 “ without any ice far to the Northward of 81 deg. failed to the
 “ North of the Seven Islands, proceeded from thence East, and
 “ afterwards S. E. remaining to the East of the North East
 “ land, when coming again to latitude 80 deg. he discovered
 “ about 25 miles ^b East, from the country to the N. E. very
 “ high lands, on which, as far as we know, no body has ever
 “ been. As to the season when the Spitzbergen seas may be
 “ expected to be free from ice, I believe, according to my obser-
 “ vations, that the most open sea to the Northward generally
 “ happens in the month of September, but then the nights begin
 “ and make the navigation dangerous. I am, &c.

“ JOHN WALIG.”

^b Fifteen to a degree, at the Equator.

A SHORT
ACCOUNT OF NAVIGATORS
WHO HAVE REACHED
HIGH NORTHERN LATITUDES*.

I WENT to Amsterdam the 26th of March, being the most proper time to make the desired enquiries, and to obtain information from all the commanders that were to depart this year to Greenland; for then you meet six, eight, and more together, in houses where they enlist their men. I am, however, sorry to mention, that but few of those commanders keep journals when they are near, or in the ice; but, notwithstanding this, the accounts they give carry with them such an air of truth, from being confirmed by minute circumstances, and corroborated by so many witnesses, that these relations (I verily believe) may be depended upon as well as some journals. I particularly applied myself, however, to those to whom a great number of voyages had given experience, and (contrary to my expectations) met with men of candour and penetration. I thought it proper, likewise, to take the following extract of a journal, it shewing the common form in which some of them are kept.

* This account was drawn up by Captain William May, in the service of the States, at the desire of Professor ALLAMAND of Leyden. See P. 94.

Translation of part of a Journal kept on Board the
VROW MARIA, Commander MARTIN BREET.

N. B. The sun's altitudes were taken with an octant, and 12 min. allowed for the sun's semi-diameter, refraction, and dip of the horizon; the longitude from Teneriff, the miles 15 to a degree at the equator, the bearings with a compass unrectified.

The 22d of April, 1771, sailed from the Texel for Greenland. 8th of May, latitude, according to the run, 70 deg. 33 min. longitude 19 deg. 22 min. saw the first ice.

13 ditto, latitude 74 deg. 50 min. longitude 24 deg. 35. min. met with a border of ice.

14 ditto, latitude by observation, 75 deg. 44 min. longitude 26 deg. 13 min. came against some ice.

15 ditto, latitude 76 deg. 13 min. longitude 25 deg. 40 min. saw Spitzbergen, the South Cape bore E. N. E. 14 miles.

N. B. Drove about in the ice, made fast to a field.

25 ditto, in the morning saw the North Foreland, N. E. by E. latitude 79 deg. 12 min. longitude 20 deg. 40 min.

26 ditto, latitude by observation 79 deg. 10 min.

27 ditto, against the ice.

28 ditto, past through some ice.

29 ditto, got fast in the ice, saw two ships sailing pretty freely in the E. N. E.

N. B. in the ice till the

7th of June got more room; beat to the Southward and made fast to a field, saw land in the E. N. E. distance 14 or 15 miles, supposed it the Quade-hoek, latitude by observation, 79 deg. 58 min. made fast to the ice till the

11 June, at noon, a violent storm, wind S. W. latitude by observation 80 deg. 19 min. In the night drove towards the coasts, for it blew too hard to carry sail.

12 ditto, in the morning laid fast in the ice, the storm continued, and the ship so much prest by the ice, that we were obliged to unhang the rudder.

13 ditto, hard prest by the ice, latitude by observation 80 deg. 29 min. Remained prest by the ice till the

18 ditto, latitude by observation 80 deg. 50 min. the ship not moveable.

19 ditto, latitude by observation 80 deg. 57 min. the ice in great motion.

20 ditto, fast in the ice again, latitude by observation 80 deg. 58 min. calm till the

24 ditto, began to blow a storm; got some room in the ice.

25 ditto, having got more room we advanced.

26 ditto, locked up again.

27 ditto, saw the land, namely, the Dorre Hoek, S. by E. half E. and the Vlakke Hoek, E. S. E. lay beset till the

29 ditto; latitude by observation 80 deg. 16 min.

30 ditto, wind N. E.

1st of July, saw water in the W. S. W. which we had not seen for many days. In the afternoon got more room.

2 ditto, worked our way through as much ice as we could, wind E. N. E. towards the evening N. made fast to a field.

3 ditto, at noon, saw the land, being the Robbe-bay, bearing S. W. by W. about one mile.

I have left out many little circumstances respecting the wind, tides, &c. as thinking the above sufficient for ascertaining the latitudes, and to shew the method in which many of the Greenland masters keep their journals. That year seems to have been

favourable for getting more to the north, for notwithstanding Mr. Breet met with so much ice, from the latitude of 79 deg. 30 min. to that of 80 deg. 58 min. Captain Jan Klaas Castricum, in the ship the Jonge Jan, at that very time of the year, and nearly in the same longitude, reached 81 deg. 40 min. by the medium of several observations with forestaffs, where he fished with success in company with Witje Jelles, who sailed from Hamburg, and found but little ice. There were likewise two English ships, who sailed so far to the north, that Castricum lost sight of them from the mast head, which two ships returned in something more than two days, and the Captains came on board of Castricum^d, and assured him that they had been to upwards of 83 degrees, and could have gone much further, as they had no obstructions from ice, but finding no whales, they returned. I spoke at the same time with other commanders, who, having been in sight of those ships, confirmed Castricum's account.

Six of the oldest masters assured me (amongst whom were John Walig, Klaas Keuken, and J. Klaas Castricum) that they had known from 1730 to 1742 an old English commander, whose name was Krickrack^e; it was his custom between the fisheries, if not obstructed by ice, to sail to the northward, and some of them affirm, that when they have been at an anchor in Brandewyn's-Bay, he once stayed away ten, and at another time twenty days, before his return, and they are very sure that he reported (and they have reasons to believe him) that

^d Captain Castricum neither asked their names, nor those of their ships; all that he knew was, he said if he remembered right, they sailed from England.

^e From 1730 to 1740, most of the masters of English ships, fitted out for the Greenland trade, were Dutchmen.

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he had been two degrees, and even more, north of the Seven Islands; all I could further learn of this Mr. Krickrack was, that in 1740 he was in the only ship sent from England; that for several voyages he had the same ship's company; that in or about 1742 he had the command of a transport, on board of which he lost his life by a musket ball; they were certain that he kept journals, out of which they think much light might be obtained.

The greatest part of the Dutch commanders live at the Helder. Mr. Walig and others assured me, that the most Northern voyage then ever heard of, and on which they could with certainty depend, was that of Jacob Schol in 1700, who had been so far North, that on his return he sailed with a fresh gale of wind, due South, 48 hours, and then fell in with the Seven Islands; he consequently had been (reckoning that run at only four Dutch miles an hour, which they thought too-little) in upwards of 84 deg. N. latitude. As Mr. Schol was an inhabitant of the Helder, they told me that they would strive to procure me his papers from his heirs; and, if I mistake not, they said that they had actually seen those papers in their younger days.

Finding that Mr. Van Keulen had put down (in his chart) the land discovered by Captain Gillis, mentioned in Mr. Walig's letter, I went to him, to see on what foundation he had placed that discovery; but as those papers could not be found, I applied to Mr. Walig, who told me, that Mr. Cornelius Gillis had been an inhabitant of the Helder; that Walig, together with Mr. Keuken, Mr. Balke, and others, since dead, had often examined Gillis's papers, maps, &c. and found that he was an enterprising man, and very accurate in his remarks and charts; that his grandson had his journals and other papers in his possession; and his grand daughter, who was married to an officer of Walig's ship
(who

(who had formerly been a commander) had his charts, some of which that officer generally took with him, in order to correct them. I begged hard to have them, if only for twenty-four hours; and next morning Mr. Walig put into my hands the original draughts of all the discoveries Mr. Gillis ever made with regard to Spitzbergen, excepting some particular drawings of bays and views of land, with permission to keep them in my possession till Mr. Walig's return from Greenland; copies of which are here annexed^f, and Mr. Walig promised to procure me, if possible, all the papers of that old commander before he left the Texel, which I hope to receive in a few days, and shall not fail in sending over every thing I find material. Asking what particulars Mr. Walig and others remembered out of those papers, they gave the following short account. That Mr. Gillis passed more than a degree to the Northward of the Seven Islands, without any hindrance from ice, that he proceeded East for some leagues with an open sea, then bent his course S. E. and afterwards South; saw in the latitude of 80 deg. to the East very high land, run through the East coast of the North East land, and entered the Waygats Streights, came to an anchor in Lamber-bay, and took two whales, and from thence proceeded to the Texel. Mr. Baske gave also an account of his uncle's having, in company with three ships, entered Waygat's from the North, and advanced as far as the same bay, but found too much ice to get through, which the other three, being young commanders, made a trial of. The North passage, however, on their return being shut, and it being the beginning of September, they made preparation to leave their ships, in order to get over land to Smeerenberg, but the ice luckily giving way, they got out to

^f These were copies of the draughts of the different coasts of Spitzbergen, of which Captain Gillis hath taken accurate surveys.

the Northward. Mr. Baske, who is a curious man, promised me, amongst other things, his thermometrical observations, which, by the conversation I had about them, I have reason to think will be accurate.

After having passed six mornings with a great number of our commanders quartered in different houses, I find that scarcely a year had past, but some of them have been to 81 deg. North, but rarely found the seas free from ice.

This is all the information I have been able to procure during my short stay at Amsterdam, which I would have prolonged, if a call to the Hague had not prevented me. I can only add, that waiting upon Mr. Boreel, that gentleman promised that he would order a search to be made for the journals of those ships which were formerly employed in protecting our Greenland fisheries.

I must, however, not forget to mention a particular that Mr. Van Keulen acquainted me with. He had at his house, last summer, a conversation with a Russian, who had past the winter last year in Spitzbergen, and gave him the following account. That being in the utmost distress, for want of eatables, on the North Coast, he made a trial to get with his boat towards the middle of the island, by means of the Bay of Wyde-bay in Gillis's map, into which he proceeded, till, to his great surprize, he fell into Wybe Janz's Bay, and so came out to the South of Spitzbergen; but he had taken no notice of the depths of water. Being questioned as to that particular, he said he was very sure that he did not pass through the Waygats.

In all my conversations with our Greenland commanders, I never failed to ask which course they would take to reach high Northern latitudes; the result was, that they would never seek it to the Westward of Spitzbergen, but run out to the North, from the West coast of Nova Zembla; Mr. Baske's reasons and those of other commanders were,

1st, That

- 1st, That all the Western coasts of the Northern countries were, for the most part, free from ice, occasioned from the winds and tides chiefly coming from the East, which experience proves.
- 2d, That the ice comes originally from the Tartarian rivers, for that the sea never freezes but where it is calm, and at the same time a great quantity of snow falls.
- 3d, That near the Seven Islands navigators often meet with a great N. E. swell, which proves that at such time the sea, to a considerable distance to the N. E. is not locked up by the ice.
- 4th, That the drift wood could not come to the Northward of Spitzbergen, in case the seas between the North of Asia and that island were frozen; whereas a great quantity of that wood is drove on the North coast of Iceland, which is a demonstration that the currents come from the N. E.
- 5th, That in some of the trees the marks of the axe were very plain, and the colour of the wood so fresh, that they certainly had not been six months in the sea.
- 6th, That some whole trees appeared with buds thereon, which they think could not have remained so fresh, if the trees had been a year in the salt water.
- 7th, That the East of Greenland was now discovered to the latitude of 79 deg. and a half, that it probably extended further to the N. N. E. which they look upon to be the cause of the stoppage of ice between that coast and Spitzbergen, and the reason why they never find a N. W. or Northerly swell.
- 8th, That generally all ships, which had once got to the North as far as 82 deg. met with little or no obstructions from the ice; and more arguments to the same purpose. There were some, however, would rather make the trial between Spitzbergen and the land discovered by Mr. Gillis.

N. B. They knew nothing of the papers read before the Royal Society.

To

TO ROD. VALLTRAVERS, Esq; &c.

S I R,

PROFESSOR Allamand, being very desirous that the inclosed might be sent to you as soon as possible, has obliged me to draw up with haste the above account of the informations I received at Amsterdam. In reading it over, and comparing it with my notes, I find no fault as to the facts related, whatever there may be in the manner in which it is drawn up; in case the whole or any part of it should be thought worth publishing, I hope you will be so good as to have it corrected ^e.

I could have made it more circumstantial, as my notes are very full, in particular with regard to the reasons our Commanders gave for not making the trial to the West of Spitzbergen, &c.

I am informed that Mr. De Bougainville intends to go by the way of Nova Zembla ^h.

I am, with profound respect,

S I R,

Your most obedient humble servant,

Leyden,
April 11th, 1775.

WILLIAM MAY.

^e This hath been done in some trifling particulars, relative merely to the stile, as Captain May is not a native of England.

^h This voyage of discovery, however, did not take place.

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THUS do the Dutch seamen, employed in the Greenland fishery, agree with our own countrymen, in never having so much as heard of a perpetual barrier of fixed ice, to the Northward of Spitzbergen, in 80 deg. and a half^b, which indeed is one of their most common latitudes for catching whales, whilst all of them suppose the sea to be generally open in those parts, and many of them proceed several degrees beyond it.

I shall only add, that, in my former pamphlet¹, I have mentioned a fact or two, I had reason to expect from the Rev. Mr. Tooke, Chaplain to the factory at Peterburgh, which he conceived would strongly prove that the sea is open to the Pole, and which I have since received in a letter from him dated the 26th of May last.

Mr. Tooke hath been assured by several persons, who have passed the winter at Kola in Lapland, that in the severest weather, whenever a Northerly wind blows, the cold diminishes instantly, and that, if it continues, it always brings on a thaw as long as it lasts.

He hath also been informed by the same authority, that the seamen who go out from Kola upon the whale and morse fisheries early in March (for the sea never freezes there) throw off their winter garments as soon as they are from 50 to 100 wersts^k from land, and continue without them all the time they are upon the fishery, during which they experience no inconvenience from the cold, but that on their return (at the end of May) as they approach land, the cold increases to such a severity, that they suffer greatly from it.

^b One of them indeed says, that the ice frequently *packs* in that latitude, which he supposes to arise from the meeting of two currents.

¹ Page 33, note [s].

^k Three wersts make two miles.

This account agrees with that of Barentz, whilst he wintered in Nova Zembla¹, and that of the Russians in Maloy-Brun; the North wind cannot therefore, during the coldest seasons of the year, be supposed to blow over ten degrees of ice.

Governor Ellis indeed, whose zeal in prosecuting the attempt of discovering the N. W. passage through Hudson's Bay is so well known, hath suggested to me an argument, which seems to prove the absolute impossibility of a perpetual barrier of ice from 80 deg. and a half to the Pole.

If such a tract hath existed for centuries, the increase, in point of height, must be amazing in a course of years, by the snow, which falls during the winter, being changed into ice, and which must have formed consequently a mountain perhaps equal to the Pic of Teneriff^m. Now the ice, which sometimes *packs* to the Northward of Spitzbergen, is said commonly not to exceed two yards in height. D. B.

¹ See, Thoughts on the Probability, &c. of reaching the North Pole, p. 83.

^m Mr. De Luc observes also, that the ice upon the Glacieres is always increasing. See his interesting observations on those mountains of Switzerland.

O B S E R V A T I O N S

O N T H E

F L O A T I N G I C E,

W H I C H I S F O U N D

I N H I G H N O R T H E R N , A N D S O U T H E R N L A T I T U D E S .

SINCE the return of the King's ships from voyages of discovery, both in high Northern and Southern latitudes, I have found that it hath been a disputed point, whether the ice which they have met with was formed chiefly from the salt or fresh water. I should rather conceive that this doubt must have arisen from what is mentioned by the great Mr. Boyle, in his experiments on heat and cold; or from an observation of M. Adanson, at the end of his voyage from Senegal, because from the quantity of ice merely (at least to the Northward) the early navigators never conceived that it was produced from sea water.

In full proof of this, not to state the opinion of several others on the same head. I shall content myself with citing that of Sir Martin Frobisher, who is well known to have made three successive voyages to Greenland, with a further intent of discovering the North West passage from Europe to the Pacific Ocean.

Ocean. In the second voyage of this celebrated navigator, he observes :

“ We found none of these islands of ice salt in taste, whereby it appears that they were not of the ocean water congealed, which is always salt, but of some standing or little moving lakes; the main sea freezes not, and therefore there is no *Mare Glaciale*.” In his third voyage he most anxiously repeats this same opinion, and in still stronger terms, so that what he hath thus laid down was not an occasional observation merely, but what he had much reflected upon, and found to be confirmed by his experience in those Northern Seas*.

This opinion of Sir Martin Frobisher’s seems not to have been disputed by any one, till the time of Mr. Boyle, who observes, that there are several in Amsterdam, who used to thaw the ice of sea-water for brewing, and then cites Bartholinus *De Nivis usu*. “ *De glacie ex aquâ marinâ, certum est si resolvatur, salsum saporem deposuisse, quod non ita pridem expertus est Clarissimus FINKIUS in glaciei frustis, ex portu nostro allatis*.”

I shall not now criticise either what falls from Mr. Boyle himself, or from Bartholinus, though it is very clear that the ice alluded to by both must have probably been formed from fresh water, either in the rivers, or lakes which empty themselves into the Zuyder Sea, because I shall hereafter contradict the assertion of Bartholinus, by the actual experiment, which I have tried myself during the late hard frost.

* See Hakluyt, Vol. II. p. 62 and 67. In 1776, Mr. Marshall, Captain of a Greenland ship, was so good as to bring me a bottle of water, which was melted from ice found floating in the Spitzbergen seas, and which had not the least saline taste.

° Boyle’s Works, Vol. II. p. 264. Folio.

To do justice indeed to Mr. Boyle, he afterwards, upon more mature consideration, shews it to be his opinion, agreeable to that of Sir Martin Frobisher, that the fresh water obtained from ice floating in the sea proves it could not have been formed from the ocean, "because the main sea is seldom or ever frozen^p."

The next author who supposes that congealed sea-water is by this process rendered sweet to the taste, is Monsr. Adanson, who informs us, that, upon his return from Senegal in 1748, he carried two bottles of sea-water, taken up on the coast of Africa, from Brest to Paris, which, during an intense frost, was so frozen as to burst the bottles, and the contents afterwards became palatable^q.

To this fact I shortly answer, either that the bottles were changed, or otherwise that Monsr. ADANSON does not mention the circumstance by which the taste of the sea-water was thus altered upon its being dissolved. Mr. NAIRNE hath been much more accurate in stating his experiments with regard to the freezing sea-water, in a paper read before the Royal Society on the 2d of February, 1776, as he mentions, that, in order to clear the ice from any brine which might adhere to it, he washed it in a pail of pump-water for a quarter of an hour, after which he informs the Society, that to his palate it was perfectly free from any taste of salt.

This is most undoubtedly the fact, but Mr. Nairne does not seem to be aware from what circumstance the ice thus melted had become fresh water^r; and indeed I must admit, that upon the

^p Boyle's Works, Vol. II. p. 302.

^q Voyage au Senegal, p. 190.

^r As Mr. Nairne, in his letter to Sir John Pringle, says that one of his great reasons for trying these experiments was to determine whether the

the first experiment which I made with regard to freezing sea-water, I deduced the same inference that he hath done, having washed it in fresh water for the same reason that he did, *viz.* to get rid of the brine which might adhere to the surface of the ice.

To determine, therefore, whence this freshness in the thawed ice might arise, I placed a large piece of what remained frozen (without being washed at all in pump-water) to be dissolved before the fire, which tasted very salt as one might naturally suppose.

The weather continuing to be very severe, I froze more sea-water, repeating the experiment of freshening it or not, by leaving, or not leaving it, in pump-water, which always turned out uniformly to be the same; and the reason of which is the following.

When sea-water is frozen, it does not form ice similar to that from fresh water, being by no means so solid or transparent, as it consists of thin laminæ or plates, between which the brine is deposited, and if the ice is accurately examined, the small

the ice which floats in the Northern Seas is formed from the salt-water or not, he therefore should have thawed the ice precisely under the same circumstances with the sea-water adhering, as the navigators take it up. The truth is, that, if the piece of ice formed from sea-water is at all large, the adhering salt-water can scarcely affect the taste at all; and I have melted the central parts of a pretty large mass, which became very salt after dissolution, though entirely detached from the sea-water in which it had been frozen. "In the severe frost last January (*viz.* 1775), "some salt-water, being set abroad, froze into an ice, which was not "solid but *porous*, the hollows being filled with the saltest part of the "water, for the ice when *drained* was quite fresh. The salt-water being "again set abroad, froze as before, what remained still unfrozen was "now become exceeding salt, but the ice drained and dissolved was "little if at all brackish; by this experiment, if another time more fully "repeated, it may be found to what degree the saltness of water may "be increased, by continuing to freeze away the fresh water." Mr. Barker in Phil. Transf. Vol. LXVI. p. ii. 1776. p. 373.

portions

portions of brine between the plates may be easily distinguished. If this brine therefore is removed, the laminæ of ice when dissolved become sweet to the taste, but, if thawed together with the brine intercepted between the laminæ, the taste is salt, nor can the ice be considerably divested of the brine, by merely leaving it to drain.

Having satisfied myself thus far from the freezing sea-water by the natural cold, and under the common circumstances of exposing it to the air in small china cups, I applied to Dr. Higgins to prosecute these trials with his more ample apparatus, and knowledge of chemistry; who was immediately so good as to suggest and try the following experiments, which will throw further light upon this subject¹.

“ JANUARY 2d¹, 1776. A gallon, Winchester measure, of sea-water, which I had fresh imported from Mr. Owen in Fleet-street, was placed in a shallow dish of Welsh ware, glazed yellow; the depth of the water was three inches and a half in this shallow dish, which I marked A. and placed on a brick wall eight feet high above the ground behind my house. This wall on the Eastern side faces the gardens belonging to five or six houses in the same street with mine; and on the Western side of it is the area between my house and the laboratory; and Westward of my area is the garden of Mess. Wedgwood and Bentley, which I believe is forty feet wide, bounded on the West by high buildings.”

¹ It would be great injustice to Mr. Lomonosoff, a Swedish chemist, not to mention that he seems to have tried experiments similar to those which I have made myself, and found the result to be as I have stated it. *Collection Académique*, Tom. XI. p. 5. & seq. 4to. Paris, 1772. See also the Probability of reaching the North Pole discussed, p. 37. Note v.

¹ Mr. Nairne began his experiments at the latter end of this month.

“ At the same time I placed another gallon of the same sea-water in a glass body. The column of water in this vessel was about thirteen inches high, about six inches diameter at the base, and about three inches at the mouth of the vessel. I placed this body with the sea-water close by the vessel marked A; so that both were equally distant from the adjoining houses; and after marking the glass body B, I covered the vessels A and B with glass basons in such a manner, that the air might communicate with the surface of the water, but rain or snow might be excluded.

“ A Thermometer was placed between these vessels.

“ From the 2d to the 7th of January, the mercury in the Thermometer stood, at various times, as low as thirty-one of Fahrenheit; and Thames water in shallow wooden vessels, placed on the ground, near the wall above-mentioned, was often frozen to the thickness of a crown piece. But an earthen oil-jar containing twenty gallons of Thames water, and a like jar containing twenty gallons of distilled water, and each covered with a pewter dish, preserved the water contained in them from freezing during this interval.

“ About the 7th of January, the mercury in the course of twenty-four hours did not rise above thirty-one, but sometimes sunk to thirty. Ice was formed in the vessel marked A; but none in the vessel marked B. Ice was at the same time formed in the great jars containing Thames water and distilled water; and to a thickness much greater in the Thames water than in the water distilled. The ice obtained from the vessel A was all formed on the surface of the water; and consisted of thin laminae adhering to each other weakly, and intercepting in their interstices a small portion of water, which was saline to the taste. This ice beaten gently with a glass pestle to divide the laminae,

then drained, and then washed in distilled water, tasted like the ice of fresh water; and being placed in a glass funnel before a culinary fire, so that the water might drain off as soon as formed, it dissolved in half an hour, and not in less time, although the Thermometer placed at the same distance close to the funnel rose to 160; and the side of the funnel next to the fire was hot to the like degree, as nearly as could be ascertained by the touch. The water of the ice thus melted was fresh and palatable, and measured half a pint.

“ From the 9th of January to the 11th inclusive, the mercury rose some days to forty, and during three or four hours on other days it sunk and remained at thirty, and sometimes for an hour or less it sunk to twenty-nine. But it did not remain at thirty during any of these days for more than four or five hours, unless at the hours of rest, when no observation was made. During this period, a thin coat of ice, like the former, was produced on the water in the shallow vessel A; but no ice was formed in the vessel B.

“ January 12, the Thermometer pointed for several hours between thirty-one at the highest, and twenty-nine at the lowest. A thick crust of ice, of the texture before described, was formed in the vessel A. This ice broken, washed, and dissolved, became fresh water, measuring a pint or more. This quantity of ice, placed in a funnel before a fire, in the circumstances already described, was not all dissolved in an hour and ten minutes. No ice was formed in the vessel B.”

“ The foregoing observations were committed to writing on the days when they were respectively made, but the day of the month was not then accurately noted. It may therefore be found that I have placed some of the foregoing temperatures a day before, or after that on which they were observed.”

“ January

“ January the 13th at night, and 14th in the morning, the Thermometer sunk for some hours below twenty-seven, and did not rise during sixteen hours above twenty-eight. The water in the vessel A, remaining after the foregoing congelations, was frozen to the thickness of a quarter of an inch in the centre, and three quarters of an inch in the circumference, but no ice was formed at any greater depth in the water. This ice, like the former, was laminated, and when bruised and washed, it formed fresh water to the quantity of three pints.

“ On the same day, *viz.* 14th of January, in the morning, the Thermometer pointing below twenty-seven, the Thames water in the great jar was frozen to the thickness of three or four inches, if not more, contiguous to the jar and the surface. The distilled Thames water in the other jar was frozen to the thickness of two inches, or thereabouts, and contiguous to the jar and surface of the water; and the sea-water in the glass body marked B was for the first time frozen. On the surface, and in the center of this surface, the ice was half an inch thick; at the circumference it was an inch thick; and from the circumference and surface the ice formed contiguous to the glass, in such a manner, that the crust was an inch thick near the glass and surface, but, as it proceeded downwards towards the wider part of the glass, it tapered to an edge, terminating within an inch of the bottom of the vessel.

“ Thus all the ice was formed on the surface and contiguous to the glass, and was thickest where the vessel was narrowest; that is, the quantity of ice was inversely as the diameter of the vessel. This ice resembled that obtained in the shallow vessel in its laminated structure and sponginess, and in its enveloping a portion of the salt-water, with this difference only, that the laminæ shot vertically, and from the circumference inclining to-

wards the centre, not directly, but so as to form with the centre an angle of about 15 degrees. This ice bruised and washed, melted to a pint and a half of pleasant fresh water. The time and heat were nearly the same as I described above.

“ Mr. Barrington at this and former periods observed, that the separation of the laminæ of the ice by bruising accelerated the effect produced by washing; that is, the extrication of the intercepted brine.

“ January the 19th at night, the mercury in the Thermometer sunk to twenty-six. The sea-water, remaining after the foregoing congelations in the flat dish marked A, was frozen so far, that only a pint remained fluid at the bottom. This ice was in all respects like the former portions. Bruised, washed, and melted, as on former occasions, it gave a quart of fresh water. At the same time, the water in B was frozen in the manner before described, but in a larger quantity, and some laminæ of ice shot close to the glass as far as the bottom of the vessel. This ice bruised and washed as formerly, and placed before the fire in a glass funnel, melted in a heat of a hundred and sixty, in an hour and a half, to one quart of fresh water.

“ January the 20th, the mercury which stood at twenty-seven in the morning, and fell to twenty-six towards twelve o'clock, fell in a few hours to twenty-four, and, before nine at night, fell to twenty-three. Only a thin coat of ice was formed on the water in A, which I did not disturb, expecting it to freeze deeper during the night. The water in the vessel B was frozen to some thickness at the surface, and contiguous to the sides of the glass body, but not at the bottom. Expecting a stronger congelation, I suffered this also to stand until the next morning, and consequently could not determine the quantity of ice formed in it, otherwise than by feeling near the surface, whereby I presumed the
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the quantity of ice to be equal to that last obtained, and formed in the same manner.

“ January the 21st in the morning, the Thermometer pointed to twenty-eight. The thin crust of ice, observed on the preceding night, did not appear to be encreased or diminished in the vessel marked A. The laminæ of this ice adhered so weakly, that the whole crust could not be raised without breaking. This ice, bruised and well washed, dissolved to near half a pint of water, brackish to the taste. And the same day, in the morning, the ice in B was removed, bruised, and washed; it melted to a pint or more of fresh water.

“ From the 21st to the 26th of January, the water in the vessel marked B was frozen twice, and the ice formed each time was bruised and washed, and melted to fresh water, both portions measuring one pint or more.

“ From the 26th of January at sun-set, to the 27th at eleven o'clock in the morning, the mercury in the Thermometer stood, at the usual hours of observation, between twenty and eighteen. The water remaining after the foregoing congelations in B was frozen so far, that only half a pint remained fluid. The ice, bruised, washed, and dissolved, tasted a little brackish, and measured one pint and a half.

“ On the 28th of January the mercury stood in the morning and until four o'clock in the afternoon between twenty-two and nineteen, and before eleven o'clock at night it sunk to seventeen. Very little ice was formed in the vessel B; and what was formed very easily crumbled or fell to small flakes in attempting to take it out. I therefore suffered it to remain in the liquor until the morning.

“ On the 29th of January the mercury stood between twenty and twenty-two until six o'clock; and between twenty
and

and nineteen, from six until twelve at night. The quantity of ice, formed on the preceding day, was not notably augmented or diminished; bruised, washed, and melted, it yielded two ounces of water, brackish to the taste, in a greater degree than any of the foregoing portions which were washed.

“ On the 30th of January, finding that the temperature of the preceding evening of the night, and of this day, which was between nineteen and twenty-one, had caused no notable congelation in the small quantity of water remaining in B; finding also that the residue of the water in A admitted of no further congelation worth notice; and considering that the slender laminae of ice, lately formed in these waters, melted to salt-water, and consequently that no further congelation, capable of separating the fresh water from the brine, even with the assistance of washing, could take place; I mixed the concentrated brine in A with that in B, and found both scarcely measured a wine pint; some small crystals were found in the bottom of both vessels, which sunk in the brine, and were to the taste sea salt. It is hence evident that some sea salt is formed in crystals by the concentration produced by cold acting gradually, and causing congelation only on the surface of the water, or not affecting that part of it which is contiguous to the bottom of the vessel.

“ The quantity of these crystals of sea salt was about two grains. I poured them together with the water into a china plate, set in a sand heat, and, by crystalization, obtained sea salt and the other saline contents of sea-water, in a dry form, near two ounces, averdupoise.

“ Now, as this quantity of sea-water (that is, two gallons), taken on our coast, generally yields about seven ounces of saline matters; it appears, that two-thirds or more of the sea salt, and bitter salts of sea-water, are intercepted in the ice of the successive congelations,

congelations, and are washed away by fresh water, applied as above-mentioned. Hence we learn that sea-water may be freshened by freezing, provided the brine enveloped between the laminæ of its ice be washed away. And in cold countries salt might be prepared from sea-water at a very moderate expence; for by freezing shallow ponds of this water, by turning the ice to drain off the brine, and when the brine is reduced to a twentieth part or less by evaporation, very little evaporation and fuel will be necessary towards the formation of the salt*. But all the salt of the sea-water employed will not be obtained, because the greater part of it will be retained between the laminæ of the ice, which must be rejected; and the concentration by freezing cannot be advantageously carried further than is above expressed, because at that degree of concentration the cold, and the time necessary to cause further congelations, must be very considerable, as will the waste of salt likewise, since the ice is then strongly saline.

“ A small portion of the ice, taken at various times from B since the 26th of January, was not washed, but only left to drain in a funnel; and each portion thus drained during five or six days, being separately dissolved, tasted strongly of salt, although the like ice, which was bruised and washed, yielded fresh water. This proves that washing removes the intercepted brine; and that this brine does not separate by draining.

“ January the 20th, at eight o'clock in the evening, the Thermometer pointing at twenty-three, in the open air where the Thermometer stood. I mixed snow with smoaking spirit of nitre, and placed in the mixture a glass half-pint tumbler full of sea-water; and at the same time placed the Thermometer in the

* “ Wallerius says, this art is practised in the Northern countries.”

mixture.

mixture. In two minutes the mercury sunk out of the tube quite into the globe. The scale extends only twenty-five degrees below 0 of Fahrenheit; wherefore I could not determine how many degrees lower it would have sunk on a more extended scale. In five minutes, some slender laminae of ice began to shoot from the circumference of the water, and adhered to the glass. The whole water was *not frozen in less than an hour*, at which time the mercury in the Thermometer rose to twenty degrees below 0. Having another mixture of the same kind ready made, I briskly removed the tumbler with the ice it contained into the fresh mixture, which, like the former, sunk the mercury into the globe.

“The ice of sea-water is more opaque than that of fresh water, when both are naturally congealed. For the elastic fluid in common water forms bubbles only in the central parts of the water last frozen; but the ice of sea-water consists of alternate parts of ice and brine; the density of which being unequal, and the matter of them being also dissimilar, light cannot be freely transmitted, but is partly reflected and refracted, according to Sir I. Newton’s Ideas of light.

“In the experiment last-mentioned, the ice was commonly opaque; and when it was exposed to the fresh frigorific mixture, it became like a mass of snow compressed, having a snowy whiteness and opacity, perfect near the surface, but not perfect towards the bottom.

“The tumbler, with the ice it contained, was kept in this last-mentioned mixture an hour, when the mercury denoted that no further degree of cold could be given by this mixture. The tumbler was then placed in snow until the next day, to preserve the ice for further observation. Notwithstanding the extreme cold to which it had been so long exposed, and the cold medium
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in which it was placed, the ice was not solid like that of fresh water, but, on the contrary, could easily be cut through the centre of the mass with a knife. The ice tasted equally of salt through the whole mass, in the same manner as a like quantity of sea-water. Bruised briskly, washed as already described, and melted, it yielded fresh water to the quantity of four-fifths of the water frozen; wherefore in washing very little ice was dissolved whilst the salt-water intercepted in the ice was removed.

“ Mr. Barrington having observed that an artificial freezing commences from the bottom and sides of the mass of water placed as usual in the frigorific mixture, but that natural freezing commences on the surface and proceeds downwards; and it occurring to me that the specific gravity of incongelable brine is greater than that of the congelable water; and, consequently, that this greater specific gravity favours the separation of brine from the ice of sea water, when the freezing commences on the surface of sea-water, and may be an impediment to the separation of the incongelable brine from the ice artificially formed in the sea-water, when the congelation proceeds from the bottom upwards: On these considerations it seemed that the foregoing experiments indicate, that ice formed in sea-water cannot, when melted, become fresh water, unless it be washed in fresh water; but do not fully prove, that ice formed on the surface only, and proceeding slowly downwards, in sea-water, may not consist of fresh water, and be freed from brine, by reason of the specific gravity of brine and other unnoticed circumstances. Therefore, on the 21st of January, at two o'clock, when the mercury stood in the open air at twenty-nine, I made the following experiment, with a view to determine whether sea-water, frozen artificially from the surface downwards in the manner performed

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by nature, would not yield ice of a solid texture capable of melting to fresh water without washing, merely by draining; which must take place in mountains of ice, if any are formed in the Northern Sea: because, ice being specifically lighter than water, and the access of congealed water being at the base, the portions first frozen will be raised above the water by succeeding portions frozen, and thus a mountain of ice may be raised, whose mass and height above water will be to the massive base immersed in water, inversely as the specific gravity of ice is to that of water.

“ I placed therefore a gallon of sea-water in a glazed earthen vessel, whose diameter was one-third greater than the depth of the water. In this water I flung a thin glass basin cut from a bolt-head, capable of containing near two quarts of water, in such manner that it might be immersed two inches deep in the sea-water. The vessel containing the sea-water was surrounded with snow. I then filled the basin, which was suspended in the sea-water, with snow pressed down with a glass-pestle, and poured into the snow the usual quantity of strong nitrous acid.

“ In fifteen minutes some crystals of ice were formed on the interior glass basin, in the part where it was contiguous to the surface of the sea-water. In three hours the whole bottom of the basin, containing the frigorific mixture, was coated with ice, the thickness of which was half an inch or less at the bottom of the basin, increasing to three-fourths of an inch at the part which corresponded with the surface of the water.

“ I easily separated it entire from the basin, found it somewhat firmer in its aggregation than the ice slowly formed by natural freezing, and not composed of laminae like this latter; but similar in texture to the salt-water frozen by artificial cold applied in the usual manner. I placed it on a heap of snow, where it remained to drain upwards of six hours, but still was

wet to the touch on the surface, and in the fresh surfaces of the fractured parts. I then placed a part of it in a glass funnel before the fire, to melt, and found the water strongly saline to the taste, but not near so saline as equal parts of sea and river-water mixed.

“ Another portion of this ice, which was wrapped up in filtering paper, and left to drain on a heap of dry snow during four days, when melted, was saline to the taste, and not sensibly different from that which had drained only six or seven hours. Whence it appeared, that ice formed in the sea-water, in circumstances similar to those which attend natural congelation, is, nevertheless, saline to the taste.

“ The several portions of water obtained in the foregoing experiments, from the washed ice of the sea-water in A and B, being preserved in glass-stopper-bottles, were not examined. Although they were fresh to the taste, it appeared by the quantity of *luna cornea*, which they all formed with saturated nitrous solution of silver, that they were strongly impregnated with marine salt, comparatively with Thames and New River water, examined in the like manner.

“ Mr. Barrington observing, that salt in water is an impediment to the congelation of that water, presumed, that salt in water would accelerate the thawing of ice immersed in it; and that in equal temperatures ice would be thawed in sea-water sooner than in fresh water. I therefore made the following experiment.

“ January the 20th, when the Thermometer pointed to twenty-three, about nine o'clock at night, I placed five ounces and half a drachm, averdupoise, of Thames water in a half pint glass tumbler; and the like quantity of the same water distilled in another half pint glass tumbler of equal figure and capacity

city with the foregoing. The tumblers were placed on the wall formerly described, and left there covered with glass until eleven o'clock next morning.

“ In the morning, at eleven o'clock, the Thermometer pointed to twenty-eight. The water in both tumblers was frozen quite through, and formed masses of ice, transparent as crystal in every part, except the centre, and near the bottom, which parts were rendered opaque to the thickness of half an inch, by a number of air-bubbles locked up in the ice. The distilled water had been kept several days in the jar above described, whose mouth was only covered with an inverted pewter dish.

“ Into a glass tumbler, capable of holding a Winchester pint or more, I put a wine pint of Thames water; and into another tumbler of the same figure and capacity, I poured a pint of sea-water concentrated, by freezing one fourth of it, the better to represent sea-water of the great oceans, which are not affected by rivers so much as the sea-water used in these experiments must be, as it was taken up near the North Foreland. The sea-water was thus concentrated for these further reasons: first, that the effect of salt in the water might be more conspicuous during the thawing of the ice; and secondly, to prevent the first portions of ice thawed from diluting the salt water to a degree, which never is found in the ocean. I reduced the Sea and the Thames water, contained in these tumblers, to the same temperature exactly, in the open air; then taking hold of each by the summit of the glass above the water, I carried them into my study, and placed them on a carpet fifteen feet equally distant from the fire, and three inches from the wainscot of the wall opposite the fire, and equally distant from a door on one side, and a window, which extends within fourteen inches of the floor, on the other. The tumblers, containing the frozen water, were immersed in
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a large pan of hot water, close to each other, and near the centre of the pan, the water rising to the height of the ice in the tumblers; after a few minutes the ice was thrown out, by inverting the glasses on clean paper. The two pieces of ice were equal in size, figure, and weight; the weight of each being five ounces averdupoise.

“ The moment before the ice was taken out of the tumblers, I found the temperature of the sea and fresh water, placed as above-mentioned, to be equal, and exactly thirty-four; the temperature of the air in that part of the room being forty-six. I plunged the pieces of ice immediately, one in the sea-water, the other in the fresh water. It was at this instant two o'clock in the afternoon. In ten minutes the temperature of the sea-water was thirty-two, that of the fresh water was thirty-three and a half. In half an hour the sea-water raised the mercury to thirty-three, the fresh water raised it to thirty-four and a half.

“ At this instant, *viz.* half an hour past two o'clock, I took both the pieces of ice at the same time, weighed them briskly, and replaced them in their respective vessels at the same instant. Of the ice placed in the sea-water, half an ounce was dissolved; of the ice placed in the fresh water, only four drachms and a half were dissolved.

“ From half an hour past two o'clock until six I frequently changed the position of the tumblers, making one take the place of the other. At six, the temperature of the sea-water was thirty-six, that of the fresh water was thirty-seven and a half. In the manner already mentioned, the ice was at this time weighed and replaced. Of the ice in sea-water three ounces and four drachms were dissolved; of that in fresh water, only two ounces and eight drachms.

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“ It is observable, that the sea-water was a degree and a half colder, ever since the immersion of the ice, than the fresh water, acted on by the like mass of ice, and placed in the like circumstances; and nevertheless the ice was dissolved much quicker in the colder sea-water. The quicker solution of the ice in sea-water was evidently the cause of the greater degree of cold preserved in it during four hours; and it already appeared, that salt-water is a more powerful solvent of ice than fresh water in the like temperature. And, agreeable to Mr. Barrington's suggestion, the matter which impedes the congelation of water must of course facilitate the thawing of ice. The nitrous acid furnishes us with another striking instance to this effect; for no cold can be produced to freeze the water in it; and a red-hot ladle cannot thaw ice placed in it, so quickly as ice is thawed by nitrous acid.

“ At ten o'clock, or in eight hours after the pieces of ice were first placed in the Sea and Thames water, the temperature of the sea-water was thirty-nine, that of the Thames water only thirty-eight. At this time, of the ice in sea-water four ounces eight drachms were dissolved; of the ice in Thames water, four ounces only were dissolved. The sea-water being at this period warmer than the Thames water, corresponds with the small portion of ice remaining in it, compared with that remaining in the fresh water. The temperature of the room in the place where the tumblers stood, being, by reason of the fire kept constantly in it, forty-four or forty-five, for the last six hours.

“ In twelve hours, or at two o'clock in the morning, the temperature of the room near the vessels of water being nearly the same as formerly described, the temperature of the sea-water was forty, the temperature of the fresh water was thirty-nine. Four ounces fifteen drachms of the ice in salt-water were dissolved,

dissolved, only one drachm remaining; four ounces ten drachms of the ice in fresh water were dissolved, only six drachms remaining.

“ At the end of the thirteenth hour, after the immersion of the masses of ice in the fresh and in the salt-water, that is, at three in the morning, the temperature of the room was forty-five near the place where the tumblers stood. The temperature of the open air was thirty-one. The ice in the sea-water was melted. The quantity of ice remaining in the fresh water was one drachm, which, in fifteen minutes more, was entirely melted.

“ At this period, when the ice in the fresh water was melted, that is, a quarter of an hour past three, the mercury stood at forty in the fresh water, in the salt-water it stood at forty-one. In a quarter of an hour after this the mercury stood at forty-two in the salt-water, and at forty-one in the fresh water. In a quarter of an hour more, the temperature remained unalterable in the salt and fresh water, although the temperature of the air between and near the vessels was forty-five, and the vessel on the right was placed on the left, and replaced several times. And both vessels were at all times equi-distant from the wainscot, which was perfectly close, as were the boards of the floor also.

“ In a quarter of an hour more, the temperature of the air near and between the tumblers remained forty-five; the temperature of the fresh water was scarcely forty-two; the temperature of the salt-water was forty-two and a half.

“ In a quarter of an hour more, the temperature of the air between the tumblers being forty-four and a half, the temperature of the salt-water was forty-three; the temperature of the fresh water was somewhat more than forty-two. It was now past four o'clock in the morning, on Monday the 22d of January I went to bed leaving the tumblers in the position described.

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“ It was observed, during the foregoing and other experiments, and it is visible from the experiments related, that fire, in diffusing itself from warm bodies to contiguous cold bodies, proceeds slowly; that cold bodies do not acquire the temperature of the warmer medium in which they are immersed so soon as is commonly imagined, but, on the contrary, require a considerable time for that purpose; and this time is directly as the diameter of the cold body.

“ It was inferred from these experiments, that a temperate body like water, placed in a cold medium, as in air, cooled to thirty or thirty-one of Fahrenheit, requires many hours before it acquires the temperature of the surrounding medium, and before a congelation commences; and that the time necessary for the commencement of the congelation is directly as the mass and shortest diameter of the water, and the progress of the congelation is inversely as the depth of the water.

“ It was also observed, that as much of a given mass of water was frozen in five hours in a temperature of twelve degrees below the freezing point, as was frozen in one hour in a temperature fifty degrees below the freezing point; and that long duration of the temperature between twenty and thirty-two is, towards the congelation of water, equivalent to intensity of cold, such as is marked 0, and below 0, in Fahrenheit, but of short duration.

“ It was moreover observed, that water in thick jars covered was not frozen, when water in open vessels was frozen; that water included in massive vessels of wood, or surrounded by any matter except water, to some thickness, preserved its temperature, and resisted congelation, longer than the like quantity of water exposed to the cold air; and that water in thick vessels was not frozen so soon as a like quantity of water in thin vessels of

Like matter, figure, and capacity. It was thence inferred, that fire does not so quickly pervade thick bodies as it does thin bodies; and that fire pervades water more freely than it does solid bodies, and sooner diffuses itself from water to air, than from any other body containing water to air.

“ Thence it followed, that in reasoning on the phenomena of congelation, the masses of water, the duration of cold temperature in the atmosphere, and the masses of other matter surrounding water, are to be considered. Deep rivers and lakes do not freeze so soon as shallow rivers and lakes. Large bodies of water are never frozen in any temperature of short duration; but shallow waters are often frozen in the summer.

“ It need not be presumed, that certain lakes, which are never frozen, communicate with subterranean fires, or hot mineral streams; or that they are impregnated with matter which impedes congelation: but it is rather to be presumed, that as fire slowly pervades, enters, or quits bodies, the time necessary for its diffusing itself from deep lakes to the cold atmosphere is greater than ever such temperature of the atmosphere continues without intermission below the freezing point.

“ By the like reasoning applied to masses of earth and other matter which are not so quickly pervaded by fire as water is, we can conceive why deep wells and springs at or near their issuing from the earth are not frozen in this climate even when navigable rivers are ice-bound. We also understand why the main pipes, buried in our streets, retain the water fluid, when the pipes leading from these to the houses and crossing the area of each house, are choaked with ice; and why hay-bands twisted round these small pipes prevent the freezing, &c.

“ On these grounds it is presumed, that no considerable congelation ever takes place in the sea, because this is the greatest

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and deepest parts of water we know of; because it is always in motion, and communicates with the water of temperate climates; because sea-water is not so easily frozen as fresh water; because the ice found in the sea is solid, and in transparency not different from the ice of fresh water; and, lastly, because this floating ice, which is met with by navigators, both in high northern and southern latitudes, when melted, is palatable to the taste; whereas the ice formed from sea-water is very saline, if it be thawed without having been washed in fresh water.

“ It is also presumed, that in the deep Northern seas the water near the surface will be found warmer than that near the bottom at the approach of summer; and will be found colder near the surface than at the bottom in the first month of the cold season, for the reasons already expressed: and in like manner, that, during the first six or eight hours of a frost in England, the water in any deep lake will be found colder near the surface than at the bottom, but that the water at the bottom will be found colder than that near the surface in twenty-four hours after a thaw, provided the air be temperate or nearly so.”

IT having been proved, from what hath been already urged, as well as by the preceding experiments of Dr. Higgins, that the floating ice, which is observed both in high southern and northern latitudes, cannot be probably formed from sea-water, it may be thought incumbent upon me to shew how such quantities can be supplied from springs, rain, or frozen snow.

The rivers which are always found at certain intervals in any large tract of land undoubtedly supply considerable part of such ice; but there are not wanting other sources from which these floating masses may be produced.

The larger and higher ice islands¹ I conceive to be chiefly formed on shore, after which they are undermined by the rills and melted snow, during the summer, of which we have an accurate account in the late voyage towards the North Pole².

Others

¹ Mr. Wales observes, that in the islands of ice, near Georgia Australis and Sandwich-land, there are strata of dirty *ice*, which irrefragably proves their having been formed on the land. Remarks on Dr. Forster's Account, &c. 8vo. London, 1778, p. 106.

With regard to the formation of Ice-islands, see likewise Captain Cook's Voyage, Vol. II. p. 213 and 240, who conceives them to arise from congealed snow and sleet in the vallies. Captain Cook also supposes, that the ice-cliffs, at the end of these vallies, often project a great way into the sea, when they are sheltered from the violence of the wind, p. 242.

² "Large pieces frequently break off from the Ice-bergs, and fall with great noise into the water: we observed one piece which had floated out into the bay, and grounded in twenty-four fathoms; it was fifty feet high above the surface of the water, and of the same beautiful colour as the Ice-berg." p. 70.

I have likewise been favoured with the following account of ice islands on the coast of Labradore, from Lieutenant John Cartwright, of the Royal Navy, to whom I have not only this obligation. [See the Probability of reaching the North Pole, p. 5.]

Others, which happen to have projected over the sea, may have had their foundations so sapped by the waves during a storm,

“ DEAR SIR,

Thursday, Feb. 28, 1776.

In conformity with my promise of yesterday, I now send you, as nearly as I can recollect, my brother's account (who hath resided four years on the Labradore coast) of the formation of those great masses of frozen snow, seen annually in very great numbers on the northern coasts of America, and by mariners usually called *Islands of Ice*.

Along the coast of Labradore, the sea, in winter, is frozen to a great distance from the land [how this ice is produced, will appear, p. 145.]. The north-west is the prevailing and coldest wind. The snow, carried by this or any other westerly winds over the cliffs of the coast, falls becalmed upon the ice at the foot of the said cliffs, drifting up to the very tops of them, although many of them are not inferior to that of Dover, or those about Lulworth. The current of the strong western winds, having passed these precipices, takes its course downwards into the undisturbed air below; but it is not until it arrives at some distance from the land, that it can be felt on the surface of the sea. Having the frozen surface of the sea for a base, and the precipice for a perpendicular, an hypothenuse is made by the descending direction of the wind. The inclosed triangle, be the cliffs ever so high, will be filled with snow; because the tops of the adjoining hills, being quite naked, are entirely swept clear of snow by the violence of the storms, and what would otherwise have lain there is carried to the leeward of the hills, and under the shelter of the cliffs, where it is deposited in infinitely greater quantities, than it would fall in without such a cause. The hypothenuse of such triangle is frequently of such a slope as that a man may walk up or down without difficulty. By frequent thaws, and the occasional fall of moisture interrupting the frost, during the first parts of the winter, the snow will, in some small degree, dissolve, by which means it only acquires a greater hardness when the frost returns; and during the course of that rigorous season it generally becomes a very compact body of snow-ice. In the spring of the year the icy base gives way, and its burden plunges into the sea, sometimes entire, sometimes in many fragments. As the depth of water in many parts is forty, fifty, one hundred fathoms, and upwards, close to the shore, these bodies of ice, vast as is their bulk, will frequently float without any diminution of their contents, although the very large ones do often take the ground, and sometimes are not sufficiently reduced by either the penetration of the sea and the rain-water, or of a whole summer's sun, to get at liberty again before another winter.

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storm^a, as to have lost their support; whilst others again may have been reft from the mafs to which they before adhered by the expansive power of the froft^b.

Great part of the field, or lower ice, I take to be formed by the fnow falling on the sands left bare for fix hours (from half ebb to half flood), which immediately diffolves upon touching the sands, and, before the tide returns, becomes folid ice; part of thefe pieces are by the wind, or tide, again returned to the fame sands, where they again meet with another ftore of ice, formed during another fix hours, which, in the courfe of a winter, muft, by packing, accumulate to immense mafles. That this is not mere conjecture, but the fact, I appeal to Captain James's account of what he himfelf was witness of whilst he wintered at Charlton Island, in Hudfon's Bay^c.

The above relation, which my brother gives from his own obfervation, in North latitude, 52 deg. 15 min. accounts very naturally and eafily for the formation of that furprifing number of the vaft pieces of ice which is annually feen on the Labradore coaft, and confiderably to the Southward.

JOHN CARTWRIGHT."

^a "The fea has washed underneath the ice cliffs, as high as the "Kentish Forelands, and the arches overhanging, fupport mountains "of fnow, which have lain fince the creation." Wood's *Voyage*, p. 20.

"Cuncta gelu, canaque æternùm grandine tecta,

"Atque ævi glaciem cohibent, riget ardua montis.

"Ætherii faciès, furgentique obvia Phœbo,

"Duratas nescit flammis mollire pruinas."

Silius Italicus, Lib. III. l. 480.

^b "The rocks along the coaft burft with a report equal to that of artillery, and the fplinters are thrown to an amazing diftance." Mr. Wales, in *Philofophical Transactions*, Vol. LX. p. 125.

^c For Captain James's account, fee Boyle, Vol. II. as alfo Harris, Vol. II. p. 420. where it is confiderably abridged, and differs in fome few circumftances. It is ftated, however, that in few hours the fnow thus frozen will be five or fix feet thick.

Now if we examine a globe, we shall find, that from sixty to seventy degrees of Northern latitude more than half its circumference is land, which is open to a Northern sea, from which large tract of coast much greater quantities of floating ice may be derived than have ever been met with by navigators, without being obliged to suppose that any part of it is formed from sea-water.

But it may be said, that our late enterprizing navigators to the Southward have also met with as great a quantity of ice in the opposite hemisphere, without scarcely discovering any land.

To this I answer, that their circumnavigation was, at a medium, about fifty-seven degrees of Southern latitude, though they made pushes greatly to the Southward in three points, and in one of these to seventy-one degrees ten minutes. In the other instances, as far as 67 deg. and 67 deg. 30 min.

There is consequently a very large space in which there may be many a frozen region, which they have not had any opportunity of discovering. If, for example, a navigator from the Southern was sent upon discoveries to the Northern hemisphere, and Europe, as well as Asia and North America, having been sunk by earthquakes, was to report that he had circumnavigated at fifty-five degrees North latitude at a medium; made pushes even to seventy-one degrees in different directions, without seeing any continent; and that therefore there was no land to the north of fifty-five degrees; his countrymen would be much deceived by such report, because Denmark, Norway, Sweden, Muscovy, Tartarian Asia, and part of North America, continued in their present situation.

Besides, however, the ice which may come from *Tierra del Fuego*, Captain Cook hath discovered two frozen islands between Cape Horne and that of Good Hope, which were covered with

ice and snow^d. The first of these, situated in fifty-four degrees, is called *Georgia Australis*; and the second, *Sandwich-land*, in fifty-nine degrees, which appeared so large, to some eyes, that it was conceived to be part of a continent^e.

It is believed also, that no ship hath been beyond forty-eight degrees to the Southward of New Zealand; and from the coldness of the most Southern of these large islands, I cannot but suspect that there is a considerable tract of land between it and the Pole.

Having thus endeavoured to account how the floating ice which is met with may be supposed to be formed from snow or fresh water; I cannot but risk another conjecture, that the time of the year at which attempts are commonly made to make discoveries towards the two poles (though favourable in many

^d Hence whatever land is discovered to the south of this latitude must produce ice. There is also a large tract of land named in some maps, the *Gulph of St. Sebastian*, which is not far distant from *Georgia Australis*, and which possibly may have escaped Captain Cook. This great navigator also conceives, that the ice floats from 70 degrees South, and is detached by accidents from land lying to the South of that parallel, as the currents in the Antarctic Seas always set to the North. Cook's Voyage, Vol. I. p. 268.

Captain Furneaux, in 1744, passed between *Georgia Australis* and *Sandwich-land* (rather supposed a continent), without seeing either of these new discoveries, though the mountains on both are remarkably high, particularly those in *Sandwich-land*, one of which, by several, was considered to equal *Teneriff*.

Captain Furneaux could not have been well more than two degrees from either of these countries. See his Track in the lately published map.

^e See Captain Cook's voyage, Vol. II. p. 230. where he supposes land near the South Pole, chiefly opposite to the Southern Atlantic, and Indian Oceans, as on those meridians ice is found as far North as 48 deg. It is in this tract of Southern land that Cook supposes the ice to be chiefly formed, which is met with in the Southern Oceans. Ibid.

other circumstances^f) is probably the season when the greatest quantity of floating ice will be observed.

This seems to follow as a necessary consequence from the push being never made before Midsummer, and often a month later, which is precisely the time when the ice begins to break up in the fresh water rivers, &c.

I have accordingly minuted down, from several voyages into high northern latitudes, the day on which navigators first mention seeing the floating ice.

The result of which is as follows:

Sir Martin Frobisher on the 23d of June. Hackluyt, Vol. II. p. 77.

Davis in his first voyage, July 19.—In his third, July 2d. Ibid. p. 99.

Pet and Jackman on the 13th of July. Ibid. p. 447.

Burrow, on the 21st of July. Ibid. p. 277.

Governor Ellis, July 5th. Voyage to discover the North West Passage, p. 127.

“The shores of Hudson’s Bay have many inlets or friths, which are full of ice and snow, and frozen to the ground.

“These are broke loose, and launched into the sea, by land-floods, during the months of June, July, and August.” Ibid.

“The first floating ice which is observed on the coast of Labradore is a joyful presage to the inhabitants of the approach of summer.” Lieutenant Curtis, in Philosophical Transactions.

“The ice begins to break up the 18th of June.” Danish Account of Groenland.—*Voyages au Nord*, Vol. I. p. 167.

^f *Viz.* The nights being shorter, and the rigging not being so subject to be frozen.

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“ The lakes of Lapland continue frozen on June the 24th.”
Linfchoten’s Voyage, *ibid.* Vol. IV.

“ On the 5th of July, the sea on two sides is observed to be covered with ice.” *Ibid.* p. 187.

Wood sees the first ice in North latitude seventy-five degrees fifty-nine minutes, on June 22d.

On the 17th of August vast pieces of floating ice. *Ibid.*

“ In the month of August the French observe, on the Labrador coast, mountains of ice as high as the ships.” Boyle’s Works, Vol. II. p. 303.

“ On June 16th, a river in Hudson’s-bay breaks up.” Mr. Wales, in Philosophical Transactions, Vol. LX. p. 126.

“ The mouth of the Lena is not open till the middle of August.” *Observations Géographiques, par Mr. Engel, p. 229.*

With regard to the ice which may be observed in Southern latitudes, I shall only take notice that Sir Francis Drake, Feuillee, and Clipperton, passed Cape Horn, or the Straits of Magellan, during the month of December, without mentioning ice^g, from which it should seem that it breaks up chiefly during the months of January, February, and March, answering to our July, August, and September^h.

Three Dutch ships, which failed on discoveries with Commodore Roggewein, in 1721, met with much ice to the South of Cape Horn in the middle of January. The Author of the Narrative afterwards makes this observation: “ Those mountains of

^g See Callander’s Voyages under these three articles.

^h It may possibly break up in some years earlier, perhaps in December; but some time must be allowed for its floating to the north, as far as the latitude of *Tierra del Fuego*. From the instances cited, it appears that the earliest floating ice which is seen in the northern hemisphere is not observed sooner than the 16th of June, whilst in much the greater part mention is not made of it till July.

“ ice, which are seen in the latitude of Cape Horn, prove that
 “ there is land towards the Southern Pole, it being certain that this
 “ ice cannot be formed in the ocean, though the cold is so severeⁱ.”

But it may, perhaps, be said, that the ice which breaks up in June, July, and August, or during the correspondent months in the opposite hemisphere, may remain floating for years without being much dissolved.

To this I will not take upon myself to say that some such islands, when very large, may not continue more than a year; but I should conceive this not to be very common. Storms and other accidents must probably break them into small masses which will quickly be thawed; as that able geographer and promoter of discoveries, Mr. Bailiff Engel, observes that if a piece of ice is fastened by a cord and let down into the sea, it is presently melted^k.

Mr. Wales also informs us, that he supposes most of these islands of ice are soon wasted, in the following words: “ The
 “ truth is, their motion and dissolution are apparently so very
 “ quick, that I am of opinion it must be a pretty large island
 “ which is not dissolved in one summer^l.”

How soon likewise does the ice disappear, which is discharged from our own rivers into the sea, after our most intense frosts?

I have omitted stating the degree of cold at which the sea-water I exposed to the air began to be frozen, and cannot now recover the memorandum which I made at the time. I am pretty confident, however, that the mercury had sunk only to twenty-seven.

ⁱ Histoire de l'Expedition de trois Vaisseaux, &c. *Hague*, 1739, p. 81.

^k See *Observations Geographiques*, p. 224.

^l Philosophical Transactions, Vol. LX. p. 112.

But though congelation thus took place at five degrees below the freezing point, it is proper that I should state some other circumstances attending the experiment.

The sea-water which I used came from the North Foreland, which is at the mouth of the Thames, and consequently, not being the same with that of the ocean, was more easily frozen.

Besides this, the quantity was so small as not to cover a thin china basin deeper than an inch, both which particulars contribute greatly to the more speedy formation of ice: it need scarcely be mentioned also, that the liquid to be frozen was in a quiescent state.

How much a considerable degree of motion impedes congelation, may be inferred from what may be observed in every river; for as high as the tide hath any force, I doubt much whether any ice is scarcely ever formed in the fair open channel, during our most intense frosts. I attended to the Thames, in this respect, during the late severity of the weather, and it seemed to me that all the ice floated down from the upper parts of the river; but packing afterwards between the lighters, occasioned the formation of very large masses.

I have little doubt, from these circumstances, but that the open sea, if it be frozen at all, must require a much more intense cold than twenty-seven; allowing however any greater degree of cold in the high latitudes, it seems deducible, from the experiments of Dr. Higgins, that sea-water cannot be frozen into a solid state, if compared with that of ice formed from the water of rivers; nor will such ice when melted become palatable, unless it hath been previously washed in fresh water.

Hence it seems to be almost demonstration, that the floating ice met with by navigators, being both solid and sweet to the

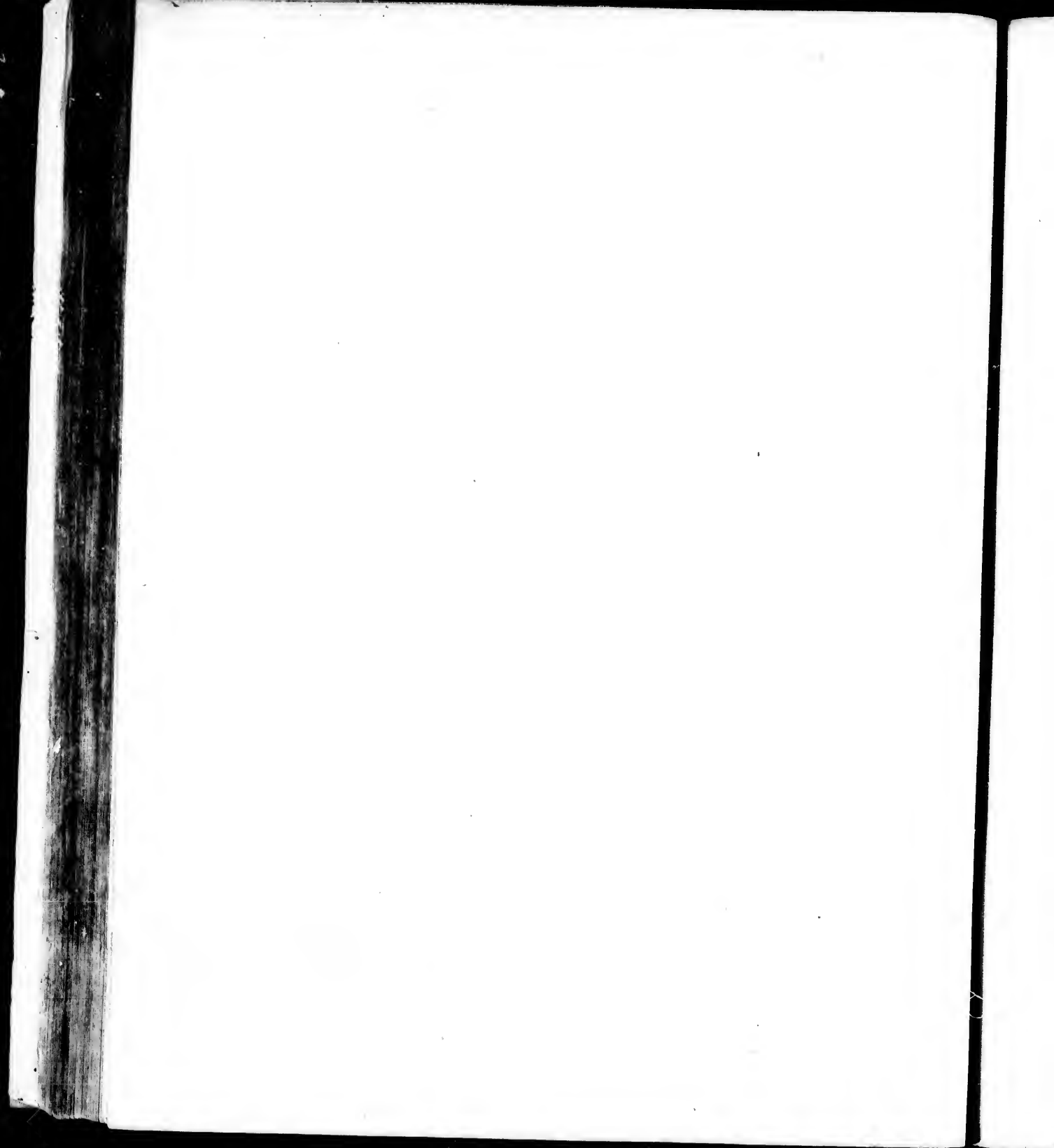
taste after dissolution, cannot be produced from the water of the ocean ^m.

I will venture also to insist, that if such ice was actually frozen from the ocean, it must very quickly be melted, because, as it must consist of detached laminæ intercepting the brine, the sea would soon insinuate itself between the interstices, so as to cause its dissolution. If any ice, therefore, should be formed in those parts of bays which are land-locked, have little or no tide, and receive considerable quantities of fresh water, when such ice is wafted fairly out to sea, I should conceive that it must disappear in a very short time.

^m The ice taken up by Captain Cook, during his circum-navigation in high Southern Latitudes, was solid and transparent; being placed also on the deck for the salt-water to drain off, the ice became wholesome and palatable water.

M I S C E L L A N E O U S

E S S A Y S.



E S S A Y I.

WHETHER THE TURKEY WAS KNOWN BEFORE THE DISCOVERY OF AMERICA.

THE earlier writers on ornithology, as Belon, Ray, and Willoughby, had supposed that the turkey was introduced into Europe from Asia: M. de Buffon, however, (with other great authorities) hath lately maintained, that we owe this bird to America; and, as he hath more fully entered into the discussion of this point than any other writer, I shall principally consider the reasons by which this most able naturalist supports what he hath contended for.

Having taken some pains on this subject, by examining most of the authorities which can afford any light, I shall, without hesitation, say, that I *rather conceive* this bird was never indigenous in the neighbourhood of Mexico^a: though I do not mean to assert this with any degree of positiveness; but I am thoroughly convinced, that, whether turkies were found in America by the first discoverers or not, the Europeans are chiefly indebted to Asia, and perhaps Africa, for this valuable addition to our tables.

^a As for Virginia, I admit turkies to have been found in a wild state on that coast by the first settlers in 1584. Hakluyt, Pt. III. p. 274. The vast distance, however, between Virginia and Mexico is well known; and these birds were called turkies in England thirty years before the discovery of Virginia.

M. de Buffon's principal arguments in favour of the American claim are the following:

Hernandez, who wrote the Natural History of Mexico, hath mentioned this bird under the name of *Huexolotl*.

Now it is much wished that Hernandez had explained what is the meaning of this Mexican term, as I strongly suspect it signifies *The New, The Eastern bird*, or of the like import, intimating that it was brought to America by the Spaniards.

But I must not dismiss this earliest and principal authority of M. Buffon's, without dwelling upon some material circumstances, to the decision of the point in contest.

Hernandez's work was first printed at Rome in 1651; and I cannot discover at what time he compiled it but by the Dedication, in which it is stated that Philip II. had sent this physician to Mexico.

Now this King of Spain began his reign in 1555, and died in 1598; and if we therefore allow twenty-one years as the half of his life, after Charles V. gave up his crown, it seems to be a fair conjecture, that Hernandez took notice of this bird in the neighbourhood of Mexico about the year 1576, when he speaks of it also as *known to every one* under the name of *Gallus Indicus*, which I hope soon to prove means the Eastern, and not the Western Indies.

This same year also, of 1576, was but fifty-one years after the conquest of Mexico by Cortez; and if this bird was in that time so dispersed over Europe, as to be known to every one, could the natural historian of this part of America have omitted so material a circumstance in relation to the animals of the country which he was describing.

As for Columbus's discovery of the islands in the Gulf of Mexico, neither M. Buffon, or any other writer, hath ever pre-

tended

tended that turkies were found upon them; and, on the contrary, *Brown* informs us, that in the present century, “ they require a “ good deal of care *in Jamaica*, and a moderate climate when “ young.” Du Tertre also observes, though turkies in the *Leeward Islands* thrive well after they are of a certain size, yet, that if the least dew wets their heads they commonly dye, as likewise from a vertigo, supposed to arise from the intense heat of the sun in that climate^c.

But as the citation from Hernandez is so much relied upon for turkies being indigenous in the neighbourhood of Mexico, it must be recollected that Cortez first visited that country in 1519, did not take the capital till 1521, nor returned to Spain till 1528^d, which is the earliest period that can be reasonably assigned for the introduction of this bird into Europe from America, though no author (as it is believed) hath ever mentioned his bringing with him any live animals.

The inference from this seems to be, that it is much more probable turkies should have been carried with fowls, horses, cows, and sheep, to the West Indies, than that they should have been brought from thence to Europe, as it is well known that a regular supply of wholesome food must be one of the first objects which every new settlement must attend to.

But I will now suppose that Cortez, or any of his followers, had introduced the turkey into Spain in the year 1528; would it not then have received the name of the Mexican bird, or Mexican peacock^e, rather than that of *pago*, which was its old appellation,

^b History of Jamaica, p. 470.

^c Histoire des Antilles. T. II. p. 266.—Paris, 1667. Quarto.

^d Robertson's History of America.

^e Gage was sent to Mexico in 1625, and traversed not only the Mexican, but adjoining territories; in his account of which journies, he four times mentions *turkies*, together with *fowls* which are known to have

appellation, though now it is more commonly called *pavo*, and the peacock *pavon*^f.

Again, if turkies were first introduced from Mexico into Spain, the other parts of Europe must have received them from the same quarter, which would also have termed it either the Mexican or Spanish bird at least; but there is no synonym in any language of Europe which bears the most distant allusion to this circumstance, nor is there any tradition of such an introduction. On the contrary, we have the authority of Cardinal Perron^g (a contemporary of Hernandez) that they were in his time drove from Languedoc into Spain in large flocks, "Le coq d'Inde est un oiseau qui a peuplé merveilleusement; de Languedoc ils en menent en Espagne, comme des moutons^h."

By this passage, we find that turkies, so far from being brought from Spain, were sent during the sixteenth century by droves into that country, which is the strongest proof (amongst many others) that we are indebted to Asia, and perhaps Asia Minor, for this bird, because the French have long had intercourse and trade with the Turks, though the Spaniards never have had any communication with them.

The next citation by which M. Buffon supports his opinion, is from Sperlingius's *Zoologia Physica*, in the following words:

have been introduced from Europe, and originally Asia. It is remarkable also, that he always meets with *turkies and fowls* near some towns, and not in the uninhabited tracts through which he passed. Now if turkies were wild in the Mexican empire in 1576, when Hernandez may be supposed to have wrote, can it be conceived that they were entirely confined fifty years afterwards to the cultivated parts of the country? See Gage's *New Survey of the West Indies*, London, 1648, p. 23. 75. 105. 125.

^f See the *Royal Dictionary of the Castilian language*, Madrid, 1726.

^g Cardinal Perron died in 1620.

^h Perroniana, p. 67.

“ante centum, et *quod excurrit*, annos, delata hæc avis (sc. Gall. Pavo) ex Nova India in Europamⁱ.”

I really am not without my doubts, whether by *Nova India* Sperlingius does not mean some of the discoveries of the Portuguese in the East Indies; but, allowing him to speak rather of America, let us examine this assertion, for which he cites no authority whatsoever.

Sperlingius's *Zoologia Physica* was printed at Leipzig in 1661; and from the pretence to great accuracy in speaking of 101 years rather than a round 100, the turkey must have been first brought to Europe from Nova India during the year 1560; whereas four young *turkies*^k (and consequently bred in England) were dressed at a serjeant's feast in 1555^l, which, by the way, was but twenty-seven years after Cortez's first return to Spain.

But I suspect at least, that I find a still earlier mention of turkies in England, for capons of *Grease* (Greece probably) made part of an entertainment in the sixth year of Edward IV. A. D. 1467^m; it being highly probable that this bird was common to two countries lying so near to each other, as Greece and Asia Minor.

Sperling, however, printing his work at Leipzig, must be supposed to have been a native of Saxony; and how are we to expect an accurate account of the introduction of turkies into Europe from an inland part of that empire, which never had the least intercourse with America? I shall also prove hereafter, that supposing the passage cited to relate to America, and not to

ⁱ P. 366.

^k They are so called, and undoubtedly, as Willoughby observes, because they were supposed to have been introduced into England from that quarter.

^l Dugdale's *Orig. Jur.* p. 135.

^m Leland's *Itinerary*, vol. VI. p. 5.

India, we shall find this writer to be contradicted by the terms now used in Germany when the turkey is spoken of. I am confident, moreover, that this whole treatise of *Zoologia Physica* is such a publication, as M. Buffon would neither read nor cite for any other purpose; especially as *Sperling* supposes the bird in question to be a monstrous production between the peacock and common hen, both of which were first brought to Europe from Asia; as also that there is frequently intercourse between turkies and ducks^a.

Buffon next endeavours to prove, that the turkey does not come from Asia but America, by travellers agreeing that few or none are found over that vast and first-mentioned continent.

Before I enter into a discussion of this last argument, insisted upon by so ingenious and able an ornithologist, I shall premise, that most of his authorities relate to the S. E. parts of Asia, and not to Asia Minor, or Indostan, from whence I rather suppose the turkey was first brought into Europe.

In the next place, though some of these travellers have passed through considerable tracts of this quarter of the globe, it is no more to be inferred, because they did not observe turkies in their route, that therefore they are not to be found in other parts of Asia, than if an Asiatic had made a complete tour of Great Britain fifty years ago, without seeing *Guiney-hens*, that the English were therefore without that bird. I mention fifty years ago, because *Guiney-hens* since that time have become much more common in this country^b.

This

^a Though I disbelieve this, together with M. Buffon, yet I have frequently been informed that ducks, hatched under a hen, prefer them to the females of their own species, or rather genus. Supposing this to be true, where birds do not differ generically, as ducks and hens do, perhaps the hatching the eggs of one species under that of another is the most likely means to produce a mixed breed.

^b As M. Buffon's most positive authority for this negative sort of proof is Tavernier, I shall now endeavour to shew that little is to be inferred from

This seems to be a general answer to all such negative authorities, because the traveller certainly deserves little or no credit, but in what relates to particulars seen or not seen by him, and in his own route.

Whenever any of these writers, however, happen to assert, that turkies are to be found in Asia, M. Buffon will not give them credit, as in the case of Du Halde, whom he believes, when he says, that “*the Chinese have them not, but from other countries*,” because he speaks of what he had been *an eye-witness of*. But M. Buffon pays no regard to the same authority, when he states that these birds are very common in the East Indies, because Du Halde is supposed to have received this account from others. Now I have always understood, that Du Halde had never been in China, or any other part of Asia, having compiled his history from materials collected by others who had visited that most extraordinary empire.

M. Buffon having endeavoured to prove that no turkies have been found in Asia, in order to support the exclusive claim of America, hath banished this sort of poultry likewise from Africa, asserting, upon the authority of Bosman, that those which they have near Senegal were originally brought from Europe⁹.

from the testimony of this traveller, who, indeed, does take upon himself to assert, that there are *no turkies in all Asia*, though he never was but once in any part of the Indies, *viz.* in 1649, when he sailed from Gombroon, in Persia, to Surat, Ceylon, and Batavia. But this is not all, for he hath refuted himself by the publication of his brother's account of the kingdom of Tunquin, where there is a print representing the ceremony of a funeral in that part of Asia, and the animals which are to be sacrificed, amongst which there is a Turkey-cock. See the third volume of Tavernier's Travels.

⁹ Buffon's Orn. t. II. p. 150. These *other countries*, however, most probably refer to other parts of Asia.

⁹ Hist. Nat. des Ois. t. II. p. 151. 158.

Bosman's

Bosman's Voyage to Africa was first printed at London in 1705; and I conclude, that such turkies as he happened to see at that time on the coast of Guiney might not be in a wild state, but supplied from Europe.

It should seem, however, that above a century before this the same coast abounded with them: for in Thomas Candish's Voyage in 1588, he informs us, "That we found in this island (*vis.* St. Helena) great store of *Guiney cocks*, which we call *turkies*."

These birds were therefore either indigenous in St. Helena, "being found in *great stores*;" or must have been brought early in the sixteenth century by the Portuguese from the coast of Guiney, or the East Indies, of both which they were the first discoverers, as well as of the island of St. Helena.

There is one circumstance, indeed, rather in favour of the East Indies, which is, that a turkey to this day is called in the Portuguese language *peru*, whilst it goes by the same name in many parts of India; nor can it be contended that the bird is thus named from that part of South America, because the Portuguese had never any connexions with Peru. Besides which it never

^r Hakluyt, Pt. II. p. 825.

^s Four years before this, *viz.* in 1584, Mr. William Barrett touched at this island, and found there only two Portuguese hermits. Turkies therefore could have been scarcely introduced merely for their sustenance; and if the Portuguese had intended to make the same use of the island that we do, they would have left there more useful members of society. Hakluyt, Pt. II. p. 280.

^t So early as the year 1455, and consequently long before the discovery of any part of America, a Venetian named *Alvise da Moro*, speaks thus of birds, which he found on the coast of Senegal: "There are also in this country some large birds, which we call *bens of Pharaoh*, and which come to us (*sc.* the Venetians) from the *Levant*." Ramusio, v. i. p. 104. B. Venezia, 1588. I shall afterwards take notice, that one of the Turkish synonyms for this bird is *Mesry*, or of *Egypt*.

hath been insisted upon by any one, that turkies were found indigenous in that part of the globe.

But I have another authority to produce, that this bird abounded during the seventeenth century in the great island of Madagascar, so much nearer to the coast of Asia than St. Helena.

De la Croix, who published his General History of Africa in 1688, informs us, that there are many turkies in the *woods* of Madagascar, which therefore it should seem most highly probable were indigenous, because the Portuguese were merely the first discoverers of that island; and, though the French did begin a small settlement in 1640, yet it was soon abandoned. De la Croix may be supposed to have received this account from some of these settlers, who clearly speak of them as in a wild state; whilst otherwise it would have been highly natural to mention, that these birds had multiplied greatly since their first introduction from Europe.

Let us now examine how this bird is called in most of the European languages, as it must afford so strong a proof of the country from whence it was first introduced, especially if most of these concur in pointing to Asia, or Africa, for its origin, whilst none bear the most distant allusion to America.

The Spanish term is not *Pavon de las Indias*, as M. Buffon states, but simply *pavo*, and formerly *pagu*. If moreover the name were *Pavon de las Indias*, it would not signify the West Indies, as in all European languages the addition of *Western* is necessary, and for the following reason, besides the constant usage.

The country called India, during the earlier centuries, comprehended only the territory of the Great Mogul (properly the present Hindostan) but when the Portuguese had discovered the

"Beaucoup des coqs d'Inde dans les bois." Relation Universelle Afrique, tom. IV. p. 426. Lyon, 1688.

two great peninsulas which lie to the South, these three immense territories went by the name of the *Indies* for pre-eminence. When America therefore is referred to, it must be termed the *West Indies*, to distinguish it from the Asiatic India, so long in possession of that appellation.

I suspect, however, that the turkey was never termed *Pavo de las Indias*, because we shall find that in most of the European tongues it is stiled *Cock of India* and not of the *Indies*.

In France, therefore, the name is *Coq-d'Inde* [not *des Indes*], *Indar*, *Paon d'Inde*, *Diudon**. In Italian, *Gallina Indiana*.

Buffon gives us the German name of *Indianischer habn*, or the *cock of India*, but he omits the more common appellation of *Welscher habn*, or the cock from Italy; as also *Kalkutischer habn*, or the cock from Calcutta². Nor is it at all extraordinary, that this bird should pass under different names in different parts of the same empire, as the turkey to this day is called in Scotland *Bubble-Jack*, [or *Snotty-Jack*], from the caruncle which projects and hangs down beyond the bill of the male bird.

The Portuguese synonym is *peru*, which I am informed is the name for a turkey in the East Indies, whilst that of the Swedes and Danes is *kalkobn*; in all which terms there is not the least allusion to its first coming from Mexico, or being dispersed from Spain into the different parts of Europe and Asia. In the modern Greek this bird is called *Tana*.

* Cotgrave's Dictionary.

¹ The most common name in Silesia is *auer habn*, which I am told signifies the *wild hen*. In Bavaria and the Palatinate, it is called *Trutt habn*. See Schoeffer's Ornithology. The Synonyms of *Welscher* and *Kalkutischer* are to be found in Johnston's Natural History, printed at Amsterdam in 1657.

² Barbosa visited Bengal in 1518, and speaks of seeing there "Galline grandissime, e smifurate," by which he possibly means these Calcutta turkies. Ramusio, Vol. I. *Gallus decumanus*, quem Gesnerus *gallopavum* vocat. De-Bry, Hist. Orient. Pt. 6.

I shall now mention some of the Asiatic names for a turkey.

I find by an Italian and Turkish Dictionary, printed at Rome in 1641, that this bird is termed in that language *Hind Taugbi*^a; and in Arabic *Deek Hindy*, both signifying the cock of *India*; in some parts of Asia Minor also, I am informed that it is stiled *Mesry* or *Mysyr*, signifying the bird from Egypt.

It will scarcely therefore be contended that the Turks (who must have had this bird in considerable numbers before 1641, so that it had obtained an Arabic as well as Turkish name) by the term *Hindy* mean the West Indies^b, about which they were then, and continue to be so ignorant, especially as America in their language is called *ieni dunia*^c; besides that some of them conceive the bird to have been introduced from Egypt by the term of *Mesry* or *Mysyr*, it having probably been brought from India to Suez, and from thence to Cairo.

I shall close the different synonyms by our name of *turkey*, which I have proved to have been used in England so long ago as the year 1555, because the chickens or powts made part of a serjeant's feast in that year.

Turkies had so increased in England within twenty-five years from this, that Caius in his account of our *rarer* animals (printed in 1570) omits mention of them, though he is very particular in the description of a *Guinea hen*, stiling it *Meleagris*. At the latter end of the same century they were driven by the carriers from Kent to London, as they are now from Norfolk^d.

^a It had therefore obtained this name in Turkey, twenty years before (according to Tavernier) it was scarcely heard of in any parts of Asia.

^b *Hind* or *Hend*. *Les Indes Orientales*. Herbelot.

^c Or the *New World*, the Arabs using the same term, though they sometimes say also *Amerib*.

^d See Shakespear's *Henry IV*. Pt. I. By a proclamation in 1633, their price at different growths is settled. Rymer, Vol. VIII. Pt. IV. p. 53. Some horses left near Buenos Ayres, by the Spaniards, in thirty years filled the country for twenty leagues round. Hakluyt, Pt. III. p. 7.

But Buffon himself supplies us with a more decisive proof against the claim of America, by asserting that turkies were first known in France during the reign of Francis the 1st, and in England during that of Henry the VIIIth.

As for what he advances in relation to France, it rests upon a tradition which I shall have no reason to controvert, as this tradition does not settle whence they were so introduced. Francis the 1st, however, dying in 1547, which was but nineteen years after Cortez's first return to Spain, it is not very probable that they should have come from America.

With regard to their being first known in England during the reign of Henry the VIII. this depends upon the following old verse:

Turkies, carps, hops, pickard, and beer,
Came into England in one year.

These old lines are certainly erroneous with regard to some of the particulars; but are generally agreed to have been made from the tenth to the fifteenth year of Henry the Eighth, or from 1519 to 1524; the latest of which is before Cortez's first return to Spain, and consequently we must have been supplied with these birds from some other quarter than that of Mexico. It is to be observed also, that they are thus early called *Turkies*.

I have indeed presumed to suggest a still more early introduction of turkies into England, under the name of *Capons of Grease*; nor is it impossible that Fitz Steven who wrote in the time of Henry the II^d. alludes to them under the term of *Afra Avis*, which seems to have formed some part of an entertainment, during the Thirteenth Century, at a London Feast.

Some also have relied much on their not being mentioned in our oldest bills of fare; but it must be recollected that we
have

have very few of these till the Sixteenth Century; as also, that the place where the feast is given, and the time of year, is very material. If at a distance from London, these dainties could not be procured; whilst the autumn only produced the chickens or powts, which were then only eaten by our ancestors, as they had not discovered that a grown turkey becomes only a delicacy by having been kept for a fortnight or three weeks.

Having thus endeavoured to shew that M. Buffon is not supported by any of his authorities in the turkey's not being known till the discovery of America, it would be uncandid to suppress a stronger proof on his side of the question than any which he hath produced, and which I happened to stumble upon in my researches on this question.

Peter Gyllius, who was a native of France, and published a translation of Ælian's Miscellaneous History in 1535, together with a few remarks of his own, hath described the turkey; saying, that the living specimens had been brought *ex Novo Orbe*.

Though, perhaps, there may be doubts whether this expression alludes to America, or the discoveries of the Portuguese in Asia, yet I will admit it to refer to the former, according to Gyllius's meaning; but still I conceive he must have been deceived from the following circumstances.

Gyllius was born in 1490, and died in 1555, having travelled for forty years of his life, and, amongst other parts of the world, to Constantinople, of which he hath printed a description, together with that of the Bosphorus Thracius. As he does not mention *where* he saw these birds, it is not improbable that this might have happened in Turkey; and can it be otherwise supposed that they could have been brought to any part of Europe (except Spain), within eight years from Cortez's first return from

Mexico, which happened in 1527, whilst Gyllius's work was published in 1533? It is highly probable also, that this assertion was made many years before it appeared in print.

There is another very decisive circumstance with regard to his meaning either to refer to the East Indies by *Novus Orbis*, or otherwise being mistaken in supposing that the birds came from America, which is, that the cock is described to be of the dark colour observed commonly in wild birds, whilst the hen was *white*.

Now such a change of colour arises from birds and other animals being long domesticated and pampered; nor can it probably be produced in so short a space of time as eight years, allowing their importation from America as early a date as possible.

Whilst birds remain in a wild state, the least deviation from the common plumage becomes a phaenomenon, and is deposited in the Museums of the curious; but the constant supply of palatable food, together perhaps with a better protection from the inclemencies of the weather, produces daily *varieties* in all our poultry, as it does in Canary birds*.

I shall now urge another argument of some presumption against the Mexican claim. Wherever birds are found indige-

* The darker colour in all wild birds, and which consequently are not protected by man, is a most providential circumstance against their being discovered by their numerous enemies. In birds of the gayest plumage therefore, the young of both sexes do not assume their bright and glossy feathers, till the third year; nor does the female at any age, who would be otherwise seen whilst sitting. No colour, however, points out a bird so much to it's pursuers as that of white; and Columella, for that reason, advises against the white breed of chickens, as being more easily seen by hawks. De Re Rustica, l. viii. c. 2. As for the Ptarmigan, it is an exception which proves the justice of the general observation, because it becomes white only, when the ground is covered with snow.

nous, they are in the climate best suited to their wants, and most favourable to the increase of their species. The mother bird therefore most assiduously exerts and attends to the great duties of incubation, and rearing her young. These same birds, however, removed to other climates, often neglect, or seem insensible of this most providential impulse, which I conceive to arise from a supposition that their nestlings cannot be reared.

In our own latitudes we find this almost constantly with regard to pea and Guiney hens, whilst, on the other hand, a duck removed to a tropical climate will seldom hatch her eggs or rear her young.

A French gentleman, therefore, named Morifette, who for some years hatched chickens in ovens near Lambeth Marsh, gave me the following account :

The first time he went to Batavia, he was at dinner with a large company, when a man came in out of breath, to inform them, that he had found a duck sitting upon her eggs, on which every one but himself immediately left the room to see this uncommon sight. After this Mr. Morifette having been employed both by the English, Dutch, French, and Portuguese, visited almost every part of the East Indies, where he found that ducks would not sit for any time, and which is the occasion of the Chinese (who live so much upon this bird) making use of ovens for this purpose, and contriving that the young ones shall burst the egg, whilst the gleanings of the rice harvest float upon the water^f.

^f I rather suspect, for the same reason, that hens do not sit close in Egypt, though this most useful of all poultry is admitted to breed well in almost every climate, and to be an exception to the general observation which I have ventured to make.

To apply this general observation to the instance of the turkey.

Mexico is not only situated within the tropicks, but the continent in that part being narrow between the two seas, I should suppose that the climate must be nearly the same with that of Jamaica, where Brown informs us “ that turkies require a good “ deal of care, and a moderate climate when young^s”, which seems to imply neglect commonly in the mother bird. On the other hand, turkies are very attentive to their parental duties in all the more moderate climates of Europe, which circumstance affords some presumption that we derive this bird originally from the Northern parts of Indostan, which are not only out of the Tropic, but being inland have often very considerable degrees of cold.

I therefore conceive, that if Gyllius speaks of America by the term of *Novus Orbis*, he was imposed upon by those who shewed him these then extraordinary birds, as we know well how every one's curiosity must have been raised with regard to the productions of that lately discovered quarter of the globe. To this it may be added, that Belon, who writes expressly on birds (and therefore deserves much more credit on the point in controversy) so far from imagining that turkies came from America, gives us his opinion, that they were known to the ancients. Now Belon was a Frenchman as well as Gyllius, and only published his Ornithology in 1555, or twenty years after Gyllius's work.

I have thus stated, for the decisions of others, this new authority on the side of America, together with the circumstances which may invalidate it: if, upon the whole, my arguments should not be deemed irrefragable against the turkey's being found indigenous in Mexico, yet I flatter myself that I have fully proved that this bird was not peculiar to America, as M. Buffon hath contended.

^s History of Jamaica, p. 470. See also ante, p. 129, where there is a citation from Du Tertre to the same import.

Having thus endeavoured to prove that the turkey (whether indigenous or not in the neighbourhood of Mexico) could not have been first introduced into Europe from that quarter of the globe; I shall next consider another question of some moment amongst the ornithologists, whether it was the *meleagris* of the ancients.

Most of the earlier writers on this part of Natural History have rather supposed the *meleagris* to be the same bird; but M. de Buffon contends that the *meleagris* was the *Peintade* or Guiney hen.

I will not pretend to pronounce with any positiveness on this point; but I must own that I rather conceive, neither the one nor the other were commonly known to the ancients, at least to the Romans, nor were perhaps used by them or the Greeks as poultry.

My first reason for this is, that I do not conceive how these very useful birds, having been once introduced into Italy, could have been lost, as both turkies and Guiney hens were undoubtedly for so many centuries: whereas the peacock, by no means so necessary as either of them, was continued from the time of the Romans to the present century. It is agreed likewise that the common hen was originally introduced from Asia.

But it may be said, that this argument is not to hold against positive descriptions of the bird, which I agree to; but let us examine what these descriptions are.

Ovid, in his Eighth Book of the *Metamorphoses*, transforms the sisters of Meleager into these birds, in the following lines:

— natis in corpore pennis
Allevat, & longas per brachia porrigit alas,
Corneaque ora facit, *versaque per aera* mittit.

Now

Now Ovid is known to be very accurate in the description of the animals into which every one is changed^b; and yet, of the only three circumstances mentioned in this description, two of them are not the least applicable to the Guiney hen, for this bird hath very short wings, and consequently seldom takes any flights. Even the third circumstance of *corneaque ora facit* perhaps implies nothing more than the change of the human mouth into a bird's bill.

Varro speaks of the Meleagris after mention of the *Gallina rustica*, which he says was then rare at Rome, and scarcely ever seen but in a cage. He then observes that they are like the African hens, *aspectu ac facie incontaminatâ*ⁱ, which brings him to the description of the *Gallina Africana*; Gallinæ Africanæ sunt *grandes, variæ, gibberæ* quas *μελεαγριδας* appellant Græci.

Now when the resemblance to fowls is mentioned, it certainly cannot be said of the *Guiney hen*, that they are comparatively *large*, or *grandes*.

Columella thus alludes to the meleagris:

Africana est, (quam plerique Numidicam dicunt) Meleagridi similis, nisi quod *rutilam* galeam & cristam in capite gerit quæ utraque sunt in Meleagride *cærulea*^k." Now a Guinea hen hath neither crest nor comb; and as for the horny nob on its head, it is red and not blue. Columella by this passage likewise only says, that the African hen is *like* the meleagris, except as to the colour of its crest and comb, and not that it is the same bird.

^b I should therefore wish, that if an elegant edition of the Metamorphoses should be printed, it might be beautified and illustrated by coloured engravings from specimens in Sir Ashton Lever's most capital Museum.

ⁱ De Re Rustica, l. iii. c. 9. I must own that I have no clear idea of what Varro means by *facie incontaminatâ*.

^k Columella de Re Rustica, l. viii. c. 2.

As the African hen is here likewise spoken of, and said to have been more commonly called the Numidian hen, it explains that Martial cannot allude to the *peintade* in the following lines. After having stated that his friend Faustinus's villa was a mere farm, the poet enumerates his poultry :

“ Vagatur omnis turba fordidaē cortis ;
 “ Argutus anser, gemmeique pavones
 “ Nomenque debet quæ rubentibus pennis,
 “ Et picta perdix, *Numidicæque guttatae*,
 “ Et impiorum phasiana Colchorum,
 “ Rhodias superbi foeminas premunt galli.”

Martial, L. iii. Ep. 58.

I cannot but rather think that Martial describes these birds from a picture, than what were before his eyes in the farm-yard (for so I translate *fordidaē cortis*) because the Phænicopterus, or Flamingo, is plainly alluded to by

Nomenque dedit quæ rubentibus pennis;

and though some of the Roman Epicures were fond of the flamingo's tongue, yet it cannot be well conceived that they were reared as poultry. But the most material part is to determine what the poet means by

Numidicæque guttatae.

As I have just now proved from the words of Columella, that the African and Numidian hen were the same bird, and that it differed in most material circumstances from the *peintade*, I cannot understand any thing more to be implied by this expression, than the common fowl from Numidia, spotted in a rather particular manner, as the *penciled and partridge hens* are with us, the varieties being so numerous; but still with some care such a beautiful breed may be continued for a considerable time. In this same poem, therefore, we find mention of the

fowl from Rhodes, whilst Varro and Columella likewise recommend the sorts which came from Africa and Media.

Another circumstance which inclines me to think that our Guiney hens were little known to the ancients, is that neither the most disagreeable noise, which they are perpetually making, nor their most envious and quarrelsome disposition, are noticed by any of the writers who may be supposed to have alluded to them.

Pliny speaks twice of the Meleagris, which he says were not soon introduced to the Roman tables, *propter ingratum virus*. We know, however, of no disagreeable or poisonous taste in the Guiney hen at present, but, on the contrary, esteem it to be a bird of excellent flavour.

In his thirty-seventh Book, and second Chapter, the same naturalist cites Ctesias for saying, that near a place called Sicyone in Africa, and the river of Crathis, which empties itself into the ocean, there were birds called Meleagrides and Penelopes¹; whilst a few lines afterwards he refers to Sophocles the Tragedian, for saying that amber is made by the tears of the Meleagrides *beyond India*. There seems, therefore, to be as little agreement amongst the ancient Romans about the place these birds were brought from, as in their description of them.

It appears from this great uncertainty in describing the Meleagris by the Roman writers, that, if known at all by them, it was not considered as poultry, because, if that was the case, they must have continued in Italy till the sixteenth century, when they were first introduced from Africa^m, and as I should suppose from the Coast of Guiney, according to their English name. Nor can I hear that they are at present found in a wild state.

¹ Aristotle considers the bird of this name, as a sea eagle. L. viii. c. 3.

^m We are informed likewise by Margrave, that they were first brought to Brasil from the same quarter.

upon the Northern parts of that vast continentⁿ. On the contrary, Athenæus mentions, that they were brought from Ethiopia, and carried about in cages at a procession of Ptolemy Philadelphus^o. Photius also informs us, that some of them were to be found on an island of the river Nile, and probably the upper part of that river^p.

I should for these reasons rather suppose, that when the Romans speak of Volucres Libycæ or Numidicæ, they only refer to a variety of the common fowl, the plumage of which might somewhat resemble that of the Guiney hen, as we now distinguish them by the name of Bantam, &c.

I am by no means so clear that Guiney hens were not considered as poultry by the Greeks, though their having been introduced to Europe from the Coast of Guiney makes me suspect that they were not, because this delicacy could not have been wanting for the tables of the emperors when they resided at Constantinople, and consequently the breed could not be entirely

ⁿ Dr. Shaw takes no notice of the *peintade* amongst the birds in the neighbourhood of Algiers, but on the contrary gives an engraving and description of the *Rhaad* or *Saf-saf*, which answers almost in every circumstance with Columella's account of the *Meleagris*. The *Rhaad* is of the size of a capon, and hath a tuft of *blue feathers* on its head; having no hind claw, it may properly be considered as a bustard; and there is a specimen of the lesser species of this bird in Sir Ashton Lever's Museum, which Dr. Shaw observes hath no tuft of blue feathers behind the head; it is also elegantly mottled with brown and white.

I had an opportunity of shewing Dr. Shaw's engraving and description of the *Rhaad*, to a lady who had lived many years at Tunis, and who told me that she believed it to be what was there more commonly called the *Hen of Carthage*, because it was generally brought from thence, and esteemed a good bird for the table. From these circumstances it is not improbable that the *Rhaad* may be the *Meleagris* of the Romans, their intercourse being chiefly with the neighbourhood of Carthage, after their conquest of that part of Africa.

The same lady informed me that they had no Guiney hens at Tunis but what came from Italy.

^o Athenæus, L. IX.

^p P. 1366. Rhotomagi, 1653.

lost in that part of the world. We find also, by what hath before been mentioned from Athenæus, that Ptolemy Philadelphus was obliged to send to Ethiopia for them, instead of Greece.

There is, however, so particular a description of the Guinea hen in the 14th book of the same writer, that there cannot be the least doubt of this bird being referred to, and I shall therefore translate the whole passage:

“ Clytus of Miletus¹, a disciple of Aristotle, mentions these particulars about the meleagris. They are to be found near the temple of Minerva in Ærus²; and they are so negligent of their young, that it is necessary for the priests to look after them. They are about the size of a grown fowl, have a head rather smaller than in proportion to their body, which is smooth (or naked), and hath upon it a fleshy hard and round knob, which rises above the head like a small stake³, and of the colour of wood⁴. Near the cheeks lies a long piece of flesh like a beard, which begins from the mouth, and is redder than in hens; but it hath not the comb of the latter (or as some call it *the beard*), but appears to be mutilated in that part. The beak is larger and sharper than that of a hen; the neck is blacker, thicker, and shorter; the whole body is variegated, being black intermixed with white spots larger than a wart⁵, which are surrounded with small black circles or rhomboids, producing that variety of plumage by a mixture of white and black; the wing feathers are distinguished by white and serrated lines, which are parallel. They have no spur on their legs like cocks; and the female can scarcely be distinguished from the male.”

This description upon the whole cannot be applied to any other bird but the Guinea hen; and yet it is very remarkable.

¹ The town of Ionia so called, not that of Calabria.

² Some place near Miletus probably.

³ Περὶ κεφαλῆς. ⁴ Ξυλοειδές. It is, however, of a red colour. ⁵ Φακίων.

that the comparison is made throughout with the common hen, rather than the partridge or the pheasant*; as also, that neither Clytus, nor the *deipnosophist* himself, takes notice that the bird is good for the table.

I should therefore conceive that even amongst the Greeks, though the bird had been seen by them, yet that it was very rare, and not supposed to be a palatable food. It consequently fared the fate of other uncommon animals, which are not considered as useful, and was soon lost.

It requires a considerable time to remove our early ideas with regard to animals being improper for the table. In many parts of Ireland they will not eat landrails; and the Highlanders of Scotland reject both eels and pike.

P. S. After the preceding part of this essay was printed, I have happened to meet with authorities, which, perhaps, add some confirmation to what I have before contended.

Liebaut published the first edition of his *Maison Rustique* in 1582, and hath a particular chapter upon turkies, under the name of Poules d'Inde, against the rearing of which he advises *whether they were brought from the islands of India lately discovered by the Spaniards or Portuguesse*, because they are more chargeable than a mule.

It appears by this passage, that in 1582, and perhaps some years before the actual publication of this work, there were doubts whether turkies had been introduced by the Portuguesse or the Spaniards, and as it should seem, whether from the Philippines, or any of the *islands* first known to the Portuguesse in the East Indies, for the expression is *India*; and as to America, the first settlements of the same nation were upon the continent of Brasil.

* The *peintade* likewise hath no spur, and therefore differs in that very essential particular from the common cock.

Liebaut

Liebaut was a Doctor of Physic, and no work hath gone through more editions, or been translated into more languages; the authority therefore, as to this doubt, is more considerable, than if taken from most modern publications upon the subject of rural œconomy. It is to be remarked also, that he makes no mention of the Guiney hen, which proves that bird to have been as scarce in France at that time, as I have supposed it to be in England.

I shall take this same opportunity of stating from Camoens what affords some degree of confirmation with regard to turkies being found on the Southern coast of Africa, at the beginning of the sixteenth century, by his mentioning that the women of the *Cape* brought to the Portuguese both *bens* and *theep*ʸ.

Camoens was born in 1517; and as he went himself a voyage to the East Indies, and made Vasco da Gama's expedition the subject of an Epic Poem, it is highly probable that he had received the account of this interview from some of those who had sailed on that famous enterprize.

But it may be asked, why these *galinbas* (or hens) mentioned by the Poet, are conceived to be turkies? to which I answer, that all the Naturalists have agreed that the common cock came originally from Asia; and there having been no intercourse between that vast continent and the Southern promontory of Africa before the time of Vasco da Gama, it affords a presumption that the birds alluded to are turkies, and not hens^z.

ʸ Estes, como na vista prazenteyros
Fosse, humanamente nos trataraon,
Trazendonos, *galinbas*, & carnecyros.

Lusiadas, Canto V. St. 64.

▪ They could not likewise be *peintades*, because none of the early travellers mention those birds being wild in the neighbourhood of the Cape of Good Hope.

I have

I have in the outset of this Essay admitted, that turkies were found in a wild state upon the coast of Virginia at the latter end of the sixteenth century; and though I have conceived from many proofs that they were not indigenous in the neighbourhood of Mexico, I do not pretend to assert this with the positiveness used by Mr. de Buffon, in relation to their being unknown in Europe till the discovery of America, the contrary of which I hope to have fully evinced. If M. de Buffon had not thus excluded Asia and Africa, the controversy would have turned out, as if the point to be discussed was, whether tobacco and potatoes were not peculiar to the New World. Now it is certain that both these plants are of American growth, but not exclusively so, for in 1584, Cavendish received potatoes from the inhabitants of Capul, which is an island not far from Manilla^a; and in 1616, Schouten was supplied with tobacco from the coast of New Guiney^b.

^a See Calander's Collection of Voyages, Vol. I. p. 459.

^b Ibid. Vol. II.

E S S A Y II.

O N T H E R E I N - D E E R .

IT hath been a generally received opinion, that the rein-deer^a will not live for any time south of Lapland, or that part of North America which, though of a more southern latitude, equals Lapland in the rigour of its climate.

Queen Christina of Sweden had procured five and twenty of these quadrupeds, which she proposed to send to Oliver Cromwell, and which might long since have proved the contrary, had they reached this country.

Whitelock was then ambassador from England at that court, and endeavoured to prevail upon four Laplanders, who brought the reins as far as Stockholm, to attend them to England, which they refused to do, but said they would take care of them during the winter. The Laplanders, however, were very negligent in their charge, for soon afterwards fifteen were killed by the wolves, and the remaining ten did not long survive, the climate of Stockholm being considered as too warm^b.

Buffon,

^a Rennthier (which is usually pronounced rein-deer) signifies an animal formed for running, from the Teutonic word *rennen* to run. Busching's Geography, Vol. I. p. 345.

^b See the Journal of Whitelock's Swedish embassy, Vol. I. p. 442. I shall here state some other instances, however, of reins being brought to more southern countries, where they seem to have lived a considerable time.

Sir

Buffon (who is one of the latest naturalists that hath described the Rein-deer) mentions, that three or four were not long since carried to Dantzic, where they soon died, as the temperature of the air was too mild for them^c; and in another part of the same article, he regrets the impossibility of seeing this quadruped alive in France, on which account he only engraves the skeleton, having procured a drawing from a specimen in the Museum of the Royal Society. Pontoppidan also says, that it will always be a vain attempt to naturalize this animal in other countries, as no nourishment can be found any where else which will keep them alive, so that they have all perished^d.

Notwithstanding, however, this most prevailing opinion, it is contradicted, by the fact of a buck Rein-deer having lived near three years at Homerton (not far from Hackney), in the close of Mr. Heyde, a merchant, and which died only in 1773, very suddenly, having been the preceding day in perfect health. He was sent to England from Norway with a doe, which did not

Sir Hierom Bowes, who was ambassador from Queen Elizabeth to the court of Russia, brought over with him certain *fallow deer*, which being yoked together drew a man sitting in a sled, which deer I suppose must have been reins. Camden's Annals, A. D. 1584.

Gesner, indeed, informs us, that the king of Sweden (though so near to Lapland) caused ten of these deer to be driven constantly upon the highest mountains, in the neighbourhood of the place where they were kept, because they could not endure the heat of that part of Sweden. The same author, however, mentions, that a rein was presented to the duke of Saxony in 1561. Scheffer likewise, who was never in Lapland, and printed his work at Strasburgh, gives us the figure of a rein-deer which he himself had seen. After these instances, and that mentioned above, I may boldly pronounce the notion, that this species of deer will not live to the southward of Lapland, to be a vulgar error.

^c Buffon, Tom. XII. p. 98, citing Regnard.

^d Pt. II. p. 210.

live more than a year; and Mr. Heyde hath this autumn [1773] received a male and female, which were in November last very healthy. Leemius observes, that in Finmark they are subject to the epilepsy^e.

Every written voyage to the higher northern latitudes makes mention of this very useful quadruped, whilst Scheffer, Buffon, Hoffberg, and Leemius, have given us its natural history.

Leemius is the last of these, who published at Copenhagen his account of Finmark Lapland in 1767, and resided in that country more than ten years; he is therefore more to be depended upon than any of the others, who it is believed never saw the animal alive; at least the upper antlers, as engraved by Hoffberg, more resemble those of the Elk than of the reindeer. There is, however, a very good representation of the reindeer in Pennant's Synopsis of Quadrupeds.

As Leemius's work, hath scarcely found its way yet into the more southern parts of Europe, I shall make some extracts from it, with regard to this animal, with which he had so frequent opportunities of being thoroughly acquainted.

It is agreed by all naturalists to be peculiar to the female Reindeer, that they should have horns as well as the male: Leemius however remarks, that this is not always the fact, some having none at all, as likewise that they lose them entirely after parturition^f.

The projecting brow antler also is not observed in any other species of deer, the use of which I should conceive to be a proper defence against that arch enemy the wolf; and Leemius accordingly

^e See also Amœn. Acad. Vol. IV. p. 144.

^f P. 142.—Scheffer cites Olaus for the rein's, having a third horn in the middle of their heads, and confirms this on his own authority. See p. 324. c. 28; as also for their attaining their full size in the fourth year.

mentions

mentions an instance of one Rein having drove away two of these maroders. When the reins, however, use their antlers against their own species in the rutting time, the horns are frequently so entangled, that they cannot be separated but by the assistance of the Rein herd^s.

If it be asked why every species of deer hath not the same protection? the answer seems to be, that the swiftness of the other kinds enables them to escape their pursuer.

Though the northern naturalists speak of the expedition also, with which the Rein-deer will draw the traineau; yet I beg leave to say, from having seen three of these animals, that they are rather of a make calculated for the collar, than for extraordinary swiftness; and I have little doubt but that they are the slowest of their whole genus^b, except the Elk, whose antlers are also of a most peculiar form, as well as strength.

I should conceive likewise, that the Elk makes use of these extraordinary horns to remove the thick underwood and briars in which this quadruped lives, not being so fleet as the rest of its genus are: the antlers therefore are excessively wide, as well as shallow, and the jagged terminations seem not improper to perform the office of a saw.

I know well that some naturalists, not being able to find out the use of particular parts in several animals, have rather ridiculed the attempt to discover for what purpose they are designed: I am persuaded, however, that this arises from ignorance of the habits of the animal (which is the interesting part of Natural History); nor is it less true, because it hath been often advanced, *that nature does nothing in vain*.

^s Lcemius, c. 9.

^b Outhier observes, that they move but very slowly except the track is very even. Voyage au Nord, p. 142.

Buffon makes but one article of the Rein and Elk; he also observes, that when the latitude begins to be too warm for the former, the Elks are first to be discovered. North America furnishes, however, an exception to this observation, because Reins are found in Newfoundland, 50° N. lat. and the Hudson's-bay Company have a noble specimen of Elk's horns in their hall, which was sent them from their forts, some of which are nine degrees to the northward; at the same time that the situation is so much more inland, and consequently from that circumstance also the temperature more cold than might be expected, merely from the fort's being nine degrees nearer to the Pole. On the other hand *Jbrand Ides* met with a great many Reins not far from Nezzinskoi, which is only in N. lat. 50. at no great distance from the Eastern Ocean.

I shall now mention two or three particulars from Leemius, with regard to the Rein, which have not been noticed by other naturalists.

They are extravagantly fond of human urine, and lick up the snow with the greatest avidity when the upper part hath been stained by it; possibly, however, the opening the way to their favourite lichen may be in part the occasion of their immediately finding out such spots.

We have the same authority for their killing a vast number of mice, which are called in the Lapland language *Godde Saeparw*, and *Lemæner* in the Norwegian. As their make, however, is not described, and as I can find no names which bear the least affinity in the Fauna Suecica, it is impossible to settle the species. Possibly also the Reins only use this food when they can procure no other; it is for the same reason that the Lapland gulls are said likewise to feed on mice, and the crows to tear the linen which

is hung to dry. Leemius, in other parts of his work, mentions, that they devour the heads of these mice only, with the greatest avidity; which also may arise from want of other food, as it is believed that no other quadruped (which chews the cud) destroys animals for the purpose of sustenance.

All describers of the Rein have taken notice of the cracking noise which they make when they move their legs, which Hoffberg attributes to the animals separating and afterwards bringing together the divisions of their hoof; but he does not assign the cause of the Reins so doing, which I conceive to be the following^k.

The Rein inhabits a country which is covered with snow for great part of the year; the hoof therefore of this quadruped is most admirably adapted to the surface which it is most commonly to tread.

The under part is entirely covered with hair, in the same manner that the claw of the Ptarmigaw is with feathery bristles, which is almost the only bird that can endure the rigour of the same climate.

The hoof, however, is not only thus protected; the same necessity which obliges the Laplanders to use snow shoes makes the extraordinary width of the Rein's hoof to be equally convenient in passing over snow, as it prevents their sinking too deep, which they would be subject to eternally, did the weight of their body rest only on a small point.

^k M. Deffon supposes that the Elk makes the same snapping noise with the Rein, which, if true, seems to arise from its having the same occasion to travel large tracts of snow. I can only say that I saw a live Elk about ten years ago, which belonged to Lord Rockingham, and that, though I put this awkward quadruped in motion, I did not hear any such noise. Sir Jeron Bowes, who was ambassador from Queen Elizabeth to the Duke of Muscovy, brought with him from thence an Elk. Camden's Annals, 1583.

This

This quadruped hath therefore an instinct to use a hoof of such a form in a still more advantageous manner, by separating it when the foot is to touch the ground, so as to cover a larger surface of snow. The instant, however, the leg of the animal is raised, the width of the foot becomes inconvenient, especially when it is going against the wind; the hoof, therefore, is then immediately contracted, and the collision of the parts occasions the snapping, which is heard upon every motion of the Rein.

Another reason, possibly, for this noise, may arise from Lapland's being not only covered with snow great part of the year, but also for some time under a perpetual night; the Rein is a gregarious animal, and often obliged to go a great way for sustenance, probably therefore the cracking which they perpetually make, may serve to keep them together when the weather is remarkably dark. Bells round sheep are known to be very convenient for the same purpose, when they graze upon a wide extended down.

Leemius mentions another very singular circumstance with regard to the Lapland wolves; which is, that, when they have killed the Rein, they always place the carcase with the head towards the East, and that the skeletons are constantly found in such position. This fact, indeed, is so extraordinary, that it should not be too lightly credited; animals, however, have undoubtedly their reason for choosing or declining certain aspects: the martin, for example, seldom builds its nest against the south.

Though I have stated so many particulars from this writer, not only because he is the latest Naturalist who hath described the Rein, but because he resided ten years in Finmark; yet I cannot but take notice of one passage in his work, in which I conceive he must be entirely mistaken.

Leemius

Leemius affirms, in his ninth chapter, that the Reins lose their horns in the spring, which is not only contradicted by what Hoffberg and Buffon have advanced, but by the fact, for Mr. Heyde's buck dropt his horns for two successive winters, but *refumed them in the spring*. In one of these years they continued to be no more than stumps till the 30th of January, when they began to shoot; on the 24th of February they were five or six inches high, covered with a deep pile of velvet.

At the same time Leemius not only asserts this to happen otherwise, but the engravings which accompany his work represent the deer amongst snow with their horns on¹.

In justice to Leemius, however, I should add^m, that though Hoffberg and Buffon take notice that the Rein loses his horns at the approach of winterⁿ, yet other naturalists have supposed that they were of use in removing the snow which covers the lichen they are said to be so fond of, and which is utterly inconsistent with this quadruped being deprived of them during the winter. Leemius indeed expressly informs us, that they procure the lichen by means of their feet^o.

¹ Most of the Reins, however, which draw sleds, have been gelded; and it is observable that our fallow deer, which undergo the same operation for the sake of *better* venison, never lose their horns afterwards.

^m Leemius is also supported by Le-Brun in this particular. See his Travels, Vol. I. p. 11.

ⁿ Yet in another part of the same dissertation, Hoffberg mentions, that the Reins are fastened to the sled in the winter by their horns. See Ann. Acad. p. 167. Vol. IV.

^o P. 141. De la Motraye takes notice of the same circumstance; and that their hoofs are formed like muscle shells set on their edge, and consequently very convenient for scooping away the snow which covers the lichen, called by the Swedes *Steenmossa*, and by the Laplanders *Tek L*. Reins are also fond of another moss which hangs down from the branches of pines [in Swedish *Laa*, and in the Lap language *Loppo*] which they shake off with their antlers. With regard to the first circumstance, I find that Motraye is confirmed by the specimen of a rein's leg in Sir Ashton Lever's Museum, as the hoofs are of the form described, and at least two inches and a half high, very thin, and tapering in the form of a scoop.

As

As I have very frequently visited Mr. Heyde's Rein, I shall now mention some few particulars I happened to observe myself with regard to this quadruped, which is so seldom to be seen to the southward of the Baltic.

This animal was kept in a close of about an acre, the grass of which was rich; and he constantly fed upon it during the whole year^p, though he was much fonder of the lichen, which was sent over from Norway: by holding a little of it in my hand, I could at any time bring him to me. No animal, indeed, could be better humoured, as he would even permit his antlers to be handled when the blood vessels were most turgid. He likewise permitted me to measure his height, which was three feet two inches and a half, being in his sixth year, and of full growth. Now Leemius observes, that the doe is not so large as the buck; and I have measured the specimen of a Doe-rein, lately sent to the Royal Society from Hudson's-bay, which is about three feet in height. I state this comparison, because it makes me doubt with regard to the justness of an observation of M. de Buffon, who in his article (Rein-deer) supposes that all American animals are less than the same species in other parts of the globe. Mr. Pennant also takes notice, that the American Elk is larger than the European^q.

I once saw this Rein in Mr. Heyde's garden, where there was a considerable variety of flowering shrubs and forest-trees, all of which he browsed upon except the elder; he also drank a great deal of water out of a pond.

I have therefore little doubt but that this quadruped will live without the Lapland lichen^r, to which it only hath, perhaps,

^p He was fond also of bread and oats.

^q Synops. Quad. p. 42.

^r Pontoppidan says, the Rein is very fond of birch catkins, Pt. II. p. 10.

recourse, because there is in those latitudes no other sustenance during the winter.

I have, indeed, procured some of this lichen, which I have tasted, and conceive from thence it may be a nourishing food either to man or beast; it is, however, by no means peculiar to Lapland, as we have much of the same on our own heaths. In one respect, indeed, the Rein fares better in England than in Lapland, as Hoffberg and all other naturalists speak much of its suffering from an insect, which they term the *Oestrus Tarandi* *. We have, perhaps, the same gad-fly in England, but they are not so numerous, and Mr. Heyde's Rein did not seem to feel much inconvenience from this persecution †.

Le Brun observes ‡, that the Rein carries his head so high, that the horns touch the back; and it is not therefore improbable that these antlers may be given them as a means of removing these very troublesome insects.

The same traveller takes notice, that the chiefs of the Samoieds have sometimes six or eight of them to draw their traineaux, and that they never sweat, notwithstanding their being often much pressed, but pant with their tongues out, just as grey-hounds do after a severe course.

Leemius also informs us, that after being hard driven they lose their sight frequently for three or four days §.

I have before observed, that Mr. Heyde's buck rein was very good humoured; possibly, however, if he had been harnessed, I should not have found him so tractable, for on account of its

* These insects pierce the skin of the Rein in such a manner, that the Laplanders would have no hopes of selling it, if they did not fill up the holes in order to defraud the purchaser. Leemius, p. 68.

† That most able entomologist, Mr. Hudson, F. R. S. informs me, that he hath seen the *Oestrus Tarandi* in England.

‡ Vol. III. p. 25.

§ P. 52.

greater docility, a gelt Rein bears a much better price in Lapland, and another cause for the advanced value is, that the operation being performed but awkwardly, the owners frequently lose them: for the same reason the poorer Laplanders only harness the doe.

‡ Lecmius, p. 151.

ESSAY

E S S A Y II.

ON THE BAT, OR RERE-MOUSE.

THE Bat is so disagreeable an animal, that we are generally desirous of avoiding it rather than examining into its habits; the consequence of which aversion is, that we are more ignorant with regard to its natural history, than perhaps of any other animal of the same size.

Hideous as it may appear to our eyes, yet, if we are to believe Johnson^a (who is a writer of merit), there is a perpetual alliance between them and pigeons, inasmuch, that if the head of a Bat is fixed upon the top of a pigeon-house, the pigeons will never leave it. I profess, however, that I cannot hear this animal hath any other friend or ally, and they must naturally be dreaded by moths or other insects of the night^b, as much as hawks are the terror of our smaller birds; nature is one perpetual scene of warfare, for the sake of food, and Bats again become the prey of owls.

A friend of mine kept one for ten days, and was much amused with its manner of taking flies on which it chiefly lived^c;

^a Nat. Hist. 1657, folio. Amsterdam.

^b Or to speak more accurately of the evening and morning twilights, as Bats are seldom seen at midnight. Bats, however, are also fond of bacon, and perhaps other meats: in the East Indies likewise some species devour both fruits and leaves of the trees. Linschoten's Voyages. Others prey on fish.

^c Gesner says, that Bats will live many days without any sustenance.

Linnæus hath classed it with his primates, at the head of which stands *Man*: a more natural arrangement, perhaps, might have exalted this animal to the *order of angels*, as they are depicted with wings as well as teats.

I never met with any one who had tasted a Bat; and, indeed, with us they are so diminutive, that the morsel should be as delicate as it is small. In the island of Mauritius, however, where they are very large^d, the seamen consider them as dainties. “They are innumerable, and some as large as goshawks, and “the seamen catch them as rabbits; they hang in swarms on the “boughs of the trees, by claws fixed at the extreme part of their “wings, and their monkey faces turned downwards.” In the time of falconry they were given to hawks as a remedy for the falling-sickness.

From its likeness to a mouse, the synonym is formed in many languages, the French terming it *chauve-souris* and *rat-pennade*. The Dutch, *Vleermuys*. The Germans, *Fleder-mausch*. The Danes, *Flaggermuus*. The Swedes, *Flader-mus*. The Spaniards, *Mur-cielago*. As for our modern name of *Bat*, I do not know whence we apply it to this animal, but it was anciently called *reremoufe*, from the Anglo-Saxon *hpepemur*. Our blasphemers also use this word. In the Greek and Latin, however, the name is taken from its appearing only during the night *vortex* & *vepertilio*.

“Seroque trahunt a vespere nomen.” OVID.

Different species, or varieties of Bats, are found in most quarters both of the Old and New World; but for an enumeration of these

^d A specimen from that island may be seen in Sir Ashton Lever's most capital Museum. Kircher, in his *China Illustrata*, gives us an engraving of a Bat of Indostan, whose head exactly resembles in size and figure that of a cat, and is therefore called the *Flying Cat*.

^e Herbert's Travels, p. 360.—Le chauve-souris est fort au gré des Indiens, ils sont fort grandes & sont beaucoup de degat aux fruits & aux arbres. Linfchoten, p. 124.

I shall

I shall refer to Mr. Pennant's most excellent Synopsis of Quadrupeds, and after observing, that some of those in America are supposed to suck the blood of persons asleep, I shall confine myself to those of our own island^f.

That most able naturalist Mr. Ray takes notice of but one species, though Mr. Pennant conceives that we have four^g. Nothing can exceed both the diligence and accuracy of Ray, but the common aversion to these animals seems to have prevented both him and others from either catching or examining many species.

Having but two teats, it is supposed that they never produce more than two young ones, which, according to Pliny^h, they fly about with on their back.

If this is true at all, I should suppose that it only takes place when the young are to be taught to flyⁱ, as they may be more easily launched from their parent's back into the air, than from any other place. They cannot rise at all from the ground

^f Belon says, that those which frequent the great pyramid have tails as long as those of mice.

^g Synopsis of Quadrupeds; viz.

1st, Buffon's *Chauve-souris à cheval*; so called, because it hath a membrane at the end of the nose, in form of a horse-shoe. This species, however, wants the little internal ear, which Mr. Pennant hath observed in all other Bats, and which is shut during sleep, whilst the other is open. M. Buffon mentions, that this species is not uncommon in Burgundy; and Mr. Pennant hath been informed that they are likewise to be found in Kent.

2d, *La Noctule* of Buffon, the extent of whose wings is thirteen inches. Numbers of this second species have been taken under the eaves of Queen's College Cambridge.

3d, The common, or *short-eared Bat*.

4th, The *Long-eared Bat*, with ears of more than an inch in length, which are at the same time so thin as to be pellucid. The body, however, and tail is but one inch and three quarters long, whereas those of the preceding species are two inches and a half in length.

^h Pliny, l. x. c. 61.

ⁱ According to Johnstone the young are quite naked. *Thaumatographia*, p. 269.

according

according to Linnæus^k; and in this situation therefore they seem to be divested of every pretension to be deemed birds, if their being viviparous, and having no beaks, did not sufficiently exclude them, as well as their want of feathers. As to their having wings, a flying fish, or the flying squirrel, might for the same reason be considered as birds.

But the most interesting part in relation to this animal, is its state of torpidity during the winter, to which it is induced probably from want of flying-insects for its food^l, as seems to be the case with the swallow tribe.

In this part of the Natural History of this animal, I am much indebted to the communication of a most ingenious correspondent^m, who knows where to find them torpid at any time during the winter, and more particularly in a large cavern near Torbayⁿ.

The prevailing notion that they hang always in clusters touching each other is not true, as this depends entirely upon their having

^k I conceive, however, Buffon to be more accurate when he informs us that, "elles s'elevent de terre avec peine," which is also the case with the *Swift*, on account of the legs of that bird being so short, that the Greek synonym is *απες*. Linnæus also states two other particulars with regard to Bats, of which I should much doubt. He says, that an Asiatic species (which he styles *Vampyrus*) is *phlebotomus felicissimus in pleuritide*, and supposes the common sort (named by him *murinus*) to be poisonous.

^l Sleep therefore appears to be providential, not only for the refreshment arising from relaxation, but from the saving of food, because all animals, whilst awake, are very apt to eat, and this is the case with the Greenland fishers who have perpetual day.

^m Mr. Cornish, surgeon, at Totness in Devonshire.

ⁿ Homer had observed them in the same state, and afterwards issuing from a cavern:

Ὡς ἄρα κατ' ἄσπετος, μὲν αἴψα διεσπαστοί,
 Τόσσον αἰετῶναι, ἔπειτα τις ἀποπνεύσων
 Ὀρμῆς ἐκ τῆρας, ἀνα δὲ λήθσων ἔρχεται.

Ο. γλ. Ω. 1. 7.

a proper opportunity of adhering to the place from which they are suspended; they sometimes, therefore, are in contact, and often at considerable distances, but always fix themselves by both their feet.

Martial says of the dormouse, that it is fatter during its state of torpidity than when it revives°. I therefore begged to know from Mr. Cornish, whether this was the case with Bats during the winter, who informs me that the fact does not hold with regard to the one or the other, and that bats mute^p, whilst they are thus suspended. Both dormice and bats lose from five to seven grains in weight during a fortnight, whilst in a state of torpidity.

Bats on the whole fare better during a hard than a mild winter, for warm weather not only awakens them, but promotes their power of digestion, whilst at the same time they cannot procure the food of which they are in search. This holds likewise with regard to bees, which are better preserved in a dark room than if exposed to the air whilst torpid, because sometimes they are awakened by the mild temperature of the weather, when there are no flowers for their support.

As Bats mute whilst torpid, there is also a circulation of the blood, for Mr. Cornish having applied a thermometer to the body of one perfectly asleep, which stood at 36, the heart beat

° *Tota mihi (sc. gli) dormitur hyems, & pinguior illo
Tempore sum, quo me nil nisi somnus alit.*

As the Romans considered dormice as a delicacy for their tables, and Varro hath made them an article of the farmer's attention, I thought this observation of the poet might have been relied upon.

^p This evacuation, however, becomes less and less the longer the animal sleeps; and as the intestinal tube empties, the faeces become harder and harder. The guts also are very weak after a torpidity of some continuance, nor can they be extracted without breaking. The blood is vivid and black, in proportion to the continuance of the animal in a sleeping state. A correspondent of Gesner's informed him, that he had seen such a quantity of bats dung in *Misnia*, that carts would have been necessary to have carried it off.

60 times in a minute¹; the same Bat being awakened so as to fly weakly; the thermometer applied in the same manner rose to 38, and the heart beat 100 times in a minute.

They have been, however, observed to continue in their torpid state when the thermometer, placed in the air, hath been at 48^r, which is ten degrees warmer than the animal when awakened according to this experiment.

Most of the Bats roused by irritation have not survived more than three days, but then it is stated that the weather became colder. Frequent attempts have been made to revive them after this seeming death, but they have all proved ineffectual.

Having desired Mr. Cornish to make some experiments with an air-pump on torpid bats, he informs me that his apparatus for that purpose is not so good as it should be, but that he is of opinion from some imperfect trials, that they are not so soon affected by want of air, as other animals, which do not sleep during the winter.

That distinguished anatomist Mr. John Hunter, having occasion to dissect bats during the winter, applied to me to procure him some from Devonshire, knowing that I had a correspondence with Mr. Cornish, who could at any time resort to their lurking places.

I accordingly requested Mr. Cornish to send up a dozen of bats in their state of torpidity, which he was so obliging as to do by the next conveyance; but though he had packed them with the greatest care, they died, as Mr. Cornish apprehended, before they reached London. The motion of the carriage pro-

¹ Mr. Cornish, however, is not positive that there is any circulation in the capillaries. He supposes, indeed, that the animal respites, though most slowly and weakly.

^r Mr. Cornish hath known instances of their venturing out when the thermometer was only at 42 in the open air. The pulsation in a Bat, during the summer, is from 2 to 300, and the ball of the thermometer being laid in its body, hath sometimes risen 8 degrees.

bably occasioned this disappointment, as also that they did not hang in their usual attitude, nor in the proper temperature of air. If they had continued to live, Mr. Cornish informed me, that though one could perceive no motion in them, yet if placed in contact with a proper crevice, they would however fix themselves by their claws.

These bats were kept for some time by Mr. Hunter before he would absolutely pronounce them to be dead, and afterwards, at Sir Ashton Lever's, before they were *set up*; but though they never shewed any signs of life, yet their bodies did not putrify. The same thing I had occasion to observe with regard to some torpid martins which were sent to me from Somersetshire, and which I wished Mr. Hunter to dissect. These birds also did not revive, but no signs likewise of putrefaction appeared, though they were kept a considerable time.

And here it may be observed, that a moderate heat, such as the bosom or hand, is the most likely to bring torpid animals to life, which are often killed by being placed too near the fire, from the common prejudice, that one cannot have too much of a good thing.

For a more immediate test of life in the animal, it will shrink either upon the touch, or holding a lighted candle near it.

 E S S A Y III.

 ON THE SUDDEN DECAY OF SEVERAL TREES
 IN ST. JAMES'S PARK.

SEVERAL years ago I happened to be at a country-house where a narrow canal was filled, on the sides of which grew some limes of about forty years growth, and which continued to be in a flourishing state. The next summer all these trees died, which was supposed to arise from the canal's being filled with some materials of a noxious nature to them: but as I was on the spot when the alteration was made, I knew that there was nothing uncommon in the strata of the soil which had been used for this purpose; I therefore began to suspect the real cause of this accident, and determined to observe what might be the event under similar circumstances, if a proper opportunity should offer.

It is well known that Rosamond's Pond, as well as some smaller ones within the island of St. James's Park, have lately been filled up; and it is as well known that every tree which grew very near to their margins hath died within the ensuing year, which therefore seems to be owing to the following cause.

When a tree is planted at a distance from water, the roots spread equally in every direction, in order to receive the moisture which

is necessary to carry on its growth and vegetation. When it is however placed very near to the water's edge, the roots on that side are chiefly protruded, to meet with the nourishment so immediately at hand, and for the same reason become vastly larger than those which are extended in any other direction.

If therefore in process of time the water is dried up, the tree is left without any other supply than that which is commanded by one which is surrounded with a dry soil, at the same time that the principal roots are only to be found on one side; so that the tree is deprived of at least half the nourishment which was necessary for its support. But it is not only where ponds or ditches have been filled, that the trees in St. James's park have suffered, for many of the limes on the sides of the Mall are decaying very fast, and that from year to year, when they were before in a most flourishing state. I should suppose, that this alteration arises from the central walk becoming convex instead of concave, by a vast quantity of fresh gravel, which hath also been laid on the two side-walks. The consequence of which is, that almost all the rain which falls never reaches the roots, having so much a thicker surface to penetrate through than when the limes were originally planted, as also by being carried off immediately to the side drains, by the proper convexity of the Mall, in its present state. Even under the most favourable circumstances much rain must fall to moisten an inch of soil, from which the capillary parts of the roots are far removed, being probably more than at twelve times that depth.

It appears also, by what has happened in St. James's Park, that such loss of water is certain death to many sorts of trees, which are not aquatics, and that their age is no greater protection than their species. Some of the elms near Rosamond's Pond may be pronounced to have been at least two hundred years old; the

limes, horse-chestnuts, and birches^a, which have shared the same fate, were not indeed of the same antiquity, but were in a very flourishing state. I should therefore hope that what hath been experienced in St. James's Park will prove a warning to those who may intend to dry ponds near which trees grow that they would be sorry to lose; for though the filling up Rosamond's Pond is in most respects a very striking improvement, as well as the other alterations which are now carrying on, yet I should suppose that a landscape painter would wish the pond restored, with all its inconveniences, provided those very capital trees could be replaced, which were so great an ornament from every point of view in the two parks. As these public walks are not only so ornamental, but contribute so much to the health of the inhabitants of the metropolis, I shall take the liberty of objecting to the new trees which have lately been planted there, and which are almost entirely elms. It is admitted that these young trees are in a very promising condition; but they want that most essential requisite in plantations of

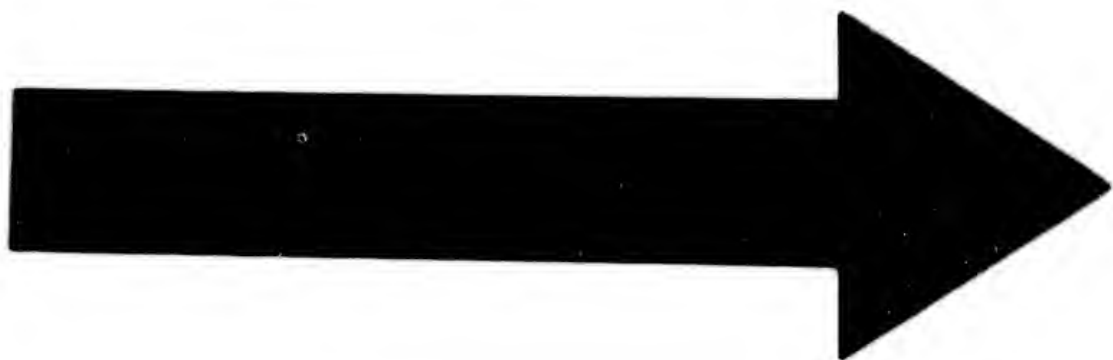
— seris factura nepotibus umbram;

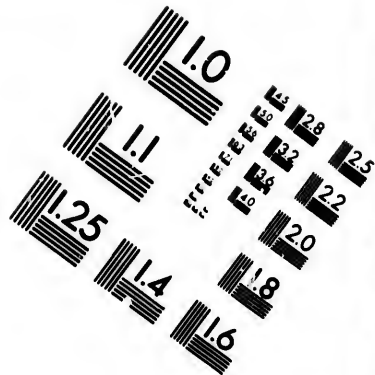
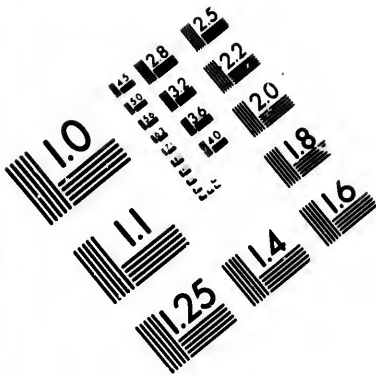
for the roots of elms spread so very near to the surface, that they are very apt to be blown down by high winds, when they are become of a considerable size; nor have I observed any other tree which suffers so frequently in this respect, if the birch be excepted.

I could wish therefore that as fast as the limes decay, fresh trees of the same sort were introduced, as they grow to an immense size and age, there being some in Sir Laurence Dundas's park, in Hertfordshire, which must have been planted for many centuries,

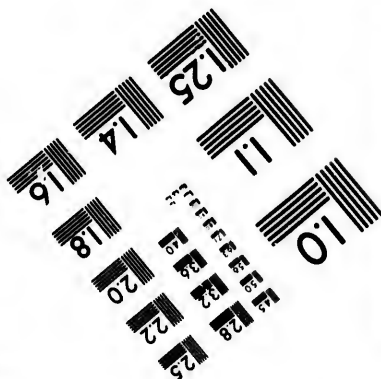
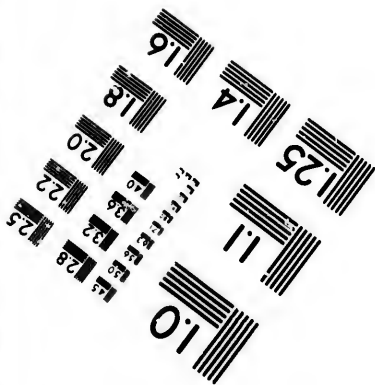
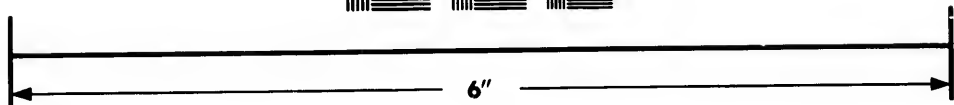
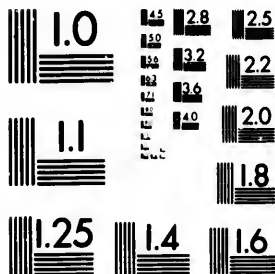
^a I allude to the trees of these sorts which grew within the Decoy.

and which, till they are examined at a small distance, one should conceive to be ancient beeches. We know also that they thrive remarkably well on the same spot before the gravel laid upon the Mall prevented the roots from receiving the proper quantity of moisture, whilst at the same time their coming so early into leaf, and the fragrance of their flowers, make them peculiarly proper for the public walks of a metropolis.





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E S S A Y I V.

On the periodical Appearing and Disappearing of certain
BIRDS, at different Times of the Year.

To WILLIAM WATSON, M.D. F.R.S.

DEAR SIR,

AS I know, from some conversation we had on this head, that you consider the migration of birds as a very interesting point in natural history, I send you the following reflections on this subject as they have occurred to me upon looking into most of the ornithologists who have written on this question.

It will be first necessary in the present, as in all other disputes, to define the terms on which the controversy arises. I therefore premise that I mean, by the word Migration, a periodical passage by a whole species of birds across a considerable extent of sea.

I do not intend therefore to deny that a bird, or birds, may possibly fly now and then from Dover to Calais, from Gibraltar to Tangier, or any other such narrow strait, as the opposite coasts are clearly within the bird's ken, and the passage is no more adventurous than across a large fresh-water lake.

* This Essay was first printed in the LXth vol. of the Philosophical Transactions; but is now reprinted, with considerable additions.

I as

I as little mean to deny that there may be a periodical flitting of certain birds from one part of a continent to another: the Royston Crow, and Rock Ouzel, furnish instances of such a regular migration.

What I mean chiefly to contend therefore is, that it seems to be highly improbable, birds should, at certain seasons, traverse large tracts of sea, or rather ocean, without leaving any of the same species behind, but the sick or wounded.

As this litigated point can only receive a satisfactory decision from very accurate observations, all preceding naturalists, from Aristotle to Ray, have spoken with much doubt concerning it.

Soon after the appearance of Mons. Adanson's Voyage to Senegal, however, Mr Collinson first, in the Philosophical Transactions^b, and after him the most eminent ornithologists of Europe, seem to have considered this traveller's having caught four European Swallows on the 6th of October, not far from the African coast, as a decisive proof, that the common swallows, when they disappear in Europe, make for Africa during the winter, and return again to us in the spring.

It is therefore highly incumbent upon me, who profess that I am by no means satisfied with the account given by Mons. Adanson of these European swallows, to enter into a very minute discussion of what may, or may not, be inferred from his observation according to his own narrative.

I shall first however consider the general arguments, from which it is supposed that birds of passage periodically traverse oceans, which indeed may be almost reduced to this single one, viz. we see certain birds in particular seasons, and afterwards we see them not; from which circumstances it is at once inferred, that the cause of their disappearance is, that they have crossed large tracts of sea.

^b Part II. 1760, p. 459, & seq.

The obvious answer to this is, that no well-attested instances can be produced of such a migration, as I shall endeavour to shew hereafter; but, besides this convincing negative proof, there are not others wanting.

They who send birds periodically across the sea, being pressed with the very obvious answer I have before suggested, have recourse to two suppositions, by which they would account for their not being observed by seamen during their passage.

The first is, that they rise so high in the air that they become invisible^c; but unfortunately the rising to this extraordinary height, or the falling from it, is equally destitute of any ocular proof, as the birds being seen whilst crossing an ocean.

I have indeed conversed with some people, who conceive they have lost sight of birds by their perpendicular flight; I must own, however, that I have always supposed them to be short-sighted, as I never lost the sight of a bird myself, but from its horizontal distance, and I doubt much whether any bird was ever seen to rise to a greater height than perhaps twice that of St. Paul's cross^d.

There

^c It is well known that some ornithologists have even supposed that they leave our atmosphere for that of the moon. See Harl. Miscell. vol. II. p. 561.

A bird of passage, lost as soon as found;
Now in the moon perhaps, now under ground.

POPE.

^d Wild-geese fly at the greatest height of any bird I ever happened to attend to; and from comparing them with rooks, which I have frequently looked at, when perched on the cross of St. Paul's, I cannot think that a wild-goose was ever diminished, to my sight at least, more than he would be at twice the height of St. Paul's, or perhaps 300 yards. Mr. Hunter, F. R. S. informs me, that the bird which hath appeared to him as the highest flier, is a small eagle on the confines of Spain and Portugal, which frequents high rocks. He hath first seen this species

There seems to be but one method indeed, by which the height of a bird in the air may be estimated; which is, by comparing its apparent size with its known one, when very near us; and it need not be said that this method of calculating must depend entirely upon the sight of the observer, who, if he happens not to see objects well at a distance, will very soon suppose the bird to be lost in the clouds.

There is also another objection to the hypothesis of birds passing seas at such an extraordinary height, arising from the known rarefaction of the air, which may possibly be inconvenient for respiration, as well as flight; and if this was not really the case, one should suppose that birds would frequently rise to such uncommon elevations, when they had no occasion to traverse oceans.

The Scotch Ptarmigan frequents the highest ground of any British bird, and it takes but very short flights.

But it is also urged by some, that the reason why seamen do not regularly see the migration of birds, is because they choose the night, and not the day, for the passage.

Now though it may be allowed, that possibly birds may cross from the coast of Holland to the Eastern coast of England (for example) during a long night, yet it must be dark nearly as long as it is within the Arctic circle to afford time for a bird to pass from

species of eagle from the bottom of a mountain, and followed it to the top, when the bird hath risen so high as to appear less than he did from the bottom. Mr. Hunter however adds, that he could still hear the cry, and distinguish the bird.

* Mr. Cateby supposes that they may thus pass in the night-time, to avoid birds of prey. Phil. Trans. Abr. Vol. II. p. 887. But are not owls then stirring?

On the other hand, if they migrate in the day-time, kites, hawks, and other birds of prey must be very bad sportsmen not to attend (like Arabs) these large and periodical caravans.

the Line to many parts of Europe, which *Monf. de Buffon* calculates may be done in about eight or nine days ^f.

If the passage happened in half the nights of the year which have the benefit of moonlight, the birds would be discovered by the sailors almost as well as in the day-time; to which I must add that several supposed birds of passage (the Fieldfare in particular) always call when on their flight, so that the seamen must be deaf as well as blind, if such flocks of birds escape their notice.

Other objections however remain to this hypothesis of a passage during the night.

Most birds not only sleep during that time, but are as much incapacitated from distinguishing objects well as we are in the absence of the sun: it is therefore inconceivable that they should choose owl-light for such a distant journey.

Besides this, the Eastern coast of England, to which birds of passage must necessarily first come from the continent, hath many light-houses upon it; they would therefore, in a dark night, immediately make for such an object, and destroy themselves by flying with violence against it, as is well known to every bat-fowler.

Having endeavoured to answer these two suppositions, by which it is contended that birds of passage may escape observation in their flight; I shall now consider all the instances I have been able to meet with of any birds being actually seen whilst they were crossing any extent of sea, though I might give a very short refutation to them, by insisting, that if this was ever experienced, it must happen as constantly in a sea which is much navigated,

^f In the preface to the first volume of his lately published *Ornithology*, p. 32. *Brown* supposes, however, that a hawk had pursued a woodcock at no greater rate than 30 miles in an hour. *Treatise on Falconry*, 1608.

as the return of the seasons, or the motions of a stated carrier.

I cannot do better than to follow these according to chronological order.

The first in point of time is that which is cited by Willoughby^e, from Bellon, whose words are thus translated, “When we “ sailed from Rhodes to Alexandria, many quails flying from the “ North towards the South were taken in our ship, whence I “ am persuaded that they shift places; for formerly, when I “ sailed out of the Isle of Zant to Morea, or Negropont, in the “ spring, I had observed quails flying the contrary way to N. “ and S. that they might abide there all summer, at which time “ also a great many were taken in the ship.”

Let us now consider what is to be inferred from this citation.

In the first place, Bellon does not particularize the longitude and latitude of that part of the Mediterranean which he was then crossing; and in his course from Rhodes to Alexandria, both the islands of Scarpanto and Crete could be at no great distance: these quails therefore were probably flitting from one island of the Mediteranean^h to another.

The same observation may be made with regard to the quails which he saw between Zant and Negropont, as the whole passage is crowded with islands; they therefore might be passing from

^e B. II. c. 11. § 8.

^h One of the Mediterranean islands is supposed to have obtained its ancient name of Ortygia from the numbers of quails. The Mediterranean birds also flit from the islands to the continent.

Ουδε μιν οριζου αεραεις ηπειρεθεν αυτη,
Εν νησων οτε ποτ' ελαι επιπλησσωσιν αεραεις,
Ερχομενου Σεριος χειρος.

ARATUS—

who is known to have attended particularly to the flights of birds, as they afforded prognostics of the weather.

island to island, or headland to headland, which might very probably lie East and West, so as to occasion the birds flying in a different direction from that in which they passed the ship before.

I have therefore no objection to this proof of migration, if it is only insisted upon to shew that a quail shifts its station at certain seasons of the year; but cannot admit that it is fair from hence to argue that these birds periodically cross large tracts of sea.

Bellon himself states, that when the birds settled upon the ship, they were taken by the first person who chose to catch them, and therefore they must have been unequal to the short flight which they were attempting. Mr. Burnaby therefore observes, that the wild pigeons in their migration (though a bird distinguished for their flight) settle on the trees of Rhode Island in such numbers as sometimes to break the branches; and that they seem so fatigued with their flight, as not to be driven away but by extraordinary noises¹.

It is very true that quails have been often pitched upon as instances of birds that migrate across seas, because they are scarcely ever seen in winter: it is well known, however, to every sportsman, that this bird never flies 300 yards at a time, and the tail being so short, it is highly improbable they should be equal to a passage of any length.

We find therefore, that quails, which are commonly supposed to leave our island in the winter, in reality retire to the sea coasts, and pick up their food amongst the sea weeds².

I have happened lately to see a specimen of a particular species

¹ Burnaby's Travels in N. America, p. 132.

² See Br. Zool. Vol. II. p. 210. 2d ed. octavo. Thus Bellon also informs us, that the ortygometre (or rail) is frequently seen in France during the winter.

of quail, which is described by Dr. Shaw¹, and is distinguished from the other kinds by wanting the hind-claw. Dr. Shaw also states that it is a bird of passage. Now if quails really migrate from the coast of Barbary to Italy, as is commonly supposed, whence can it have arisen that this remarkable species hath escaped the notice of Aldrovandus, Olina, and the other Italian ornithologists?

When I had just finished what I have here said with regard to the migration of quails, I had an opportunity of seeing the second volume of *Monf. de Buffon's ornithology*^m; where he contends, that this bird leaves Europe in the winter.

It is incumbent upon me, therefore, either to own I am convinced by what this most ingenious and able naturalist hath urged, or to give my reasons why I still continue to dissent from the opinion he maintains.

Though M. de Buffon hath discussed this point very much at large, yet I find only the following facts or arguments to be new.

He first cites the *Memoirs of the Academy of Sciences*ⁿ, for an account given by M. Godcheu of quails coming to the island of Malta in the month of May, and leaving it in September.

The first answer to this observation is, that the island of Malta is not only near to the coast of Africa, but to several of the Mediterranean islands; it therefore amounts to no more than the sitting I have before taken notice of^o.

Buffon

¹ *Phys. Obs.* on the kingdom of Algiers, ch. 2. See also an engraving and description of such a quail which is found in Lucania, one of the Philippine Islands. *Sonneratte's Voyage*. Paris, 1776, 4to.

^m See p. 459, & seq.

ⁿ Tom. III. p. 91 and 92.

^o Both *Monf. de Godcheu* and *M. de Buffon* seem to conceive that the quail should fly in the same direction as the wind blows; but birds on the

Buffon next supposes that a quail only quits one latitude for another, in order to meet with a perpetual crop on the ground.

Now can it be conceived that there is such difference between the harvest on the coast of Africa, and that of the small quantity of grain which grows on the rocky island of Malta, that it becomes inconvenient to the bird to stay in Africa as soon as May sets in; and necessary, on the other hand, to continue in Malta from May till September.

Buffon then conjectures that quails make their passage in the night, as well as conceives them to be of a remarkably warm temperature^p, and says that “*chaud comme une caille*” is in every one’s mouth^q.

Now in the first place their migration during the night is contrary to Belon’s account, which M. de Buffon so much relies upon, and which rather implies that the birds were caught in the day-time.

In the next place I apprehend that “*chaud comme une caille*” alludes to the very remarkable falaciousness of this bird, and not to the constant heat of its body,

the wing from point to point, which are at a considerable distance, fly against the wind, as their plumage is otherwise ruffled. See also Marten’s Voyage to Spitzbergen, who observes the same, as likewise with regard to the swimming of whales, for which indeed there is not the same reason.

^p As this is given for a reason why the African quails pass Northward: Q. What is to become of the Swedish quails during the summer? Varro gives us a very particular account of this migration:

“De illo genere sunt turdi adventitii, ac quotannis trans mare in Italiam advolant circa æquinoctium autumnale, et eodem revolant ad æquinoctium vernum. Et alio tempore vultures ac *c. turnices* immani numero. Hoc ita fieri apparet in insulis propinquis Pontia, Palmatia, Pandataria; ibi enim cum primâ volaturâ veniunt, *morantur paucos dies requiescendi causâ*; idemque faciunt cum ex Italiâ trans mare remeant.” Varro de Re Rusticâ, l. I l. c. 5.

^q All birds indeed are warmer by four degrees than other animals. See some ingenious thermometrical experiments by Mr. Martin of Aberdeen, Edinb. 1771, 12mo.

Buffon

Buffon proceeds to observe, that if quails are kept in a cage, they are remarkably impatient of confinement in the autumn and spring, whence he infers that they then want to migrate^r; he also adds, in the same period, that this uneasiness begins an hour before the sun rises, and that it continues all the night.

This great naturalist does not state this observation as having been made by himself, and it seems upon the face of it to be a very extraordinary one.

No one (at least with us) ever keeps quails in a cage except the poulterers, who always sell them as fast as they are fat, and consequently can give no account of what happens to them during so long an imprisonment as this observation necessarily implies.

No such remarkable uneasiness hath ever been attended to in any other supposed bird of passage during its confinement: but, allowing the fact to be as Buffon states, he himself supplies us with the real cause of this impatience.

He asserts, that quails constantly moult twice^s a year, *viz.* at the close both of summer and winter; whence it follows, that
the

^r It may also arise from this bird's being of so quarrelsome a disposition, and consequently most likely to fight with its fellow-prisoners when they are all in greatest vigour after moulting, and on the return of the spring.

Buffon allows that they will fight for a grain of millet, and adds, "car parmi les animaux il faut un sujet reel pour se battre." M. de Buffon hath never been in a cockpit.

^s I have often heard that certain birds moult twice a year, some of which I have kept myself without their changing their feathers more than once.

I should suppose that this notion arises from some birds not moulting regularly in the autumn every year; and when the change takes place in the following spring, they very commonly die: I can scarcely think that many of them are equal to two illnesses of so long a continuance, which are constantly to return within twelve months.

I should

the bird, in autumn and the spring, must be in full vigour upon its recovery from this periodical illness: it can therefore as little brook confinement, as the physician's patient upon the return of health after illness.

Thus much I have thought it necessary to say in answer to M. de Buffon, who "dum errat, docet," who scarcely ever argues ill but when he is misinformed as to facts, and who often, from strength of understanding, disbelieves such intelligence as might impose upon a naturalist of less acuteness and penetration.

The next instance of a bird being caught at any distance from land, is in Sir Hans Sloane's Voyage to Jamaica, who says, that a lark was taken in the ship 40 leagues from the shore: this therefore was certainly an unfortunate bird, forced out to sea by a strong wind in flying from headland to headland, as no one supposes the skylark to be a bird of passage.

The same answer may be given to a yellow-hammer's settling upon Hæsselquist's ship in the entrance of the Mediterranean, with this difference, that either the European or African coast must have been much nearer than 40 leagues¹.

The next fact to be considered is what is mentioned in a letter of Mr. Peter Collinson's, printed in the Philosophical Transactions.

He there says, "That Sir Charles Wager had frequently informed him, that in one of his voyages home in the spring, as he came into soundings in our chanel, that a great flock of

I should therefore rather account for the extraordinary briskness of a quail in autumn and the spring, from its recovery after moulting in the former, and from the known effects of the spring as to most animals in the latter.

¹ See Hæsselquist's Travels. Crantz mentions that a Redpoll forced out by a storm hath been taken in a ship which was 40 leagues from Greenland. Vol. I. p. 77.

" 1760. Part II. p. 461.

“swallows almost covered his rigging; that they were nearly spent and famished, and were only feathers and bones; but being recruited by a night’s rest, they took their flight in the morning.”

The first answer to this is, that if these were birds which had crossed large tracts of sea in their periodical migrations, the same accident must happen eternally, both in the spring and autumn, which is not however pretended by any one.

In the next place, the swallows are stated to be spent both by famine and fatigue; and how were they to procure any flies or other sustenance on the rigging of the admiral’s ship, though they might indeed rest themselves?

Sir Charles, however, expressly informs us, that he was in the channel, and within soundings: these birds, therefore (like Bellon’s quails) were only passing probably from headland to headland; and being forced out by a strong wind, were obliged to settle upon the first ship they saw*, or otherwise must have dropped into the sea, which I make no doubt happens to many unfortunate birds under the same circumstances.

As the birds which thus settled upon Sir Charles Wager’s rigging were swallows, it very naturally brings me now to consider the celebrated observation of Monf. Adanson, under all its cir-

* Mr. Franklin of Tobago informs me, that being 60 or 70 leagues from the coast of Portugal, at the latter end of December, many birds of different sorts, blown from the land, settled on the ship, and, amongst the rest, a Woodcock and Skylark. The Skylark was taken up by Mr. Franklin himself, and was so fatigued that it instantly shewed an inclination to sleep; after which, being put into a cage, the bird not only recovered, but became the next day remarkably tame. A hawk which would not settle on the ship was observed to drop into the sea. “For it often happens, that birds not natives of our island are, through storms, or other accidental causes (unknown to us), brought over hither,” Edwards’s *Gleanings in the article Rose-colour’d Ouzel.*

cumstances, as it hath been so much relied upon, and by naturalists of so great eminence.

Monf. Adanson is a very ingenious writer, and the publick is much indebted to him for many of the remarks which he made whilst he resided in Senegal. I may, however, I think, presume to say, that he had not before his voyage made ornithology his particular study; proofs of which are not wanting in other parts of his work, which do not relate to swallows. For example, he supposes, that the Canary birds which are bred in Europe are white, and that they become so by our climate's being more cold than that of Africa.

“ J'ai remarqué que le serin qui devient tout blanc en France, est à Tencriffé d'un gris presque aussi foncé que celui de la linotte; ce changement de couleur provient vraisemblablement de la froidure de notre climat.”

Mr. Adanson in this passage seems to have deduced two false inferences from having seen a few white Canary birds in France, which he afterwards compares with those of Tencriff, and supposes the change of colour to arise merely from alteration of climate: it is known, however, almost to every one, that there is an infinite variety in the plumage of the European Canary birds, which, as in poultry, arises from their being pampered with so much food, as well as confinement¹.

Monf.

¹ Voyage au Senegal, p. 13. Shells seem to be the part of natural history which chiefly engaged Mr. Adanson's attention.

² In the same passage, he compares the colour of the African Canary bird to that of the European linnet, and says it is *d'un gris presque aussi foncé*, whereas the European linnet is well known to be brown, and not grey. The linnet affords a very decisive proof that the change of plumage does not arise from the difference of climate, but the two causes I have assigned. The cock bird, whilst at liberty, hath a red breast: yet if it is either bred up in a cage from the nest, or is caught with its red plumage, and afterwards moults in the house, it never recovers the red feathers.

That

Monf. Adanfon, in another part of his voyage^a, describes a Roller, which he fuppofes to migrate fometimes to the Southern parts of Europe.

This circumftance fhews that he could not have looked much into books of natural hiftory, becaufe the principal fynonym of this bird is *Garrulus Argentoratensis*^b; and Linnæus informs us that it is found even in Sweden^c.

The ftrong characteristic mark of the Roller is the outermoft feathers of the tail, which able naturalifts defcribe as three fourths of an inch longer than the reft^d. Monf. Adanfon, however, compares their length, not with the other feathers of the tail, but with the length of the bird's body, which is by no means the natural or proper ftandard of comparifon.

The reafon of my taking notice of thefe more minute inaccuracies in Monf. Adanfon's account of birds, arifes from Mr. Collinfon's relying upon his obfervations with regard to fwallows being fo abfolutely decifive, becaufe he is reprefented to be fo able a naturalift.

I fhall now ftate (very minutely) under what circumftances thefe fwallows were caught, and what feems to be the true inference from his own account.

He informs us, that four fwallows fettled upon the fhip, not 50 leagues from the coaft of Senegal, on the 6th of October; that

That moft able naturalift Monf. de Buffon, from having feen fome cock linnets which had thus moulred off, or perhaps fome hen linnets (which have not a red breast) confiders them as a diftinct fpecies, and compares their breeding together in an aviary to that of a Canary bird and Goldfinch. Ornith. p. xxii.

^a P. 16.

^b Or of Strasburgh. Ray's Synopfis.

^c Faun. Suec. 94.

^d Willoughby, p. 131. Br. Zool. Vol. II. in Append.

these birds were taken, and that he knew them to be the true swallow of Europe^c, which he supposed were then returning to the coast of Africa.

I shall now endeavour to shew that these birds could not be European swallows; nor, if they were, could they have been on their return from Europe to Africa.

The word *hirondelle*, in French, is used as a general term for the four^f species of these birds, as the term *swallow* is with us.

Now the four swallows thus caught and examined by Monf. Adanson were either all of the same species, or intermixed in some other proportion.

Would not then any naturalist in stating so material a fact (as he himself supposes it to be) have particularized of what species of swallow these very interesting birds were?

Should not Monf. Adanson also have taken care to distinguish these supposed European swallows from a species of the same tribe, which bears a general resemblance to those of Europe, and is not only described, but engraved by Brisson, under the name of *Hirondelle de Senegal*^g?

Monf. Adanson however concludes his account of the supposed European swallow, whilst it continues on the coast of Senegal, by

^c I have before endeavoured to shew that Monf. Adanson does not always recollect with accuracy the plumage of the most common European birds, by what he says with regard to the linnet. I need scarcely observe also that the 6th of October, when these swallows were caught, is too early for their migration so far southward from any part of Europe.

^f Viz. the swallow *swallow*, the martin, the sand martin, and the swift: I omit the goat-sucker, because this bird, though properly classed as a species of swallow by ornithologists, is not so considered by others.

^g See Brisson, Tom. II. pl. xlv. Sonnerat also hath given a description and engraving of the swallow of Antigue [some island between the Philippines and N. Guinea] which much resembles our martin, except that the throat is yellow.

a circumstance which seems to prove to demonstration of what species the four swallows caught in the ship really were.

He says that they roost on the sand, either by themselves, or at most only in pairs, and that they frequent the coast much more than the inland parts ^b.

These swallows therefore, if they came from Europe, must have immediately changed at once their known habits: and is it not consequently most clear that they were of that species which Brisson describes under the name of *Hirondelle de rivage du Senegal*?

But though it should be admitted, notwithstanding what I have insisted upon, from Mons. Adanson's own account, that these were really swallows of the same kind with those of Europe; yet I must still contend that they could not possibly have been on their return from Europe to Africa, because the high road for a bird from the most Western point of Europe to Senegal is along the N. West coast of Africa, which projects greatly to the Westward of any part of Europe.

What then could be the inducement to these four swallows to fly 50 leagues to the Westward of the coast of Senegal, so much out of the proper direction?

It seems to me therefore very clear, that these swallows (whether of the European kind or not) were flitting from the Cape de Verde Islands to the coast of Africa, to which short flight, however, they were unequal, and were obliged, from fatigue, to fall into the sailors hands.

^b Voyage au Senegal, p. 67. I wish Mons. Adanson had also informed us whether these swallows had the same notes with those of Europe, which is a very material circumstance in the natural history of birds, though little attended to by most ornithologists. Julius Pollux, in his *Onomasticon*, gives us the different terms for the notes of many birds, that of the *χρῆσῶν* (or martin) is *ψιθυρίων*. l. V. ch. 14.

Mons.

Monf. Adanfon likewise mentions ⁱ that the fhip's company caught a Roller on the 26th of April, which he fupposes was on its paffage to Europe, though he was then within fight of the coaft of Senegal: this bird, however, muft be admitted not to have had fufficient ftrength to reach the firft ftage of this round-about journey, and was therefore probably forced out to fea by a ftiong wind, in paffing from head-land to head-land.

But I muft not difmifs what hath been obferved with regard to the fwallows feen by Monf. Adanfon at Senegal ^k, without endeavouring alfo to anfwer what M. de Buffon hath not only in-

ⁱ Voyage au Senegal, p. 15.

^k Since this effay was printed in the Philofophical Tranfactions, I have had an opportunity of examining the Planches Enluminees, which are faid to be published under the infpection of M. de Buffon, and which feem to afford a demonftration of M. Adanfon's inaccuracy, in fupposing either the Roller or Swallows which were caught in his fhip near the coaft of Senegal to be the fame with thofe of Europe ^{*}.

In the 8th of thefe plates there is a coloured figure of a bird, called le Kollier d'Angola, which agrees exactly with M. Adanfon's defcription; but he trufted too much to his memory when he pronounced it to be the Garrulus Argentoratensis of Willoughby, and therefore fupposed it to be on its paffage to Europe. This bird hath indeed, in many refpects, a very ftiong refemblance to the European Roller, but it differs moft materially in the length of the two exterior feathers of the tail, as well as in the colour of the neck, which in the African Roller is of a moft bright green, and in the European of rather a dull blue.

In the 310th plate of the fame publication there is likewise a coloured representation of the Hironnelle à ventre roux du Senegal, which very much refembles the European fwallow, but the tail differs materially, as the forks (in the Senegal fpecimen) taper from the bottom of the two exterior feathers to the top, at three regular divifions or nitches, whereas in the European they are nearly of the fame width throughout.

The convincing proof, however, that the Hironnelle à ventre roux du Senegal differs from our chimney fwallow is, that the rump is entirely covered with a bright orange or chefnut, which in the European fwallow "is of a very lovely but dark purplifh colour [†]."

^{*} Voyage au Senegal, p. 9.

[†] Willoughby, p. 312.

ferred from it, but hath endeavoured to confirm by an actual experiment¹.

M. de Buffon, from the many instances of swallows being found torpid even under water, very readily admits, that all the birds of this genus do not migrate, but only that species which was seen by Monf. Adanson in Africa, and which he generally refers to as the chimney swallow^m; but, from the outset, seems to shew that he hath himself confounded this species with the martin.

“ Prenons un seul oiseau, par exemple, l'hirondelle, celle que
“ tout le monde connoit, qui paroît au printemps, disparoît en
“ automne, & fait son nid avec de la terre contre les fenestres, ou
“ dans les cheminées,” p. 23.

It is very clear that the design in this period is to specify a particular bird in such a manner that no doubt could remain with any one about the species referred to; and from other passages which follow, it is as clear that Monf. de Buffon means to allude to the swallow *κατ' ἐσχχην*.

Though this was certainly the intention of this most ingenious naturalist, it is to me very evident that the martin, and not the

¹ See the two prefatory discourses on his sixteenth volume of natural history.

^m So little do naturalists know of this very common bird, that I believe it hath never yet been observed by any writer, that the tail-feathers are much longer in the cock than hen swallow, which are considered as its most distinguishing marks. I venture to make this remark upon having seen the difference in two swallows which are in Mr. Tunstall's collection, F. R. S. as also in two others, which have lately been presented to the Museum of the Royal Society by the directors of the Hudson's Bay company.

These very long feathers would be very inconvenient to the hen during incubation; and they are likewise confined to the cock *widow-bird*, as, from their more extraordinary length, they would be still more so. The same holds with regard to most (if not all) of the humming birds.

swallow,

swallow, was in his contemplation, because he first speaks of the bird's building against windows, before he mentions chimnies, and therefore supposes that either place is indifferent; which is not the case, because the swallow seldom builds on the sides of windows, or the martin in chimnies.

There are perhaps three or four martins to one swallow in all parts; and from their being the more common bird of the two, as well as from the circumstance of their building at the corner of windows (and consequently being eternally in our sight) nineteen out of twenty, when they speak of a swallow, really mean a martinⁿ.

I only take notice of this supposed inaccuracy in *Monf. de Buffon*, because, if that able naturalist does not speak of the different sorts of swallows with that precision which is necessary upon such an occasion, why should he rely so entirely upon the impossibility of *M. Adanson's* being mistaken?

I shall now state the experiment of *Monf. de Buffon*, to prove that the swallow is not torpid in the winter, and must therefore migrate to the coast of *Senegal*^o.

ⁿ In the same manner the generical name in other languages, for this tribe of birds, always means the martin, and not the swallow.

Thus *Anacreon* complains of the *χαλιδων* for waking him by its twittering.

Now if it be considered that there was only the kitchen chimney in a Grecian house, it must have been the martin which built under the eaves of the bed-chamber window, that was troublesome to *Anacreon*, and not the swallow.†

Ovid also speaking of the nest of the *hirundo*, says,

—luteum sub trabe figit opus.

by which he necessarily alludes to the martin, and not the swallow.

Garrula quæ tignis nidum suspendit hirundo.

VIRG. Georg. l. IV.

‡ *Plan de l'ouvrage*, p. 15.

He

He shut up some swallows (*hirondelles*) in an ice-house, which were there confined "plus ou moins de temps;" and the consequence was, that those which remained there the longest died, nor could they be revived by exposing them to the sun; and that those, "qui n'avoient souffert le froid de la glaciere que pendant "peu de tems," were very lively when permitted to make their escape.

M. de Buffon does not, in this account of his experiment, state the time during which the birds were confined; but as the trial must have been made in France, the swallows which he procured could not be expected to be torpid either in an ice-house^p or any other place, because the season for their being in that state was not yet arrived.

I cannot also agree with M. de Buffon, that those birds which were shut up the longest time died through cold, as he supposes, but for want of food, as he neither supplied them with any flies, nor, if he had, could the swallows have caught them in the dark: a very short fast kills these tender animals, which are feeding every instant when on the wing.

It therefore seems not to follow from this experiment, that swallows must necessarily migrate (as M. de Buffon supposes) to the coast of Senegal.

^p The very name of an ice-house almost strikes one with a chill; I placed, however, a thermometer in one near Hyde Park Corner on the 23d of November, where it continued 48 hours, and the mercury then stood at 43 $\frac{1}{2}$ by Fahrenheit's scale.

This is therefore a degree of cold which swallows sometimes experience whilst they continue in some parts of Europe, without any apparent inconvenience; and it should seem that the cold vapours, which may arise from the included ice, sink the thermometer only 7 or 8 degrees, as the temperature in approved cellars is commonly from 50 or 51 throughout the year.

Swallows are seen during the summer in every part of Europe from Lapland to the Southern coast of Spain; nor is Europe vastly inferior in point of size to Africa.

If swallows therefore retreat to Africa in the winter, should not they be dispersed over the whole Continent of Africa during that season, just as they are over every part of Europe during the summer?

But this most certainly is not so: Dr. Shaw, who was a very good naturalist and attended much to the birds in the neighbourhood of Algiers (as appears by his account of that country), makes no mention of any such circumstance; nor have we heard of it from any other traveller^a.

It must be admitted indeed, that Herodotus, speaking of a part of upper Egypt (which he had never seen), says, that kites and swallows never leave it^b; this, however, totally differs from Monf. Adanson's account, who informs us that they disappear in Senegal on the approach of summer^c.

^a It may also be observed here, that credit is in some measure given to M. Adanson's eyesight, against that of all the English, French, Dutch, Portugueze, and Danes, who have been settled not far from Senegal for above a century, many of which have spent great part of their lives there, and whose notice European swallows seen during the winter must have probably attracted. I do not mean by this to deny that such swallows may not be observed at Senegal; I only doubt their periodical migration.

^b *Ἰκίμαι δὲ καὶ χελιδόνες δι' ἔτος εὐρῆς ἐκ ἀπολείπουσιν.* Euterpe, p. 98. ed. Gale.

^c On the contrary they appear, and disappear, at the same seasons as with us, both in the tropical parts of America and Asia. With regard to America, I shall cite Hughes's History of Barbadoes, p. 75. and, with relation to Asia, a gentleman long resident in Bengal, who informs me that swallows are often found in the banks of the Ganges during the winter, and in their torpid state. They also conceal themselves in the rocks of Barbadoes, according to Hughes.

It

It seems to follow therefore, from this silence in others, that swallows cannot be accommodated for their winter residence in any part of the vast continent, except in the neighbourhood of Senegal. But this is not the whole objection to such an hypothesis.

If the swallows of Europe, when they disappear in those parts, retreat to the coast of Senegal, what necessarily follows with regard to a Lapland swallow ?

I will suppose such a bird to have arrived safely at his winter quarters upon the approach of that season in Lapland ; but it must then, according both to Monf. Adanson's and de Buffon's account, return to Lapland in the spring, or at least some other swallow from Senegal fill its place.

Such a bird immediately upon its arrival on the Southern coast of Spain would find the climate and food which it desired to attain, and all proper conveniences for its nest : what then is to be its inducement for quitting all these accommodations which it meets with in such profusion, and pushing on immediately over so many degrees of European continent to Lapland, where both martin and swallow can procure so few houses to build upon ? What also is to be the inducement to these birds, when they have arrived at that part of the Norwegian coast which is opposite to the Ferroe islands, to cross degrees of sea, in order to build in such small spots of land, where there are still fewer habitations ?

The next fact I have happened to meet with, of a bird's being seen at a considerable distance from the shore, is in Dr. Forster's lately published translation of Kalm's account of N. America^t.

^t Vol. I. p. 24.

We are there informed that a bird (which Kalm calls a swallow) was seen near the ship on the 2d of September, and, as he supposes, 20 degrees from the continent of America^u.

It appears however, by what he before states in his journal, that the ship was not above 5 degrees from the island of Sable.

Besides, if it is contended that this was an European swallow on its passage across the Atlantic on the 2d of September, it is too early even for a swift to have been on its migration, which disappears with us sooner than the three other species of European swallows^x.

Only three more instances have occurred of birds being seen in *open* sea that have been described with any sort of precision, which I shall just state, as I would not decline giving the best answer I am able to every argument and fact which may be relied upon, by those who contend that birds periodically migrate across oceans. Dr. Shaw mentions, that whilst his ship was at anchor under mount Carmel, he observed many storks passing, but as

^u It may not be improper here to observe, that in all instances of birds being seen at sea any great distance from the coast, it is not improbable that they may have before settled on some other vessel, or perhaps on a piece of wreck. In a passage from Newfoundland to England Mr. Thomas Butts fell in with floating ice on which were hawks and other fowls to rest themselves, being weary of flying over far from the main. Hakluyt, part III. p. 131. In and after a storm, blackbirds, starlings, and all sorts of small birds, are driven from the shore, and make for the ships to save themselves, whilst others fly about till they are spent, fall into the sea, and are drowned. Marten's Voyage to Spitzbergen, p. 31.

By accidents of this sort even butterflies have sometimes been caught by the sailors at 40 leagues distance from any land. See Monf. l'Abbé Courte de la Blanchadiere's Voyage to Brazil, Paris, 1759, 12mo. p. 169.

^x The bird mentioned by Kalm was probably an American swallow, forced out to sea by some accidental storm: there are several species of them, and they seem to bear a general affinity to those of Europe.

the

the vessel was so near the coast, this seems to be only a flitting from headland to headland.

On the 30th of March, 1751, Osbeck, in his voyage from Sweden to China^y, met with a single house-swallow near the Canary Islands, which was so tired that it was caught by the sailors: Osbeck also states, that though it had been fine weather for several preceding days, the bird was as wet as if it had just emerged from the bottom of the sea.

If this instance proves any thing, it is the submersion and not the migration of swallows so generally believed in all the northern parts of Europe. It would swell this Essay to a most unreasonable size, to touch only upon this litigated point; and I shall, for the present, suppress what hath happened to occur to me on this controverted question.

Osbeck afterwards, in the course of his voyage, mentions, that a swallow (indefinitely) followed the ship, near Java, on the 24th of July, and another on the 14th of August, in the Chinese sea, as he terms it.

After what I have observed before with regard to other instances of the same sort, I need scarcely say that this naturalist does not state of what species these swallows were; and that, from the latitudes in which they were seen, they must have been some of the Asiatic kinds.

I cannot, however, dismiss this article of the swallow, without adding some general reasons, which seem to prove the great improbability of this or any other bird's periodically migrating over wide tracts of sea; and I the rather do it in this place, because the swallow is commonly pitched upon as the most notorious instance of such a regular passage.

^y See the lately published translation of this voyage.

This seems to arise from its being seen in such numbers during the summer, from its appearing almost always on the wing, and from its feeding in that position : from which two latter circumstances it is supposed to be the best adapted for such distant migrations

And first, let us consider, from the few facts or reasons we have to guide us in the discussion, what length of flight either a swallow or any other bird is probably equal to.

A swallow, it is true, seems to be always on the wing ; but I have frequently attended, as much as I could, to the motions of a particular one ; and it hath appeared to me, that the bird commonly returned to its nest in eight or ten minutes : as for extent of flight, I believe I may venture to say, that these birds are seldom a quarter of a mile from their mate or young ones ; they feed whilst on the wing, and are perpetually turning short round to catch the insects, who endeavour to illude them as a hare does a greyhound.

I have sometimes seen swallows in a church, into which they had entered through a broken window ; these birds fled backwards and forwards for perhaps ten minutes ; but then always perched to rest themselves. It therefore seems to me, that swallows are by no means equal to long flights, from their practice during their summer residence with us.

I have long attended to the motions of birds ; and it hath always appeared to me, that they are never on the wing for amusement (as we walk or ride), but merely in search of food.

The only bird which I have ever observed to fly without any particular point of direction, is the rook, which will, when the wind is high,

“ Ride in the whirlwind, and enjoy the storm.”

They

They never pass, however, at this time, from point to point, but only tumble in the air, merely for their diversion.

It seems, therefore, that birds are by no means calculated for flights across oceans, for which they have no previous practice: and they are, in fact, always so fatigued, that, when they meet a ship at sea, they forget all apprehensions, and deliver themselves up to the sailors.

Let us now consider another objection to the migration of the swallow, which *Monf. de Buffon* supposes may cross the Atlantic to the Line in eight days²; and this is not only from the want of rest, but of food, during the passage.

A swallow, indeed, feeds on the wing; but where is it to find any insects, whilst it is flying over a wide expanse of sea? This bird, therefore, if it ever attempted so adventurous a passage, would soon feel a want of food, and return again to land, where it had met with a constant supply from minute to minute.

I am aware it may be here objected, that the swallow leaves us on the approach of winter, when soon no flying insects can be procured: but I shall hereafter endeavour to shew, that some species of these birds are then torpid, and, consequently, can want no such food.

Another objection remains to the hypothesis of migration, which is, that birds, when flying from point to point, endeavour always to have the wind against them³, as is periodically experienced by the London bird-catchers in March and October, when they lay their nets for singing birds⁴.

² *Discours sur la nature des oiseaux*, p. 32.

³ *Kalm*, in his voyage to America, makes the same observation, with regard to flying fish; and *Valentine* says, that if the wind does not continue to blow against the bird of paradise, it immediately drops to the ground.

⁴ These birds, as it should seem, are then in motion; because, at those seasons, the ground is plowed either for the winter or lent corn.

Let us suppose, then, a swallow to be equal to a passage across the Atlantic in other respects; how is the bird to be insured of the wind's continuing for days in the same quarter; or how is he to depend upon its continuing to blow against his flight with moderation? For who can suppose that a swallow can make his way to the point of direction, when buffeted by a storm blowing in the teeth of his intended passage?

Lastly, can it be conceived that these, or any other birds, can be impelled by a providential instinct, regularly to attempt what seems to be attended with such insuperable difficulties, and what most frequently leads to certain destruction?

But it will still be objected, that, as swallows regularly appear and disappear at certain seasons, it is incumbent upon those who deny their migration to shew what becomes of them in Europe during our winter.

Though it might be answered, that it is not necessary those, who endeavour to shew the impossibility of another system or hypothesis, should from thence be obliged to set up one of their own; yet I shall, without any difficulty, say, that I at least am convinced swallows (and perhaps some other birds) are torpid during the winter.

I have not, I must own, myself ever seen them in this state; but, having heard instances of their being thus found from others of undoubted veracity, I have scarcely the least doubt with regard to this point.

It is, indeed, rather difficult to conceive why some ornithologists continue to withhold their assents to such a cloud of wit-

* I have myself attended to swallows during a high wind, and have observed that they fly only in sheltered places, whilst they almost touch the surface of the ground. The sea-fowl even, on the approach of a hurricane, fly to the land for shelter. Voyage to the island of Mauritius, in 1768, p. 189.

nesses,

nesses, except that it perhaps contradicts a favourite hypothesis which they have already maintained.

Why is it more extraordinary that swallows should be torpid during the winter, than that bats are found in this state^d, and so many insects which are the food of swallows?

But it may be said, that as the swallows have crowded the air during the summer in every part of Europe since the creation, and as regularly disappear in winter, why have not the instances of their being found in a sleeping state been more frequent?

To this it may be answered, that though our globe may have been formed so many centuries, yet the inhabitants of it have scarcely paid any attention to the study of natural history but within these late years.

As for the antient Greeks and Romans, their dress prevented their being so much in the fields as we are; or, if they heard of a rather extraordinary bird in their neighbourhood, they had not a gun to shoot it: the only method of attaining real knowledge in natural history depends almost entirely upon the having frequent opportunities of thus killing animals, and examining them when dead.

If they did not stir much in their own country, much less did they think of travelling into distant regions; want of bills of exchange, and of that curiosity which arises from our being thoroughly acquainted with what is near us at home, probably occasioned this; to which may also be added, the want of a variety

^d And yet how few can go to the places where bats are to be found thus torpid during the winter! I speak this from having been obliged to send as far as Totness in Devonshire for some, which were wanted in that state by Mr. Hunter, F. R. S.

of languages: scarcely any Greek seems to have known more than his own tongue, nor Roman more than two*.

Aristotle, indeed, began something like a system of natural history; and Pliny put down, in his common place-book, many an idle story; but, before the invention of printing, copies of their works could not be so generally dispersed, as to occasion much attention to what might be interesting facts for the ornithologist.

In the sixteenth century, Gesner, Belon, and Aldrovandus, published some materials, which might be of use to future naturalists; but, in the seventeenth, Ray and Willoughby first treated this extensive branch of study with that clearness of method, perspicuity of description, and accuracy of observation, as hath not, perhaps, been since exceeded. The works of these great naturalists were soon dispersed over Europe, and the merit of them acknowledged; but it so happened, that Sir Isaac Newton's amazing discoveries in natural philosophy making their appearance about the same time, engaged entirely the attention of the learned.

In process of time, all controversy was silenced by the demonstration of the Newtonian system; and then the philosophical part of Europe naturally turned their thoughts to other branches of science.

Since this period, therefore, and not before, natural history hath been studied in most countries of Europe; and consequently the finding swallows in a state of torpidity, or on the coast of

* It need be scarcely here mentioned also, that their navigation was confined to the Mediterranean, from the compass not having been then discovered.

Q. Ennius tria corda se habere dicebat, quod loqui Græcè, Oscè, et Latine sciret. Aulus Gellius, LXVII. c. 17.

Lingua doctus utraque.—MARTIAL.

Linguas edidicisse duas.—OVID.

Senegal, during the winter, begins to be an interesting fact, which is communicated to the world by the person who observes it.

The annual publications of the Royal Society, as likewise the periodical ones of other scientific academies, have also afforded an immediate and convenient opportunity of laying such facts before the publick, which would neither have been printed, nor perpetuated in detached pieces.

To this I may add, that the common labourers, who have the best chance of finding torpid birds, have scarcely any of them in doubt with regard to this point; and consequently, when they happen to see them in this state, make no mention of it, because they consider the discovery as neither uncommon nor interesting to any one.

Molyneux, therefore, in the *Philosophical Transactions*, informs us, that this is the general belief of the common people of Ireland with regard to land-rails^e; and I have myself received the same answer from a person who, in December, found swallows in the stump of an old tree^h.

Another reason why the instances of torpid swallows may not be expected so frequently is, that the instinct of secreting themselves at the proper season of the year likewise suggests to them,

^f *Phil. Transf. abr. vol. II. p. 853.*

^g The Rev. Dr. De-Salis (who hath been in most parts of Ireland) informs me that the following lines are commonly repeated in many parts of that country:

“The bat, the bee, the butterfly, and the swallow,

“The corn-creak^{*}, and the stonechat, all sleep the winter thorough.

^h *Vel qualis gelidis plumâ labente pruinis
Arboris immoritur trunco brumalis hirundo.”*

CLAUDIAN.

* i. e. Our landrail.

its being necessary to hide themselves in such holes and caverns as may not only elude the search of man, but of every other animal which might prey upon them; it is not therefore by any common accident that they are ever discovered in a state of torpidity.

Since the study of natural history, however, hath become more general, proofs of this fact are frequently communicated, as may appear in the British Zoology ^l.

That it may not be said, however, I do not refer to any instance which deserves credit, if properly sifted, I beg leave to cite the letter from Mr. Achard to Mr. Collinson, printed in the Philosophical Transactions ^k, from whence it seems to be a most irrefragable fact, that swallows ^l are annually discovered in a torpid state on the banks of the Rhine. I shall also refer to Dr. Firsch's History of the Royal Society ^m, where it is stated, that the celebrated Harvey dissected some, which were found in the winter, under water, and in which he could not observe any circulation of the blood.

Assuming it, therefore, from these facts, that swallows have been found in such a state, I would ask the partisans of migration,

^l See vol. II. p. 250. Brit. Zool. ill. p. 13, 14. As also Mr. Pennant's Tour in Scotland, p. 199.

^k 1763, p. 101.

^l "Swallows or martins," are Mr. Achard's words, which I the rather mention, because Mr. Collinson complains that the species is not specified.

Mr. Collinson himself had endeavoured to prove, that sand martins are not torpid, Phil. Transf. 1760, p. 109. and concludes his letter, by supposing that all the swallow tribe migrates, therefore the swift is the only species remaining; for his friend Mr. Achard shews to demonstration, that swallows or martins are torpid; he does not, indeed, precisely state which of them.

^m Vol. IV. p. 537.

whether

whether any instance can be produced where the same animal is calculated for a state of torpidity and, at the same time of the year, for a flight across oceans?

But it may be urged, possibly, that if swallows are torpid when they disappear, the same thing should happen with regard to other birds, which are not seen in particular parts of the year.

To this I answer, that this is by no means a necessary inference: if, for example, it should be insisted that other birds besides the cuckoo are equally careless with regard to their eggs, it would be immediately allowed that the argument arising from such supposed analogy could by no means be relied upon.

It is possible, however, that some other birds, which are conceived to migrate, may be really torpid as well as swallows; and if it be asked why they are not sometimes also seen in such a state during the winter, the answer seems to be, that perhaps there may be a hundred swallows to any other sort of bird, and that they commonly are found sleeping in clusters.

If a single bird of any other kind happens to be seen in the winter, without motion or apparent warmth, it is immediately conceived that it died by some common accident.

I shall, however, without any reserve, say, that I rather conceive the notion which prevails with regard to the migration of many birds, may most commonly arise from the want of observation, and ready knowledge of them, when they are seen on the wing, even by professed ornithologists.

It is an old saying, that "a bird in the hand is worth two in the bush;" and this holds equally with regard to their being distinguished, when those even who study natural history have but a transient sight of the animalⁿ.

If,

ⁿ An ingenious friend of mine makes always a very proper distinction between what he calls in-door and out-door naturalists.

Thomas.

If, therefore, a bird, which is supposed to migrate in the winter, passes almost under the nose of a Linnæan, he pays but little attention to it, because he cannot examine the beak, by which he is perhaps to class the bird. Thus I conceive, that the supposing a nightingale to be a bird of passage arises from not readily distinguishing it, when seen in a hedge, or on the wing^o. This bird is known to the ear of every one, by its most striking and capital notes, but to the eye of very few indeed; because the plumage is dull, nor is there any thing peculiar in its make.

The nightingale sings perhaps for two months^p, and then is never heard again till the return of the spring, when it is supposed to migrate to us from the continent, with redstarts, and several other birds.

That it cannot really do so, seems highly probable, from the following reasons.

This bird is scarcely ever seen to fly above twenty yards, but creeps at the bottom of the hedges, in search of maggots, and other insects, which are found in the ground.

If the swallow is not supplied with any food during its passage across oceans, much less can the nightingale be so accommodated; and I have great reason to believe, from the death of birds in a cage, which have had nothing to eat for twenty-four hours, that these delicate and tender animals cannot support a longer fast, though using no exercise at all.

Thomas Willisel, who assisted Ray and Willughby much with regard to the natural history of the animals of this island, never stirred any where without his gun and fishing tackle.

^o No two birds fly in the same manner, if their motions are accurately attended to.

^p Whilst it sings even, the bird can seldom be distinguished, because it is then almost perpetually in hedges, when the foliage is thickest, upon the first burst of the spring, and when no insects can as yet have destroyed considerable parts of the leaves.

To this I may also add, that those birds which feed on insects are vastly more feeble than those whose bills can crack seeds, and consequently, less capable of bearing any extraordinary hardships or fatigue.

But other proofs are not wanting that this bird cannot migrate from England.

Nightingales are very common in Denmark, Sweden, and Russia⁹, as also in every other part of Europe, as well as Asia, if the Arabic name is properly translated. Kempfer likewise informs us that they are found in Japan, and much prized there.

Now, if it is supposed that many of these birds which are observed in the southern parts of England, cross the German-sea, from the opposite coast of the continent; why does not the same instinct drive those of Denmark to Scotland, where no such bird was ever seen or heard[†]?

But these are not all the difficulties which attend the hypothesis of migration; nightingales are agreed to be scarcely ever observed to the westward of Dorsetshire, or in the principality of Wales[‡], much less in Ireland.

I have also been informed, that these birds are not uncommon in Worcestershire, whereas they are excessively rare (if found at all) in the neighbouring county of Hereford.

⁹ See Dr. Birch's History of the Royal Society, vol. III. p. 189. Linnæi Fauna Suecica. and Biographia Britannica, art. FLETCHER; where it is said, that they have in Russia a greater variety of notes than elsewhere.

[†] Sir Robert Sibbald, indeed, conceives the nightingale to be a bird of North Britain; but, if I can depend upon many concurrent testimonies, no such bird is ever seen or heard so far northward at present, nor could I ever trace them in that direction further than Durham.

[‡] I have, however, frequently seen the nightingale's congener (and supposed fellow-traveller) the redstart in Wales.

Whence therefore can it arise, that this bird should at one time be equal to the crossing of seas, and at other times not travel a mile or two into an adjacent county? Does it not afford, on the other hand, a strong proof, that the bird really continues on the same spot during the whole year, but happens not to be attended to, from the reasons I have before suggested?

I am therefore convinced, that if I was ever to live in the country during the winter, I should see nightingales, because I should be looking after them; and I am accordingly informed, by a person who is well acquainted with this bird, that he hath frequently observed them during this season^t.

If it be asked, why the nightingales are all this time mute? the answer is, that the same silence is experienced in many other birds, and this very muteness is, in part, the cause why the bird is not attended to in winter.

I must now ask those who contend for the migration of a nightingale, what is to be its inducement for crossing from the continent to us? A swallow, indeed, may want flies in winter, if it stays in England; but a nightingale is just as well supplied with insects on the continent, as it can be with us after its passage^u.

I must

^t I find they have also been seen in France during the winter. See a treatise, intitled, *Aëdologie*, Paris, 1751. p. 23.

^u I have omitted the mention of a more minute proof, that this bird cannot migrate from the continent, from the having kept them for some years in a cage, and having been very attentive to their song.

Kircher (in his *Musurgia*) hath given us the nightingale's notes in musical characters, from which it appears that the song of a German nightingale differs very materially from that of an English one: now, if there was a communication by migration between the continent and England, the song of these birds would not so materially differ, as I may, perhaps, shew, by some experiments I have made, in relation to the notes of birds.

I have

I must also ask, in what other part of the world this bird is seen during the winter: must it migrate to Senegal with the swallow?

I am persuaded likewise, that the cuckow never leaves this island any more than the nightingale: this bird is either probably torpid in the winter, or otherwise is mistaken for one of the smaller kind of hawks^x; which it would be likewise in the spring, was it not for its very particular note at that time, and which only lasts during courtship, as it does with the quail.

If there is fine weather in February, this bird sometimes makes this sort of call to its mate, whilst it is supposed to continue still on the continent.

An instance is mentioned by Mr. Bradly^y, of not only a single cuckow, but several, which were heard in Lincolnshire during the month of February; and that able naturalist Mr. Pennant informs me, another was heard near Hatcham in Shropshire, on the 4th of February^z. I have received a similar account from Welshpool, in Montgomeryshire, but of the last week of the same month, 1779, as also from Argyleshire.

I have before mentioned, that Mr. Fletcher, who was ambassador from England to Russia in the time of Queen Elizabeth, observed that the song of the Russian nightingale differed from that of the English.

^x Mr. Hunter, F. R. S. informs me, that he hath seen cuckows in the island of Belleisle during the winter, which is not situated so much to the southward, as to make it improbable that they may equally continue with us.

^y Works of Nature, p. 77.

^z Mr. Pennant received this account from Mr. Plimly, of Longnor in Shropshire; and Amis the Peulterer in Bond-street hath told me that he hath procured cuckows during the winter. See likewise Willughby, art. Cuckow.

Thus likewise Mr. Edwards informs us, that the sea fowls near the Needles, which are commonly supposed to migrate in winter, appear upon the weather's being very mild. Essays, p. 197.

It is amazing how much the being interested to discover particular objects contributes to our readily distinguishing them.

I remember the being much surprized that a greyheaded game-keeper always saw the partridge on the ground before they rose, when I could not do the same; he told me, however, that the reason was, I lived in a time when the shooter had no occasion to give himself that trouble.

He then further explained himself, by saying, that when he was young, no one ever thought of aiming at a bird on the wing, and consequently they were obliged to see the game before it was sprung. He added, that from this necessity he could not only distinguish partridges, but snipes and woodcocks, on the ground.

Another instance of the same kind, is the great readiness with which a person who is fond of coursing finds a hare sitting in her form: those, however, who are not anxious about such sport, can scarcely see the hare when it is under their nose, and pointed out to them.

But more apparent objects escape our notice, when we are not interested about them.

Ask any one, who hath not a botanical turn, what he hath seen in passing through a rich meadow, at the time it is most enamelled with plants in flower; and he will tell you, that he hath observed nothing but grass and daisies. If most gardeners even are in like manner asked whether the flowers of a bean grow on every side of the stalk, they will suppose that they do; whereas they, in reality, are only to be found on one side.

The mouths of flounders are often turned different ways, which one would think could not well escape the observation of the London fishmongers; yet, upon asking several of them whether they had attended to this particular, I found they had not, till I shewed them the proof in their own shops.

A fish-

A fishmonger, however, knows immediately whether a fish is in good eating order or not, on the first inspection: because this is a circumstance which interests him.

I shall, however, by no means suppress two arguments in favour of migration, which seem to require the fullest answer that can be given to them.

The first is, that there are certain birds, which appear during the winter, but disappear during the summer; and it may be asked, where such birds can be supposed to breed, if they do not migrate from this island. These birds are in number four; viz. the snipe, woodcock, red-wing, and fieldfare.

As for the snipe, I have a very short answer to give to the objection, as far as it relates to this bird; because it constantly breeds in the fens of Lincolnshire, Wolmar forest, and Bodmyn downs; it is therefore highly probable that it does the same in almost every county of England.

I must own, however, that, till within these few years, I conceived the nest of a snipe was as rarely seen in England as that of a woodcock or fieldfare; and that able ornithologist Mr. Edwards supposes this to be the fact, in the late publication of his ingenious Essays on Natural History ^a.

Woodcocks likewise are known to build in some parts of England every year; but, as the instances are commonly those of a single nest, I would by no means pretend to draw the same proof against the summer migration of this bird, as in the former case of the snipe. It is remarkable, however, that Belon asserts, without the least doubt of the fact, that in France the woodcocks leave the plains for the mountains, in order to make their nests ^b; and Willughby flush'd them in the months of June and July on mount Jura.

^a P. 72.

^b Belon, p. 273.

I will most readily admit, that these accidental facts are rather to be accounted for, perhaps, from the whimsy or silliness of a few birds, which occasions their laying their eggs in a place where they are easily discovered, and contrary to what is usual with the bulk of the species.

I remember to have seen a duck's nest once on the top of a pollard willow, near the decoy in St. James's Park; it would not be, however, fair to infer from such an instance that all ducks would pitch upon the same very improper situation for a nest, upon which it is difficult to conceive how a web-footed bird could settle. Some silly birds likewise now and then choose a place for building, which cannot escape the observation of either man or beast, as they pass by.

I therefore suppose that the few instances of woodcocks nests having been found in England, arise either from one or other of these two causes; and all which they seem to prove is, that our climate in summer is not absolutely improper for them.

It is to be observed, however, that Mr. Catesby considers such instances as of equal force against the migration of the woodcock as of the snipe^d. Willughby also says, that Mr. Jessop saw young woodcocks sold at Sheffield (which rather implies a certain number being brought to market), and that others had observed the same elsewhere^e.

We are, indeed, informed by Scopoli^f, that they breed constantly in Carniola, which is considerably to the southward of

^c See also other instances of nests imprudently placed by birds, Phil. Transf. vol. LXIV. part I. p. 199. as also vol. LXV, part I. p. 263.

^d Phil. Transf. Abr. vol. II. p. 289.

^e B. III. c. 1. The same able ornithologist observed Woodcocks which were brought to market during the month of August at Nuremberg; from whence he concludes, that they continue in that part of Germany throughout the year, which is only in 49½ North Latitude.

^f Ornith. Leipzig, 1769.

any part of England : our country therefore is certainly not too hot for them.

Woodcocks appear and disappear almost exactly about the same time in every part of Europe, and perhaps Africa[†] : heat and cold, therefore, seem not to have any operation whatsoever with regard to the supposed migration of this bird.

But it may be said, what signifies proving the probability of woodcocks breeding in England, if it is not a known fact that they do so ?

To this it should seem there are several answers, as it is equally incumbent upon those who contend for migration, to shew that these birds were ever seen on such passage.

Another answer is, ask ninety-nine people out of a hundred, whether snipes ever make a nest in England ; and they will immediately say, that they do not ; so little are facts or observations of this sort attended to^h.

But

[†] Shaw's Travels, Phys. Obs. ch. ii.

^h I have scarcely ever been in company when this subject hath been started but that some of those who were present have mentioned instances of woodcocks nests being found in different parts of England ; and a Suffex farmer near Cuckfield hath kept several, feeding them on worms. A pair of such woodcocks were given by this farmer to Lord Montague in December 1778. They were cock and hen, being called by the name of Derby and Joan ; but one of them, after having survived the journey to London, and continued there a few days, died before it could be sent to Cowdry.

In an aviary of the Infant Don Lewis's at St. Ildelfonso, there were many woodcocks [chocas] which had been kept there several years. In this aviary there was a fountain, as also a pine tree, and some shrubs, to keep the ground always moist, whilst the woodcocks were likewise frequently supplied with fresh fods from the neighbouring forest, as full of worms [*combrices*] as they could be procured. Though these worms hid themselves in the fods, yet the woodcocks, by their smell, soon found them out, darting their bills into the fods only as far as the nostrils ;
after.

But I shall now endeavour to give some other reasons why woodcocks may not only continue with us during the summer, but also breed in large tracts of wood or bog, without being observed.

In the other parts of Europe all birds almost are considered as game, or, at least, are eaten as wholesome food; Ray therefore mentions, that hawks and owls are sold by the poulterers at Rome; every sort of small bird also is equally the foreign fowler's objectⁱ.

after which, holding up their heads quite perpendicular, they swallowed the worm without the least perceptible motion in the throat. *Historia Natural de Espana por Guliermo Bowles. Madrid, quarto, 1775. p. 454.* A friend of mine also saw several woodcocks in the menagery of Versailles during the month of August, 1748. Gifner likewise cites Longolins, who had often seen woodcocks fattened with meal, dried figs, and water, which, "rostris longissimis hauriunt potius quam ducunt."

I should by no means despair of having a breed of woodcocks in an aviary if they were taken young from the nest, and brought up by hand; for, if there is no awe of man, why should we expect this only from Canary birds? On this idea I prevailed upon a bird-catcher, who reared young robins in the house, to put the next year a cock and hen of such a brood into a breeding cage. In this experiment I prevailed with some difficulty; but, to the bird-catcher's great surprise (though not so to mine), five nestlings were not only hatched, but grew to be of their full size.

When birds are thus brought up, they not only have no dread of man, but consider him as their parent and benefactor, of which I have seen the following proof.

Mr. Morifette (a French Gentleman who had traded several years in the East Indies) took a house in Lambeth Marsh, where he raised many chickens by ovens. These chickens not only rejoiced upon seeing any one come into their little garden, but would frequently run up one's legs; and Mr. Morifette was obliged to make an old woman frequently sit amongst them, as otherwise they pined, and did not feed heartily.

ⁱ In one of Boccace's Novels, a lover, who lives at Florence, dresses a falcon for the dinner of his mistress. *Giornata V. Novel. IX.* Aristotle likewise informs us that young hawks are very fat and sweet. *De Hist. An. l. vi. c. 7.*

An Englishman does not consider, on the other hand, perhaps, twelve kinds of birds worthy his attention, or expence of powder, none of which are ever shot in our woods during the summer, nor are birds then disturbed by felling either coppice or timber.

But it will be said, why are not woodcocks sometimes seen, however, as they may be supposed to leave their cover in search of food?

To this I answer, that woodcocks sleep in the day-time, whilst with us in the winter, and feed during the night^k. Whenever a woodcock, therefore, is flushed, he is roused from his sleep by the spaniel or sportsman, and then takes wing, because there are no leaves on the trees to conceal the bird.^l

Whoever hath looked attentively at a woodcock's eye, must see that, from the appearance of it, the sight must be more calculated to distinguish objects by night than by day^l.

The fact therefore is notorious to those who cut glades in their woods, and fix nets for catching these birds, that they never stir but as it begins to be dark, after which they return again by day-break, when their sight even then is so indifferent that they strike against the net, and thus become entangled.

No one with us ever thinks of fixing or attending such nets in summer for woodcocks, because it is not then supposed that there

^k Almost all the wild fowl of the duck kind also sleep in the day-time, and feed at night. Virgil therefore is mistaken when he supposes that aquatic birds sleep at the same time with those of the land :

— pictæque volucres
Quæque lacus latè liquidos, quæque aspera dumis
Rura tenent, somno posita sub nocte silenti
Lenibant curas, &c.

^l I conceive also, it is from the eye's looking so dull that this bird is generally considered as being so foolish : hence the Africans call the woodcock *hammar el badgel*, or the partridge's ass. Shaw's Phys. Obs. ch. ii.

is any such bird in the island; if they tried this experiment, however, I must own that I believe they would have sport^m.

Dr. Reinhold Forster, F. R. S. who is an able naturalist, informed me, that the fowlers in the neighbourhood of Dantzick kill many woodcocks about St. John's day (or Midsummer) in the following manner, and that they continue to do so till the month of August.

They wait on the side of some of the extensive woods in that neighbourhood, before day-break, for the return of the woodcock from his feeding in the night-time, and always depend upon having a very good chance of thus shooting many of them.

The Dantzickers, however, might be employed the whole summer near these woods in the day-time, without ever seeing such a bird; and it seems therefore not improbable, that it arises from our not waiting for them at twilight or day-break, that they are never observed by Englishmen in the summer. If this bird should, however, be seen in the night, it is immediately supposed to be an owl, which a woodcock does not differ much from in its flight.

^m I would ask those who will probably laugh at the very idea of such sport (which I do not, however, absolutely insure), whether, if I was to send them to any part of the British coast to catch the true anchovy, or tunny fish, they would not suppose equally that it was a fool's errand.

Notwithstanding, however, this incredulity, I can produce the authority of both Ray (Syn. Pisc. p. 107.) and Mr. Pennant (Brit. Zool. ill. p. 34. 36.) that the true anchovy is caught in the sea not far from Chester, and the tunny fish on the coast of Argyleshire, together with the herrings, where they are called *mackrel sturc*.

Is it not amazing, however, that a fish of such a size as the tunny should never have been heard of, even by the Scotch naturalist Sir Robert Sibbald?

Few will suppose, that the largest of the British Grouse (commonly called *Black Game*) are to be found but at a great distance from London; yet I have myself within the space of two hours seen two different broods of these birds in the neighbourhood of the New Forest in Hampshire.

To

To these reasons for woodcocks not being observed, it may be added, that the bird is commonly mute, and consequently seldom discovers itself by its call.

If it be still contended, that the nest or young must sometimes be stumbled upon, though in the centre of extensive woods, or large bogs, the *fiskin* (or *aberdavine*ⁿ) is a much more extraordinary instance of concealing its nest and young.

The plumage of this bird is rather bright than otherwise, and the song, though not very pleasing, yet is very audible, both which circumstances should discover it at all times; yet ^oKramer informs us, that, though immense numbers breed annually on the banks of the Danube, no one ever observed the nest.

This bird is rather uncommon in England; so that if I ask when the nest was ever found within the verge of the island, it may be considered as rather an unfair challenge.

There is another bird, however, called a *redpoll*^p, which is taken in numbers during the Michaelmas and March flights by the London bird-catchers, whose nest, I believe, hath seldom been seen in the southern parts of England, though I have seen them in pairs during the summer, both in the mountainous parts of Wales and highlands of Scotland^q.

But I shall now mention another proof that woodcocks breed in England.

The Reverend Mr. White of Selborn, who is not only a well-read naturalist, but an active sportsman, informs me, that he

ⁿ Brit. Zool, p. 309.

^o Elenchus Animalium per Austriam, p. 261. Viennæ, 1756.

^p Brit. Zool, p. 312.

^q This elegant little bird is very common in Hudson's Bay, where it feeds chiefly on the birch trees; which being more common in the northern than southern parts of Great Britain, may account for the bird's being more often seen northward.

hath frequently killed woodcocks in March, which, upon being opened, had the rudiments of eggs in them, and that it is usual at that time to flush them in pairs; Willughby also observes the same^r.

This bird, therefore, certainly pairs before its supposed migration; and can it be conceived that this strict union (which birds in a wild state so faithfully adhere to^s) should take place before they traverse oceans, and when they cannot as yet have pitched upon a proper place for concealing their nest and nestlings?

Let us examine if this intercourse before migration takes place in other birds, which are supposed to cross wide extents of sea: and a quail affords such proof.

I have been present when these birds have been caught in the spring, which always turn out to be males, and are enticed to the nets by the call of the hen; quails therefore pair after they appear in England.

But I shall now consider the other two instances of birds which are seen with us in the winter, and are not observed in the summer; I mean the fieldfare and redwing.

And, first, let us examine, where these birds are actually known to breed: the northern naturalists say, in Sweden; Klein, in the neighbourhood of Dantzick, which is only in lat. 54° 30'; and Willughby, in Bohemia.

As

^r B. III. c. i.

^s It is believed that no mulc-bird was ever seen in a wild state, notwithstanding M. de Buffon suspects many an intrigue in the recesses of the woods (Hist. Nat. des Oiseaux, tom. I.) Such irregular intercourse is only observed in cages and aviaries, where birds are not only confined, but pampered with food.

^t See Klein, de Avibus Erraticis, p. 178. Klein, however, cites Zornius, who lived in the same part of Germany, and who asserts that the

As they therefore build their nests in more Southern parts of Europe, there is certainly no natural impossibility of their doing so with us; though I must own I never yet heard of but one instance, which was a fieldfare's nest found near Paddington^u.

I cannot, however, but think it is only from want of observation, that more of such nests have not been discovered, which are only looked after by very young children; and the chief object is the eggs, or nestlings, not the bird which lays them^v.

The plumage therefore and flight of the fieldfare or redwing being neither of them very remarkable, it is not at all improbable they may remain in summer, without being attended to; and particularly the redwing, which scarcely differs at all in appearance from thrushes. It is not also improbable, that the young fieldfares, before they have moulted, may much resemble the common thrush. Thus the chough is by no means peculiar to Cornwall, as is commonly supposed, but is mistaken for the jackdaw or rook.

turdus iliacus (or redwing) leaves those parts in the spring. The circumstance therefore of the redwing's breeding in numbers (*per multitudines*) had escaped the notice of Zornius, though he hath written a dissertation on this question.

Is it at all surprizing, after this, that such discoveries, if made at all, should not be commonly heard of?

I have not before referred to Klein, who hath written a very able treatise, in which he argues against the possibility of migration in birds; because, though I should be very happy to support my poor opinion by his authority, yet I thought it right neither to repeat his facts, or arguments.

^u See also Harl. Misc. Vol II. p. 561.

^v Many birds also build in places of such difficult access that boys cannot climb to; birds-nesting is confined almost entirely to hedges and low shrubs.

But it may be said, that these birds fly in flocks during the winter, and if they remain here during the summer, we should see them equally congregate.

This circumstance, however, is by no means peculiar to the fieldfare and redwing; most of the hard-billed singing birds do the same in winter, but separate in summer, as it is indeed necessary all birds should during the time of breeding:

I shall now consider another argument in favour of migration, which I do not know hath been ever insisted upon by those writers who have contended for it, and which at first appearance seems to carry great weight with it.

There are certain birds which are supposed to visit this island only at distant intervals of years; the Bohemian chatterer and cross-bill^y (for example) once perhaps in twenty.

The fact is not disputed, that such birds are not commonly observed in particular spots from year to year; but this may arise from two causes, either a partial migration within the verge of our island, or perhaps more frequently from want of a ready knowledge of birds on the wing, when they happen to be seen indeed, but cannot be examined.

I never have disputed such a partial migration; and indeed I have received a most irrefragable proof of such a flitting, from Mr. White, whose accurate observations I have before had occasion to argue from.

^y This bird varies much in the colour of its plumage, and is sometimes red.

The first account we have of their being seen, is in the Ph. Tr. abr. Vol. V. p. 33. where Mr. Edward Lhwyd suspects them to be Virginia nightingales, from their feathers being red, and had no difficulty of at once supposing that they had crossed the Atlantic.

The

The rock (or ring-ouzel) hath always hitherto been considered as frequenting only the more mountainous parts of this island: Mr. White, however, informs me that there is a regular migration of these birds, which flock in numbers, and regularly visit the neighbourhood of Selborn, in Hampshire².

I therefore have little doubt but that they equally appear in others of our Southern counties; though it escapes common observation, as they bear a sort of general resemblance to the black-bird, at least to the hen of that species.

I own also, that I always conceived the Bohemian chatterer was not observed in Great Britain but at very distant intervals of years, and then perhaps only a single bird, whereas Dr. Ramsay (professor of natural history at Edinburgh) informs Mr. Pennant, that flocks of these birds appear constantly every year in the neighbourhood of that city³.

As for cross-bills, they are seen more and more in different parts of England, since there have been so many plantations of firs: this bird is remarkably fond of the seeds of these trees, and therefore changes its place to those parts where it can procure the greatest plenty of such food^b.

This

² See also Br. Zool. Ill. p. 56.

^a These birds are said to be particularly fond of the berries of the mountain-ash, which is an uncommon tree in the Southern parts of Great Britain, but by no means so in the North.

^b This bird should also, for the same reason, be found from year to year in the cyder counties, if it was true (as is commonly supposed) that he is particularly fond of the kernels of apples, which it is conceived he can instantly extract with his very singular bill.

Mr. Tunstall, F. R. S. however, at my desire, once placed an apple in the cage of a cross-bill, which he had kept for some time in his very valuable and capital collection of live birds. Upon examining the apple a fortnight afterwards, it remained untouched. The notion of this bird, however, feeding on apple-kernels, is very ancient. A. D. 1251, quaedam aves mirabiles quæ nunquam in Angliâ antea visæ crant, in pomeriis maxime

This flitting therefore by no means amounts to a total and periodical migration over seas; but is no more than what is experienced with regard to several birds.

For example, the British Zoology informs us^c, that, at an average 40,000 dozen of larks are sent up from the neighbourhood of Dunstable to supply the London-markets; nor do I hear, upon inquiry, that there is any complaint of the numbers decreasing from year to year, notwithstanding this great consumption.

I should not suppose that 500 dozen of sky-larks are caught in any other county of England; and it should therefore seem that the larks from the more adjacent parts crowd in to supply the vacuum occasioned by the London epicures, which may be the cause possibly of a partial migration throughout the whole island.

I begin now to approach to something like a conclusion of this (I fear) tedious dissertation: I think, however, that I should not omit what appears to me at least as a demonstration, that one bird, which is commonly supposed to migrate across seas, cannot possibly do so.

A landrail^d, when put up by the shooter, never flies 100 yards; its motion is excessively slow, whilst the legs hang down like those of the water-fowls which have not web feet, and which are known never to take longer flights.

This bird is not very common with us in England, but is excessively so in Ireland, where they are called corn-creaks.

Now those who contend that the landrail, because it happens to disappear in winter, must migrate across oceans, are reduced to the following dilemma.

maxime apparuerunt, pomorum grana & non aliud de eisdem pomis comedentes. Habebant autem partes rostric ancillatas, per quas poma quasi forcipe dividerunt. Matthew Paris, p. 825. & additamenta, p. 263.

^c P. 235.

^d Br. Zool. p. 387.

They

They must first either suppose that it reaches Ireland periodically from America; which is impossible, not only because the passage of the Atlantic includes so many degrees of longitude, but because there is no such bird in that part of the globe.

If the landrail therefore migrates from the continent of Europe to Ireland, which it must otherwise do, the necessary consequence is, that many must pass over England in their way Westward to Ireland; and why do not more of these birds continue with us; but, on the contrary, immediately proceed across the St. George's channel?

Whence should it arise also, if they pass over this island periodically in the spring and autumn, that they are never observed in such passage, as I have already stated their rate in flying to be excessively slow? To which I may add, that I never saw them rise to the height of twenty yards from the ground, nor exceed the pitch of a quail.

I have now submitted the best answers that have occurred, not only to the general arguments for the migration of birds across oceans, but also to the particular facts, which are relied upon as actual proofs of such a regular and periodical passage.

Though I may be possibly mistaken in many of the conjectures I have made, yet I think I cannot be confuted but by new facts, and to such fresh evidence, properly authenticated, I shall most readily give up every point, which I have from present conviction been contending for.

I may then perhaps also flatter myself, that the having expressed my doubts with regard to the proofs hitherto relied upon, in support of migration, may have contributed to such new and more accurate observations.

It is to be wished, however, that these more convincing and decisive facts may be received from islanders (the more distant from

from any land the better^e) and not from the inhabitants of a continent; as it does not seem to be a fair inference, because certain birds leave certain spots at particular times, that they therefore migrate across a wide extent of sea.

For example, storks disappear in Holland during the winter, and they have not a very wide tract of sea between them and England; and yet this bird never frequents our coasts^f.

The stork, however, may be truly considered as a bird of passage by the inhabitants of those parts of Europe (wherever situated) to which it may be supposed to resort during the winter, and where it is not seen during the summer.

I am, &c.

* I would particularly propose the islands of Madera and St. Helena; to these, I would also add the island of Ascension (had it any inhabitants), as likewise Juan Fernandez, for the Pacifick ocean.

^f Kempfer however mentions that storks continue throughout the whole year at Japan, vol. I. p. 129.

E S S A Y V.

ON THE TORPIDITY OF THE SWALLOW TRIBE,
WHEN THEY DISAPPEAR.

IN the foregoing treatise upon the migration of birds, the appearance and disappearance of the swallow-tribe hath necessarily been touched upon; but I think it better to reserve, for a separate dissertation, what more particularly relates to their being during the winter in a state of torpidity.

I have for many years attended carefully to the motions of these birds from the latter end of March to the latter end of April, at which time I have travelled into, or returned from, North Wales.

For the last twelve years the spring seasons in that part of Great Britain have been generally dry, the east winds prevailing during the month of April.

The consequence hath been, that on my journey towards Wales, or upon my arrival in the principality, I have perhaps seen a straggling swallow or swallows^a; but upon the weather growing

^a As often martins. I shall here subjoin a letter which I received from that ingenious and observant naturalist the Rev. Mr. White, of Selborne in Hampshire.

“DEAR SIR,

Selborne, Nov. 22, 1777.

You cannot but remember that the 26th and 27th of last March were very hot days; so sultry that every body complained, and were restless

G g

under

growing more severe, they have disappeared perhaps for a fortnight or more, so that I never have been able to procure any, though

under those sensations to which they had not been reconciled by gradual approaches.

This sudden summer-like heat was attended by summer coincidences; for on those two days the thermometer rose to 66 in the shade; many species of insects revived and came forth; some bees swarmed in this neighbourhood; the old tortoise near Lewes in Suffex awakened and came forth out of his dormitory; and, what is most to my present purpose, many house-swallows appeared, and were very alert in many places, and particularly at Cobham in Surry.

But as that short warm period was succeeded, as well as preceded, by harsh severe weather with frequent frosts and ice, and cutting winds, the insects withdrew, the tortoise retired again into the ground, and the swallows were seen no more until the 10th of April, when the rigour of the spring abated, and a softer season began to obtain.

Again: it appears by my journals for many years past, that house-martins retire, to a bird, about the beginning of October; so that a person not very observant of such matters would conclude, that they had taken their last farewell; but then it may be seen in my diaries also that considerable flocks discover themselves again in the first week of November, and often on the 4th day of that month, *only for one day*; and that not as if in actual migration, but playing about at their leisure, and feeding calmly as if no enterprize of moment at all agitated their spirits: and this was the case in the beginning of this very month; for on November the 4th more than twenty house-martins, which in appearance had all departed about the 7th of October, were seen again for that *one morning only* sporting in my fields, and feasting on insects which swarmed in that sheltered district. The preceding day was wet and blustering; but the fourth was dark and mild and soft, the wind at S. W. and the thermometer at $58\frac{1}{2}$, a pitch not common at that season of the year. Moreover, it may not be amiss to add in this place, that whenever the thermometer is above 50 the Bat comes flitting out in every autumn and winter-month.

From all these circumstances laid together it is obvious, that torpid insects, reptiles, and quadrupeds, are awakened from their profoundest slumbers by a little untimely warmth: and therefore, that nothing so much promotes this death-like stupor as a defect of heat. And farther it is reasonable to suppose, that two whole species, or at least many individuals

though I have sent people out with guns to shoot them. My inducement was to examine them upon their first appearance, and to see in what plight they might be, both as to case and plumage^b; as also what they might feed upon before many winged insects are to be found.

Upon my return towards London I have commonly seen five or six skimming over the river Clwyd^c, near the gate of the town of Ruthin, which is called Porthydwr.

After this, it hath commonly happened, that I have not observed any of this tribe of birds but at the distance of 20, 30, or 40 miles, and this always depending upon the approach to rivers or ponds, so that I could be tolerably certain where I might expect to observe them.

These circumstances seem to me very decisive, that swallows are concealed near the place where they begin to appear; and on first consideration of these facts it may be perhaps inferred, that these birds are all to be found under the water; it must however

dividuals of those two species of British hirundines, do never leave this island at all, but partake of the same benumbed state; for we cannot suppose that, after a month's absence, house-martins can return from southern regions to appear for *one morning in November*, or that house-swallows should leave the districts of Africa to enjoy in *March* the transient summer of a *couple of days*.

I am, with great esteem,

Your obliged and humble servant,

GIL. WHITE.

^b I have been informed however by Mr. Cornish, an ingenious naturalist and surgeon at Tonnes, that he hath been more fortunate, and that the plumage of the birds look as usual, but that their bodies are much emaciated.

^c I need scarcely remind the reader of the old Greek proverb, translated into so many languages, "that one swallow does not make the *spring*."

be recollected, that they probably procure more food in such situations when on the wing, whatever may have been their winter residence. By the latter end of April the swallow-tribe appears in numbers.

I shall now state such facts as I have myself observed, or received from ingenious correspondents, in relation to each species of swallow, and without hesitation make my own inferences, leaving them to be corrected by those who may be more fortunate in collecting more decisive instances.

I shall begin with the *Swallow*, as Mr. Pennant does in his *British Zoology*^d; and premise that I mean the species whose tail is most fork'd, and which is mark'd with a red spot on the forehead and chin^e.

This bird appears the first of its tribe, and (as I conceive at least) hides itself under water during the winter, because, in the few instances where the relator hath been able to particularize the species thus found, it hath happened to be a swallow.

There is scarcely a treatise on ornithology, written in the Northern parts of Europe, which does not allude to the submerision of swallows during the winter, as a fact almost as well known as their peopling the air during the summer; and because the name of Linnaeus is respected by most of the incredulous on this head, I copy from him the following words in the description of the bird.

“*Hirundo* [*Rustica*], habitat in Europæ domibus intra tectum, “*unaque cum urtica demergitur, vereque emergit*.”

^d Vol. II. p. 282.

^e This distinguishes the bird at once to every reader; but, if I was to call it the *Hirundo Rustica* of Linnaeus, few would comprehend what bird I meant, as the continuing in the country is much more applicable to the sand martin.

^f *Systema Naturæ*, 1766. This authority indeed extends also to Martins.

It is also clear from the expression of *demergitur* (though perhaps not classical) that this naturalist conceived these birds hid themselves under water during the winter; and it is to be observed, that he seems to have stated it after a proper examination, because in the *Fauna Suecica*, published five years before, he omits the mention of this circumstance ^f.

As the instances of finding swallows under water are most common in the Northern parts of Europe, I shall begin with the testimony of the inhabitants of that part of the globe.

Mr. Peter Brown, a Norwegian and ingenious painter ^h, informs me, that from the age of 6 to 17, whilst he was at school near Sheen ⁱ, he with his companions hath constantly found swallows in numbers torpid under the ice, which covered bogs, and that they have often revived upon being brought into a warm room ^k.

Baron Rudbeck, a Swedish gentleman, who was not long since in England, hath assured me that this fact was so well known in Sweden as to leave no doubt with any one.

^f Isaac Biberg, in his Dissertation on the Oeconomy of Nature, read before the Academy of Upsal, states the submerision of swallows as a known fact in that part of the world.

Mr. Boyle took notice that swallows live under frozen water in the Baltic. Birch's Hist. R. S. Vol. I. p. 180.

The swallows, before they sink under water, sing their *swallow song*, as it is called, *and every one knows*. Pontoppidan, part II. p. 98.

See many well-attested instances of swallows being so found in the Northern Parts of Germany. Klein.

^h Author of the *New Zoology*. He lives at N^o 85. Queen Ann Street, East.

ⁱ N. Lat. 59.

^k The best way, however, of awakening them from their torpid state is, to put them into one's bosom, or hold them in one's hand, as Mr. Cornish, an ingenious surgeon of Totness, in Devonshire, hath informed me, who hath made many curious experiments upon bats in that state.

Mr.

Mr. Stephens, A. S. S. informs me, that when he was 14 years of age, a pond of his father's (who was vicar of Shrivenham in Berkshire) was cleaned during the month of February, that he picked up himself a cluster of three or four swallows (or martins) which were caked together in the mud, that the birds were carried into the kitchen, on which they soon afterwards flew about the room, in the presence of his father, mother, and others, particularly the Rev. Dr. Pye. Mr. Stephens also told me that his father observed at the time, he had read of similar instances in the Northern writers. Though I have stated these birds to have been either swallows (or martins) I rather suppose them to have been the former, from their being found under water.

The compilers of the Encyclopedie (art. Mort.) have inserted the following observation and fact in relation to swallows discovered in the same situation.

“Plusieurs oiseaux passent aussi tout l'hyver sous les eaux, telles sont les *hirondelles*, qui loin d'aller suivant *l'erreur populaire* fort *accréditée*, dans les climats plus chauds, se precipitent au fond de la mer, des lacs, & des rivieres, &c.”

It is there also stated, that Mr. Falconet, a physician, living at Paris, had seen in one of the provinces, “une masse de terre que les pecheurs avoient tirée de l'eau; apres avoir lavée & debrouillée, il appercut que ce n'etoit autre chose qu'un amas d'hirondelles,” which, on being brought to the fire, revived, the fishers declaring that this was not uncommon.

The late ingenious Mr. Stillingfleet informs us, that one swallow's being found at the bottom of a pond in winter, and brought to life by warmth, was attested to him by a gentleman of character¹.

Some years ago the moat of Aix-la-Chapelle was cleaned during the month of October, and the water let out for that purpose,

¹ Misc. Tr. p. 106.

when

when on the sides of the moat, and much below the parts which had been covered with water, a great number of swallows were seen to all appearance dead, but their plumage not impaired.

DuTertre mentions, that a Russian of credit had told him, that, a piece of ice in a village of Muscovy having been brought into a house with swallows in it, they all revived ^m.

There are several reasons why swallows should not be frequently thus found; ponds are seldom cleaned in the winter, as it is such cold work for the labourers, and the same instinct which prompts the bird thus to conceal itself, instructs it to choose such a place of security, that common accidents will not discover it.

But the strongest reason for such accounts not being more numerous, is, that facts of this sort are so little attended to; for though I was born within half a mile of the pond near Shrivensham, and have always had much curiosity with regard to the natural history of animals, yet I never heard a syllable about this very material and interesting intelligence till very lately.

To these instances I must also add, that swallows may be constantly taken in the month of October, during the dark nights, whilst they sit on the willows in the Thames; and that one may almost instantaneously fill a large sack with them, because at this time they will not stir from the twigs, when you lay your hands upon them. This looks very much like their beginning to be torpid before they hide themselves under the water.

A man near Brentford says, that he hath caught them in this state in the eyt opposite to that town, even so late as November.

I shall conclude the proofs on this first head by the dignified testimony of Sigismond King of Poland, who affirmed, on his

^m Vol. II. p. 260. Paris, 1667.

oath, to Cardinal Commendon^a, that he had frequently seen swallows which were found at the bottom of Lakes.

I shall now proceed to the second species of the swallow-tribe, called a *martin*, which hath no colours but black and white, hath a shorter tail than the preceding, and builds commonly under the eaves of houses.

I may be mistaken, but I shall here again hazard a conjecture that this species does not hide itself under water during the winter, but rather in the crevices of rocks or other proper lurking places above ground, as most of those which have been discovered in such situations have been martins.

The instances of this sort are so numerous from all parts, that to bring them within a moderate compass I must only select a few of them; promising those who are incredulous, that I can most readily furnish many more than I shall now produce.

I shall begin with a letter dated at Towyn in Merionethshire, dated March 22 1773.

EXTRACT from a Letter relative to torpid MARTINS.

“ SIR, *Towyn, Merionethshire, March 22, 1773,*

I received yours; and according to your desire I made as much enquiry as I could concerning the swallows. Richard Hugh, a boatman at Aberdysfyny, tells me, that he lived with Mr. Anwyl about twenty years ago, when they were found by Mr. Anwyl himself, who ordered him, with some others of his servants, to go along with him to see them; and the said Richard Hugh really believes that there were some thousands of them; and Mr. Anwyl, with his own hand, put some of them into a part of the

^a See the Life of that Cardinal, p. 211. Paris, 1671, 4to.

cliff which remained in the rock, they could at first scarcely perceive life in them, but soon they began to crawl a little, then they carried some into the house, and held them near the fire, when they became pretty lively. Richard Hugh cannot recollect who was the person that saw them beside himself and Mr. Anwil, neither can he remember exactly what month it was; but he is ready to make oath, that it was a very uncommon time of year to see swallows, and to the best of his memory it was either the latter end of January or the beginning of February. I went to Mr. Griffith Evans at Tymaur, to ask whether he had heard any thing of them; and he told me, that he now well remembers to have heard Mr. Anwill telling a deal about them, how remarkable it was to see them at such time of the year, and he believes it was about twenty years ago; and Mr. Griffith Evans says he is positive that it is true. Also one Hugh Richard, a very credible old man in this town, says, that he really heard Mr. Anwil mentioning them."

I have another account of the same sort with regard to swallows (or martins) being discovered, about 16 years ago, at Yew-Law Castle, near Hawarden, in Flintshire.

I have received also the same kind of information relative to torpid swallows, in Carnarvonshire, and Cattleton in Derbyshire.

Sir William Beilers told the late Dr. Chauncey that he happened to stop at a Fisherman's house in Cornwall, whose net had been much torn by a large clod of earth, which, upon being examined, was very full of swallows, that awaked from their torpidity upon being brought near the fire. I should rather suppose however that they were martins, from the circumstance of their being found in a large clod of earth, which had probably dropt from the bank a little while before.

By a letter from Dr. Finley, Provost of the college of New Jersey, dated May 1, 1765, to the late Dr. Chandler, and soon afterwards communicated to the Royal Society, it appears that the same notion prevails in America, with regard at least to some species of their swallows. Kalm also mentions their being found torpid in holes and clefts of rocks near Albany °.

Dr. Pallas gives an account that on the 18th of March a swallow (perhaps martin) was brought to him, near Ufa, which had been found in a field, to all appearance lifeless, but having remained a quarter of an hour in a warm room, it flew about, and lived some days, till killed by accident †.

Mr. Cornish, an ingenious surgeon, who resides at Totness in Devonshire, was fishing in the river Dart, at the beginning of November, 1774, and on a very warm day observed several martins issuing from some large rocks, overgrown with ivy and thicket. On this appearance, at such a time of the year, he desisted from his amusement, that he might more attend to the motions of these birds, which had been brought out of their winter-quarters by the fineness of the weather, the sun at that time shining strong on the rocks. They continued to flit backwards and forwards for almost half an hour, keeping very near together, and never flying in a direct line, nor when at the farthest above a hundred yards distant from the rocks, closer to which they now (as the sun lowered) began to gather very fast. Their numbers were then lessened considerably, and in a very short time they all returned to the fissures of the rocks, from whence they had been induced to venture out by the warmth of the evening. Mr. Cornish concludes this account by asserting very positively, that there was not one swallow amongst these martins ‡.

° Vol. II. p. 146.

† Pallas's Travels through the Russian Territories, part II. book I. p. 13. Petersburg, 1773.

‡ Phil. Transf. vol. LXV. part I. p. 343.

The same ingenious naturalist afterwards mentions, that he hath seen martins at Totness in the months of December^r and January, though he never observed a swallow at that season; in which fact he is confirmed by a person whose name is Didham, and who saw two martins on the 26th of December at a place called Syfferton^s.

I shall here subjoin other facts of the same kind, which I have received from the same good authority.

Mr. Manning, a surgeon of reputation in Kingsbridge, when a boy, and in search of sparrows nests, on a headland called the Hope, pulled out from under the thatch of an uninhabited house great numbers of swallows (or martins) which he considered as dead, but they afterwards revived; and their number amounted to more than 40. Mr. Manning recollects the fact at present as if it had been more recent, and likewise remembers, that the plumage was in perfect order; which was the case also with some martins, which I received myself during the winter, from Camerton in Somersetshire, in which there was not the least mark of putrefaction.

Another person drew out a great number of martins from the wall of an old castle in Wales during winter, and the heat of his hands recovered some of them so as to fly.

Again, a plumber in Mr. Cornish's neighbourhood hath made a solemn deposition, that being at work on the leads of Forabylhouse (situated on the sea-coast in Torbay) early in the spring, he found in some of the cisterns several martins: that he at first believed them to be dead; but as they looked not at all decayed, he began to suppose they might be only asleep, and that in consequence of this idea, curiosity tempting him to hold one of them

^r He observed some so recently as the 7th of December, 1778.

^s Phil. Transf. vol. LXV. part I. p. 346 and 349.

in his hand for a few minutes, the bird became strong enough to fly two or three yards.

Kyrcher speaks of a deep cavern high up the Teverone, which the mountaineers told him was never left by the swallows in winter[†].

The Rev. Dr. Bosworth observed five swallows (or martins) creep out of the wall of Merton College, Oxford, during the month of January, which returned again to their dormitories on the weather becoming colder.

Mr. Hooper, F. R. S. hath informed me, that martins were seen at Christchurch in Hampshire so late as Christmas, in 1772, when the flies also began to be troublesome. I shall here subjoin the words of a letter on this subject from an eye-witness, "As my neighbours and self were standing in the churchyard[‡], we told fourteen on the wing at one time, near the East end of the church, and could see others flying about over my house, and different parts of the town." Mr. Rickman went home, and immediately wrote the following memorandum in his almanack: "Dec. 9, 1772. This day a considerable number of martins or swallows were seen round the church. They were in indefinite numbers (as during the summer), and flew with as much velocity as at that time of the year. They decreased daily till the 23d of December, after which I have not heard of one being seen."

I have also received an account of two swallows or martins appearing on the 21st of December, in this same year, *viz.* 1772, at or near the town of Pool, in Dorsetshire.

I am lastly informed, by an intelligent servant of the Right Hon. Mr. Mackenzie, that being with his master at Lord Strafford's

[†] Latium Vetus.

[‡] Sc. of Christchurch.

in Yorkshire, seven or eight years ago, the latter end of October, a conversation began with the game-keeper about swallows crossing the seas; which the game-keeper disbelieved, because he said he could then carry any one to some neighbouring coalworks, where he was sure of finding them by that time. On this many of the servants attended him to the coalpits, where several martins were observed in a torpid state, but shewed motions of life upon their being brought near to the fire.

Most of these instances are so well attested, that I conceive it cannot be disputed by any one, that martins at least appear occasionally throughout the winter, whenever the weather is remarkably mild, and which agrees with what Sir William Hamilton hath informed me, in relation to his scarcely ever passing between Naples and Pozzuoli without seeing some of these birds, when the season at that time of the year was temperate.

With regard to the third species of swallows, the sand martin, I have never been able to collect a decisive instance of their being observed at all during the winter, though possibly sometimes not distinguished from the more common martin; I will not therefore pretend to conjecture what may be their peculiar lurking places, though I conceive that they undoubtedly have such. I have however been negatively informed that they are not found in the holes where they make their nests. This bird is commonly so distant from the habitation of man, and is so much in the dark, that its habits are not easily attended to.

As for the fourth species, called the *Swift*^x, which is well known by its superior size, and being almost entirely black, Linnæus asserts, that it winters in the holes of churches^y.

^x Hirundo Apus.

^y Templorum foraminibus.

I have

I have however the following instance of their sometimes chooting other places of concealment.

The Rev. Mr. Williams of Bishop's Waltham in Hampshire found three Swifts in the battlements of an old flint tower belonging to that town during the winter, which being brought into a warm room shewed signs of life, but afterwards hanging them up in a paper bag close to the kitchen fire they were either stifled by the closeness of the bag, or killed by the too great heat. See also an instance of three Swifts being found in an old oak during the winter, which, on being laid before the fire, soon recovered strength enough to fly about the room, though they died soon after². Aristotle indeed asserts, that in Greece the Swift never disappears, *φανεται δὲ μὲν ἀπὸς πάντων ὡραν*³.

I shall now endeavour to corroborate these facts with regard to most of the species of swallows being observed during the winter either in a torpid state, or on the wing, by some other proofs, which seem to make strongly against the periodical migration of such birds across oceans.

They who maintain this opinion, always suppose that these birds pass to the northward upon the approach of spring, in great flocks; of which however I have not been able to find any instance in what hath been printed on this subject, except what is stated in the Philosophical Transactions, of a number having lighted upon the sails of Sir Charles Wager's fleet in the Channel. I flatter myself also, that I have (in a previous essay) fully answered any inferences to be drawn from this relation in support of migration; and must likewise repeat, that such instances must happen as regularly as the return of the seasons, did swallows then pass to the northward.

² Phil. Transf. Vol. LXV. p. 347. and another instance, p. 349.

³ Arist. de Hist. Anim. L. I. c. 1.

But this is not all, as if I can depend upon my own observations, as well as those of others, swallows should, according to this supposition, always first appear in flocks on the Southern coast of this island; whereas they are seen but in small numbers, dispersed almost equally over all parts of it, and if any cold weather happens they then immediately disappear, being observed in the same numbers again when the mild weather is more confirmed, and are afterwards joined by myriads from every lurking place and retreat.

All animals are endowed with a providential instinct to avoid what may be prejudicial to them, and therefore it should seem that the swallow tribe would never leave the coast of Africa in their spring migration to the Northward till a month later than they generally appear, as then there would be no occasion for a sudden retreat on the frosts, which are so frequently experienced in the early parts of our spring. Lying however in their torpid state they cannot resist the mild influence of the first genial weather, but know where to secure themselves when it becomes severe.

That the swallow-tribe are concealed during the winter, not far from the place where they have been hatched, may be inferred from the following facts.

Mr. Stephens, F. S. A. hath informed me that martins continued to have a nest for 16 years together in the hall of an old house which belongs to him at Camerton in Somersetshire, though the door was constantly shut during the night, and sometimes for a few hours during day-light, when the parent birds must have been not a little impatient to feed their nestlings.

The same fact hath been attested to me by Mr. Sanxay, with regard to the porch of a gentleman's house in Derbyshire^b, though

^b John Burrows, Esq. of Overstone, near Derby.

the birds did not continue to build for so many years as in the preceding instance.

The following fact relates to a swallow which built for two years together on the handles of a pair of garden sheers, that were stuck up against the boards in an outhouse; and, what is stranger still, another bird of the same species made its nest on the wings and body of an owl that happened by accident to hang dead, and dry, from the rafter of a barn. This owl, with the nest on its wings and eggs, was brought to Sir Ashton Lever, who desired the person that furnished him with this curiosity to fix a large shell where the body of the owl had hung. The person did as he was ordered, and the following year a nest was made and eggs laid in the shell by a pair of swallows^c.

Now it is clear, from these well-attested instances, that both martins and swallows choose to build, for a succession of years, in the same place^d, though an inconvenient one, and is it to be sup-

^c The nest, eggs, and shell, are now also to be seen in Sir Ashton Lever's Museum.

^d Kalm, in his account of N. America, informs us, that Dr. Franklin's father lived near two rivers, in the one of which herrings constantly were observed, but not in the other. Mr. Franklin therefore made an experiment, by removing some of the spawn, which occasioning a breed in the second river, herrings were afterwards observed at the proper season, as frequently as in the other, the grown herrings depositing their spawn where they had been hatched themselves. Kalm, vol. I. p. 294. This fact seems to prove that fish, as well as birds, always breed in the same places; and it may be therefore asked why a bird ever builds a new nest. To this I answer, that the materials of some are destroyed by the winter; but where they are not thus rendered useless, and are out of the reach of man, it is commonly observed that the same nest, with some trifling repairs, serves for several years. Witness those of herons, kites, and rooks, all of which I have seen in the same field at Sir Nicholas Baily's, in the island of Anglesey, and which were constantly upon the same trees.

posed that they constantly return to the same spot from the coast of Africa, rather than they should be torpid during the winter, in no very distant place of concealment.

But they who maintain that swallows periodically leave Europe and proceed to Africa, rely much upon their being seen to congregate not long before they disappear, which happens however with regard to many other birds, and the assemblage consists of the first brood, who are left by their parents to shift for themselves, swallows and martins uniting.

This therefore seems to arise from such birds considering themselves as rather in a defenceless state, unless

Defendit numerus.

That this is the fact, particularly with the swallow tribe, appears by the repeated observations of that attentive and ingenious naturalist the Rev. Mr. White*.

It is well known that the swallow and martin have two broods every year, and consequently that their first nestlings must be abandoned by the parents: how therefore are the produce of the first nest to be conducted over the Atlantic from Great Britain and Ireland, to Africa?

How also can it be expected, that the second brood, which I have known myself to be hatched in October, should be equal to such a passage, in which they have no insects to feed upon, and in which they never seem to have been observed by any ship at a considerable distance from land, or by any person on shore, who can properly assert that they were bent on such periodical migration?

I will here add an observation which relates to the Swift only. This bird, by the length of its wings, is certainly better calculated

* Of Selborne, in Hampshire. See Phil. Trans. vol. LXXV. p. 261.

for a long flight than any of the swallow-tribe, and yet it is the latest comer, and disappears the earliest of this whole genus^f, long before the insects on which it feeds are wanting.

But this is not all. When this bird is first seen in the spring it is all over of a glossy dark soot colour (except their chins, which are white); but by being for a considerable time in the sun and air, they become weather-beaten and bleached before they disappear^g?

Now would not this alteration in the colour be occasioned by their passage over the Atlantic, and do we not know that the quicker the motion is, and the longer continued without intermission, the more our own skins and hair are changed; and are we not to suppose that the same effects will be produced on the feathers and hairs of other animals?

I will now beg leave to state another objection to the migration of swallows from Europe to Africa, which is, that if this conjecture is true, the same thing must hold with regard to the Northern and Southern parts of Asia. On the contrary, I am informed, that swallows hide themselves in the banks of the Ganges during what are called the winter months in that part of the world. Du Tertre likewise mentions, that the few swallows seen in the Caribbee Islands are only observed in the summer, as in France.

Now we are assured, by Dr. Pallas, that they have not only swallows in Russia and Siberia, but that on the banks of the Okka, which empties itself into the Wolga, in N. Lat. 57, on frost taking place about the 4th of August, they disappeared for that year^h.

^f Viz. At the latter end of April and August, Phil. Transf. vol. LXV. p. 264, et seq.

^g Phil. Transf. vol. LXV. p. 269.

^h Pallas's Account of his Travels through Russia.

These birds therefore should, according to the hypothesis of migration, have been passing to the more Southern parts of Asia, but I do not find it observed by any Asiatic traveller that they have the same species of hirundines with us, or that they are only seen in those parts during our winter.

Between what hath been advanced in the preceding and present dissertations, the arguments against the periodical migration of swallows have filled many pages, and it may be right to bring them to a conclusion, by answering an objection which is much relied upon by those who maintain the contrary opinion.

It is frequently asked by these, where and when the swallow moults, if this does not happen in parts of the globe to the Southward of Europe.

To this I do not pretend to answer by informing them where or when these birds change their feathers; but I may equally ask the question with regard to nine of the birds out of ten which have been described by naturalists, because we are entirely un-informed about this matter, except in relation to those which we usually eat, or keep in cages.

It is true, that most, if not all of these, commonly moult with great regularity; but it is also known that there are often exceptions to every general observation or rule; nor do I see why it is more necessary that every bird should moult, than that every fish should not have wings, which would have been most confidently maintained by the old naturalists who were unacquainted with the flying fish.

Again, it is part of the known definition of a bird to be an animal covered with feathers, and yet those of the Cassowary and the Silky fowl of the East Indies rather resemble hairs than plumage; and this is the case so strongly with the latter, that it hath

given occasion to the imposition at Bruffels, where they are shewn as the mix'd breed of a fowl and rabbit.

I therefore do not conceive it to be absolutely necessary that this tribe of birds should change their feathers at all, or perhaps they may do so only the second or third year, and at a time different from that in which other birds moult.

But I will now ask the direct question of the partisans of migration, whether the feathers are renewed whilst the swallow tribe are in Africa during the winter ?

Now in all the birds which we are well acquainted with, moulting begins in the autumn ; and therefore if swallows drop their plumage in Africa during the winter, it is nearly as much contrary to what happens in relation to the change of feathers in other birds, as the not being liable to any change at all.

It is not also absolutely impossible that these birds may moult during the time of their concealment, to which the fact already mentioned of the Swift's plumage being most bright and glossy, when it first appears in the spring, seems to give some countenance, and Aristotle asserts, that this happens to the *τρυγών* (commonly rendered the turtle-dove) whilst it is hid¹.

How little do we know, with accuracy, in relation to the renewal of our own hair ; which I rather believe to be brought about by such degrees as to be almost imperceptible, nor are the hair-cutters, or friseurs, perhaps capable of giving us any material information on this head.

Whatever weight, however, these answers may be thought to carry with them, it is as much incumbent upon those who maintain the migration of swallows from Europe to Africa, to inform us where and when they moult, as it is upon those who deny that they pass from one continent to another.

¹ *φάσις*. Arist. Nat. Hist. L. viii. c. 16.

E S S A Y VI.

ON THE PREVAILING NOTIONS WITH REGARD
TO THE CUCKOW.

THOUGH it hath been so implicitly believed for centuries, that the cuckow neither hatches nor rears its young, I hope to be permitted to express my doubts, with regard to this most unnatural neglect in the parent bird being general.

I find that this most prevailing opinion takes its rise from what is said by Aristotle, in the ninth book, and twenty-ninth chapter, of his Natural History, who there asserts, that the cuckow does not build a nest itself, but makes use most commonly of those of the wood-pigeon, hedge-sparrow, lark, (which he adds are on the ground) as well as that of the *χλωρίς*^a, which is in trees.

Now if we take the whole of this account together, it is certainly not to be depended upon; for the wood-pigeon^b and hedge

^a The *χλωρίς* is rendered *luteola*; but, as there is no description, it is difficult to say what bird Aristotle here alludes to; Zinanni supposes it to be the greenfinch.

^b The wood-pigeon, from its size, seems to be the only bird which is capable of hatching, or feeding, the young cuckow; yet, if it is recollected that this bird lives on seeds, it is probable that the cuckow, whose nourishment is insects, would either be soon starvtd, or incapable of digesting what was brought by the foster-parent. This objection is equally applicable to the *χλωρίς*, if it is our greenfinch.

sparrow.

sparrow do not build upon the ground, and it is believed that no one ever pretended to have found a cuckow's egg in the nest of a lark, which, indeed, is so placed. It is likewise to be observed, that the witnesses often vary with regard to the bird in whose nest the cuckow's egg is deposited^c; and Aristotle himself, in the seventh chapter of his sixth book, confines the foster-parents to the wood-pigeon and hedge-sparrow, but chiefly the former.

In the age^d of Aristotle is considered, when he began to collect the materials for his Natural History, by the encouragement of Alexander after his conquests in India^e, it is highly improbable he should have written from his own observations. He therefore seems to have hastily put down the accounts of the persons who brought him the different specimens from most parts of the then known world.

Inaccurate, however, and contradictory as these reports often turn out, it was the best compilation which the ancients could have recourse to; and Pliny therefore professes only to abridge him, in which he often does not do justice to the original.

Whatever was asserted by Aristotle, is well known to have been most implicitly believed, till the last century; and I am convinced

^c Thus Linnæus supposes it (in the Fauna Suecica) to be the white wagtail, which bird builds in the banks of rivers, or roofs of houses, (See Zinanni, p. 51.) where it is believed no young cuckow was ever found.

^d He did not leave the school of Plato till the age of thirty-eight (or, as some say, forty); after which, some years passed before he became Alexander's preceptor, who was then but fourteen: nor could he have written his Natural History, probably, till twelve years after this, as Pliny states that specimens were sent to him by Alexander, from his conquests in India. Aristotle therefore must have been nearly sixty when he began this great work, and consequently must have described from the observations of others.

^e Pliny, L. viii. c. 16.

that

that many of the learned in Europe would, before that time, not have credited their own eyesight against what he had delivered.

There cannot be a stronger proof that the general notion about the cuckow arises from what is laid down by Aristotle, than the chapter which immediately follows, as it relates to the goatfucker, and states that this bird fucks the teats of that quadruped.

From this circumstance, the goatfucker hath obtained a similar name in most languages, though it is believed no one (who thinks at all about matters of this sort) continues to believe that this bird fucks the goat^f, any more than the hedgehog does the cow.

I beg leave, however, to explain myself, that I give these reasons only for my doubting with regard to this most prevailing opinion in relation to the cuckow; because I am truly sensible that many things happen in nature, which contradict all arguments from analogy, and I am persuaded, therefore, that the first person who gave an account of the flying fish, was not credited by any one, though the existence of this animal is not now to be disputed. All that I mean to contend for is, that the instances of such extraordinary peculiarities in animals, should be proportionably well attested, in all the necessary circumstances.

I must own, for example, that nothing short of the following particulars will thoroughly satisfy me on this head.

^f See Zinanni, p. 95. who took great pains to detect this vulgar error. Though it now is agreed both by Ray Buffon and Pennant, that the porcupine does not shoot its quills, yet this notion will continue to be believed perhaps for centuries, and Linnæus hath stated in the 12th edit. of his *Systema Naturæ*, “quod spinas in hostem jaculare valet non extrahendas.” Bosman also in his voyage to Guinea asserts, that the animal really does so. We are always ready to suppose that we see what we have no doubt with regard to. How long was the poisonous effect of the Tarantula, and Ants hoarding for winter, credited?

The

The hedge-sparrow's nest must be found with the proper eggs in it, which should be destroyed by the cuckow, at the time she introduces her single egg^f. Aristotle asserts this to be the fact; but Pliny says, all the eggs are hatched.

The nest should then be examined, at a proper distance, from day to day, during the hedge-sparrow's incubation, as also the motions of the foster-parent attended to, particularly in feeding the young cuckow, till it is able to shift for itself^h.

As I have little doubt that the last-mentioned circumstance will appear decisive to many, without the others which I have required, it may be proper to state my reasons, why I cannot consider it alone as sufficient; though Willoughby gives it as his chief argument for believing the popular notion.

There is something in the cry of a nestling for food, which affects all kinds of birds, almost as much as that of an infant, for the same purpose, excites the compassion of every human hearer.

I have taken four young ones from a hen skylark, and placed in their room five nestling nightingales, as well as five wrens, the greater part of which were reared by the foster parentⁱ.

^e I could also wish that the following experiment was tried. When a hedge-sparrow hath laid all her eggs, a single one of any other bird, as large as a cuckow, might be introduced, after which if either the nest was deserted, or the egg too large to be hatched, it would afford a strong presumption against this general opinion: and would also shew whether the cuckow throws out the five eggs of the hedge-sparrow, and whether the single cuckow egg is deposited upon removing the first or all of them?

^h A notion prevails in many parts, that the hedge-sparrow is at last swallowed by the cuckow.

ⁱ I am persuaded that a cuckow is oftener an orphan than any other nestling, because, from the curiosity which prevails with regard to this bird, the parents are eternally shot.

It can hardly in this experiment be contended, that the skylark mistook them for her own nestlings, because they differed greatly, not only in number and size, but in their habits, for nightingales and wrens perch, which a skylark is almost incapable of, though, by great assiduity, she at last taught herself the proper equilibrium of the body. If ducks are turned over to a hen turkey she will generally take as much care of them as of her own brood, and I have been most credibly informed, that a rabbit hath been rear'd by a cat. Lucretius is therefore mistaken when he assigns the following reason for each species of birds not varying from the prototype:

Nec ratione aliâ proles cognoscere matrem,
Nec mater possêt prolem.

I have likewise been witness of the following experiment: two robins hatched five young ones in a breeding cage, to which five others were added; and the old birds brought up the whole number, making no distinction between them.

The *Aëdologie* also mentions (which is a very sensible treatise on the nightingale^k) that nestlings of all sorts may be reared in the same manner, by introducing them to a caged bird, which is supplied with the proper food. In the same manner the ducklings hatch'd by artificial heat in China, are immediately put under old ones, who nurture them^l.

Not only grown birds, however, attend to this cry of distress from nestlings, but young ones also which are able to shift for themselves.

I have seen a chicken, not above two months old, take as much care of younger chickens as the parent would have shewn to them which they had lost, not only by scratching to procure them food,

^k Paris, 1771.

^l Mandeslo's Travels, p. 225.

but by covering them with her wings ; and I have little doubt but that she would have done the same by young ducks.

I have likewise been witness of nestling thrushes of a later brood being fed by a young bird which was hatched earlier, and which indeed rather over-crammed the orphans intrusted to her care ; if the bird however erred in judgement, she was certainly not deficient in tenderness, which I am persuaded she would have equally extended to a nestling cuckow.

An instance moreover is recorded by Dr. Birch of two pigeons (not more than seven weeks old) sitting on supposititious eggs, and not only hatching, but rearing them^m.

If it is considered, that with regard to the nurture of young birds there can be no difficulty but on the part of the dam, half the wonder of many of the foregoing instances must immediately cease, when it is recollected, that if nestlings perfectly fledged are taken, they are as ready to receive their food from man as from the parent bird, and are as clamorous for it. As these advances are therefore constantly made on the part of the infant brood, there can be but one reason for withholding the food that is implored, which is the foster-bird's being a hen, with a large brood of her own, under which circumstances even it hath been proved that she is willing to rear them, for there seems to be a pleasure and perhaps pride in other animals, as well as man, to have their dependents. Nor is assiduity wanting on the part of the nestlings to preserve the continuance of this protection by every coaxing endearment on their part, which, if man becomes the foster parent, is equally shewn to him. Nor is this merely dissimulation, in order to procure food and nurture, for they are enlivened by his presence after a hearty meal, and

^m See a letter from Dr. Wallis, History R. S. vol. I. p. 313.

pine during his absence. A French gentleman, whose name is Morifette, hath shewn me frequent proofs of this in his young chickens, which were hatched in ovens. These of course were fed by his servant till they were of an age to be turned into a little garden, when they would not run about, and feed kindly, unless the old woman was present who had reared them, and who therefore had a particular feat, in which she continued the greatest part of the day, whilst the chickens played round her, and endeavoured to jump into her lap.

The young cuckow therefore being fed by a hedge-sparrow or other bird seems to afford no irrefragable proof of having hatched the cuckow's egg, because, if she hath young ones of her own, it appears from some of the preceding facts, she will probably take to this large foundling, and much more so if she hath lost her own brood, or perhaps they have forsaken her, on being completely fledged.

A cuckow is certainly a gigantic orphan to be nourished and protected by a hedge-sparrow; but all animals love society, let the disparity in size be what it may.

I shall here, on this head, subjoin part of a letter which I have received from my often-mentioned correspondent the Rev. Mr. White, of Selborn, in Hampshire.

“ There is a wonderful spirit of sociality in the brute creation independent of sexual attachment. The congregating of gregarious birds in the winter is a remarkable instance. Many horses, though quiet with company, will not stay one minute in a field by themselves; the strongest fences cannot restrain them. My neighbour's horse will not only not stay by himself abroad, but he will not bear to be left alone in a strange stable, without discovering the utmost impatience, and endeavouring to break the rack and manger with his fore-feet: he has been known to leap

out at a stable-window after company ; and yet, in other respects, is remarkably quiet. Oxen and cows will not become fat by themselves, but will neglect the finest pasture that is not recommended by society. It would be needless to instance in sheep, which constantly flock together.

But this propensity seems not to be confined to animals of the same species ; for we know a doe, still alive, that has lived ever since it was a little fawn, with a dairy of cows ; with them it goes a-field, and with them it returns to the yard. The dogs of the house take no notice of this deer, being used to her ; but if strange dogs come by, a chase ensues ; while the master smiles to see his favourite securely leading her pursuers over hedge, gate, or stile, till she returns to the cows, who with fierce lowings and menacing horns drive the assailants quite out of the pasture.

Even great disparity of kind and size does not always prevent social advances, and mutual fellowship ; for a very intelligent person assured me, that in the former part of his life keeping but one horse, he happened also on a time to have but one solitary hen : these two incongruous animals spent much of their time together in a lonely orchard, where they saw no creature but each other. By degrees apparent regard began to take place between these two sequestered individuals. The fowl would approach the quadruped with notes of complacency, rubbing herself gently against his legs ; while the horse would look down with satisfaction, and move with the greatest caution and circumspection, lest he should trample on his diminutive companion. Thus by mutual good offices each seemed to console the vacant hours of the other. So that Milton, when he puts the following sentiment in the mouth of Adam, seems to be somewhat mistaken :

“ Much less can bird with beast, or fish with fowl,
“ So well converse ; nor with the ox the ape.”

The

The bare fact therefore that a hedge-sparrow, or other small bird, being observed to feed a young cuckow, is by no means satisfactory proof that the cuckow's egg was hatched by such a dam, especially as she must have continued to sit after her own five eggs had been removed; nor can we suppose that the cuckow could have deposited her single egg, without having perceived the intrusion of so large a stranger.

Can we presume again, that hedge-sparrows are not like other birds created to propagate their own species; but, on the contrary, chiefly for the purpose of hatching and feeding young cuckows?

That distinguished anatomist Mr. Hunter hath dissected several hen cuckowsⁿ, and found that they are as well formed for incubation as other birds^o; but supposing that they were not so, why does not the cuckow pitch upon the nest of a thrush or black-bird, rather than that of a hedge-sparrow, as both nest and dam of the former are so much nearer to the proper size, and the young cuckow therefore must have an infinitely better chance of being reared?

But other objections remain to the popular opinion, as, till all the proper circumstances are proved to establish the fact, we must reason from analogy.

If the hedge-sparrow (or other small bird) is a complete mother to the young cuckow, she must not only disregard the removal of her own five eggs, but the colour of them, for the

ⁿ Which were shot in the island of Bellisle during the winter.

^o This is not the case with the ostrich, which leaves her eggs in the sand, the legs of that bird being so long as not to be disposed of under her body, which would be scorched by the burning soil, as likewise the exclusion of the young too much accelerated by the united warmth of the sands and the dam. It need scarcely be observed, that an ostrich's nest must be on the ground.

cuckow's egg is not only much larger, but is of a dirty yellow spotted with black, whereas her own are of a fine pale blue.

Again, all other nestlings, whilst callow, want to be covered by the plumage of the dam; but how can this gigantic orphan receive such warmth from a hedge-sparrow?

The time, moreover, of the egg being hatched, is commonly in proportion to its size, the hedge-sparrow therefore would probably abandon it, supposing it to be added. I must also ask what is to become of the hen cuckow during the time that the hedge-sparrow is performing its parental functions; is she employed from day to day in dropping her single egg into other nests, in which circumstance likewise she differs from almost every other bird, as I do not recollect an instance of less than two, and the greater part lay five?

It will undoubtedly be urged, however, that all reasons from analogy are of little weight against positive facts, to which I most readily assent; but though I have made many inquiries about this extraordinary notion, I never could hear evidence of any other circumstance to support it, except that the young cuckow had been fed by a small bird; which I hope to have shewn is by no means sufficient to prove that it was also hatched by the hedge-sparrow. Of this latter circumstance nothing less than the hedge-sparrow's eggs being removed by the cuckow, her own single egg substituted in the place, and afterwards hatched, will convince me, as the proof of what contradicts the general laws of nature must be proportionally strong.

On the contrary, I have received several well-attested instances of cuckows hatching and feeding their own nestlings, which I shall here state.

I have been favoured by that eminent naturalist Mr. Pennant with the following, from a MS dissertation of Dr. Derham's:

“ The

“The Rev. Mr. Stafford was walking in Blossop-dale^p, and saw a cuckow rise from its nest, which was on the stump of a tree that had been some time felled, so as to resemble the colour of the bird. In this nest were two young cuckows; one of which he fastened to the ground by means of a peg and line; and very frequently, for many days, beheld the old cuckow feed these her young ones.”

I have been also furnished with two other instances of cuckow's nests, and the proper parents feeding their young, within four miles of London, and likewise on the S. Western coast of Merionethshire.

I remember myself having been in Herefordshire, not many years ago, when a girl brought a young cuckow to the house where I happened to be; and on my asking what sort of bird it was fed by, the girl answered, by such another, only somewhat larger.

From these facts it must be allowed, that all cuckows at least are not the unnatural parents they are commonly supposed to be.

I must however here repeat, that though I cannot but distrust the commonly received opinion from the time of Aristotle to the present, that I by no means take upon myself peremptorily to deny it, as I do not want to be convinced, that the general rules and instinct by which animals are actuated, may sometimes be broken through, notwithstanding the reason for such exception may not be very obvious.

I must however desire those who may perhaps be rather astonished that any one should presume to doubt what is so generally credited, to recollect what hath happened with regard to the

^p Derbyshire.

goat-fucker's supposed fucking the teats of quadrupeds, the bite of the Calabrian tarantula, the porcupine shooting its quills, or the effects of the moon upon madmen, though they are called lunatics.

The true philosophical temper is neither to credit nor disbelieve extraordinary facts too hastily :

Nil spernat auris, nec tamen credat statim.

PHÆDRUS.

Another notion with regard to the cuckow prevails, that during the winter it conceals itself in the stumps of trees, and which perhaps is as well attested, as the young cuckow's being hatched by the hedge-sparrow.

“ *Certum est cuculum hyeme latere in concavis arborum et lapidum¹.*”

“ *Cuculus hyeme in terræ lapidum et arborum cavis se abdit, in iisque per totam hyemem latet².*”

“ *Cuculus hyeme occultatur³.*”

“ *Cuculus hyeme in cavernis arborum latet, muta procedit vere, &c.⁴.*”

Willoughby relates, from Jo. Faber, a cuckow's being found in the winter which lived the two following years. He also cites Aldrovandus for the same notion ; as likewise accounts he had heard from his countrymen, though upon the whole he rather supposes this bird to migrate during the winter.

Though many of these citations are from men of learning, and positively assert cuckows being thus found, I shall leave them to

¹ Gesner citing Albert.

² Johnson's Nat. Hist. Amsterdam, 1659, fol.

³ Raczynsky Nat. Hist. of Poland, p. 277. Sandomiria, 1721.
Schwenfeld's Historia Avium Silesiæ. Lipsiæ, 1600.

the reader's judgement, the fact is as credible as that the young is hatched and reared by the hedge-sparrow, and perhaps better attested.

Another notion is very prevalent, that a young cuckow never lives long enough to make its call in the succeeding spring.

I have inquired much with regard to the truth of this opinion, and never could hear of but one instance^u, in addition to that before cited from Gesner, which was from a shopkeeper in Holborn, who informed me, that he had known this bird to have lived more than two years in a cage. I have myself indeed seen two cuckows, which having been reared by hand, did not die till the latter end of March, and appeared a few days before to be in perfect health.

There seems to be little doubt therefore, that cuckows having lived ten or eleven months may still survive this critical period of the succeeding spring, and I should conceive that the occasion of their usually dying about that time is the following.

Willoughby informs us, that he dissected the stomach of a cuckow, and found in it caterpillars, with other insects; when a young bird of this kind therefore happens to be caught, the succedaneum is commonly raw meat, cut into small pieces,

^u I have most recently indeed been furnished with another instance :

A very creditable old woman, who supplied Newgate-market with live poultry, hath frequently informed her customers, that having reared a young cuckow, it disappeared during the whole winter, and was concluded to have been killed; but in the spring it crept out of its lurking place, and was afterwards very lively. This old woman died about 10 years ago, aged 90, and was known by the name of Mother Bentham.

which equally answers for other nestlings who live on the same food*.

All animals throughout the creation eat as long as they can swallow, if they have plenty of food before them; and man only forbears what is equally pleasant to his palate, from the consideration of the bad consequences to his health, as also from the convenience and good society which attends stated meals.

Those animals which are granivorous seem to thus satiate themselves with impunity; some of these however chew the cud afterwards; and in those which do not, grass is certainly a food of very light digestion.

Carnivorous animals, on the other hand, have not their prey always lying before them, and are on that account calculated for long fasts. If you constantly supply them therefore with what they are at all times ready to devour, nature is counteracted, and the animal is short-liv'd.

Now I consider birds which live on insects as carnivorous, and Linnæus indeed asserts, that cuckows devour small birds in the autumn[†]; I am for this reason persuaded, that the nestlings reared in a cage die by over cramming themselves, when the bad effects of repletion are more likely to be experienced, as the spring approaches.

It is much to be wished indeed, for the illustration of Zoology, that many birds were not only reared, but kept for years in cages; nor is this so difficult a feat to accomplish as many may suppose.

* Robins, for example; but as they grow up it is commonly changed for vegetable, or at least great part of their food.

† I have some doubts with regard to the truth of this observation, as also what the same naturalist asserts about its devouring the foster water-wagtail.

I have

I have before observed, that raw meat cut into slices proportionable to the size of the nestling is a good succedaneum for insects, as is the common substitute given to young canary birds, for those nestlings which live on the produce of vegetables.

When the young ones are properly fledg'd the dam should be taken with them²; aft. which she will immediately feed them, at least I have seen frequent instances of this in robins and skylarks; nor can I conceive that the parental *στυγη* can be confined merely to these birds only. If the dam however cannot be caught, they who mean to rear the nestlings by hand should imitate her, in not cramming them too much, for she does not feed her young oftner than in five minutes, and then with a very small portion. If the nestlings also are hung in a cage near the spot where the nest was found, the dam will generally feed them; but such young birds are often destroyed by vermin, and are seldom very tame, though they may indeed be rendered so with no great trouble³.

I once prevailed upon a bird-catcher to try whether he could not rear some young martins by the promise of a guinea, if any one of them lived till Christmas; he did not catch the dam, however, as I wished him to do; and having fed the nestlings

² By birdlime, properly disposed near the nest, or in some situations by a net being put over her. The cock bird will also feed the young but is not so much to be depended upon as the hen.

³ The best means for effecting this is, to shew the animal that it is absolutely in your power, and that you mean notwithstanding to use it kindly. Take therefore a bird which hath been just caught, and carry it into a dark place, letting it perch upon your finger. The bird, in this situation, does not stir, and should be stroaked with the other hand, whilst occasionally it is permitted to perch upon another finger, placed under its breast. In nine or ten minutes introduce some light by degrees, and many small birds will instantaneously feed out of your hand.

for ten days, when they could fly, the whole brood died, by which he was so discouraged as never to have repeated the experiment, though it should seem, that having lived ten days they might have survived as many months, and perhaps years.

As these birds were martins, it perhaps might have been expected that they should have been torpid during the winter; but this sleeping state does not take place with some other animals of the same habits, when they are supplied with food and warmth, witness the bear, the viper, and the common fly, which under these circumstances are not only awake, but chearful and alert.

It is scarcely necessary to refute another vulgar error, which seems to have taken its rise from what is mentioned by Pliny, as he supposes the cuckow to become a hawk at the approach of autumn^b, and which possibly is also the occasion of the notion that it preys upon small birds at the same time of the year; this assertion being likewise advanced by the same authority.

Besides other material distinctions, the cuckow hath two claws before and two behind, whereas every hawk hath three before and only one behind. It is indeed rather surprising that this difference should have escaped Linnæus, when he gravely asserts, that this metamorphosis does not take place; but it is remarkable that the Swedish ornithologist considers the touraco^c as a cuckow, which hath three claws before, and only one behind.

Another notion prevails, that the froth seen on many plants is occasioned by this bird, and it is therefore termed *cuckow spit*;

^b There is likewise a prevailing notion, equally ill founded, that a land rail becomes a water-rail, which is at once refuted by the great difference between the bills of these two birds.

^c A most beautiful bird of Africa, of which there are two specimens in Sir Ashton Lever's Museum.

this

this however is now known to be the receptacle for the eggs of grasshoppers ; nor does the cuckow ever scarcely light upon the ground ; it therefore can as little deposit this froth, as feed upon the plant *arum*, which with us is called *cuckow pint*. Perhaps it is more probable both the one and the other may have obtained this name from their being seen at the same time that the cuckow appears, than that the bird occasions the former, or feeds upon the latter ^d, which is an early plant of the spring.

^d Arum is too acrid to be eaten by a cuckow, or probably any other animal ; nor did I ever see the least appearance of its having been touched.

ESSAY VII.

ON THE LINNÆAN SYSTEM.

AFTER the death of our illustrious countryman Ray, the study of Natural History seems to have slept, not only in England, but in most parts of Europe; which may perhaps be attributed to the Newtonian Philosophy's affording a more interesting subject of discussion, till by the force of truth it was thoroughly established.

In the Northern part of Sweden, however, a man of very uncommon abilities, and great penetration in examining specimens, arose, who published his first edition of a *Systema Naturæ* in 1735; I need scarcely say that I mean the celebrated Linnæus.

The first person who introduced the knowledge of this comprehensive work to the English reader is believed to have been Sir John Hill; and it was afterwards much commended by the late Mr. Stillingfleet, who translated some essays of the University of Upsal, written under the inspection of their president Linnæus.

I am truly sensible of his merit in classing the different kingdoms of nature; and most readily allow, that it is perhaps the best dictionary and grammar which the naturalist can use, when he goes into a museum, or means to travel into distant regions.

I am

I am sensible also of the great convenience in conforming to any general nomenclature, and that much confusion is thereby avoided, from the same reason that it signifies little to geographers whence the first meridian is taken, if any particular one is but universally adopted.

These advantages, however, should not make us blind to Linnæus's defects, and the bad consequences which perhaps are to be apprehended from his system prevailing to the exclusion of others, to whom the naturalist must for ever be so much indebted.

I have seen several letters written by Linnæus, the latinity of which a young school boy with us would be ashamed of, and indeed in many periods the common rules of grammar were broken ^a.

Lord Kaimes therefore expresses himself most justly on this head, "a language as barbarous as the German Metaphysics of Leibnitz, or the Swedish Natural History of Linnæus, which are not even intelligible, except to those who have made a particular study of their lingo's ^b."

This is really a most material defect in any one who treats on subjects of Natural History; for the description should be couched in terms that can leave no doubt about the author's meaning, and by such accuracy make the expence of engraving unnecessary.

It may, however, be now expected, that I should furnish some instances of descriptions which cannot be easily comprehended

^a I should almost suspect likewise that he did not understand French or English, as in the 12th edition of his *Systema Naturæ*, he refers only to Geſner, Aldrovandus, Johnstone, Ray, Brisſon ^{*}, and Houtinus, without any mention of Buffon, or Pennant.

^b Preface to Lord Kaimes's 3d vol. on language.

* Brisſon's descriptions are both in Latin and French.

by the reader, on account of the terms employed; whilst I premise that I do not require elegance, but only that the expressions should be clear, and not liable to be misunderstood. But though I do not insist upon classical latinity, yet every reader hath a right to expect, that in a dead language no new words should be introduced, or established terms used, in a manner for which proper authority cannot be produced.

I shall not have much trouble in citing such instances from the *Systema Naturæ*, and *Fauna Suecica*, as every page almost where there are two lines of description, affords them.

Linnaeus thus speaks of the woodcock :

“ *Scolopax [rusticola]* habitat in *appropriatis* locis, volitans per
“ noctes quasi viam *strictissimam* in ipso aëre, &c.”

The specific difference assigned to this bird is *rusticoli*, which can only mean, that it frequents the country; but is not this applicable to ninety-nine birds out of a hundred? Linnaeus therefore intends to convey some other idea to his reader; but what that may be I must own I cannot comprehend.

Gesner indeed conceives the woodcock to be the *Perdix rustica* of the antients; but very erroneously, his authority being probably the following lines from Martial :

Rustica sim, an perdix, quid refert, *si sapor idem est?*
Carior est perdix, sic sapit illa magis.

Now by another epigram of Martial's it appears that the perdix was a very scarce bird in Italy :

Ponitur Aufoniis avis hæc e rarissima mensis,
Hanc in lautorum maudere, sæpe soles.

But without entering into a critical discussion what birds were termed by the antients *perdix*, and *rustica*, it is plain by this

‡ Sc. the perdix.

citation,

citation, that a woodcock was not alluded to by the latter name; for can any one say that the flavour of the two birds^d hath the least resemblance:

“ Quid refert, si sapor idem sit?”

The truth of the matter is, that as the woodcock hath been called *scelopax* from the time of Aristotle, and as Linnæus hath made it a distinct genus by that name; the *woodcock* should have taken the lead, and the others of the same genus be distinguished by specific appellations.

The next expression in this short citation from Linnæus, that I shall take notice of, is “ *in appropriatis locis* ;” which I conceive to be no word of classical Latinity; but supposing it to be so, what is the reader to understand by it? Can the ornithologist mean that it frequents peculiar places? or if he does mean so, is not this applicable to almost every other bird?

But the citation proceeds, “ *volitans per noctes quasi viam strictissimam in ipso aëre.*” What is again to be inferred from these expressions, and more particularly *viam strictissimam*? if a *strait road* is intended, was the term *stricta* ever used in that sense? and do not many other birds fly in a direct line from point to point?

For another example of the same sort I shall here subjoin part of what Linnæus observes with regard to the horse, “ animal generosum, superbum, aptissimum equitando, cursu furens, furiis delectatur, posteriora curat, caudâ conopes tabanosque abigit, alterum scalpit, pullum injuriæ obnoxium repunit, &c.”

^d The reading, in some editions of Martial:

“ *Rustica sum perdix,*”

is clearly erroneous.

Though there is a wide field of objection to the matter of this description, I shall confine myself to the latinity and obscurity of it.

And first what is intended by *posteriora curat*? for though perhaps a meaning may suggest itself to some readers, yet it is not true in fact that the horse is more cleanly than many other quadrupeds in that circumstance, by any care or trouble which he takes himself.

What is the reader to understand again by *alterum scalpit*? does this signify that one horse rubs itself against another? and, if it does, is this circumstance peculiar to this quadruped?

The next unintelligible expression is, "pullum injuriæ obnoxium reponit;" to which, for a considerable time, I could affix no sense whatsoever, but have a distant guess that it means, "when the foal is in danger, the dam places it behind her;" but is this circumstance again peculiar to the horse?

Having produced these proofs of descriptions unintelligible, or at least obscure, by the use of improper terms; I shall not dwell upon the disagreeable (but most easy) task of stating multitudes of other passages equally objectionable; and may truly say, that I scarcely ever examined, with attention, an article in the *Systema Naturæ*, with regard to the terms of which I have not continued to have my difficulties, though I have consulted some of Linnæus's most zealous admirers.

There is scarcely any naturalist who hath published since the Linnæan system began to have a vogue, who hath not condemned many parts of it; so that I am not singular in supposing that it hath its defects.

But I conceive, that there is not only foundation for many of these objections; but that it hath, in many instances, been prejudicial

judicial to the knowledge of that very subject which it is intended chiefly to inculcate.

Linnaeus hath comprised the animal kingdom of the whole globe, except insects, (viz. Beasts, Birds, Reptiles, and Fish,) in 532 pages, octavo: and what can this possibly amount to more than a vocabulary, grammar, or dictionary, be it as excellent as it may?

But it may possibly be said, that the cheapness of so much instruction, as well as its being so portable, are great recommendations of this useful publication, which I am very ready to allow: so are Cole's Latin Dictionary and Hedericus's Lexicon deservedly in great request; but though these will answer my purpose very well whilst I am at school, I shall want better assistance when I have left it.

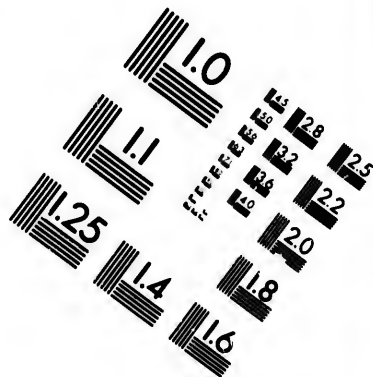
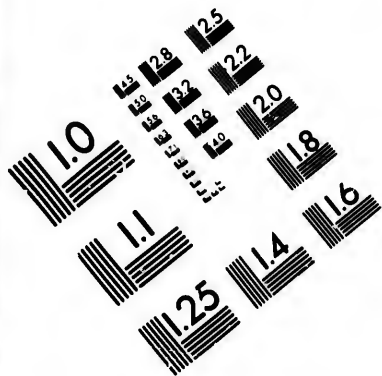
Again, it will be urged, that they who study the Linnæan System are not debarred from perusing the works of other naturalists; but I appeal to experience, whether those who are zealous admirers of the Swedish professor often go beyond the elementary knowledge of their instructor, or contribute any useful additions to any article of natural history.

In other words, so much time is taken up in mastering the Linnæan elements, that we grow old before we can apply to any particular branch of this comprehensive study.

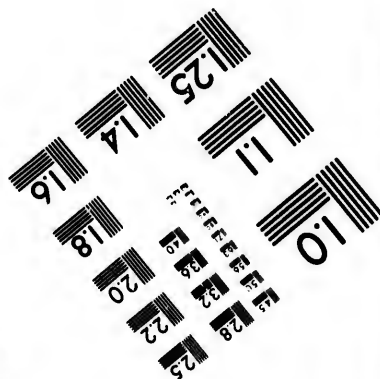
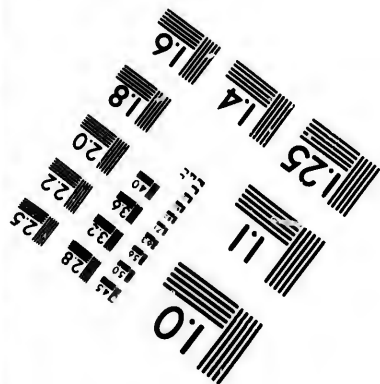
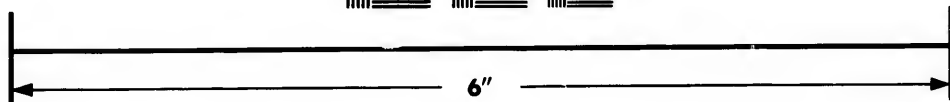
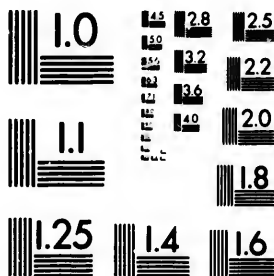
I may therefore perhaps, in some measure, compare this to a person's perusing with great care treatises on husbandry in every latitude and quarter of the globe, whilst no particular attention is paid to the culture of his own estate, where alone he can make any improvement either in knowledge or profit.

I have already admitted, that so useful a repertory cannot be carried into any museum, or upon an extensive voyage, as Linnaeus's *Systema Naturæ*. but after all, when we have found some





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account of the unknown animal in this celebrated work, what further instruction do we really procure, but that Linnæus hath either seen or heard of it? Surely this amounts to very little, whilst the habits of the animal, the uses for which its limbs are peculiarly adapted, with other such circumstances, deserve only the name of natural history, or can be really interesting.

The celebrated Mr. Gray therefore thus speaks of the Linnæan system, “not much to my edification; for though he is “pretty well acquainted with their persons, he is not so with “their manners.”

What Mr. Gray thus requires from the naturalist, is only to be attained by attending to the animals of our own country, or rather district. And to give an idea of what I conceive at least to be the proper articles of observation, I will beg leave to refer to four letters of the Rev. Mr. White on the four species of British swallows †. But perhaps the admirers of Linnæus may suggest, that such an account of the animals of Sweden is to be found in his *Fauna Suecica*, and it is true that the descriptions in this his later work are rather more full, but they by no means answer what one should expect from a zoologist of so distinguished pre-eminence, and smell of the lamp, rather than the country excursion.

The great use in publications like those of Linnæus, is to find out the animal or plant which one happens to see to the right or left, for how few museums can be resorted to in most parts, even of this scientific country? I will suppose therefore, that the common brown linnæus is what I have seen either on the wing, or lies dead before me.

* Gray's Letters, who had employed the latter part of his life chiefly in the study of natural history.

† Phil. Trans.

The first circumstance I want to know is its sex, with regard to which Linnæus is silent in the 12th edition of his *Systema Naturæ*, though published five years after his *Fauna Suecica*, where the difference is indeed noticed. But my specimen hath a red head and breast, and by having heard it sing, I rather suppose it to be a cock; and how can I reconcile this to the plumage of a male bird kept for some years in a cage, which hath no red on either of these parts? Here again Linnæus fails me, who did not know, that the common linnet, when he moults in captivity, never re-assumes his red plumage.

In my walks I happen to find a deserted nest of this bird, as to the component parts of which Linnæus gives me no information; as also with regard to the eggs, either in colour or number, nor how long the hen sits upon them.

I hear again the most pleasing and mellow notes of this bird, which being unnoticed by Linnæus, my distrust is again raised whether I may suppose the bird to be a linnet.

I see these birds also during the autumn and spring flying in large flocks, whilst some of them have a different motion from the rest, as likewise have a peculiar call: Linnæus however is silent as to this flock, consisting of linnets and *twites*, which at those seasons often assemble together, as fieldfares and redwings accompany each other during the winter.

In fact, the only circumstance which he adds to the dry description seems rather to mislead the reader, because he mentions that the linnet chiefly lives on alder-feeds, which it is believed this bird never touches in England, or certainly does not make its principal subsistence.

After all, therefore, what instruction have I reaped by consulting Linnæus, but that the common linnet is one species of *fringilla* noticed by him, which is about as much knowledge as
is

is picked up from a common dictionary, with regard to the import of a word, when I want to find whether it hath not been used in a different signification.

I admit, indeed, that the name alone, together with its classification, nearly compleats the natural history of a fossil, but surely the circumstances omitted by Linnæus are the most interesting parts of zoology.

If I was to refer again to Linnæus's description and account of another well-known bird (the goldfinch) I should not find any more material circumstances, whilst, as I conceive, he would mislead me by saying, that the tips of the wings and tail-feathers are white in the autumn, and black in the spring, which with us continue of the same colour throughout the year. To this I must add, that the goldfinch in England does not particularly frequent junipers, nor do I understand what part of this shrub this bird is to feed upon during the summer; the fact being, that all the finch tribe live during that season upon groundsel, chickweed, and other plants, both the stalks, flowers, and leaves of which afford them plentiful nourishment.

It may be however asked, if Linnæus is not to be consulted, to whom I would refer the naturalist for information? to which my answer is, that he should have recourse to the ornithologist who hath lived in, and observed the animals of, the country where the bird may be found in its wild state, and if that country be England, he will find satisfaction as to many of these particulars from Willoughby and Pennant. Doing otherwise may be compared to the looking into a Polyglot dictionary for the signification of a word in a particular language, instead of a capital compilation confined to the terms of that single country.

I have hitherto confined myself to Linnæus's zoology, but have also my apprehensions with regard to the use of the botanical part
of

of his system, which in general are nearly the same with the supposed defects in his Zoology.

As this system, however, comprehends the plants of the whole globe, it is a most useful repertory for a large botanical garden, provided the plants are in flower, and the botanist hath the proper apparatus for dissecting and examining them. If the collection on the other hand consists of dried plants, the system is almost entirely useless, as those minute parts (the chives^e and pointals) are commonly deranged or lost in such specimens. The same holds with regard to all engravings of plants before this system was introduced, where the same minute parts are not attended to.

But as the chief amusement in botany is the finding a plant in its wild state (for the seeing it in a conservatory is like shooting in a farm yard, or fishing in a stew) I will suppose the *wild-carot* to be stumbled upon; of which the botanist is ignorant, till he can consult his Linnæus.

For what the student is to wade through before he can procure this information I shall refer to Dr. Withering's arrangement of the vegetables of Great Britain^h.

If the botanist therefore hath recourse to Linnæus he must turn to the second order [Digynia] of his class [Pentandria] and to the second subdivision, which consists of thirty plants, where he will at length find the *Daucus Carota* of the Swedish botanist, if the plant happens fortunately to be in flower, and is nicely examined with the proper apparatus.

I will now suppose this plant to be visited a month afterwards, when the flowers have fallen, and when such a metamorphosis hath taken place, that it cannot be supposed to be the same; for the flowering part, which was before horizontal, is now become

^e These likewise often vary in number.

^h Introd. p. xxv.

deeply concave, and the sides approach each other so nearly as to form a strong resemblance to a bird's nest.

Should therefore such a remarkable change in the appearance of a plant be omitted in the description of it by any botanist? and if it is omitted, will not the student be often misled?

I will now suppose the same botanist to be furnished only with Ray's Synopsis of British plants, and to consult it on the same occasion.

Ray divides the *perfect* plants of our island (and such is the *wild carrot*) into twenty-three genera, the 11th of which consists of the *herbæ umbelliferæ*¹, to which, if I am not blind, I must immediately know, at almost any season, that this plant must belong, though I am at some distance from it. This class (or genus) again contains but 25 principal plants, which are also divided into seven clear and distinct subdivisions, and which reduces my trouble probably to the examination of not more than five species, whereas if I consult Linnæus, I must pore over thirty; nor then can receive any information, except when the plant is in full flower. Notwithstanding this superior facility of procuring the more perspicuous and interesting account from Ray, many an English botanist hath been deterred from prosecuting this branch of study by the difficulties of the Linnæan system, which he is told perhaps is the only one that deserves to be consulted.

After this comparison can there be a doubt whether the English botanist should consult Ray or Linnæus for an English plant, the former not only being the more compendious guide, but pointing out the road at most seasons, whilst the other only gives rather obscure directions for a single month of the year? I have before allowed, that there is a great advantage in adopting any

¹ Having a rundle supported by fruit-stalks or spokes.

system whatsoever, so that confusion may not be created by referring to different synonyms; but till this becomes the universal practice amongst naturalists, the new system occasions the greatest confusion, and must do so for perhaps half a century.

Is it to be expected, for example, that an English botanist, who is well acquainted with the plants of his own country, by the assistance of Ray, shall immediately drop the name of a plant, now become familiar to him, in order to new-christen it by the Linnæan appellation?

One of the great pleasures in botany is, to produce a rather uncommon plant to those who know it to be curious; but the English botanist will not have much satisfaction in showing it to a simpler, who is not acquainted with it under the name given by Gerard or Ray.

I remember to have once met an elderly gentleman, near Ten-terden, who had in his hand a very fine specimen of the *Touchmenot*, or *Balsamine lutea* of Ray; and when I had congratulated him upon having found this rare plant, he immediately told me, that he would not but have met me for five pounds, as it signified little to have made the discovery in his neighbourhood, where no one had the least tincture of botany.

If I had upon accosting him, however, referred this Rayian botanist to the Syngenesia Monogamia of Linnæus, there would have been an end of our conference, and he would have only stared, considering me as either ignorant, or an affecter of unintelligible terms. I must add, that I think he had a good right so to do; for in England the synonyms of Gerard and Ray should be referred to, with which most Linnæans are entirely unacquainted, whilst by this confusion of names the disciples of Ray and Linnæus are perpetually at cross purposes. If I mention

the plant also by Gerard's English synonym, I may possibly by inquiries either confirm or refute the popular notions with regard to the virtues and uses of the plant, which is certainly the most material part of botany.

And here I will take the liberty to say that plants may be distinguished by some circumstances which none of the writers on that part of natural history have attended to.

If the taste or smell indeed is very remarkable, it is often noticed; but the leaves, flowers, seeds, and roots, often differ in these particulars.

The form of the root is again totally neglected if it is not bulbous, whereas the superficies above ground does not vary more than what is under ground. The colour also of the leaves, when they fade in the autumn, is a material circumstance in the natural history of the plant.

Their medicinal use indeed is generally mentioned; but the culinary too much neglected, as in the instance of water-creffes, which, when boiled, are an excellent succedaneum for spinnage, and are of a more beautiful green when served on table than any of the products of the kitchen-garden.

Some botanists have, in a few instances, taken notice of the insect which feeds upon particular plants; this however should be general, as well as mention made of the bird, or other animal, which chiefly subsists upon them.

Having thus presumed to recommend some particulars to the attention of the writers on botany, I shall conclude by repeating, that I do not deny the great merit of Linnæus's *Systema Naturæ*, as a general repertory, though it seems to me that the naturalist who describes the production of the country which he inhabits should always be preferred, as affording more complete and more interesting

interesting information. In other words, let the *Systema Naturæ* be reserved for the Museum, or botanical garden, rather than be the Naturalist's companion, on excursions within his own neighbourhood.

The chief merit of the Linnæan system consists undoubtedly in the having paid greater attention to the parts of fructification in plants than was shewn by preceding writers on the same subject; but it must never be forgotten, that the chives and potatoes are too minute, too uncertain in their number, and too seldom in a state proper to be examined, to afford very interesting criteria in distinguishing plants.

I will conclude with an extract from the late Sir John Hill: "Such is the system of Linnæus: *novelty* made it please, and its "obscurity rendered it admired; but it cannot be lasting*."

* British Herbal; in the introduction to his second class. Sir John Hill was himself captured with the novelty, and had much commended this new system; this opinion therefore was given as to the merits, after thorough examination, with the strongest prejudice in its favour.

Jan. 28, 1780.

AS it appears from some of the foregoing essays that I have paid attention to some particular articles of Natural History, I take this opportunity of laying before the public my poor endeavours, as an unworthy member of the Royal Society, for the promotion of knowledge in this branch of science, as it chiefly relates to an agreement with the present King of Spain for that purpose; which is still unaccomplished on the part of his Catholic Majesty.

The Royal Society hath almost from its first institution collected specimens for a museum; which, so far back as the year 1681, had become so considerable, that Dr. Grew published a handsome catalogue, in folio, of the several articles, together with engravings; and that great architect Sir Christopher Wren gave a well-considered plan for the building a repository to receive these natural productions, which was not only approved of by the society, but carried into execution,

This elegant room, together with the specimens, were almost totally neglected; and I had the good fortune to prevail upon the council of the society (about nine years ago) to lay out some money in necessary repairs and alterations.

Having been the occasion of this expence, I then thought it was incumbent upon me to do what lay in my power to add to the collection of specimens; when it occurred, that our forts in Hudson's Bay would probably supply those which were most rare, as this is the most Northern part of America inhabited by Europeans, and was never visited by any naturalist.

I accordingly applied to Mr. Wegg, V. Pr. and Treasurer of the Royal Society; who, in concert with the other directors of the Hudson's Bay Company, most obligingly gave orders, that many of the animals near their forts should be sent over by
the

the ensuing autumn ; and this being repeated for three successive years produced a great many duplicates^a.

The collection being by this means much enlarged^b, it occurred, that we might still augment it by a judicious barter of these duplicates ; and more particularly so with Spain, as the animals of Hudson's Bay could not be procured by his Catholic Majesty but from England ; whilst Peru, Chili, Buenos Ayres, and the Philippines, would furnish what we only could obtain from the Spaniards.

The late Prince Maffarano, who was ambaffador from his Catholic Majesty to our court, was not only a fellow of the Royal Society, but sometimes attended their meetings ; and this plan of exchange between the two countries having been proposed to his excellency, he undertook to lay it before his Royal Master.

The King of Spain at that time happened to be forming a cabinet of natural history, and therefore signified that he would send orders to his governors to collect for him, and would make the Royal Society a proper return for any presents they might destine for him from Hudson's Bay.

The Royal Society accordingly transmitted a considerable number of specimens from that part of the world to his Catholic Majesty in 1773 (through M. Escarano, then resident at our court) ; but we have never received any natural productions from South America, or the Philippines, though I have seen the printed

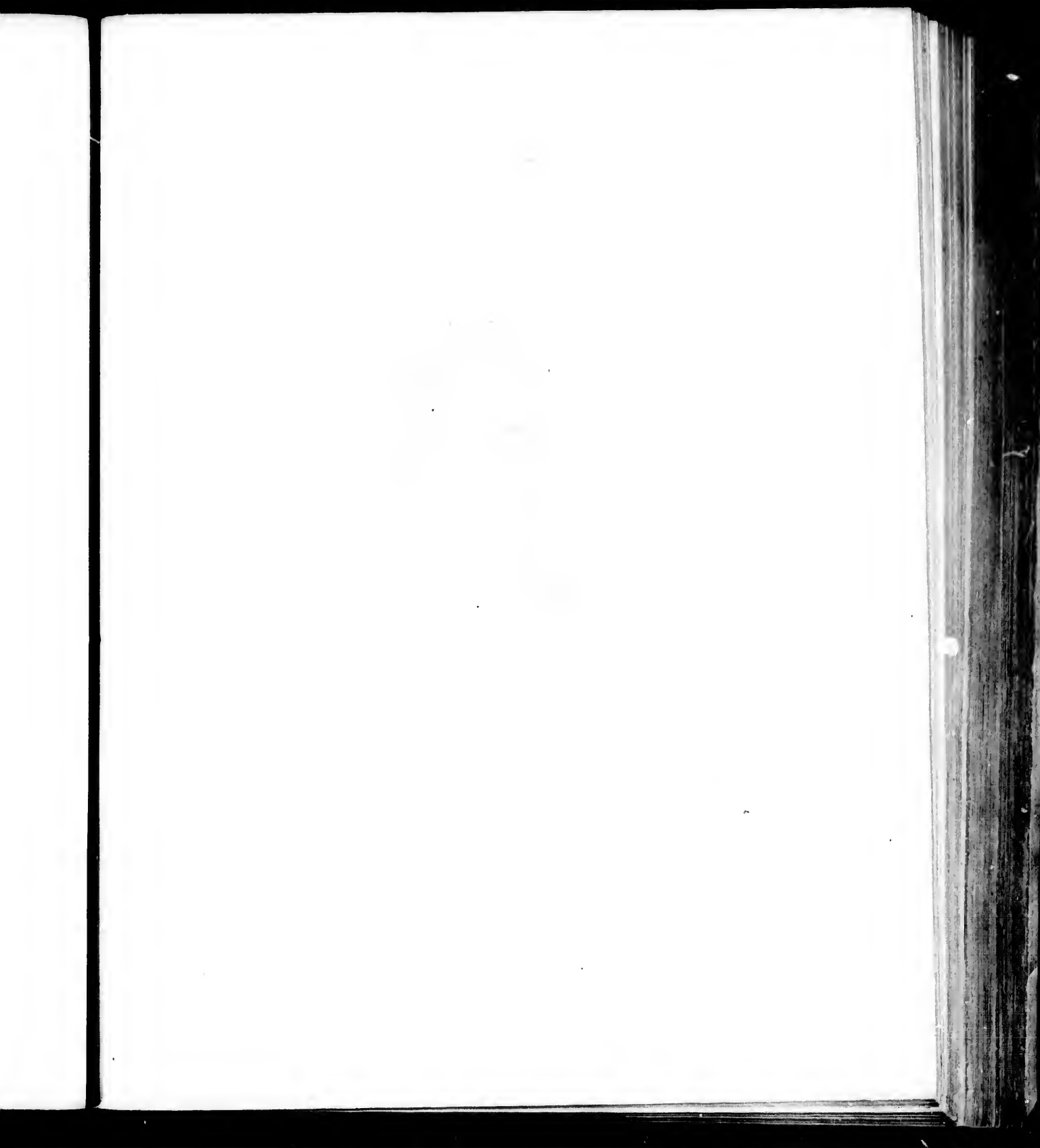
^a Lord Dartmouth, then Secretary of State, and F. R. S. was likewise so obliging as to write to the governors of some of our Southern colonies for procuring natural productions ; but whether from the rebellion which the mother country hath lately experienced, or from what other cause I will not determine, the Royal Society hath never received any specimens, in consequence of these orders.

^b I understand that the old collection is now presented by the Royal Society to the British Museum, together with these additions.

orders alluded to by his Catholic Majesty, which issued immediately after this naturalist-treaty was concluded.

It is to be hoped indeed, that, notwithstanding the present war between the two countries, this undertaking on the part of the King of Spain (in a matter of mere science, and for which his Majesty hath received a valuable consideration) will not be forgotten ; but, lest it should, I leave this poor testimony of what hath been done on our side, and what is incumbent upon the court of Spain in return. And I do this the rather, because this promised exchange is the only method of obtaining specimens from the Spanish part of South America, or the Philippines.

ACCOUNT





Ἡ σοὶ γ' ἐκ' ἡνεγκ' τὰ δ' αὖτ' ἐσπέσο δαυμάτῃα ἐργα ;
Ἡε τίς ἀθανάτων, ἢε Διῶτων ἀνθρώπων
Δωρον ἀγαθὸν ἔδωκε, καὶ ἐφράσε Διῶσφι κούδην ;

HOMER'S Hymn on Mercury.

ACCOUNT OF A VERY REMARKABLE
YOUNG MUSICIAN.

In a LETTER to MATHEW MATY, M. D. Sec. R. S.^a.

SIR,

IF I was to send you a well-attested account of a boy who measured seven feet in height, when he was not more than eight years of age, it might be considered as not undeserving the notice of the Royal Society.

The instance which I now desire you will communicate to that learned body, of as early an exertion of most extraordinary musical talents, seems perhaps equally to claim their attention.

Joannes Chrystomus Wolfgangus Theophilus Mozart was born at Saltzbourg, in Bavaria, on the 17th of January, 1756^b.

^a This is re-printed from the LXth volume of the Philosophical Transactions, for the year 1770.

^b I here subjoin a copy of the translation from the register at Saltzbourg, as it was procured from his excellency Count Haslang, envoy extraordinary and minister plenipotentiary of the electors of Bavaria and Palatine :

“ I, the under-written, certify, that in the year 1756, the 17th of
“ January, at eight o'clock in the evening, was born Joannes Chrystomus Wolfgangus Theophilus, son of Mr. Leopold Mozart, organist of
“ his highness the prince of Saltzbourg, and of Maria Ann his lawful
“ wife (whose maiden name was Pertlin), and christened the day following, at ten o'clock in the morning, at the prince's cathedral church
“ here; his godfather being Gottlieb Pergmayr, merchant in this city.
“ In truth whereof, I have taken this certificate from the parochial register of christenings, and under the usual seal, signed the same with
“ my own hand.

Saltzbourg,
Jan. 31. 1769.

“ Leopold Comprecht,
“ Chaplain to his Highness in this city.”

I have

I have been informed, by a most able musician and composer, that he frequently saw the boy at Vienna, when he was little more than four years old.

By this time he not only was capable of executing lessons on his favourite instrument the harpsichord, but composed some in an easy style and taste, which were much approved of. His extraordinary musical talents soon reached the ears of the present empress dowager, who used to place him upon her knees whilst he played on the harpsichord. This notice taken of him by so great a personage, together with certain consciousness of his most singular abilities, had much emboldened the little musician. Being therefore the next year at one of the German courts, where the elector encouraged him, by saying, that he had nothing to fear from his august presence; little Mozart immediately sat down with great confidence to his harpsichord, informing his highness, that he had played before the empress.

At seven years of age his father carried him to Paris, where he so distinguished himself by his compositions that an engraving was made of him. The father and sister who are introduced in this print are excessively like their portraits; as is also little Mozart, who is stiled, "Compositeur et Maitre de Musique, agé de sept ans." After the name of the engraver follows the date, which is in 1764; Mozart was therefore at this time in the eighth year of his age.

Upon leaving Paris, he came over to England, where he continued more than a year. As during this time I was witness of his most extraordinary abilities as a musician, both at some public concerts, and likewise by having been alone with him for a considerable time at his father's house; I send you the following account, amazing and incredible almost as it may appear.

* An engraving of the boy himself is annexed.

I carried to him a manuscript duet, which was composed by an English gentleman to some favourite words in Metastasio's opera of Demofonte. The whole score was in five parts, viz. accompaniments for a first and second violin, the two vocal parts, and a base. I shall here likewise mention, that the parts for the first and second voice were written in the counter tenor cleff; the reason for taking notice of which particular will appear hereafter.

My intention in carrying with me this manuscript composition, was to have an irrefragable proof of his abilities as a player at sight, it being absolutely impossible that he could have ever seen the music before.

The score was no sooner put upon his desk, than he began to play the symphony in a most masterly manner, as well as in the time and stile which corresponded with the intention of the composer. I mention this circumstance, because the greatest masters often fail in these particulars on the first trial. The symphony ended, he took the upper part, leaving the under one to his father.

His voice, in the tone of it, was thin and infantine, but nothing could exceed the masterly manner in which he sung.

His father, who performed the under part in this duet, was once or twice out, though the passages were not more difficult than those in the upper one; on which occasions the son looked back with some anger, pointing out to him some mistakes, and setting him right.

He not only however did complete justice to the duet, by singing his own part in the truest taste, and with the greatest precision: he also threw in the accompaniments of the two violins, wherever they were most necessary, and produced the best effects. It is well known that none but the most capital musicians are capable of accompanying in this superior stile.

As many of those who may be present when this letter may have the honour of being read before the society, may not possibly be acquainted with the difficulty of playing thus at sight from a musical score, I will endeavour to explain it by the most similar comparison I can think of.

I must, at the same time, admit, that the illustration will fail in one particular, as the voice in reading cannot comprehend more than what is contained in a single line. I must suppose, however, that the reader's eye, by habit and quickness, may take in other lines, though the voice cannot articulate them as the musician accompanies the words of an air by his harpsichord.

Let it be imagined, therefore, that a child of eight years old was directed to read five lines^a at once, in four^b of which the letters of the alphabet were to have different powers.

For example, in the first line A, to have its common powers.

In the second that of B.

In the third of C.

In the fourth of D.

Let it be conceived also, that the lines so composed of characters, with different powers, are not ranged so as to be read at

^a By this I mean,

The two parts for the violins.
The upper part for the voice.
The words set to music.
And lastly, the base.

^b By this I mean,

The violin parts in the common treble cleff.
The upper part for the voice in the counter-tenor cleff, as before-mentioned.
The words in common characters.
And the base in its common cleff.

all

all times one exactly under the other, but often in a desultory manner.

Suppose, then, a capital speech in Shakespeare's never seen before, and yet read by a child of eight years old, with all the pathetic energy of a Garrick.

Let it be conceived likewise, that the same child is reading, with a glance of his eye, three different comments on this speech, tending to its illustration; and that one comment is written in Greek, the second in Hebrew, and the third in Arabic characters.

Let it be also supposed, that by different signs he could point out which comment is most material upon every word; and sometimes that perhaps all three are so, at others only two of them.

When all this is conceived, it will convey some idea of what this boy was capable of, in singing such a duet at sight in a masterly manner from the score, throwing in at the same time all its proper accompaniments.

When he had finished the duet, he expressed himself highly in its approbation, asking, with some eagerness, whether I had brought any more such music.

Having been informed, however, that he was often visited with musical ideas, to which, even in the midst of the night, he would give utterance on his harpsichord; I told his father that I should be glad to hear some of his extemporaneous flights.

The father shook his head at this, saying, that it depended entirely upon his being as it were musically inspired, but that I might ask him whether he was in humour for such a composition.

* The words in Metastasio's duet, which little Mozart sung, are very pathetic.

Happening to know that little Mozart was much taken notice of by Manzoli, the famous singer, who came over to England in 1764, I said to the boy, that I should be glad to hear an extemporary *Love Song*, such as his friend Manzoli might choose in an opera.

The boy on this (who continued to sit at his harpsichord) looked back with much archness, and immediately began five or six lines of a jargon recitative proper to introduce a love song.

He then played a symphony which might correspond with an air composed to the single word, *Affetto*.

It had a first and second part, which, together with the symphonies, was of the length that opera songs generally last: if this extemporary composition was not amazingly capital, yet it was really above mediocrity, and shewed most extraordinary readiness of invention.

Finding that he was in humour, and as it were inspired; I then desired him to compose a *Song of Rage*, such as might be proper for the opera stage.

The boy again looked back with much archness, and began five or six lines of a jargon recitative proper to precede a *Song of Anger*. This lasted also about the same time with the *Song of Love*; and in the middle of it he had worked himself up to such a pitch, that he beat his harpsichord like a person possessed, rising sometimes in his chair. The word he pitched upon for this second extemporary composition was, *Pecido*.

After this he played a difficult lesson, which he had finished a day or two before^d; his execution was amazing, considering that

^d He published six sonatas for the harpsichord, with an accompaniment for the violin, or German flute, which are sold by R. Bremner, in the Strand, and are intitled, *Oeuvre Troisième*.

that

that his little fingers could scarcely reach a sixth on the harpsichord.

His astonishing readiness, however, did not arise merely from great practice; he had a thorough knowledge of the fundamental principles of composition, as, upon producing a treble, he immediately wrote a base under it, which, when tried, had a very good effect.

He was also a great master of modulation, and his transitions from one key to another were excessively natural and judicious; he practised in this manner for a considerable time with an handkerchief over the keys of the harpsichord.

The facts which I have been mentioning I was myself an eyewitness of; to which I must add, that I have been informed by two or three able musicians, when Bach the celebrated composer had begun a fugue and left off abruptly, that little Mozart hath immediately taken it up, and worked it after a most masterly manner.

Witness as I was myself of most of these extraordinary facts, I must own that I could not help suspecting his father imposed with regard to the real age of the boy, though he had not only a most childish appearance, but likewise had all the actions of that stage of life.

For example, whilst he was playing to me, a favourite cat came in, upon which he immediately left his harpsichord, nor could we bring him back for a considerable time.

He is said in the title page to have been only eight years of age when he composed these sonatas.

The dedication is to the Queen, and is dated at London, January 8, 1765.

He subscribes himself, "tres humble, et tres obeissant *petit* serviteur."

These lessons are composed in a very original stile, and some of them are masterly.

He

He would also sometimes run about the room with a stick between his legs by way of horse.

I found likewise that most of the London musicians were of the same opinion with regard to his age, not believing it possible that a child of so tender years could surpass most of the masters in that science.

I have therefore for a considerable time made the best inquiries I was able from some of the German musicians resident in London, but could never receive any further information than that he was born near Saltzbourg, till I was so fortunate as to procure an extract from the register of that place, through his excellency Count Haflang.

It appears from this extract, that Mozart's father did not impose with regard to his age when he was in England, for it was in June, 1765, that I was witness to what I have above related, when the boy was only eight years and five months old.

I have made frequent inquiries with regard to this very extraordinary genius since he left England; and was told last summer, that he was then at Saltzbourg, where he had composed several oratorios, which were much admired.

I am also informed, that the prince bishop of Saltzbourg, not crediting that such masterly compositions were really those of a child, shut him up for a week, during which he was not permitted to see any one, and was left only with music-paper, and the words of an oratorio. During this short time he composed a very capital oratorio, which was most highly approved of upon being performed.

Having stated the above mentioned proofs of Mozart's genius, when of almost an infantine age, it may not be improper perhaps to compare them with what hath been well attested with regard to other instances of the same sort.

Amongst

Amongst these, John Barratier hath been most particularly distinguished, who is said to have understood Latin when he was but four years old, Hebrew when six, and three other languages at the age of nine.

This same prodigy of philological learning also translated the travel of Rabbi Benjamin when eleven years old, accompanying his version with notes and dissertations. Before his death, which happened under the age of twenty, Barratier seems to have astonished Germany with his amazing extent of learning; and it need not be said, that its increase in such a soil, from year to year, is commonly amazing.

Mozart, however, is not much more than thirteen years of age; and it is not therefore necessary to carry my comparison further.

The Rev. Mr. Manwaring (in his *Memoirs of Handel*) hath given us a still more apposite instance, and in the same science.

This great musician began to play on the clavichord when he was but seven years of age; and is said to have composed some church-services when he was only nine years old, as also the opera of *Almeria* when he did not exceed fourteen.

Mr. Manwaring likewise mentions that Handel, when very young, was struck sometimes whilst in bed with musical ideas; and that, like Mozart, he used to try their effect immediately on a spinnet, which was in his bedchamber.

I am the more glad to state this short comparison between these two early prodigies in music, as it may be hoped that little Mozart may possibly attain to the same advanced years as Handel, contrary to the common observation, that such *ingenia præcoccia* are generally short-lived.

I think I may say without prejudice to the memory of this great composer, that the scale most clearly preponderates on the side of
Mozart

Mozart in this comparison, as I have already stated that he was a composer when he did not much exceed the age of four.

His extemporary compositions also, of which I was a witness, prove his genius and invention to have been most astonishing; least however I should insensibly become too strongly his panegyrist, permit me to subscribe myself, SIR,

Your most faithful humble servant,

DAINES BARRINGTON.

Jan. 21, 1780.

ON this republication of what appeared in the LXth volume of the Philosophical Transactions, it may be right to add, that Mozart (though a German) hath been honoured by the pope with an order of merit called the Golden Spur, and hath composed operas in several parts of Italy. I have also been favoured by D. Burney with the following account of one of his latest compositions.

“Mozart being at Paris, in 1778, composed for Tenducci a scene in 14 parts, chiefly obligati; viz. two violins, two tenors, one chromatic horn, one oboe, two clarinets, a Piano forte, a Soprano voice part, with two horns, and a basse di rinforza.

“It is a very elaborate and masterly composition, discovering a great practice and facility of writing in many parts. The modulation is likewise learned and recherche; however, though it is a composition which none but a great master of harmony, and possessed of a consummate knowledge of the genius of different instruments, could produce; yet neither the melody of the voice part, nor of any one of the instruments, discovers much invention, though the effects of the whole, if well executed, would, doubtless, be masterly and pleasing.”

ACCOUNT OF MR. CHARLES WESLEY.

CHARLES^a was born at Bristol, Dec. 11, 1757. He was two years and three quarters old when I first observed his strong inclination to music. He then surprized me by playing a tune on the harpsichord, readily and in just time. Soon after he played several, whatever his mother sung, or whatever he heard in the streets.

From his birth she used to quiet and amuse him with the harpsichord; but he would not suffer her to play with one hand only, taking the other, and putting it on the keys, before he could speak. When he played himself she used to tie him up by his backstring to the chair, for fear of his falling. Whatever tune it was he always put a true bass to it. From the beginning he played without study or hesitation; and, as the masters told me, perfectly well.

Mr. Broadrip^b heard him in petticoats, and foretold he would one day make a great player.

Whenever he was called to play to a stranger, he would ask, in a word of his own, "Is he a musicker?" and if answered, "Yes," he played with the greatest readiness.

He always played *con spirito*. There was something in his manner above a child, which struck the hearers, learned or unlearned.

^a I was favoured with this account of his eldest son by the Rev. Mr. Charles Wesley.

^b Organist at Bristol.

At four years old I carried him with me to London. Mr. Beard was the first that confirmed Mr. Broadrip's judgment of him, and kindly offered his interest with Dr. Boyce, to get him admitted among the King's boys. But I had then no thoughts of bringing him up a musician.

A gentleman carried him next to Mr. Stanley, who expressed much pleasure and surprize at hearing him, and declared he had never met one of his age with so strong a propensity to music. The gentleman told us, he never before believed what Handel used to tell him of himself, and his own love of music, in his childhood.

Mr. Madan presented my son to Mr. Worgan, who was extremely kind; and, as I then thought, partial to him. He told us, he would prove an eminent master, if he was not taken off by other studies. Mr. Worgan frequently entertained him with the harpsichord. Charles was greatly taken with his bold full manner of playing, and seemed even then to catch a spark of his fire.

At our return to Bristol we left him to ramble on till he was near six; then we gave him Mr. Rooke for a master; a man of no name, but very good-natured, who let him run on *ad libitum*, whilst he sat by, more to observe than to control him.

Mr. Rogers, the oldest organist in Bristol, was one of his first friends. He often sat him on his knee, and made him play to him, declaring he was more delighted in hearing him than himself."

What follows contains the strongest and fullest approbation of Mr. Charles Wesley's manner of playing on the organ by the most eminent professors; to which commendation they who have the pleasure of hearing him at present will give the most ample credit.

I received the following account of his son SAMUEL from the
Rev. Mr. CHARLES WESLEY.

Samuel was born on St. Matthias's Day, Feb. 24, 1766, (the same day which gave birth to Handel 82 years before). The seeds of harmony did not spring up in him quite so early as in his brother; for he was three years old before he aimed at a tune: his first were "God save great George our King," Fischer's minuet, and such like; mostly picked up from the street organs. He did not put a true bass to them, till he had learnt his notes.

While his brother was playing he used to stand by, with his childish fiddle, scraping and beating time. One observing him, asked me, "And what shall this boy do?" I answered, "Mend his brother's pens." He did not resent the affront as deeply as Marcello; so it was not indignation which made him a musician^d.

Mr. Arnold was the first, who, hearing him at the harpsichord, said, "I set down Sam for one of my family." But we did not much regard him, coming after Charles. The first thing which drew our attention was, the great delight he took in hearing his

^c His mother, Mrs. Wesley, however, hath given me the following most convincing proof that he played a tune when he was but two years eleven months old, by producing a quarter guinea, which was given to him by Mr. Addy, for this extraordinary feat, wrapped in a piece of paper, containing the day and year of the gift, as well as the occasion of it. Mrs. Wesley had also an elder son, who died in his infancy, and who both sung a tune, and beat time, when he was but twelve months old.

^d This alludes to a well-known story in the musical world. Marcello, the celebrated composer, had an elder brother, who had greatly distinguished himself in this science, and being asked what should be done with little Marcello, he answered, let him *mend my pens*; which piqued the boy so much, that he determined to exceed his elder brother.

brother play. Whenever Mr. Kelway came to teach him, Sam constantly attended, and accompanied Charles *on the chair*. Undaunted by Mr. Kelway's frown, he went on; and when he did not *see the harpsichord* * he crossed his hands on the chair, as the other on the instrument, without ever missing a time.

He was so excessive fond of Scarlatti, that if Charles ever began playing his lesson before Sam was called, he would cry and roar as if he had been beat. Mr. Madan, his Godfather, finding him one day so belabouring the chair, told him, "He should have a better instrument by and by."

I have since recollected Mr. Kelway's words: "It is of the utmost importance to a learner *to hear the best music*." And, "If any man would learn to play well, let him hear Charles." Sam had this double advantage from his birth. As his brother employed the evenings in Handel's Oratorios, Sam was always at his elbow, listening and joining with his voice. Nay, he would sometimes presume to find fault with his playing when we thought he could know nothing of the matter.

He was between four and five years old when he got hold of the oratorio of Samson, and by that alone taught himself to read words, soon after he taught himself to write. From this time he sprung up like a mushroom, and when turned of five could read

* Incredible as this may appear, it is attested by the whole family; and that he generally turned his back to his brother whilst he was playing. I think however that this extraordinary fact may be thus accounted for: There are some passages in Scarlatti's lessons which require the crossing of hands (or playing the treble with the left, and the base with the right); but as what calls for this unusual fingering produces a very singular effect, the child must have felt, that these parts of the composition could not be executed in any other way. It is possible indeed that he might have observed his brother crossing hands at these passages, and imitated him by recollecting that they were thus fingered.

perfectly

perfectly well ; and had all the airs, recitatives, and choruses of Samson and the Messiah, both words and notes, by heart.

Whenever he heard his brother begin to play, he would tell us whose music it was, (whether Handel, Corelli, Scarlatti, or any other) and what part of what lesson, sonata, or overture.

Before he could write he composed much music. His custom was, to lay the words of an oratorio before him, and sing them all over. Thus he set (extempore for the most part) Ruth, Gideon, Manasses, and the Death of Abel. We observed, when he repeated the same words, it was always to the same tunes. The airs of Ruth in particular he made before he was six years old, laid them up in his memory till he was eight, and then wrote them down.

I have seen him open his prayer-book, and sing the Te Deum, or an anthem from some Psalm, to his own music, accompanying it with the harpsichord. This he often did, after he had learnt to play by note, which Mr. Williams, a young organist of Bristol, taught him between six and seven.

How and when he learnt counter-point I can hardly tell ; but without being ever taught it, he soon wrote in parts.

He was full eight years old when Dr. Boyce came to see us ; and accosted me with, " Sir, I hear you have got an English Mozart in your house : young Linley tells me wonderful things of him." I called Sam to answer for himself. He had by this time scrawled down his Oratorio of Ruth. The doctor looked over it very carefully, and seemed highly pleased with the performance. Some of his words were, " These airs are some of the prettiest I have seen : this boy writes by nature as true a base as I can by rule and study. There is no man in England has two such sons, &c." He bad us let him run on *ad libitum*, without any check of rules or masters.

After this, whenever the Doctor visited us, Sam ran to him, with his Song, Sonata, or Anthem; and the Doctor examined them with astonishing patience and delight.

As soon as Sam had quite finished his Oratorio he sent it as a present to the Doctor, who immediately honoured him with the following note :

“ To Mr. Samuel Wesley.

“ Dr. Boyce’s compliments and thanks to his very ingenious brother-composer Mr. S. W. ; and is very much pleased and obliged by the possession of the Oratorio of Ruth, which he shall preserve with the utmost care, as the most curious product of his musical library.”

For the year that Sam continued under Mr. Williams, it was hard to say which was the master and which the scholar. Sam chose what music he would learn, and often broke out into extemporary playing, his master wisely letting him do as he pleased.

During this time he taught himself the violin ; a foldier assisted him about six weeks ; and some time after Mr. Kinbury gave him twenty lessons. His favourite instrument was the organ.

He spent a month at Bath, while we were in Wales ; served the abbey on Sundays, gave them several voluntaries, and played the first fiddle in many private concerts.

He returned with us to London greatly improved in his playing. There I allowed him a month for learning all Handel’s Overtures. He played them over to me in three days. Handel’s Concertos he learnt with equal ease ; and some of his Lessons, and Scarlatti’s. Like Charles, he mastered the hardest music without any pains or difficulty.

He borrowed his Ruth to transcribe for Mr. Madan. Parts of it he played at Lord D's, who rewarded him with some of Handel's Oratorios.

Mr. Madan now began carrying him about to his musical friends. He played several times at Mr. W's, to many of the nobility, and some eminent masters and judges of music. They gave him subjects and music which he had never seen. Mr. Burton, Mr. Bates, &c. expressed their approbation in the strongest terms. His extemporary fugues, they said, were just and regular, but could not believe that he knew nothing of the rules of composition.

Several companies he entertained for hours together with his own music. The learned were quite astonished. Sir J. H. cried out, "Inspiration! Inspiration!" Dr. C. candidly acknowledged, "He has got that which we are searching after," although at first, out of pure good-nature, he refused to give him a subject. An old musical gentleman, hearing him, could not refrain from tears.

Dr. B. was greatly pleased with his extemporary play, and his pursuing the subjects and fugues which he gave him; but insisted, like the rest that he must have been taught the rules.

Mr. S. and Mr. B. expressed the same surprize and satisfaction. An organist gave him a sonata he had just written, not easy, nor very legible. Sam played it with great readiness and propriety, and better (as the composer owned to Mr. Madan) than he could himself.

Lord B. Lord A. Lord D. Sir W. W. and other lovers of Handel, were highly delighted with him, and encouraged him to hold fast his veneration for Handel, and the old music. But old or new was all one to Sam, so it was but good. Whatever was presented he played at sight, and made variations on any tune :
and

and as often as he played it again made new variations. He imitated every author's style, whether Bach, Handel, Schobert, or Scarlatti himself.

One shewed him some of Mozart's music, and asked him how he liked it. He played it over, and said, "It was very well for "one of his years."

He played to Mr. Kelway, whom I afterwards asked what he thought of him. He would not allow him to be comparable to Charles; yet commended him greatly, and told his mother, "It was a gift from heaven to both her sons; and as for "Sam, he never in his life saw so free and degagé a gentleman." Mr. Madan had often said the same, "that Sam was every where "as much admired for his behaviour as for his play."

Between eight and nine he was brought through the small-pox by Mr. Br—'s assistance; whom he therefore promised to reward with his next Oratorio.

If he loved any thing better than music, it was regularity. He took to it himself. Nothing could exceed his punctuality. No company, no persuasion, could keep him up beyond his time. He never could be prevailed on to hear any opera or concert by night. The moment the clock gave warning for eight, away ran Sam, in the midst of his most favourite music. Once in the playhouse he rose up after the first part of the Messiah, with, "Come, Mamma, "let us go home, or I shan't be in bed by eight."

When some talked of carrying him to the Queen, and I asked him if he was willing to go? "Yes, with all my heart (he answered), but I won't stay beyond eight."

The praises bestowed so lavishly upon him did not seem to affect, much less to hurt him; and whenever he went into the company of his betters, he would much rather have stayed at home; yet when among them, he was free and easy; so that some remarked,

remarked, "be behaved as one bred up at court, yet without a "courtier's fervility."

On our coming to town this last time, he sent Dr. Boyce the last anthem he had made. The Doctor thought, from its correctness, that Charles must have helped him in it; but Charles assured him that he never assisted him, otherwise than by telling him, if he asked, whether such or such a passage were good harmony; and the Doctor was so scrupulous, that when Charles shewed him an improper note he would not suffer it to be altered.

Mr. Madan now carried him to more of the first masters. Mr. Abel wrote him a subject, and declared, "Not three masters in "town could have answered it so well."

Mr. Cramer took a great liking to him, offered to teach him the violin, and played some Trios with Charles and him. He sent a man to take measure of him for a fiddle; and is confident a very few lessons would set him up for a violinist.

Sam often played the second, and sometimes the first, fiddle, with Mr. Treadway, who declared "Giardini himself could not "play with greater exactness."

Mr. Madan brought Dr. N. to my house, who could not believe that a boy could write an oratorio, play at sight, and pursue any given subject. He brought two of the King's boys, who sang over several songs and choruses in Ruth. Then he produced two bars of a fugue. Sam worked this fugue very readily and well, adding a movement of his own; and then a voluntary on the organ, which quite removed the Doctor's incredulity.

At the Rehearsal at St. Paul's Dr. Boyce met *his brother* Sam; and shewing him to Dr. H. told him: "This boy will soon surpass you all." Shortly after he came to see us, took up a Jubilate which Sam had lately wrote, and commended it as one of Charles's; when we told him whose it was, he declared he

could find no fault in it; adding, "There was not another boy upon earth who could have composed this;" and concluding with, "I never yet met with that person who owes so much to nature as Sam. He is come among us dropt down from heaven."

*Ore puer, puerique habitu, sed corde sagaci,
Æquabat senium.*

SILIUS ITALICUS, L. VIII.

I first had an opportunity of being witness of Master Samuel Wesley's great musical talents at the latter end of 1775, when he was nearly ten years old.

To speak of him first as a performer on the harpsichord, he was then able to execute the most difficult lessons for the instrument at sight, for his fingers never wanted the guidance of the eye in the most rapid and desultory passages. But he not only did ample justice to the composition in neatness and precision, but entered into its true taste, which may be easily believed by the numbers who have heard him play extemporary lessons in the stile of most of the eminent masters.

He not only executed crabbed compositions thus at sight, but was equally ready to transpose into any keys, even a fourth^f; and if it was a Sonata for two trebles and a base, the part of the

^f Most musicians, when they transpose, conceive the succession of notes to be written in a cleff in which they have been used to practise, as the base cleff, tenor cleff, &c. but the transposition of a 4th belongs to no cleff, except that which the Italians term the *Mezzo Soprano*, or an intermediate cleff, between the treble and counter tenor, and which, not being ever marked in our compositions, cannot be fancied by an English performer when he is obliged to transpose a fourth.

first

first treble being set before him, he would immediately add an extemporary base and second treble to it.

Having happened to mention this readiness in the boy to Bremner (the Printer of music in the Strand), he told me that he had some lessons which were supposed to have been composed for Queen Elizabeth; but which none of the harpsichord masters could execute, and would consequently gravel the young performer. I however desired that he would let me carry one of these compositions to him by way of trial, which I accordingly did, when the boy immediately placed it upon his desk, and was sitting down to play it; but I stopped him, by mentioning the difficulties he would soon encounter, and that therefore he must cast his eye over the music before he made the attempt.

Having done this very rapidly (for he is a devourer of a score, and conceives at once the effect of the different parts), he said that Bremner was in the right, for that there were two or three passages which he could not play at sight, as they were so queer and awkward, but that he had no notion of not trying; and though he boggled at these parts of the lesson, he executed them cleanly at the second practice^s.

I then asked him how he approved of the composition? to which he answered, "*not at all*, though he might differ from a queen; and that attention had not been paid to some of the established rules." He then pointed out the particular passages to which he objected, and I stated them to Bremner, who allowed that the boy was right; but that some of the great composers had occasionally taken the same liberties.

^s Possibly though he succeeded in this attempt, some of the other lessons might have been too difficult; but I had only this single one to lay before him.

The next time I saw Master Wesley, I mentioned Bremner's defence to what he had blamed; on which he immediately answered, "*that when such excellent rules were broken, the composer should take care that these licenses produced a good effect; whereas these passages had a very bad one.*" I need not dwell on the great penetration, acuteness, and judgement of this answer. Lord Mornington, indeed, (who hath so deep a knowledge of music) hath frequently told me, that he always wished to consult Master Wesley upon any difficulty in composition; as he knew no one who gave so immediate and satisfactory information.

Though he was always willing to play the compositions of others, yet for the most part he amused himself with extemporary effusions of his own most extraordinary musical inspiration, which unfortunately were totally forgotten in a few minutes; whereas his memory was most tenacious of what had been published by others.

His invention in varying passages was inexhaustible; and I have myself heard him give more than fifty variations on a known pleasing melody, all of which were not only different from each other, but shewed excellent taste and judgement.

This infinite variety probably arose from his having played so much extempore, in which he gave full scope to every flight of his imagination, and produced passages which I never heard from any other performer on the harpsichord.

The readiness of his fingering what was most difficult to be executed on the instrument, and in the only proper manner, was equal to his musical fancy; of which I will mention the following proof:

Since the comic Italian operas have been performed in England, there is frequently a passage in the bass, which consists of a single
note,

note, to be perhaps repeated for two or three bars, at quick and equal intervals, and which cannot be effected on the harpsichord by one finger, as any common musician would attempt to do, but requires a change of two.

I laid an opera song before Master Wesley with such a passage, and happening to be at the other end of the room when he came to this part of the composition, I knew from the execution, that he must have made use of such a change of two fingers, the necessity of which that eminent professor of music Dr. Burney had shewn me. On this I asked him from whom he had learnt this method of fingering; to which his answer was, "*from no one; but that it was impossible to play the passage with the proper effect in any other manner.*"

In his extemporary compositions he frequently hazarded bold and uncommon modulations; so that I have seen that most excellent musician Mr. Charles Wesley (his elder brother^b) tremble for him. Sam however always extricated himself from the difficulties in which he appeared to be involved, in the most masterly manner, being always possessed of that serene confidence which a thorough knowledge inspires, though surrounded by musical professors, who could not deem it arrogance.

And here I will give a proof of the goodness of his heart, and delicacy of his feelings:

I had desired him to compose an easy melody in the minor third,

^b Mr. Charles Wesley hath composed some singular peices for two organs, which would have great merit if performed by others, but have still more so when executed by the two brothers, as they are so well acquainted with each other's manner of playing, and are so amazingly accurate in the precision of their time. Such as have heard the two *Plis* in duets for the hautbois may well conceive the effect of these compositions from the Wesley's.

for an experiment on little Crotchⁱ, and that he would go with me to hear what that very extraordinary child was capable of. Crotch was not in good humour, and Master Wesley submitted, amongst other things, to play upon a crack'd violin, in order to please him; the company however having found out who he was, pressed him very much to play upon the organ, which Sam constantly declined. As this was contrary to his usual readiness in obliging any person who had curiosity to hear him, I asked him afterwards what might be the occasion of his refusal; when he told me, "*that he thought it would look like wishing to shine at little Crotch's expence.*"

Every one knows, that any material alteration in the construction of an organ, which varies the position of certain notes, must, at first, embarrass the player, though a most expert one. I carried Sam, however, to the Temple organ, which hath quarter notes, with the management of which he was as ready, as if he had made use of such an instrument all his life. I need scarcely say how much more difficult it must be to play passages which must be executed, not by the fingers, but the feet. Now the organ at the Savoy hath a compleat octave of *pedals*, with the half-notes; on which part Sam appeared as little a novice as if he had been accustomed to it for years. Nay, he made a very good and regular shake on the pedals, *by way of experiment*, for he had too much taste and judgement to suppose that it would have a good effect.

He was able to sing at sight (which commonly requires so much instruction with those even who are of a musical disposition) from the time of first knowing his notes; his voice was by no means strong, and it cannot yet be pronounced how it may turn

ⁱ An account of the success of this experiment will be given in what I shall hereafter say about that other musical prodigy.

out; his more favourite songs were those of Handel, composed for a base voice, as "*Honour and Arms*," &c.

He hath lately practised much upon the violin, on which he bids fair for being a most capital performer. Happening one day to find him thus employed, I asked him how long he had played that morning; his answer was, "Three or four hours; which *Giardini* had found necessary."

The delicacy of his ear is likewise very remarkable, of which I shall give an instance or two:

Having been at *Bach's* concert, he was much satisfied both with the compositions and performers; but said, "*The musical pieces were ill arranged*¹, as four had been played successively which were all in the same key."

He was desired to compose a march for one of the regiments of guards; which he did to the approbation of all who ever heard it, and a distinguished officer of the royal navy declared, that it was a movement which would probably inspire steady and serene courage, when the enemy was approaching.

As I thought the boy would like to hear this march performed, I carried him to the parade at the proper time, when it had the honour of beginning the military concert. The piece being finished, I asked him whether it was executed to his satisfaction? to which he replied, "*by no means*;" and I then immediately introduced him to the band (which consisted of very tall and stout musicians), that he might set them right. On this Sam immediately told them, "*That they had not done justice to his composition.*" To which they answered the urchin with both astonishment and contempt, by "*Your composition!*" Sam, how-

* Having heard him sing, "*Return, O God of Hosts!*" and an Italian air, since this sheet was in the press, I can now venture to pronounce, that his voice is a pleasing counter-tenor, and that his manner is excellent. Without any practice also he hath acquired an even and brilliant shake.

¹ It is supposed that this was a mere accident in the person who made out the musical bill of fare.

ever, replied, with great serenity, "*Yes, my composition!*" which I confirmed. They then stared, and severally made their excuses, by protesting, that they had copied accurately from the manuscript which had been put into their hands. This he most readily allowed to the hautbois and basoons, but said it was the French Horns who were in fault; who making the same defence, he insisted upon the original score being produced, and shewing them their mistake, ordered the march to be play'd again, which they submitted to with as much deference as they would have shewn to Handel.

This concert of wind instruments begins on the parade at about five minutes after nine, and ends at five minutes after ten, when the guard proceeds to St. James's.

I stayed with him till this time; and asked him what he thought of the concluding movement, which he said deserved commendation; but that it was very injudicious to make it the finishing piece, because, as it must necessarily continue till the clock of the Horse-guards had struck ten, it should have been recollected that the tone of the clock did not correspond with the key note of the march.

I shall now attempt to give some account of this most extraordinary boy considered as a composer, and first of his extemporary flights.

If left to himself when he played on the organ, there were oftener traces of Handel's stile than any other master, and if on the harpsichord, of Scarlatti; at other times however his voluntaries were original and singular.

After he had seen or heard a few pieces^m of any composer, he was fully possessed of his peculiarities, which, if at all striking,

^m I asked him once to imitate Lord Kelly's stile, which he declined, as he had never heard any composition of his Lordship's, except the Overture to the Maid of the Mill, which he highly approved of, however, for its brilliancy and boldness.

he could instantly imitate at the word of command, as well as the general flow and turn of the composition. Thus I have heard him frequently play extemporary lessons, which, without prejudice to their musical names, might have been supposed to have been those of Abel, Vento, Schobert, and Bach¹.

But he not only entered into the stile of the harpsichord-masters, but that of solo players on other instruments.

I once happened to see some music wet upon his desk, which he told me was a solo for a trumpet. I then asked him if he had heard Fischer on the hautboy, and would compose an extemporary solo, proper for him to execute. To this Sam readily assented, but found his little legs too short for reaching the swell of the organ, without which the imitation could not have its effect. I then proposed to touch the swell myself, on his giving me the proper signals; but to this he answered, "*That I could neither do this so instantaneously as was requisite, nor should I give the greater or less force of the swell (if a note was dwelt upon) which would correspond with his feelings.*" Having started this difficulty, however, he soon suggested the remedy, which was the following:

He stood upon the ground with his left foot, whilst his right rested upon the swell, and thus literally played an extemporary solo,

"Stans pede in uno;"

the three movements of which must have lasted not less than ten minutes; and every bar of which Fischer might have acknowledged as his own. Every one who hath heard that capital musician must have observed a great singularity in his cadences, in the imitation of which Sam succeeded as perfectly as in the

¹ He would as readily compose a song proper for the serious or comic opera the instant it was requested, particularly the airs of Handel for a bass voice.

other parts of the composition. After this I have been present when he hath executed thirty or forty different solo's for the same instrument, totally almost varied the one from the other, to the astonishment of several audiences, and particularly so to that eminent performer on the hautboy Mr. Simpson.

Having found that the greater part of those who heard him would not believe but that his voluntaries had been practised before, I always endeavoured that some person present (and more particularly so if he was a professor) should give him the subject upon which he was to work, which always afforded the convincing and irrefragable proof, as he then composed upon the ideas suggested by others, to which ordeal it is believed few musicians in Europe would submit. The more difficult the subject (as if it was two or three bars of the beginning of a fugue), the more cheerfully he undertook it, as he always knew he was equal to the attempt, be it never so arduous.

I once carried that able composer Mr Christopher Smith to the boy, desiring that he would suggest the subject; which Sam not only pursued in a most masterly manner, but fell into a movement of the minor third, which might be naturally introduced. When we left Mr. Wesley's house, Mr. Smith, after expressing his amazement, said that what he had just heard should be a caution to those who are apt to tax composers as plagiarists; for though he had wrote on the same subject, and the music had never been seen by any one, this wonderful boy had almost followed him note by note. Baumgarten found the same, upon a like trial, of what he had never communicated to any one.

I can refer only to one printed proof of his abilities as a composer, which is a set of eight lessons for the harpsichord, and which appeared in 1777, about the same time that he became so
known

known to the musical world that his portrait was engraved, which is a very strong resemblance. Some of these lessons have passages which are rather too difficult for common performers, and therefore they are not calculated for a general vogue.

His father, the Rev. Mr. Wesley, will permit any one to see the score of his Oratorio of Ruth, which he really composed at six years of age, but did not *write* till he was eight; his quickness in thus giving utterance to his musical ideas is amazingly great; and, notwithstanding the rapidity, he seldom makes a blot or a mistake.

Numbers of his other compositions, and almost of all kinds, may be likewise examined; particularly an anthem to the following words, which I selected for him^m, and which hath been performed at the Chapel Royal, and St. Paul's:

- “ 1. O LORD GOD of Hosts, how long wilt thou be angry
 “ at the prayer of thy people?
 “ 2. Turn thee again, O LORD, and we shall be saved!
 “ 3. For thou art a great GOD, and a great King above all
 “ gods.”

The first part of this anthem was composed for a single tenor; the second a duet for two boys; and the third a chorus. With regard to the merits, I shall refer to that most distinguished singer of cathedral music the Rev. Mr. Mence, who hath frequently done it most ample justice.

^m In pitching upon these words, I attended to a circumstance which perhaps deserves some consideration in compositions for the voice. The third person singular in the English verbs as written, when our translation of the Bible was made, ends with *th*, which cannot be pronounced by many foreigners, nor sounds well even in the mouth of an Englishman. Words with such a termination are not to be found in these passages; nor is it easy to select many such from our version of the Psalms.

As I happen to have by me a little ballad of his composition, I shall here subjoin it, and deprecate the severity of critics with regard to the words, by mentioning that it was written by a child of nine years oldⁿ. Little Wesley had scarcely cast his eyes over it but he sat down to his harpsichord, and sung the following air, which I conceive to have the true melody and simplicity proper for a ballad. In this compliance he shewed his readiness to oblige; and I may add, his condescension, as he would have rather chosen a harder task should have been imposed upon him, if any thing could be difficult to his surprising versatility of invention, adapting itself instantaneously to every species of composition.

ⁿ Master Thomas Percy (a nephew of the present dean of Carlisle and born Sept. 13th, 1768) who hath written the first canto of an Epic Poem, consisting of more than 600 lines, the subject being the Invasion of Britain by Julius Cæsar; as also the first act of a tragedy, founded upon a Peruvian story. In both of these there are strong marks of a most early genius for poetry, which he likewise recites admirably well upon the first stool you may place him. I asked this wonderful boy how many books he intended to divide his Epic Poem into; when he answered, that he could not well bring all his matter into less than twenty-four.

He was carried to the Museum at Leicester-house (being himself a virtuoso) soon after which he expressed his admiration of what he had seen in some verses addressed to Sir *Ashton Lever*, in which he noticed most kind of the natural productions in that most capital collection. I happen to recollect one of the lines, which may give some idea of the other parts of the poem:

“ Here crocodiles extend their scaly length.”

I should rather suppose, that no other verses are to be found upon the same subject; and therefore Master Percy, on this occasion, could not have been assisted by imitation. If it is wished to see the whole poem, the Gentleman's Magazine for June, 1779, p. 319, may be consulted; as also the same compilation for a pastoral, written by him, at a still earlier age. See that for April, 1778, p. 183. Both the song here inserted, and the verses addressed to Sir Ashton Lever, are printed as they were hastily written. The pastoral indeed was corrected by Master Percy himself, before it was published in the Magazine; for this early genius hath, in some instances, given a patient revival of his little labours.

SONG,

S O N G, (written by Master P E R C Y):

Composed by Master W E S L E Y.

Andante.

Autumnus comes with sickly brow, the scorching streams for-

get to flow, and Phœbus burns the air; The brooks are.

dry'd up-on the plain, and Phaeton fires the world a-

gain, and Nymphs to grotts repair, and Nymphs to grotts re-

pair.

The

II.

The youths with sickles seek the fields,
To gather all that Ceres yields ;
The farmer's barns are stor'd :
They tofs about the jovial bowl,
While joy enlivens ev'ry soul ;
The pudding smoaks the board.

III.

Each chufes out his nut-brown fair,
A Lucy or a Lydia there,
To dance away the hours :
Some tune the flute, some found the reed,
Like shepherds on the graffy mead,
And drefs 'em up with flowers.

IV.

O may the golden age return,
And men with gen'rous ardour burn,
For sweet retirement's lot !
O may the Mufes all confpire,
To light my breast with genuine fire,
And fix me in a cot !

SOME ACCOUNT OF LITTLE CROTCH.

Et mentem sua non capit ætas.

STATIUS, V. 14.

ANOTHER musical prodigy hath lately appeared, whose name is William Crotch, born at Norwich, on the 5th of July, 1775, of whom Dr. Burney hath given a very full and informing account in the Philosophical Transactions¹, which supersedes the necessity of my mentioning many particulars relative to the proofs of early genius, in this most remarkable child.

I first heard him play on the 10th of December, 1778, when he was nearly three years and a half old; and find that I made the following memorandum on returning home :

“ Plays, “*God save great George our King,*” and “*Minuet de la Cour,*” almost throughout with chords, reaches a sixth with his little fingers; cries *no*, when I purposely introduced a wrong note; delights in chords and running notes for the base; plays for ten minutes extemporary passages, which have a tolerable connection with each other; seldom looks at the harpsichord, and yet generally hits the right intervals, though often distant from each other. His organ rather of a hard touch; many of his passages hazarded and singular, some of which he executes by his knuckles, tumbling his hands over the keys.”

¹ Vol. LXIX. part I. for the year 1779.

At the same time, I received the following account from the mother, of the first appearance of a musical disposition in the child.

His father is an ingenious carpenter of Norwich, and had made an organ, on which he was capable of playing two or three easy tunes, and which had not been used for some time. When little Crotch was two years and three weeks old, he heard, "God save great George our King," on this instrument, after which he was excessively fractious, whilst they were putting him to bed; his mother then conceived, that he wanted to get at the organ, and placing him so as to command the keys, the boy immediately struck them, though she did not then distinguish that he played any particular tune. The next morning however there was no doubt but that he successfully attempted, "God save great George our King." After this, the child's musical fame spread quickly through the city of Norwich ^b.

The accuracy of this child's ear is such, that he not only pronounces immediately what note is struck, but in what key the music is composed ^c. I was witness of an extraordinary instance
of

^b This account differs, in some particulars of no great moment, from that given by Dr. Burney in the Philosophical Transactions, which I conceive, however, to be more minutely accurate, as the information which he received depends upon the authority of others, as well as that of the mother. I have not the most distant suspicion indeed that she wilfully misstated a single circumstance, but all memories are fallible, when we are questioned on a sudden about transactions that have happened at some distance of time.

^c I have the satisfaction of being confirmed by Dr. Burney, with regard to both these extraordinary facts; who adds, that the child distinguished any particular note, when he was but two years and half old, by laying his finger upon that key of the organ.

As to the latter proof of his most exquisite ear, impossible almost as it seems, yet it must necessarily follow, that from two or three bars of the
com-

of his being able to name the note touched ^d, at Dr. Burney's, who hath a Piano Forte, with several keys both in the base and treble beyond the scale in the common instruments of the same sort ^e.

Upon any of these very low or high notes being struck, he distinguished them as readily as the intermediate notes of the instrument. Now it is well known that the harpsichord tuners do not so easily manage these extremes, as their ears are not used to such tones, and more particularly the lowest notes.

A still more convincing proof perhaps of the same kind hath been mentioned to me by master Wesley, who takes little Crotch much under his protection. The child hath lately taught himself to play on the violin, which he holds as a violincello, and touches only with two of his fingers ^f. Master Wesley hath sometimes mistuned the instrument on purpose to excite his anger, which he never fails to express; adding, at the same time, whether it should be *higher* or *lower* ^g. He likewise

composition, he either knows what must be the concluding note of the base; or otherwise he must retain in his memory every successive note of the three bars, and from thence determine the key. In this experiment, (which I have tried myself), I suppose the three bars not to enter into extraneous modulation; for if they were such, the boy would then name the proper key, though not that of the principal composition.

^d If a chord of four notes is struck, he names them all in succession.

^e These notes are added to give sufficient room for two performers to sit down to the same instrument, and execute duets.

^f Master Wesley heard him when he had taken to the violin for about a fortnight; but I happened to be present a few days afterwards, when he had found out the necessity of using more fingers, as he improved in his execution. Crotch can also play on the common flute and *Sticcado Pastorello*, and deals much in the *rapid runs* which are usually introduced by those who can amuse themselves with that poor instrument.

^g He does not say *sharper* or *flatter*.

judges most accurately of what are called *extremes*^b on the violin, which seems to be still more astonishing, as the child hath scarcely ever heard any other instrument but the organ, which is defective in these quarter-tones. In other words, it seems to prove, that Crotch's ear is so very exquisite as to distinguish quarter tones, whilst the notes of the organ are only subdivided into half-tones; all of which are to a certain degree imperfect, and the ability of the tuner is shewn by distributing this defect, as equally as possible, amongst them all. Surely therefore this great refinement may be pronounced to have been almost innate in the child; for though perhaps he might have heard a Norwich fiddler, yet it is highly improbable that such performer should have stopped with this great precision.

Dr. Burney indeed mentions, that Crotch was present at a concert in London where Pachierotti sung, and where undoubtedly there might be some able musicians.

I once happened to be present when he was playing a well-known air, called *Minuet de la Cour*, in the greater third and key of A, which he afterwards repeated in that of B. Observing this readiness in the child to transpose, I desired him to try it in C; which he not only complied with, but proceeded regularly through the whole octave, whilst he sometimes looked back with great archness upon me, inquiring whether I knew in what key he was then playing; and having answered him once or twice wrong on purpose, he triumphed much in setting me right.

^b These notes are marked in some compositions for violins with a double sharp; and to exemplify, when F sharp occurs, in the greater third and key of E, it should be stopped by the performer perhaps nearly a quarter of a note more sharp than it is upon the harpsichord, or approaching to an intermediate quarter tone between F sharp and G natural. Fischer executes such quarter tones with great precision on the hautbois.

I must

I must acknowledge also, that at last he really puzzled me, for he concluded by a transposition into the key of F sharp, which is never used by English composers, and which I was not able to name on his word of command, not having attended to the last note of his base.

I need scarcely say, that I left the room after this in great astonishment; and it then occurred, that it might be right to make an experiment, whether he would be equally ready to transpose in the minor third, in which probably the child had never heard any composition whatsoever, it being so seldom used in the present times¹.

I then communicated what I had been witness of to Master Wesley, desiring that he would write down a simple melody of a few bars in the minor third; which he immediately complied with, and went with me to little Crotch, in order to assist in the experiment.

I was in great hopes that the child would catch this little air, after Master Wesley had repeated it five or six times; but in this I was disappointed; for little Crotch happened not to be in humour, though we endeavoured much to coax him to the organ. Having observed however that he would sometimes play from pique, when intreaties had no effect, I desired Master Wesley to give the treble only, and told Crotch that he could not add the base to it. On this the urchin sat down by Master Wesley, accompanying with the proper base this same tune, transposed in the minor third through the whole octave.

¹ This probably arises from the greater brilliancy occasioned by the open notes on the violin, which occur more frequently in the major than minor third.

When he had finished, Master Wesley had a curiosity to try him in transposing through the octave in the major third; which Crotch instantly did, and in a manner too peculiar not to be fully stated.

The tune pitched upon for trying this experiment a second time was, as before, *the Minuet de la Cour*; but Crotch conceiving at once what Master Wesley wished to be a witness of, only played three or four bars of the first part, and then instantly changed the key throughout the octave.

I shall here insert one of Crotch's *Voluntaries*, which was taken down whilst he was playing it. I told the child that it should be published as *Crotch's* composition; on which he wished to be stiled *Doct̄or*, which title it seems Dr. Randal of Cambridge, and musical professor there, had given the boy. The exact notes of this extemporary flight are here given, though the third bar may be deemed contrary to the established rules of musical composition.



The.

The child both looks^k and is very intelligent in other matters, which do not relate to music, and draws in a bold masterly way with chalk on the floor. One of his most favourite objects to represent is a violin, which he forms instantaneously with a few strokes; I need scarcely mention the difficulty of reversing the two sides, and S's, which must be very obvious to penmen, as well as painters. The boy likewise succeeds very well in the hasty outline of a ship. He is generally good humoured, though so often teased to play, which he readily complies with for the most part, if a child of the same age is not in the room, whose company he is not pleased with, perhaps apprehending that he will be set down to his organ, a property of which he seems to be extremely jealous^l.

The present Earl of Mornington^m furnishes an instance of a still earlier attention to musical instruments.

His father played well (for a gentleman) on the violin, which always delighted the child whilst in his nurse's arms, and long

^k Crotch had now been visited by most of the musical people in London, and his portrait was engraved; but the resemblance is by no means a good one.

^l As I have mentioned so many other proofs of early genius in children, I here cannot pass unnoticed Master Lawrence, son of an inn-keeper at the Devises in Wiltshire.

This boy is now [viz. February, 1780] nearly ten years and a half old; but at the age of nine, without the most distant instruction from any one, he was capable of copying historical pictures in a masterly stile, and also succeeded amazingly in compositions of his own, particularly that of Peter denying CHRIST. In about seven minutes he scarcely ever failed of drawing a strong likeness of any person present, which had generally much freedom and grace, if the subject permitted. He is likewise an excellent reader of blank verse, and will immediately convince any one, that he both understands and feels the striking passages of Milton or Shakespeare.

^m Well known to the musical world, for his great abilities as a composer.

before he could speak. Nor did this proceed merely from a love, common to other children, of a sprightly noise; as may appear by the following proof. Dubourg, who was thirty years ago a distinguished performer on that instrument^a, happened to be at the family feat^o; but the child would not permit him to take the violin from his father till his little hands were held; after having heard Dubourg however the case was altered, and there was then much more difficulty to persuade him to let Dubourg give the instrument back to his father. Nor would the infant ever afterwards permit the father to play, whilst Dubourg was in the house.

At the same period he beat time to all measures of music, however difficult; nor was it possible to force him to do otherwise, the most rapid changes producing as rapid an acclimation in the child's hands.

Though passionately fond of music, from indolence he never attempted to play on any instrument till he was nine years old. At that time an old portrait painter came to the family feat, who was a very indifferent performer on the violin, but persuaded the child that if he tried to play on that instrument, he would soon be able to bear a part in a concert.

With this inducement he soon learned the two old catches of the *Christ Church Bells*, and *Sing one, two, three, come follow me*; after which his father and the painter accompanying him with the two other parts, he experienced the pleasing effects of a harmony to which he himself contributed.

Soon after this he was able to play the second violin in Corelli's Sonatas, which gave him a steadiness in time that

^a He was also a distinguished musician when very young, and played a solo, on a joint-stool, at the famous concert of Tom Briton the small-coal man. Sir John Hawkins's *History of Music*, vol. V. p. 76.

^o Dangan, in the county of Meath.

never deserted him. For the next musical stage he commenced composer, from emulation of the applause given to a country-dance made by a neighbouring clergyman. He accordingly set to work, and by playing the treble on the violin, whilst he sung a note to it, he formed a minuet, the base of which he wrote in the treble cleff^p, and was very profuse of his fifths and octaves, being totally ignorant of the established rules of composition^q.

This minuet was followed by a duet for two French horns, whilst the piece concluded by an *Andante* movement, thus consisting of three parts, all of which being tacked together, he filed a serenata. At this time he had never heard any music, but from his father, sisters, and the old painter.

He stuck to the violin till he was fourteen; but had always a strong inclination to the harpsichord; from which his sisters drove him continually, saying that he spoiled the instrument, notwithstanding which he sometimes stole intervals of practice.

About this time the late Lord Mornington declared his intention of having an organ for his chapel, telling his son, that he should have been the organist, had he been able to play on the instrument. On this the son undertook to be ready as soon as the organ could be finished; which being accomplished in less than a year and a half, he sat down at the maker's, played an extemporary fugue, to the astonishment of the father, as well as others, who did not conceive that he could have executed a single bar of any tune.

It is well known that this instrument is more likely to form a composer than any other, and his lordship, in process of time,

^p Having only played in this cleff on the violin.

^q Which forbid two fifths or two octaves to follow each other in the same direction, the ear being glutted with such perfect consonances in succession.

both read and studied music, whilst he at the same time committed his ideas to writing. As he had however never received the least instruction in this abstruse, though pleasing science, he wished to consult both Rosengrave and Geminiani, who, on examining his compositions, told him they could not be of the least service to him, as he had himself investigated all the established rules, with their proper exceptions.

Though simple melodies commonly please most in the earlier stages of life, he had always a strong predilection for church music, and full harmony, as also for the minor third, in which for that reason he made his first composition.

In process of time his lordship was so distinguished for his musical abilities, that the university of Dublin conferred upon him the degree of Doctor and Professor of music.

I have happened to stumble upon two other instances of children, shewing a most early disposition to music.

In Doddsley's Register for the year 1763 there is an account from Brookefield in North America, of a boy, who, at the age of twenty-two months, sung the treble to one of Dr. Watts's hymns, whilst accompanied by a base voice; and at three years and a half the same child would sing twenty different tunes, by rules commonly used for teaching^r. The compiler also mentions a clergyman's son in London, who, at five years of age, could execute difficult lessons on the harpsichord, after they had been once played over to him.

Many have wished that these early geniuses might be left to themselves, in order perhaps to produce a better style of music than we are possessed of at present; a conceit which Dr. Burney hath most ably refuted. I could almost wish however, that little

^r He was the son of Thomas Bannister of that place.

Crotch, who hath not only heard, but can execute, several tunes, should be brought up in a village, where there was neither musician nor ring of bells. For though probably his music would not be absolutely wild; he might perhaps hazard some most singular passages, which might have an amazing effect, when properly introduced by an able composer.

It may now perhaps not be improper to make some comparison between the impressions made upon us by musical notes, and words, during our infancy.

And here it will first appear, that the musical connexion is much the stronger; for no child can at once repeat a short story, or even sentence; but we find that a tune is immediately executed by them, both by their own voices, and on instruments.

At first it may be supposed, that this arises from the nurse singing to the child; but this cannot be the cause, for they generally give over their *lullabies* when the infant is six months old, nor is one nurse in twenty capable of singing a tune throughout. How few children also are able to do this, even after they are grown up, and have had so many better subjects to imitate!

But perhaps it may be urged, that though the nurse is not musical, the parents may be so. To which I answer, that I have known several instances where both the father and mother have been blessed with a love of music, yet many of the children have not shewn the least disposition of the same kind.

I know very well, that many conceive they have a taste or ear for music; but whether they have or not is instantly discovered, if they attempt to hum an air. I would not by this intimate, that it is incumbent upon every person to have a good voice; but they who have a musical ear will never sing considerably out of tune, though their tone, or organs of voice, may be never so indifferent.

Another criterion (though perhaps not so irrefragable as the preceding) is the being able to beat time, which the greater part of grown people cannot do even to a minuet, where it is more marked than in any other measure, and therefore perhaps is more generally applauded than any other musical movement. We find that Lord Mornington was capable of this, before he could speak, though perhaps no grown person can explain, whence, without either *beating* or *counting*, he is always sensible when the musical bar commences.

I will not apologize for stating these criteria of a musical ear, because, if the pupil is not capable of both, I should conceive, that the time and expence of his being instructed are thrown away, and that the supposed fondness for music may be rather considered as a love of noise.

I do not pretend however to assert, that there never hath been an instance of a musical taste being acquired by those who are advanced in life; though I rather believe that the examples are rare.

But the connexions of musical sounds not only seem to make an earlier, but a more lasting impression on us than what we hear by the medium of words, as we retain the melody when every verse and line of the ballad is lost, which hath been learnt in our nurseries. I have found this to be the case with most persons whom I have interrogated on this subject, provided they had ever been masters of the tune throughout, when a bar or two, in any part, would immediately recall the whole to their memory.

The late Lord Bathurst mentioned to me once a very strong proof of this.

As his Lordship had much frequented the opera in the time of Queen Anne, Frederick prince of Wales wanted him to

sing a favourite air of Nicolini^s, which he could not at that instant recollect, as it had been performed not less than 40 years before.

Some time afterwards his Lordship dreamed that Nicolini sung part of the air to him, and when he awoke he remembered the whole song, repeating it from hour to hour till he had waited on his royal highness, before it had escaped his memory.

In another opera of the same reign Nicolini performed the part of Theseus. His lordship told me, that this famous singer had a particular pleasure in beating the minotaur very soundly, and that the man who represented the monster might submit more cheerfully to this drubbing, Nicolini always gave him a crown. As the singer chose however to have his pennyworth out of the minotaur, he generally thrashed him so heartily as to lose his own breath, which was often inconvenient, as a song of triumph was to ensue over the prostrate foe.

I took the liberty to desire his Lordship to give me an idea of this air, when he immediately sung it throughout, and imitated at the same time the catches of breath in Nicolini, from these extraordinary exertions. Lord Bathurst was at this time eighty-seven, to the best of my recollection, and therefore affords a strong instance of the musical memory being very perfect, even in that late stage of life. It need scarcely be observed also, that he could not probably have heard this song for more than three-score years^t.

^s The music of operas was not then published from season to season, as it hath been of late years.

^t It might indeed have occasionally occurred to him, though he certainly had not heard it performed.

A third proof of the greater connexion between musical sounds and any ideas obtained by the communication of words may be perhaps evidenced by repeating a tune and story of the same length to a child who can both sing and read, when I am confident that a note either omitted or mis-arranged would be more noticed, than the either dropping or misplacing a word in the short narrative.

Strong however and early as the love of music is in many children, yet it must be admitted that this most capital pleasure falls not to the lot of the greater part of mankind, even in any stage of their life.

This may be occasioned in many by a defect in their organs of hearing; but may be in others attributed to the discouragement of parents when the child first attempts to be a musician, and particularly if a boy. I should conceive however that this strong prejudice against musicians arises from observing, that itinerant fiddlers are commonly of abandoned morals, whence it is supposed, that those who are stationary, and have had a regular education, deserve perhaps no better a character. This prejudice in many hath taken so deep a root, that the contempt is transferred from the professors to the science itself, whilst they do not recollect that it is honoured with degrees in both our universities, that it constitutes a part of our cathedral service", and that it

" If it was not for this establishment of choirs in most parts of England, a concert could scarcely be performed any where but in the metropolis. I might add perhaps, that music would be almost annihilated in the country, for the harpsichords there are mostly tuned by the organist or singers of the cathedral. Even with this assistance most of these instruments are commonly out of order, from the expence, if the city is at any distance; it is therefore to be wished, that the tuners would attend regularly, at particular towns, upon certain days, from whence the instruments of the neighbourhood might be put in order at no ruinous a price.

I

affords

affords a most rational relaxation to those who happen to have a musical disposition.

I am ready to allow however that the greater part of the inhabitants of this country should get their livelihood by more laborious means, with which the practising upon instruments should not too much interfere; but I have frequently been astonished that those who intend to leave ample fortunes to their children, without destining them to any profession, should check this strong impulse of nature, while the fingers are supple, and brilliancy of execution may be acquired. We begin too late if we are to stay till we are own masters.

I have before ventured to call music a rational amusement, but I may almost pronounce it a necessary one in the decline of life, for most eyes begin to fail at 50, whereas the ear commonly continues perfect to a much later period. As all parents therefore wish that their children may attain a good old age, they should not withhold from them the

miseris—viatica canis,

which will probably be the consequence of preventing their playing on instruments at an age when alone they can become practical musicians, and thence acquire a taste for the striking effects of harmony.

ON THE DELUGE IN THE TIME OF NOAH.

THERE seem to be the strongest objections to the supposition of an universal deluge; some of which, without mentioning others, may be thus shortly stated.

He must be a more ingenious architect than even Bishop Wilkins^a, who can contrive a single vessel large enough for Noah and his family, the beasts, fowls, reptiles, and insects, of the whole globe, together with provisions for their sustenance, during the space of a twelvemonth^b; whilst the lives of each animal, in this confined state, must also have continued for that time, otherwise some genus or species must have been intirely destroyed, without a new creation.

If we are to understand likewise the expression literally of ALL, the extirpation of the web-footed fowls would not have followed; nor of the water reptiles and insects.

On the other hand, there must have been a new creation of either the salt or fresh water fish, supposing the fluid which covered the face of the globe to have been either salt or fresh, as the former could not have lived a twelvemonth in water so much freshened, or the latter in an element become so much salter.

^a See his Works.

^b No mention is here made of fuel, as well as many other bulky but necessary articles.

How

How could the animals, almost peculiar to the arctic circle (a rein-deer for example), or those only found in America at present, have been procured for the ark, or insects in their different metamorphoses? How was the proper food also to be supplied for the animals of the whole globe, for a year, when many of them, particularly insects, only feed upon peculiar plants, which therefore must have continued to vegetate in part of the ark destined for a conservatory. The animals again are directed to be male and female; many of which, within the twelvemonth, would have procreated; and from what stores on board the ark was this numerous offspring to be supported?

The deluge, if universal, likewise continuing for a twelvemonth, all the annual plants of the globe must have been destroyed, not to mention both shrubs and trees, many of which would have lost all vegetative power, after they had been covered so long by water, either fresh or salt.

Having thus briefly stated some of the principal objections to a general deluge, it may be right to suggest the best answer I am able to the only supposed proof of such an inundation, which confessedly carries with it much plausibility, after which I shall endeavour to explain the chapters of the book of Genesis, which relate to this great event.

It is frequently urged, that shells of marine animals are found on the tops of mountains, which could not be conveyed thither by any other method.

The first answer to this is, that supposing the whole globe to be covered with water, what could have been the inducement to the shell-fish (many of which perhaps cannot move) to desert their proper habitation in the bed of the sea, in order to transport themselves to the top of an inland mountain, where they must immediately starve, for want of their usual nourishment.

The

The next answer is, that such fossils in the cabinets of virtuosi are often reported by the seller to have been found in such places, contrary to the real fact, as the specimen, with many collectors, is, on that account, more valued.

M. le Roy therefore, who was employed to procure timber in the Pyrenees, speaks thus of his fruitless searches for such fossils, " Je n'ai appercu aucun coquillage dans les Pyrenees, seulement quelques empreintes sur les pierres, que j'ai toujours crues formées par des *filtrations* ^c."

" Neither in the Apennines, Alps, Pyrenees, or Grampian Mountains, nor in those of Asia, Africa, or America, are shells or marine bodies of any kind to be found ^d."

Most fossilists again agree, that the shells thus discovered do not belong to the sea fish of the neighbouring coast, whilst, for the greater part, no known animal can be pointed out as the inhabitant ^e. The argument is therefore reduced to this, the shell bears a general resemblance to that of some crustaceous or other fish, and consequently must have originally been deposited at the bottom of the sea.

Much is in like manner said about impressions of subterraneous plants, which are frequently attributed to the same cause of a general deluge; and which commonly bear a strong, but not exact resemblance, to fern, polypody, and box.

Now it is first to be observed, that these supposed plants are seldom, if ever, doubled, or the foliage displaced, which must continually happen if they were the exuviae of real plants. At certain times of the year likewise the backs of fern leaves are

^c Londres, 1776. 4to. p. 4.

^d Wesley's Nat. Hist. vol. III. p. 139.

^e See Hist. Acad. Sc. for 1743. p. 111.

covered with the seed, and the box both flowers and seeds, yet I have never happened to see any of these fossil plants with either the one or the other. Many such specimens also have no stalk or root. They are more commonly seen in coal-flates (or the stratum above the coal), than perhaps in any other soil. Whence can it arise likewise that the leaves or branches of other plants and trees are not found as frequently? I have also seen fossils which have borne some resemblance to the barks of trees, and chiefly fir; but they were flat, and not convex, as must happen when they vegetate.

Petrified and fossil bones of animals, quadrupeds, and fish, are likewise supposed to be frequently discovered; but I never heard of more than fragments being thus found; when, if these were really the bones of animals, the perfect skeleton must often be met with in a fossil state.

Strata of these, and of a considerable length, are met with, both in Dalmatia and the rock of Gibraltar, which seem to be composed of human bones; but these are chiefly those of the leg; nor is it scarcely possible that they should have been any part of a human creature, notwithstanding the very strong resemblance.

We will suppose these however to have been thus deposited, after a great slaughter in battle, or the sudden ravage of a pestilential disorder.

Upon these occasions the numerous corpses must necessarily be buried in one general pit, and consequently the skulls and other bones would be at the same time dug up, and within a very small compass; whereas those in Dalmatia lie for furlongs in narrow strata along the sea-coast, and the same is believed with regard to the specimens from Gibraltar. At all events, in such only possible cases, the complete human skeleton would be discovered.

But it will be urged, that we are to believe our own eyes, when the resemblance is so strong; to which I am ready to answer, Yes; if you will compare the fossil plant or animal with candour and accuracy.

For example, I will suppose the instance of a fossil prawn to be examined, which not one in ten thousand will distinguish from a large shrimp; yet if it is contended that this must be a shrimp from the strong resemblance, the assertion is not true.

The same holds with regard to the specimen of a large fossil crawfish, which differs specifically from a small lobster, though naturalists only will discern the proper criteria.

Many learned writers, and amongst these some distinguished fossilists, have denied the inferences often drawn from these subterraneous specimens in support of an universal deluge.

Dr. Grew (in his Catalogue of the Museum of the Royal Society) expresses himself thus on this head.

“ Although nature cannot be said to imitate art, yet it may
 “ fall out, that the effects of both may have some likeness. Those
 “ white concretions which the Italians (from the place where
 “ they are found) call, *confetti di Tivoli*, are sometimes so like
 “ round confections, and the rough kind of sugared almonds, that
 “ by the eye they cannot be distinguished. To call these *petrified*
 “ *sugar plumbs* were senseless. Doth not Sal Ammoniac often
 “ shoot into millions of little ones? If we find in other stones
 “ the resemblance of plants, why not naturally there, as well as in
 “ frosty weather upon glass windows; or as salts sometimes
 “ figure themselves into some likeness to the plants whereof they
 “ are made? Nay, why not to a face, or other animal form?
 “ Since we see that there are diverse palm-nuts which have the
 “ same^f.”

^f P. 254.

Again,

Again, the same writer in describing a fossil, "in shape so like a shark's tooth that one tooth cannot be liker to another; yet if it be such, then by comparing those in the head of a shark, that to which this belonged must have been about 36 feet in length^a."

Lhuyd, in his additions to Camden's Britannia^b, speaks in the same manner with regard to the supposed impressions of plants found in coal and other pits. Impressions of mosses, and to the full as strong a resemblance as the fossil plants, are allowed by many of the virtuosi to be *lususes*; but I cannot conceive why it is not as difficult to effect an imitation of the one as of the other.

As we cannot account exactly how every pebble we tread upon is formed, it may by many be thought presumptuous to make this endeavour, with regard to fossil bodies; though such as attribute them to a general deluge, certainly fall under this blame (if it is deserved) as much as those who assign them to other causes.

I do not pretend to produce my own hypothesis in regard to the formation of many of these subterraneous bodies, with any degree of confidence; but I have at least persuaded myself that it may deserve some attention.

I shall therefore venture to submit, that subterraneous insects may have occasioned many of these strong resemblances (or *lususes*) either by their claws or *antennæ*, or perhaps by emitting a liquor which may both excavate and discolour the stone, or other body, on which they may happen to work.

The first objection to this conjecture will probably be, that proof is wanting of the existence of such insects, and which I

^a Ibid. p. 257.

^b Art. Flintshire.

admit must rest upon what at most will amount to a probability.

We know with certainty, that a quadruped, so large as a mole, not only exists, but finds its proper nourishment under ground, as also a considerable number of insects. We likewise know that the toad hath been frequently found at a considerable depth under the soil, inclosed with stone almost in contact with its body. This fact indeed hath been much ridiculed by some, and chiefly because it was supposed that the animal could not have continued to exist, both for want of air and food, whilst in such a situation. We are not however to reject well-attested accounts of facts in Natural History, merely because they happen to contradict what we generally observe to be necessary for the preservation of animal life; and that able anatomist Mr. John Hunter, F. R. S. having inclosed a toad between two stone flower pots for more than 14 months, found it as lively as when first confined.

But insects, tender as their bodies are, frequently penetrate into the hardest surfaces¹; which labour they would not throw away, did it not answer to them either for food or depositing their eggs, or young.

Geoffroy informs us, that some of the Teignes [tinea] excavate stones to lay their larvæ in^k, and our own naturalist poet Thomson says,

secure
Within its winding citadel, the stone
Holds multitudes.

[*sc.* of Insects.]

¹ There is a species of ant in the Mauritius which will eat through a trunk in a night. See a Voyage to that Island, in 1753.

^k Account of Insects in the environs of Paris, vol. II. p. 178.

Turnesort again mentions that, "Rocks are peopled and
"eaten by small worms covered with shells of a green or ash-
"colour!"

Another argument of most considerable weight for the existence of such insects, at almost any depth, arises from such a vast mass of matter as our globe consists of, under the surface, or even the deepest of our mines, not contributing to the life or conveniences of any animal whatsoever, which can scarcely be supposed, without the strongest and most irrefragable proof.

Particular fossils again are commonly found in the same particular strata; and does not this afford a proof that the insects which inhabit such strata are the occasion of the singular bodies which we there discover? A general deluge, on the other hand, must disperse these bodies indiscriminately in every kind of strata ^m.

Some animals moreover form their shells by emitting a juice, which fashions the layers of their habitation. "So the shells of
"snails and oysters are formed, their respective animals throwing
"out periodically the ossaceous juice, or testaceous matter, which
"adheres to the former shell, and concretes, and thus the successive layers are produced ⁿ."

As

¹ This circumstance may account for many of the fossil shells, the living inhabitant of which hath never been discovered by any naturalist.

^m There are two stone quarries near Swindon in Wiltshire; and in that which is at the least distance from the town there are scarcely any fossils which bear the most distant resemblance to those of marine shells, whereas they are found in considerable numbers in a quarry at no greater distance than a quarter of a mile. This fact seems to prove, that the strata of the second quarry are more convenient to certain insects than those of the first, whilst it cannot be supposed that this difference is to be attributed to a general deluge.

ⁿ Ellis, Ph. Transf. vol. LXVI. p. 8.

I do

As we know therefore, that certain animals which we are well acquainted with, form their habitations in this manner, why is this to be denied to subterraneous insects, the existence of which may be fairly inferred from what hath been stated, nor can we go further in the proof, except our deepest mines are more attended to than they have yet been by any naturalist. The search indeed into these deep caverns, commonly arises from other motives than that of promoting science.

It is unnecessary to mention instances of the regularity and ingenuity with which insects construct their habitations, or prepare the proper receptacle for their eggs and young. I have myself however frequently observed, under the bark of a decayed bough, marks made by their punctures, exactly in the form of leaves, and with as strong a resemblance to a plant as any fossil of the same kind. If insects therefore above ground produce such imitations, why may not the same happen under the surface of the earth, or at least is the impossibility of this so great, that it is necessary to have recourse to a general deluge?

But I shall now perhaps be told, that all these objections to the whole globe being covered with water in the time of Noah, cannot weigh an instant against the positive words of the book of Genesis, which therefore it will be now right to examine, in the same manner that expressions in every other author should be understood.

No apology for this need be made in a protestant country, as otherwise we must give up the Copernican system, and literally believe that Joshua not only ordered, but obliged, the sun (and

I do not by this mean to contend, that no fossil shell was ever found, but there cannot be a stronger proof that such instances are rare at any distance from the coast, than that extravagant prices are given for specimens which have the pearly coat.

not the earth) to stand still for a whole day; and in countries of the Roman Catholic persuasion, excuses are made for entertaining this opinion in every publication where it is alluded to.

The whole of this much controverted point depends principally upon the signification of the word *earth*, which in English more commonly includes the whole globe, unless confined by the context to a district, or more circumscribed spot.

And first, let us consider the occasion of the deluge; which is stated to be,

“That God saw the wickedness of man was great upon *the earth*,” Gen. vi. 5.

“And the LORD said, I will destroy man whom I have created, from *the face of the earth*, both man and beast, and the creeping thing, and the fowls of the air;” ver. 7.

“But Noah found grace in the eyes of the LORD,” ver. 8.

The exception here stated, “But Noah found grace, &c.” seems most strongly to prove, that the wickedness complained of related to the district in which he lived; for in the then uninhabited part of the globe there could have been none to offend, and involve with their own destruction the whole race of animals. This however was necessary in that portion of Asia where Noah dwelt, as the animals not included in the ark might have contributed to the support of some of the guilty.

I should conceive therefore, that the term *Earth* is to be confined in these chapters of Genesis to that portion of the globe where the calamity happened, the synonyms in most languages being equally restrained by the context, or at least often so.

◦ “*The earth*,” in this and other passages of the three chapters of Genesis which relate to the deluge, is always anxiously repeated, as “and every thing which is *in the earth* shall die,” Gen. vi. 17. where, if the whole globe was intended, it would have been said only, “*every thing shall die.*” The same may be observed with regard to the two former citations from Gen. vi. 7, and 8.

Thus

Thus in the 12th book of the *Odyſſey* γαῖα only means an island^p.

— εἰς τις ἀλλή

Φαινέτο γαῖαν, ἀλλ' ἔρανος, ἠδὲ θαλάσσια. *Od. M.* 403.

It ſometimes is ſtill more circumscribed, and relates to the ſoil immediately under our feet, as in the firſt book of the *Iliad*.

Ποτι δὲ σκηπῆρον βάλε γαίῃ, as alſo,

— ῥέε δ' αἵματι γαῖα.

Iliad. Δ. 451.

The ſenſe of the word (*terra*) equally depends upon the context, and does not always import the whole ſurface of the globe, as in the following line of *Virgil*:

Postquam altum tenuere artes, nec jam amplius ullae
Apparent terrae—

Sometimes ο more than a very ſmall portion of ſoil, as

— haud paravero,

Quod aut avarus ut Chremes terra premam;
Discinctus aut perdam ut nepos.

Horat. Epod. i.

I ſhall now ſhew that *the earth* is neceſſarily uſed in a confined ſenſe in ſome of the chapters of *Geniſis* which relate to the flood.

“There were giants in the *earth* in thoſe days,” *Gen. xi.* 4. where it muſt mean the adjacent country, for I believe it never was contended, that there were at this time giants over the whole ſurface of the globe. The ſenſe of the word being thus aſcertained

^p What thus follows is printed chiefly from vol. IV. of the *Archaeologia*, p. 323, & ſeq.

when

when it is first introduced in these chapters of Genesis, it seems to follow, that it must continue to be used in the same signification, when it occurs afterwards in the account of the flood.

Thus again, “and the flood was forty days upon the earth, and the waters increased and bare up the ark, and it was lift up above the earth.”

When the *earth* is thus introduced a second time, it must mean only the space of ground which was under the ark¹; whilst it is also expository of the same word used in the preceding part of the verse, which cannot therefore reasonably be extended beyond the district.

The next term which hath occasioned the misunderstanding the scripture account is that of *Heaven*, the sense of which again, and its synonyms, in most languages, depends upon the context, as it often signifies no more than the atmosphere over a particular district, or scarcely more sometimes than the vertical point over our heads.

Thus in the 12th book of the Odyssæy *ερανος* means only the atmosphere above a high rock.

—ερανον ευρυν ικανει

Οξειη κορυφη — Od. M. 74.

And again in the last book of the Iliad,

—λειβε δε οινον,

Ουρανον εισανιδων, — Il. Ω. 306.

where it is confined to the clouds above the person who is to make the libation.

The Latin term *Coelum* is often likewise not applied to more than the atmosphere of a district, or a still smaller portion; thus in the often cited line of Horace,

Coelum non animum mutant, qui trans mare currunt;

¹ Gen. vii. 16.

X x

whilst

whilst Virgil confines it to the void space above a tree ;

Exiit ad coelum ramis felicibus arbos.

Thus Jacob's ladder reaches from the earth to *heaven*, Gen. xxviii. 12, in which passage nothing more than a very small point can be implied.

As again, "A tower whose top may reach to heaven," Gen. xi. 4.

There is a third expression used in these three chapters of Genesis which it may be right to explain, viz. *the fountains of the deep*, as it is much relied upon by the partisans of an universal deluge, and supposed to account for the extraordinary height of the inundation ; whilst some conceive it to signify the sea, and others subterraneous waters inclosed within the surface of our globe. I understand, however, by this expression, nothing more than the fountains of the atmosphere, the word *deep*, in some languages, relating to what is over our heads, as well as under our feet.

The term, therefore, by which *the deep* is rendered in the Septuagint, is *αβυσσος*^r, which signifies indeed *without bottom*, but for the same reason *without top*.

^r This term occurs in Pf. xlii. 7. "*Deep* calleth unto *deep* at the noise of thy water-spouts," which in the Septuagint runs *αβυσσος αβυσσων επικαλειται εις φωνην των καταραηλων σου*. It is impossible that the Psalmist can here allude to either waters under the surface of our globe, or to the sea which is at such a distance from Judea ; but, on the contrary, it must relate to what is above him, from *καταραηλων* being mentioned, which always signify the precipitate descent of a river. Thus also *αβυσσος* is joined to the *καταραηλων τε κρανη*, Gen. vii. 11. as again Gen. viii. 2. which being stopped, the rain from heaven is restrained.

This term (viz. *αβυσσος*) is twice used likewise in the revelations, viz. ix. 11. and xx. 3. in both which verses it must mean, probably, some inferior part of the heavens, and neither the bottom of the sea, or waters within the central parts of our earth.

This word is more properly *αβυθος*, but Suidas informs us, *λεγεις δε του βιβου αβυσσων φασιν*.

Thus

Thus *profundus* is applied by Virgil to Heaven,
 Terrasque tractusque maris, coelumque profundum,
 Ecl. iv.

Altus likewise signifies either *high* or *deep*, as in the line of
 Virgil,

Postquam *altum* tenuere rates.

Having thus endeavoured to fix the sense in which the 6th, 7th, and 8th chapters of Genesis have introduced these expressions, I will beg any candid reader to peruse them, substituting my acceptance of these words, instead of the terms in which these chapters are rendered either into Greek, Latin, or English.

It is proper, however, that I should here state the only text*, which may seem to require being understood to extend to a general deluge.

“ And the waters prevailed exceedingly upon the earth, and all
 “ the high hills that were under the *whole heaven* were covered.

“ Fifteen cubits upwards did the waters prevail, and the moun-
 “ tains were covered.” Gen. vii. 19 and 20.

That the *whole* heaven can here only imply the atmosphere above the country in which the deluge happened, seems evident from the following reasons :

The history of this flood is commonly supposed to have been written by Moses, and if he received the tradition from Noah with the utmost accuracy, yet the Patriarch could only give an account of what he was able to observe himself; therefore these words must be confined to the district in which the ark

* ALL flesh is likewise used, Gen. ix. 15, and occurs also twice more in the same chapter; but I should conceive, that these general expressions must be confined in their signification for the reasons which I shall give in relation to Gen. vii. 19, 20.

floated. It must be added to this, that it is stated, the mountains were covered with water to the depth of fifteen cubits; this cannot, however, relate to every mountain on our globe, but to those only which Noah might be acquainted with the height of; even mount Ararat, on which the ark is supposed to have rested, is by no means the highest mountain of our earth.

Besides this, such general words (as *all*) must frequently be confined in their signification.

Thus when it said by St. Luke, that there went out a decree from Cæsar Augustus that *all the world* should be taxed, Luke ii. 1^t, this can only refer to that part of it which was under the Roman government; for Parthia (not far from Judea) was so far from being subjected to the Roman yoke, that they had not more than half a century before this, totally defeated Crassus's army.

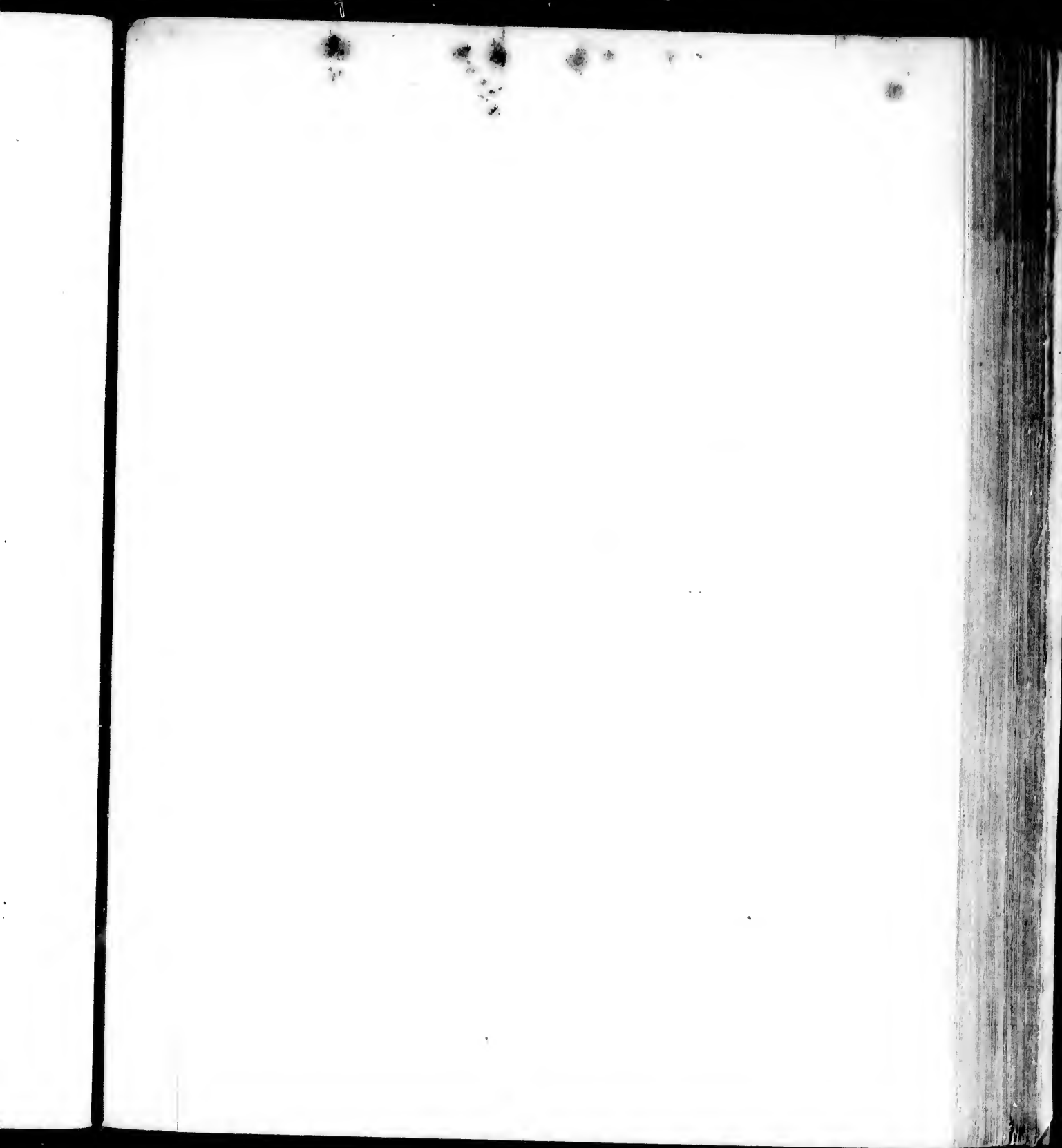
Thus

' The expression in the Greek is *πασαν την οικουμενην*, but this is equally inaccurate, if the words are translated in their more literal sense, and confined to the inhabited part of the globe. Thus also three of the Evangelists inform us (Matthew xxvii. 45. *επι πασαν την γην*. Mark xv. 33. and Luke xxiii. 44. *εφ' ολην την γην*;) that darkness prevailed over the whole earth for three hours after the crucifixion; this, however, must relate only to Judea, for such a most remarkable event is not mentioned by any other writer who lived at the time or later. The elder Pliny must have probably remembered this darkness, if it had extended to Italy; and he would certainly have introduced it into his Natural History, as he hath a chapter, entitled, *Dierum lux nocte*, l. ii. c. 33. which would have been followed by "Noctuum tenebrae die."

"The Lord God of heaven hath given me *all* the kingdoms of the *earth*," Ezra speaking in the name of Cyrus, 1st and 2d.

"And there stood up one of them, named Agabus, and signified by the spirit, that there should be a great dearth *throughout all the world* [*εφ' ολην την οικουμενην*] which came to pass in the days of Claudius Cæsar," Acts xi. 28. Which expression Bishop Lowth, in his lately published commentary on Isaiah, confines to the Roman empire, or Judea, p. 91. *notes.*

After



A GENEALOGICAL TABLE; shewing the Descent, according to Dr. Powell

†† In the several descents only such of the issue are mentioned, as show the order of succession, or were remarkable.

Although this Genealogy is chiefly formed from Dr. Powell's Hist. some Additions are made from Dugdale's Baronage, and other good Authorities.

I. King Cadwallader, the last king of Britain, ob. 55.

Prince Edwal the Roe, son of Cadwaller, obiit. 70.

III. King Roderic Molwynoc, king of Wales, ob. 715.

Nest, sister and heir of the king of Powis. IV. King Conan, ob. 715.

V. King Mervyn Frych, slain 843. Princess Efylyt, only daughter of Conan.

VI. King Roderic, the Great, slain 877. Anarawd, son of Efylyt.



PRINCES OF NORTH WALES.

VII. Prince Anarawd had North Wales, ob. 913; began his reign 877.

Pr. Mervyn Powis, ob. 877.

Elise, 2d son of Anarawd, slain 940.

VIII. Prince Edwal Voel, slain 940.

Trawst, wife of Sitylt.

Meyric, set aside by his brother.

X. Pr. Jevaf, began 948, deposed ob. 987.

XVII. Pr. Llewelyn ap Sitylt, reigned 1015.

XV. Pr. Edwal ap Meyric, gained N. Wales in 992.

XII. Pr. Howel ap Jevaf, began circ. 972. fl. 984.

XIII. Pr. Jevaf, slain 985.

XIX. Pr. Gryffyth ap Llewellyn, reigned 1037; slain 1060.

XVIII. Pr. Jago ap Edwal, got N. Wales; was slain, 1037.

Conan, slain 1003.

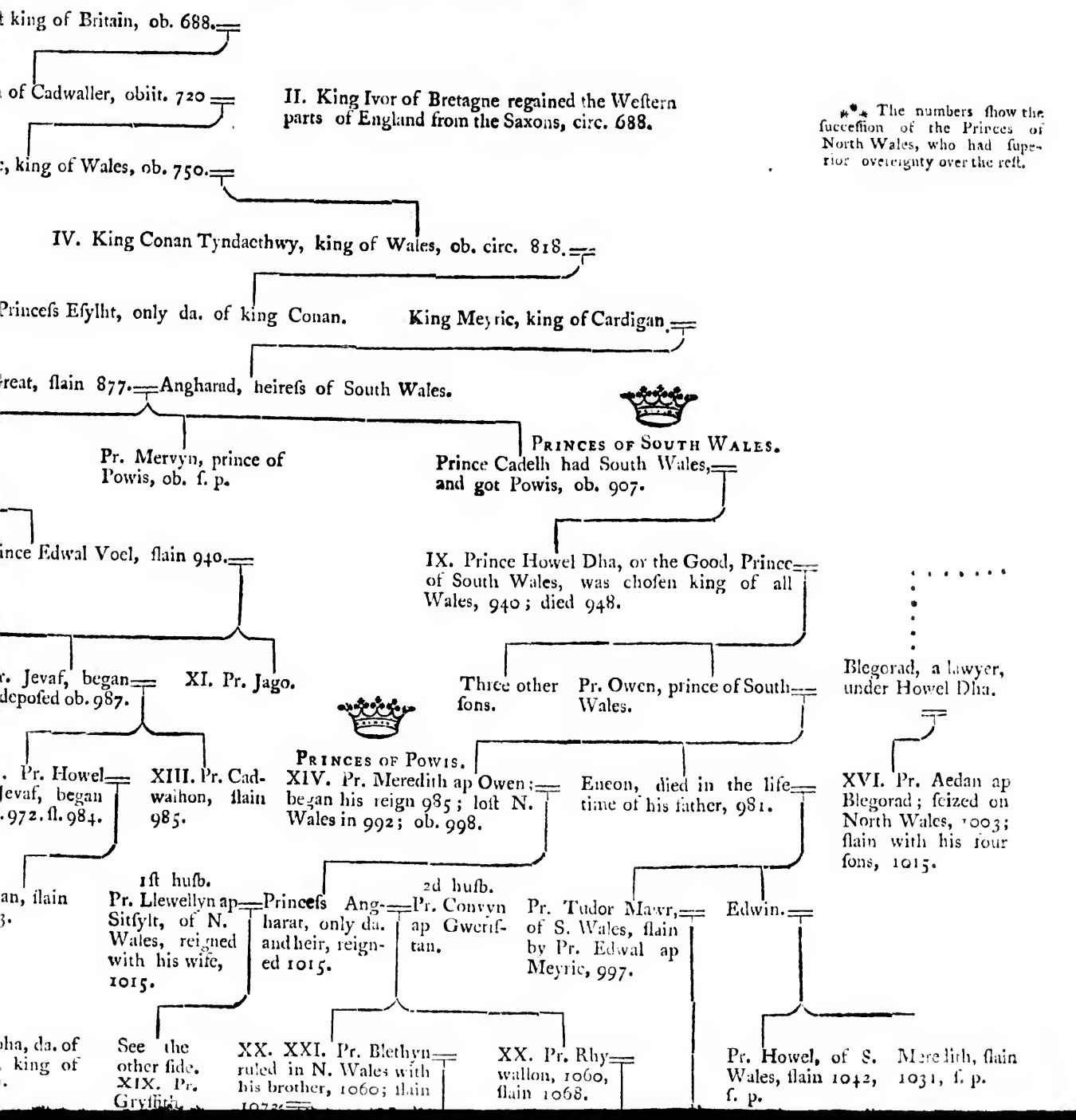
1st h. Pr. Llewelyn ap Sitylt, reigned N. Wales, with his brother, 1015.

Fleance, son of Banquo, fled from k. Macbeth. Nest, da. of Gryff. XXII. Pr. Trahaern ap Cara-doc.

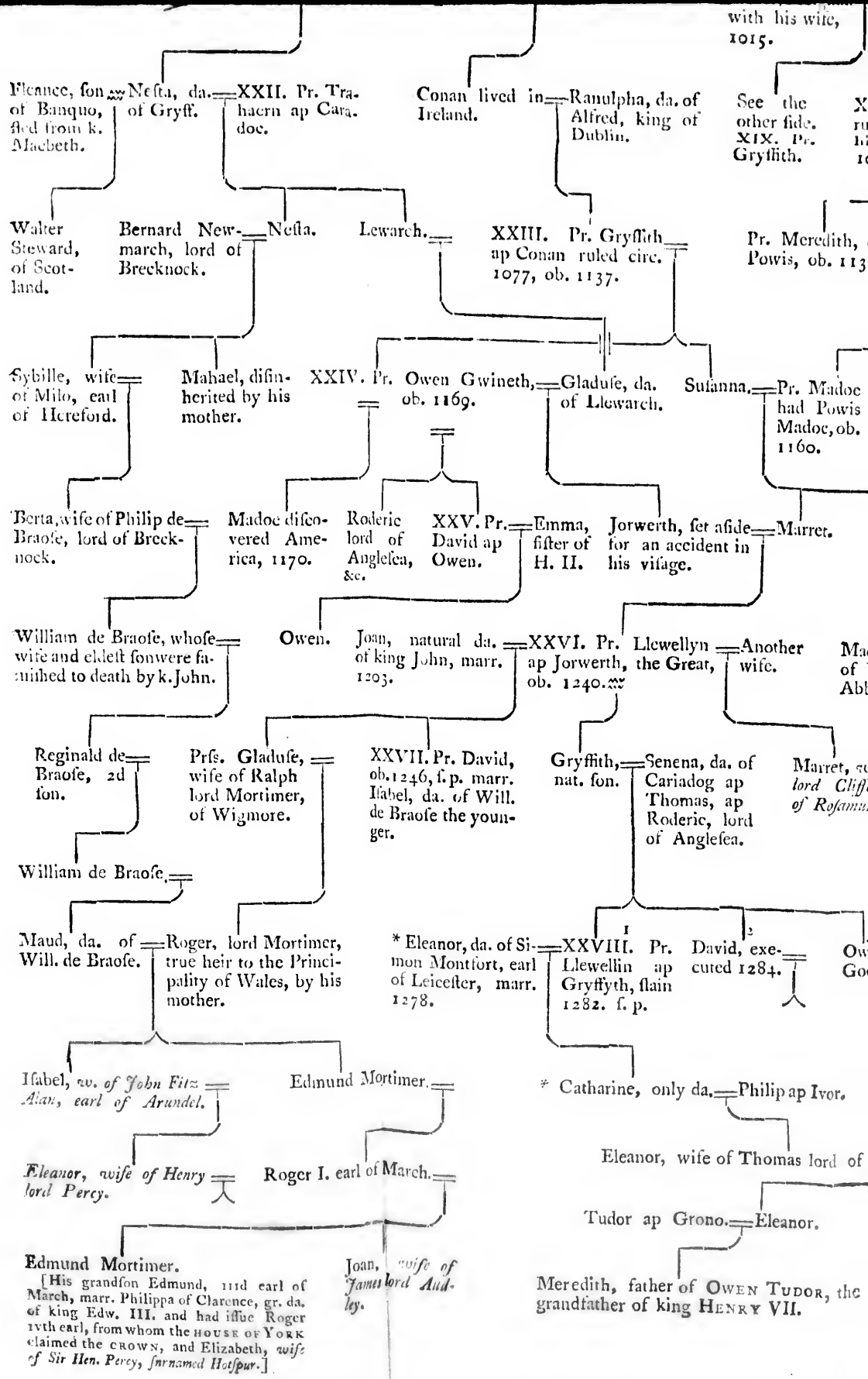
Conan lived in Ireland. Ranulpha, da. of Alfred, king of Dublin.

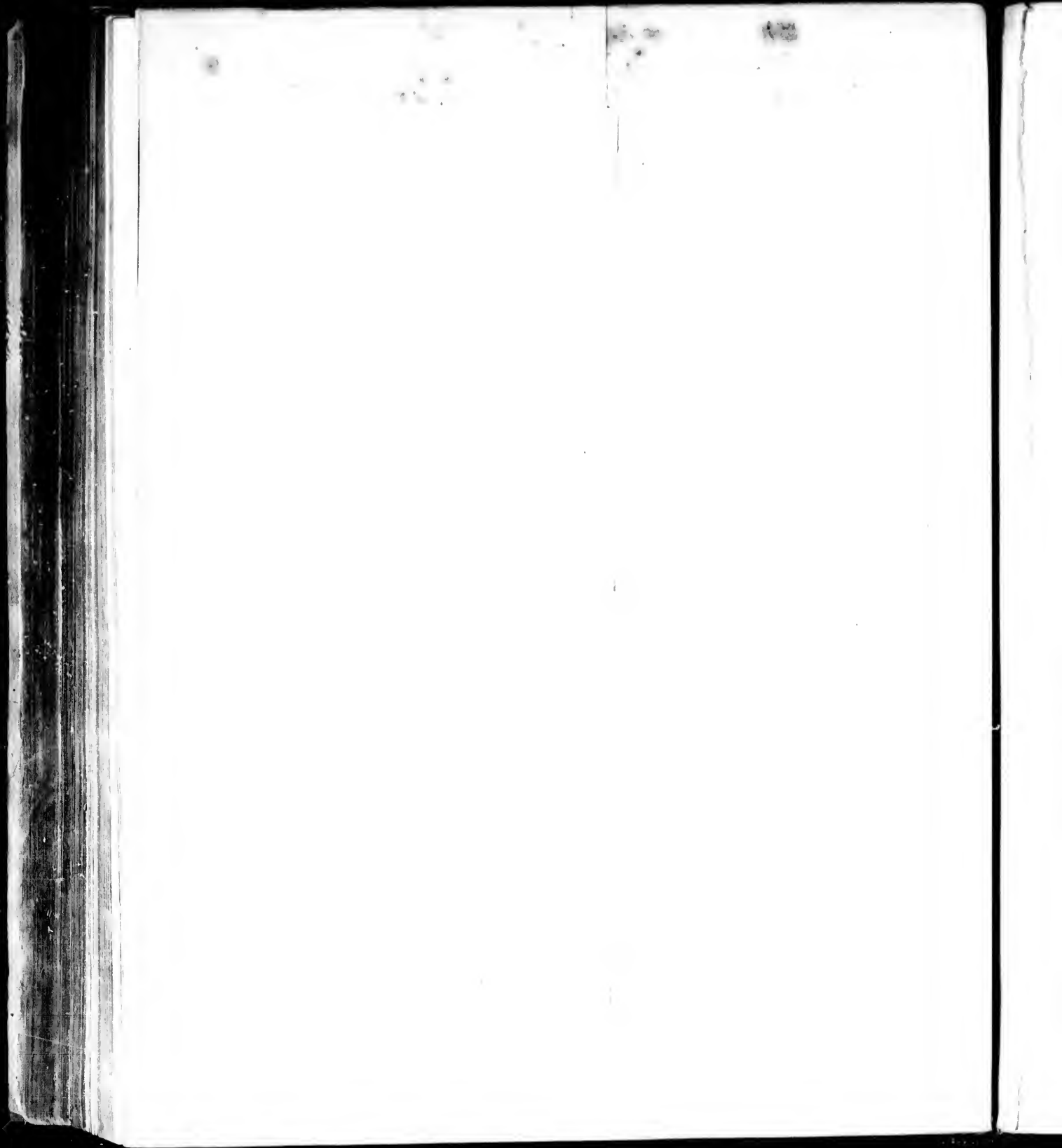
See the other side XIX. Pr. Gryffyth.

ing the Descent, Affinity and Order of Succession of the **KINGS** and **PRINCES** of **WALES**,
 ing to Dr. Powel's History of Wales, 1584, 4to.



*** The numbers show the succession of the Princes of North Wales, who had superior overignty over the rest.





Thus also, when Petronius says,

Orbem jam totum victor Romanus habebat,

Qua mare, qua tellus, qua fidus currit utrumque,

it is well known, that there were many parts even then unsubdued; as there were in the time of Antoninus, whom Oppian addresses as,

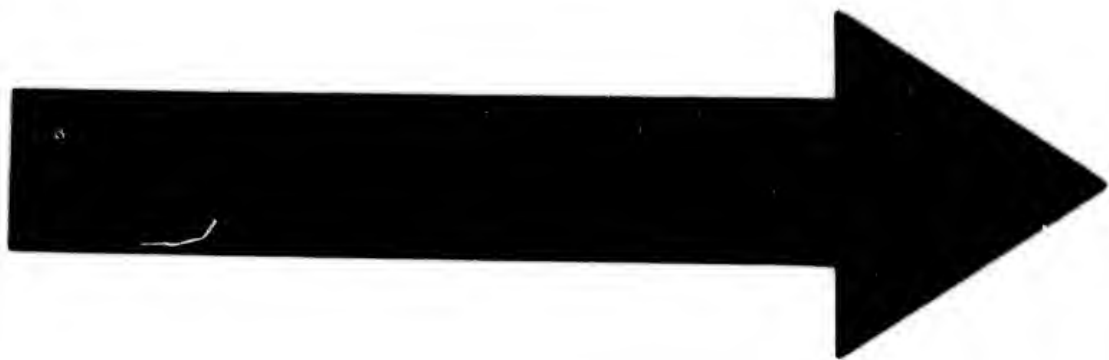
Κοσμῶν γαμῶν.

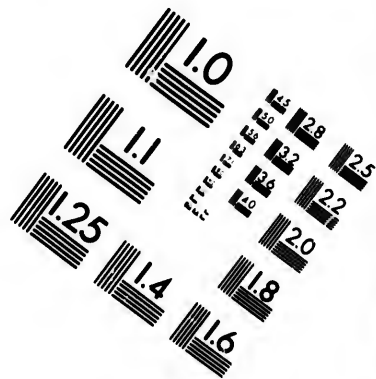
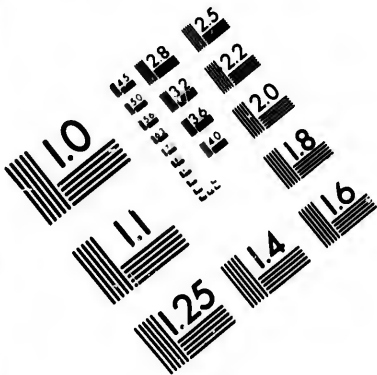
It should seem therefore, from the common rules and observations by which a passage or words used by any other writer would be explained, that the general terms of the three chapters of Genesis which relate to the deluge, are to be confined to the country in which Noah lived; and to contend otherwise seems most unnecessarily to multiply unanswerable difficulties and objections. As the universality of the deluge is no article of faith, it may be freely discussed; and I have already shewn, that a living and distinguished prelate of our church hath explained the expression of *all the world*, in Acts xi. 28. to be confined to the Roman empire, or *perhaps Judea*, when the Jews had greater intercourse with other nations, than in the time when the Old Testament was written. The Jews indeed, before the Roman

After a few generations from Noah the attempt was made to build the tower of Babel, and the first verse of the chapter which relates to this intention begins, “and the *whole earth* was of one language and of one speech.” Can this passage possibly relate but to the immediate descendants of Noah, and the district which they inhabited? And does it not most strongly prove, that the expression of *all the earth* continues to be used in the book of Genesis, according to its original import, with regard to the flood?

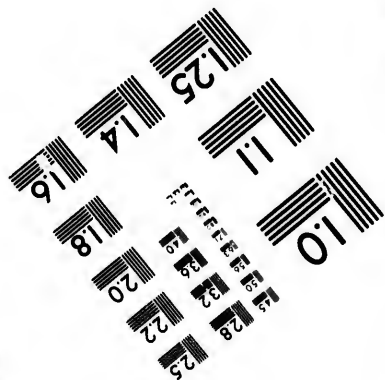
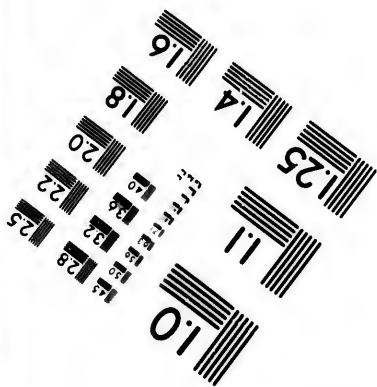
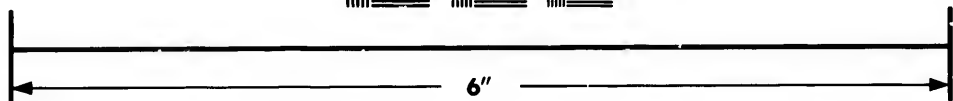
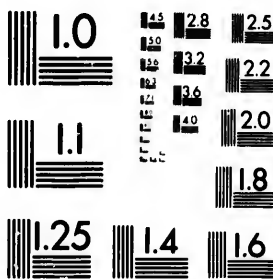
In these early times indeed the destruction of the neighbouring inhabitants seems to have been supposed to include those of the whole globe, for Lot's daughter, after the destruction of Sodom, conceive that their father is the only surviving male *upon the earth*, Gen. xix. 31.

conquest,





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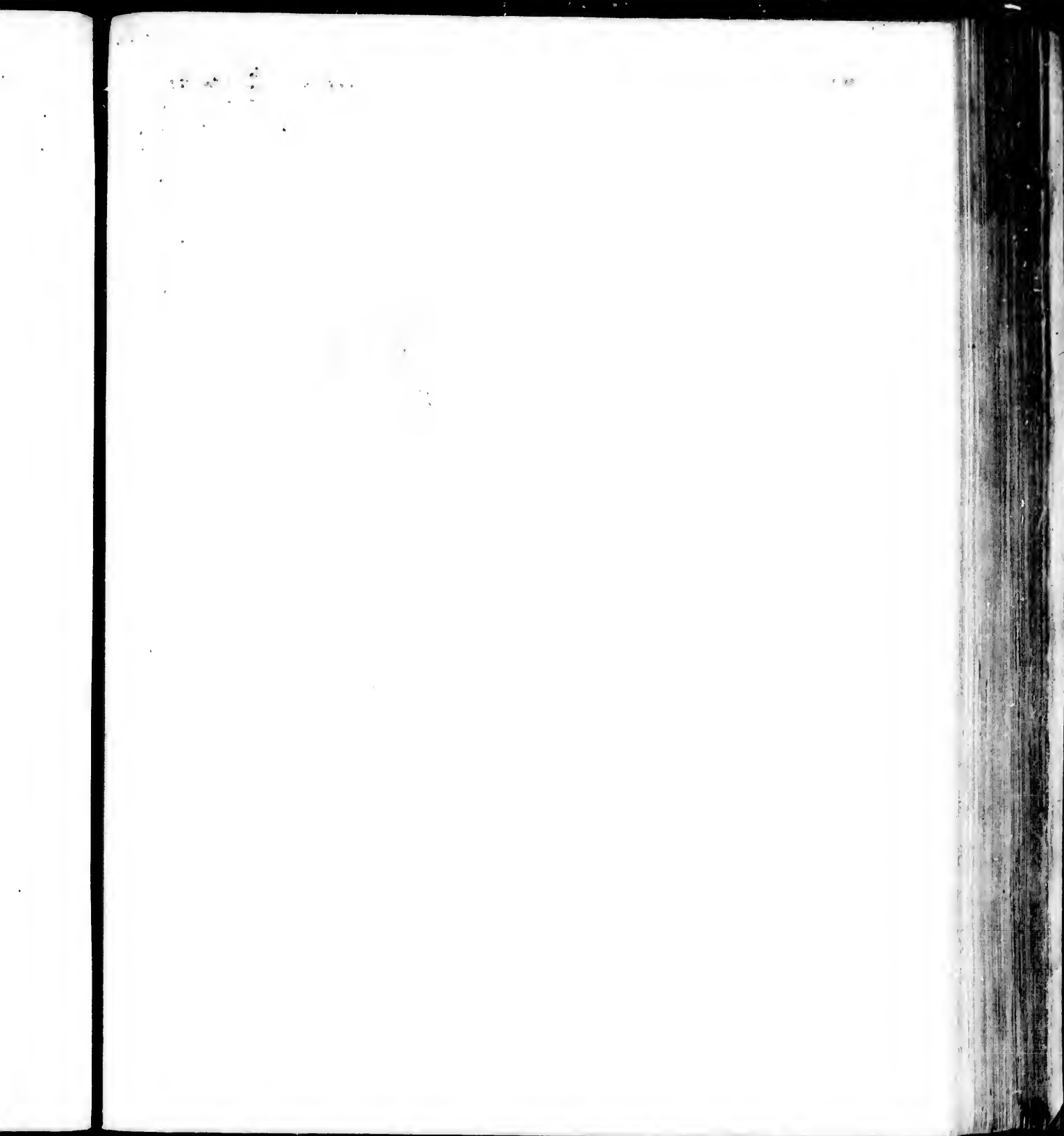
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conquest, had scarcely any communication but with the Assyrians or Egyptians, and certainly in the time of Noah could not have been acquainted with any but the inhabitants in their own district, of which particular tract they therefore can be only presumed to have spoken. All general terms must, in like manner, be restrained by the context, or subject they allude to; and when the ambitious views of Lewis the 14th, for *universal empire*, were most exclaimed against; no one ever supposed they extended to the dominion of the globe.



III



W. Sharp sc.

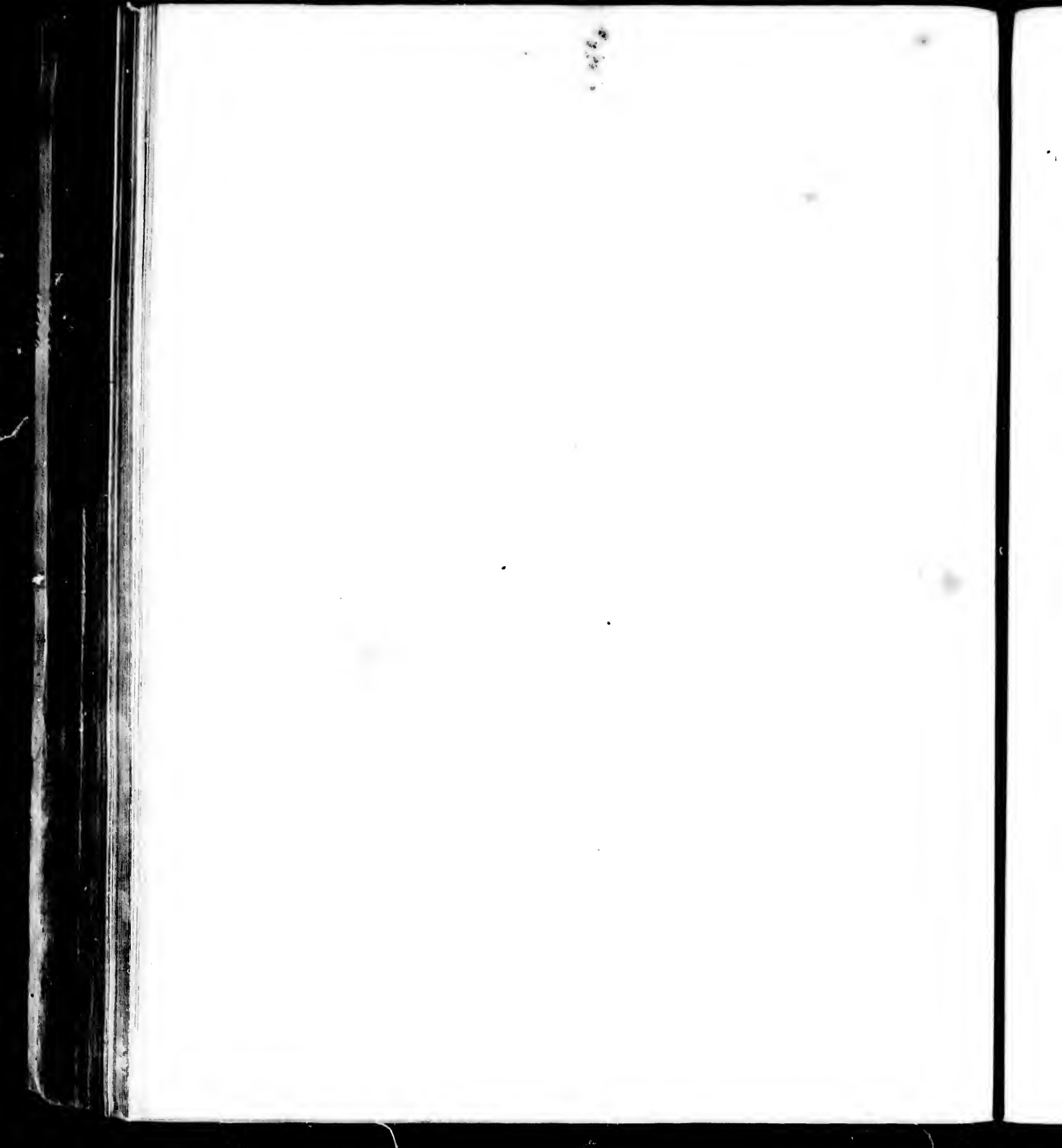
SIR JOHN WYNNE BARONET.

THE
H I S T O R Y
OF THE
GWEDIR FAMILY,

BY
S I R J O H N W Y N N E,
(The First Baronet of that Name)
Who was born in 1553.

"Cui genus a proavis ingens."
VIRG.

*Xx 3



THE HISTORY OF THE GWEDIR FAMILY,

BY SIR JOHN WYNNE,

The first BARONET of that Name, who was born in 1553.

INTRODUCTION.

IT may not be improper to give the reader some account of what he is, or is not, to expect from the present publication, as well as to throw together what few particulars can be now collected with regard to its author.

The MS. hath, for above a century, been so prized in North Wales, that many in those parts have thought it worth while to make fair and complete transcripts of it. One of these Carte had consulted, and he refers to it as his authority for the Welsh Bards having been massacred by Edward the First^a. This circumstance alone may stamp a most intrinsic value on the MS, as it hath given rise to an ode which will be admired by our latest posterity. The whole passage relative to this tradition is also cited by the

^a This history of the Gwedir family was published in octavo, 1773; but the impression having been sold, it hath for some years been in considerable request and is therefore here reprinted, with some additional notes.

^b See Carte, vol. II. p. 196. where it is entitled, *Sir John Wynne's History of the Gwedir family.*

Rev. Mr. Evans, in his *Specimens of Welsh Poetry*, and it appears that he had made the extract from a copy in the collection of Sir Roger Mostyn, Bart.

It is believed likewise that there is another transcript^c in the possession of Mr. Panton, of Plasgwyn in Anglesey, who, together with Mr. Holland of Conway, and the Rev. Mr. Jones (late Vicar of Lanrwst), have been so obliging as to communicate many particulars with regard to the Gwedir family.

The author was indeed a general collector of what related not only to his own ancestors, but the antiquities of the Principality^d, as Rowland cites an Extent^e or Survey of North Wales, illustrated by useful remarks of Sir John Wynne.

There was some difficulty in settling the time of the author's birth and death, till Mr. Granger's *Biographical Dictionary* was consulted, who gives the following inscription under a copy made by Vertue, from an engraving of the author by Vaughan.

“Johannes Wynn de Gwedir in Com. Carnarvon Eques & Baronettus^f; obiit 1^{mo} die Martii, 1626, æt. 73.”

The accuracy of these dates seemed at first to be very suspicious, as there is an account of a voyage to Spain by Sir *Richard Wynne of Gwedir, Baronet*, in 1623, which is prefixed to that volume of Hearne's *Tracts* that begins with the *Life of Richard the Second*. Application was however made to the late Mr. West, Pr. R. S. for leave to examine the original print, in his very va-

^c The present publication is also from a copy that belonged to Capt. Joseph Williams of Glanravan, which he kindly communicated.

^d See *Mon. Antiq.* p. 123.

^e This extent or survey of North Wales is now in the Harleian Collection. It is a very fine MS in Folio, and appears to have been made in the 26th year of Edward the Third. It relates only to the counties of Anglesey, Carnarvon, and Merioneth.

^f He was created Baronet in 1611. (See Gwillim's *Heraldry*, 6th ed.)

luable and curious collection. Mr. Granger's dates are thereby most exactly confirmed, and it may not be improper here to add the inscription under the engraving :

“ Vera effigies Domini Clarissimi Johannis Wynn de Gwedir
“ in Com. Carnarvon, Equitis & Baronetti.

“ Obiit primo die Martii 1626, ætat. 73.

“ Honoris ipsius causâ Rob. Vaughan sculpsit, prolisque D. D.”

This was possibly Robert Vaughan of Hengwrt the great antiquary, who was a particular friend of Sir John Wynn, as also of his son Sir Richard, to whom he dedicated his book entitled, “ British Antiquities revived.” I find also by the letter subjoined, that Mr. Robert Vaughan of Hengwrt engraved himself, and that the expression of *sculpsit* therefore is strictly accurate.

“ S I R,

“ I wold intreate you to send me certayne directions, whether
“ itt shold be three Egletts in a Scutcheon, or one Eagle on a
“ Wreath; for to doe it in a Scutcheon with one Eagle is con-
“ trary to the rules of heraldry, and not your cote: likewise
“ whether itt shold not have a Labell for the distinction of an
“ elder brother, during the life-time of his father, in this man-
“ ner.



“ If you please to send by the weekly post I will
“ answer you by the next convenient messenger.
“ When these troubles began I had drawne the
“ pedigree of Sir Richard from Owen Gwynedd
“ lineally to himselfe; now in my absence from London both the
“ copper plate which I had began to 'grave and the draught was
“ embezzeled from me: now I am resolved (God willing) this
“ vacation time to sett it a foote agayne. I onely want the names
“ of your ancestors from Owen Gwynedd to your selfe, of which
“ you are the 15th (leaving out young Sir John and Sir Richard)

Y y

“ be:ause

“ because they died issueless. For the faces I am at my own
 “ fancy till I come to Sir John Wyn your father; for the rest
 “ that are beyond him I thinke you have no true pictures of
 “ them extant. This (if I have your fayre leave) I wold dedi-
 “ cate to posterity, in some small measure to expresse my duty I
 “ owe to your honor’d family; and during life remayne,

“ Your evervowed servant

London, June 22,
 1650.

“ ROBERT VAUGHAN.

“ To the Hon. Sir Owen Wynne, Knt.

“ Baronet at Gwedur,

“ These, with his service, present.”

[Communicated by Paul Panton, Esq.]

It seems improbable that the engraver could be inaccurate in the dates of Sir John Wynne’s birth and death, when the print is dedicated to his family.

The title therefore given by Hearne to a voyage of Sir Richard Wynne of Gwedir, Baronet, in 1623, when he only became so in 1627, must have arisen from his being a Baronet when he, perhaps, made a more fair and complete copy of his Travels.

If this could want any confirmation, it may receive it from two commissions in Rymer^g; in the first of which, dated in 1626, mention is made of Sir *John* Wynne, Baronet; and in the second, dated in 1627^h, of Sir *Richard* Wynne, Baronet.

Though Mr. Granger therefore seems to be accurate, with regard to the birth and death of the first Baronet, yet, from a similarity of names, he hath made a mistake in ascribing the republication of “Dr. Powell’s History of Wales from Cadwalader to Llewelyn, by W. Wynne, A.M.” to this Baronet.

^g See Rymer’s Fœd. vol. VIII. part ii. p. 145 and 233. Hague ed.

^h Sir John Wynn probably died on March 3, 1647.

The author, who was born in 1553, seems to have lived chiefly in retirement, during which period no very interesting particulars can be expected^b.

The building a new house is an event of some consequence in such a life; he began Upper Gwedirⁱ in 1604, as appears by an inscription over the entrance.

It

^b It should seem, that he had travelled in his younger days, as Archbishop Williams (then tutor to his sons at St. John's College, Cambridge) speaks of him as a man *

Multorum mores hominum qui vidit, & urbes *.

Which circumstance is perhaps confirmed by his son having visited Italy when young, as fathers generally wish that their sons should be educated in the same manner with themselves.

ⁱ The house, called Lower Gwedir, he mentions in this MS. to have been built by his great grandfather. As for Upper Gwedir, it was covered almost with inscriptions in different languages; scarcely any of which remain, as the wainscot hath been lately used in repairing farm-houses on other parts of the estate. The Pigeon-house appears by the date to have been built in 1597.

There is an engraving of Lower Gwedir in a map of Denbigh and Flintshire, which was published 40 or 50 years ago, by William Williams:

A Welsh inscription, which is still legible, over the entrance, is here subjoined.

Bryn Gwydir gwebir golau adeilad,
uwch dolydd a chaerau,
Bryn gwydych adail yn ail ne,
Bron wen henllys brenhinlle.

Hugh bach ap Howel ap Shenkin a ganodd yr Englyn, uchod ddengmlynedd cyn amcanu, gwneuthur yr adeilad hon.

“ A conspicuous edifice on Gwydir hill, towering over the adjacent land, a well-chosen situation, a second paradise, a fair bank, a palace of royalty.

“ This *Englyn* was written by little Hugh Shenkin, ten years before the building was designed †.”

* MS. Letter penes Paul Panton, Esq.

† It should seem from this, that little Hugh Shenkin was a prophet, as well as poet.

It was considered as one of the best houses in the principality, because there is a tradition that it was calculated to receive any of the Royal Family, who might have occasion to go to Ireland ^k.

As in the year 1604 none of the blood Royal could probably think of such a journey, it may rather be supposed that it was destined for the reception of the Lords Deputies of Ireland, as it is little out of the road to Holyhead, if at this time they did not go from Chester to Dublin.

The late reverend Mr. Jones, vicar of Llanrwst, was so obliging as to copy the above inscription, and to accompany it with the translation here given.

He also observes, that this Welsh composition is a sort of gingle, for which he knows no English name, or any similar metre.

^k A correspondent of his son Sir Richard Wynne speaks thus of Gwydder, in 1661.

“ DEARE SIR,

“ I Know not how in part to acquit my selfe of the obligation you have layd on me, without giving my acknowledgement to your excellent lady whom I have taken the boldness to visit, and find her in the happy condition I desired, being very well, and upon inquiry, continuing in the hopeful way you left her to increase your family. Really upon my view and consideration of the seate of Gwydder, I conclude it to be the best place in Wales, and inferiour to few in England, I need not urge those things to hasten your returne; but I should judge very weakly of those that have such conveniencys, and will not enjoy them, if not detained by very great considerations. In fine, I am in the buttry, just taking leave, and drinking your health, bidding adieu to your house, and the like at this time to your selfe.

Your most humble servant,

Gwydder, this 27th May, 1661.

“ And obliged Cosen,

“ THOMAS BULKELY.”

[Present this to the Hon. Sir Richard Wynne, Bart.]

“ John Win ap Meredith dwellith at Gwydder at two bows shots above *Conway* town, on the *ripe* of Conway River: it is a praty place,” *l. cl. Itin.* vol. V. p. 40. Leland here most evidently mistakes Conway for Llanrwst.

Be

Be this as it may, some reason for any mention being made of this house, arises from a possibility of its having been designed by Inigo Jones, in his first manner, before he had been in Italy, as this great architect was protected by Sir John Wynne.

The name of Jones sufficiently proves him to have been of Welsh extraction; to which it may be added, that his cast of features, as represented in Hollar's engraving of his portrait, seems to shew that he must have been an inhabitant of the Principality.

All traditions have generally some foundation, and it is commonly believed in the neighbourhood of Llanrwst, that Jones was born either at that town, or Dolwyddelan, which is equally situated near considerable estates of the Gwedir family. The tradition is also so circumstantial, as to suppose that he was christened by the name of *Ynyr*, which, after his travels into Italy, he exchanged for *Inigo* as founding better¹. It is part likewise of the same tradition, that he was patronised by the Wynnes of Gwedir, and that he built *Plastêg*, belonging to the Trevor family, on the road from Wrexham to Mold^m.

¹ Thus Cooper (master for the *Viol da Gamba* to Charles the First) after he had been in Italy, changed his name to *Coperario*. Hawkins's *History of Music*, vol. IV. He also altered his Christian name, styling himself *Giovanni* instead of *John*, *ibid.* vol. IV. p. 55. Thus likewise Peter Philips, another musician, who had been much in Italy, styled himself *Pietro Philippi*, *ibid.* v. III. p. 327. Jones was branded by Ben Jonson for his vanity, as one of the latter's epigrams is addressed to *Inigo Marquis would be*. Jones indeed contrived the scenes for Jonson's masques, which being perhaps more admired than the poetry, excited Jonson's envy. It is remarkable also that one of these scenes represents *Craig Eryri*, or the rocks of Snowdon*, under which Jones was born, if a native of Llanrwst.

^m There is an engraving of the front of this house on the side of a large map of Denbighshire and Flintshire, which was published about forty or fifty years ago.

* By Snowdon is here meant, what was anciently included in the forest of that name.

As every particular which relates to this great architect is interesting, it may not be improper also to observe, that Jones, who went a second time to Italy in 1612, might possibly have travelled^a under the protection of the author's eldest son, John, who died at Lucca in that year. As for his being patronised by the Earl of Pembroke at this time, it seems to be very justly doubted by Mr. Walpole^o.

It is not improbable likewise that Jones might have obtained the considerable station he afterwards rose to, from the patronage of this family, which considered him as a promising genius, that did particular honour to Gwedir and its neighbourhood. But to return to what more immediately concerns the author of these Memoirs, and his family.

In 1610 Sir John Wynne erected at Llanrwst some almshouses (to which he gave the name of Jesus Hospital) for the reception of twelve poor men, and drew up regulations for the management of his benefaction. He also endowed this charity very liberally with the rectorial tithes of Egglwys Fach, which are now valued at £. 200. per annum.

In 1615 he had incurred the displeasure of the Council of the Marches, as the then Chancellor (Lord Ellesmere) is informed, that Sir John Wynne, Knight and Baronet, is improper to be continued a member thereof, and also that his name should not remain in the commission of the peace for Carnarvonshire^p.

^a The university of Oxford, A. D. 1605. upon King James visiting it, hired one Mr. Jones, a *great traveller*, who undertook to further them much, and furnish them with rare devices, but performed very little, to that which was expected, though paid £. 50. for his service. Addition to the second volume of Lel. Collect. p. 646.

^o Anecdotes of Painting in England (article JONES); where notice is likewise taken, that this great architect was possibly protected by the Earl of Arundel.

^p MS. Letter, penes Mr. Panton.

The year before his death he was desirous of promoting a considerable embankment on the confines of Carnarvon and Merionethshire²; as appears by the following letter :

“ Right worthee SIR, my good Cousyn, and one of the
“ greate Honours of Veneration,

“ I Understand of a greate work that you have performed in
“ the Isle of Wight, in gaininge two thousand acres from the
“ sea: I may saie to you as the Jewes said to Christ; we have heard
“ of thy great workes done abroad, doe somewhat in thine owne
“ Countrey.

“ There are two wayis in Merionethshire whereon some parte
“ of my living³ lieth, called Traethmawr and Traethbychan, of
“ a greate extent of ground, and entringe into the sea by one
“ Issue, which ys not a mile broade at full sea and verie shallow:
“ the fresh currents that run into the sea, are both vehement
“ and greate, and carrie with them much sand, beside the sou-
“ therly winde, which bloweth to the haven's mouth, carrieth
“ with it so much sand that it hath overwhelmed a greate quan-
“ titie of the ground adjacent. There are also in the boarderinge
“ countreys abundance of wood, brush, and other materials fit to
“ make mounts, to be had at a verie cheape rate, and easilie
“ brought to the place, which I hear they do in Lincolnshire to
“ repell the sea. My skill ys little, and my experience none at
“ all in such matters; yet I ever had a desire to further my
“ country in such actions as might be for their profit, and leave
“ a remembrance of my endeavours; but hindered with other
“ matters, I have onelie wished well, and done nothinge.

² Engineers have lately made their reports in favour of this under-
taking; but hitherto no workmen have been employed.

³ Anciently used for an *estate*, thus, “ I have a little *living* in this town.”
The London Prodigal, ascribed to Shakespeare.

“ Now

“ Now ſeing yt pleaſed GOD to bringe you into this countrey,
 “ I am to deſire you to take a view of the place, not beinge
 “ above a daie’s journey from you; and yf you doe ſee things fit
 “ to be undertaken, I am content to adventure a brace of hun-
 “ dreth pounds to joyne with you in the worke.

“ I have leade oare on my ground in greate ſtore^s, and other
 “ minerals neere my houſe, yf it pleaſe you to come hither, being
 “ not above two daies journey from you, you ſhall be moſt
 “ kindly welcome; yt may be you ſhall find here that will tend
 “ to your commoditie and myne: yf I did knowe the day cer-
 “ taine when you would come to view Traithmawr, my ſonne
 “ Owen Wynn ſhall attend you there, and conduct you thence
 “ along to my houſe. Commending me verie kindly unto you,
 “ doe reſt,

“ Your loving Couſyn and Friend,

Gwyder, Sept. 1, 1625.

“ JOHN WYNNE.”

To the Hon. Sir Hugh Myddleton,
 Knight and Baronet.

[A coppie of a letter to Sir Hugh Myddleton, Knight and Baronet,
 at the Silver Mines^s in Cardiganshire.]

In 1626, at the age of ſeventy-three, he died much lamented
 both by his family and neighbourhood, which may be inferred
 from the engraving by Vaughan already mentioned, as in thoſe
 times few had ſuch reſpect ſhewn to their memories, who were
 not very ſingularly eſteemed.

^s Theſe mines have been lately worked, and I am told with ſome
 ſucceſs.

^s There is ſo much ſilver in ſome of the lead mines not far from
 Aberystwith, that they have been ſtilled the Welch Potoſi; I have been
 informed alſo that money hath been coined from them.

How

How many of Sir John Wynne's children were living at his death cannot now be accurately known; he had, however, by Sidney daughter of Sir William Gerard, chancellor of Ireland, eleven sons and two daughters^u.

Sir Richard Wynne, who became the eldest son upon the death of his brother John, was one of the Grooms of the bedchamber to Charles the First when Prince of Wales, and was appointed afterwards Treasurer to Queen Henrietta.

In 1633 Sir Richard built the chapel at Llanrwst, which is supposed by tradition to have been planned by Jones, and in 1636 the bridge over the Conway at the end of the town, was completed. This bridge is also considered as a work of Jones's, and is so elegant a structure that it sufficiently speaks itself to be the plan of a masterly architect^v.

Having stated the few circumstances which could be collected with regard to the author, it may not be improper to mention,

^u This appears by the inscription over the author's tomb at Llanrwst. A letter from Archbishop William states, that some of his elder sons were promising scholars.

In the Temple Church is a monument to Henry Wynn, one of the eleven sons of Sir John Wynn of Gwedir, Bart. This Henry Wynn married Catherine the daughter and heiress of *Elizei* Lloyd, Esq. of Rugoch in Merioneth. He was Judge of the Marshallea, Prothonotary of the N. W. Circuit, and Secretary to the Court of the Marches. He died in 1671. See also N^o 2129. p. 148 & seq. of the Harleian MSS. for many inscriptions on the tomb-stones of the authors ancestors in Llanrwst church, which seem to have been copied about a century ago, and many of which are now scarcely legible.

^v Mr. Panton hath informed me, from the records of the Quarter Sessions for Denbighshire, that this bridge was directed to be rebuilt in the 9th of Car. I. by a letter from the Privy Council^w, Jones being then surveyor of the works, and having therefore probably procured this order in favour of the place of his nativity. The estimate amounted to £. 1000. which was to be levied on the two counties of Denbigh and Carnarvon.

^w A modern lawyer would probably dispute the legality of such a requisition.

that no liberties have been taken in improving his orthography or style, except now and then by breaking a very long and complicated period into two, so as to make it more perspicuous and intelligible.

It is not pretended that the present publication is entitled to any merit of this sort, as it appears to have been compiled merely for the author's information, and that of his descendants.

His intention in these memoirs of his family was to deduce his pedigree from Owen Gwynedd, Prince of N. Wales in 1438. So long therefore as his ancestors continued to be some of the *reguli* of that country, it may be considered as a history, or rather brief chronicle of the Principality. Imperfect however as it is, yet it may be entitled to some degree of value, in the light of a supplement to Dr. Powell's *Chronicle of Wales*.

It appears by this MS. that the author was furnished with some materials, which neither Powell, nor Wynne, the only other historian of Wales, had ever seen.

In different parts of these memoirs he cites as his authorities, The copy of a Fragment of a Welsh Chronicle, in the possession of his cousin Sir Thomas Williams of Trefriw; Welsh Pedigrees; The records kept in Carnarvon Castle; Records copied for him at the Tower, by J. Broughton; Esq. then Justice of N. Wales; as also the tradition of the country.

What seems to be most interesting in the work, are some anecdotes and circumstances which relate to the more immediate ancestors of the author, as they are strongly characteristick of the manners and way of living in the Principality, during that period.

As the places mentioned are often nothing more than farms, and in a part of Wales not much known probably to English Readers, it hath been thought proper to subjoin in a note some account of their situations.

If this had been done, however, in every instance, it would have greatly increased the size of the publication; it therefore may not be improper to premise, that the scene chiefly lies in Eifionydd, Dolwyddelan, and Gwedir, all of which are in Carnarvonshire.

I conceive it to be much to the credit of these Family Memoirs that the very learned and ingenious Dr. Percy (Dean of Carlisle) hath perused them with such attention as to have drawn out four genealogical tables, as also to have added some notes, for the illustration of certain parts, and more particularly with regard to the pedigrees. I am proud to insert these, and the reader will find them under the mark of P. I have likewise added some observations for which I am indebted to the Rev. Mr. Evan Evans, translator of some specimens of ancient Welsh Poetry, published for Doddsley, in quarto: these are marked E.

Written by Sir JOHN WYNNE of Gwyder, Knt. and Baronet,
Ut creditur & patet.

GRUFFITH ap Conan, Prince of Wales, had by his wife Anyhared, the daughter of Owen ap Edwyn, Lord of Englefield, Owen Gwynedd, Cadwalader and Cadwallon, who was slaine before his father's death: he reigned over Wales fifty years. His troublesome life and famous acts are compiled by a most auncient frier or monke of Wales: this was found by the posterity of the said Gruffith ap Conan in the house of Gwedir^a in North Wales, and at the request of Morice Wynne, Esq. (who had the same written in a most ancient booke and was lineally descended from him) was translated into Latine by Nicholas Robinson, Bishop of Bangor^b.

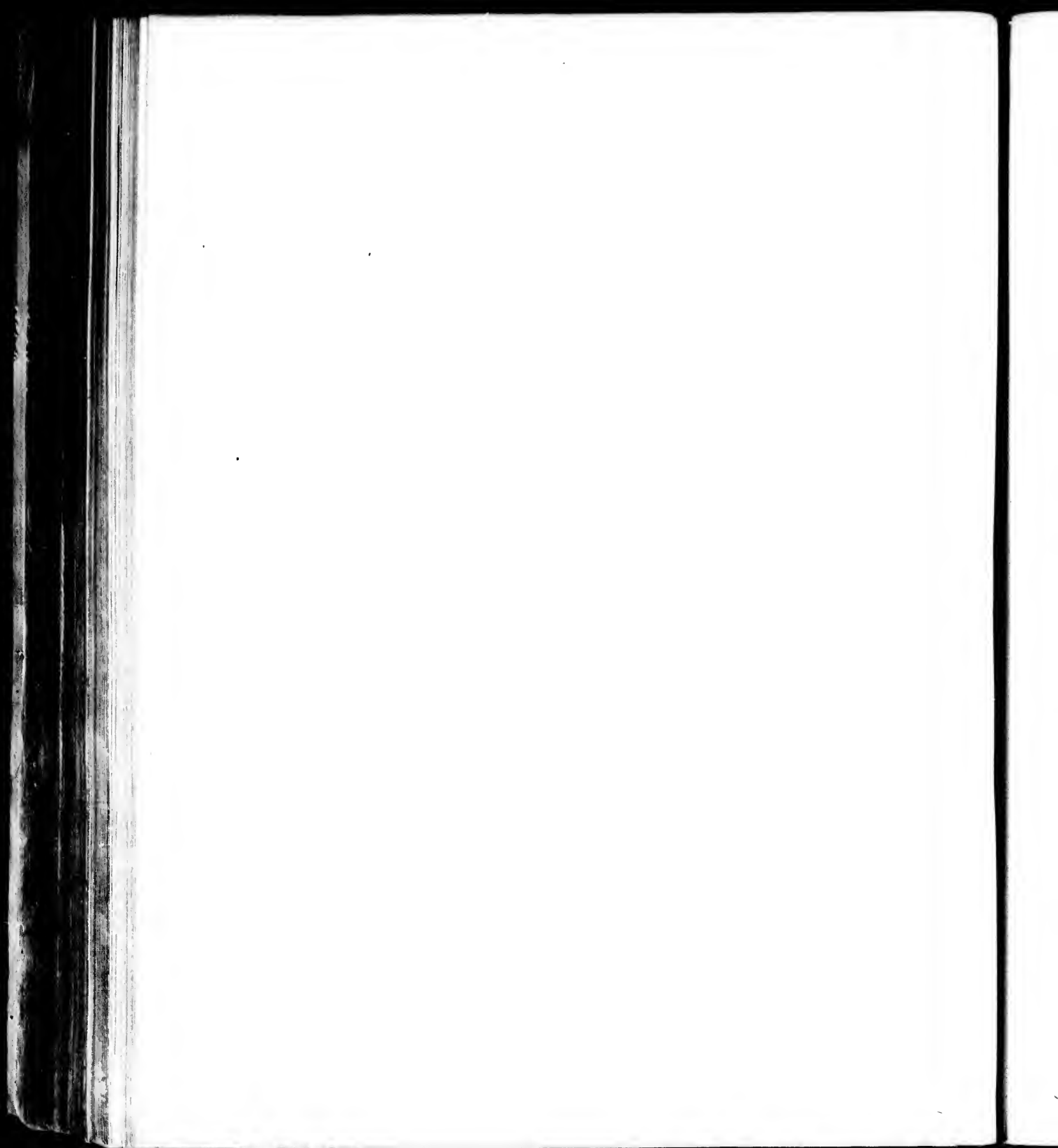
Owen Gwynedd was Prince after his father.

He married to his first wife Gwladys, daughter to Lowarce ap Trahayarn, Lord of Divet, by whom he had only Yerwerth^c
Drwndwn

^a There are two houses so called at present very near each other, the one Lower *Gwyair* and the other *Upper*; they are both in Carnarvonshire, on the western side of the Conway opposite to the town of Lanrwst. One of these houses is so ancient as to be mentioned in Saxton's map of Carnarvonshire, which was engraved in 1578.

^b The late Rev. Mr. Lloyd of Cowden in Suffex informed me that he saw this MS. of Bishop Robinson, at the Rev. Mr. Hugh Hughes's late vicar of Bangor, whose father and eldest brother were stewards after him at Gwedir.

^c This account differs very materially from that given by Dr. Povel in his History of Cambria, p. 226. It should seem however that the author made use of some materials in compiling this short chronicle of the Princes of Wales, which Dr. Povel had no opportunity of consulting; and



Drwndwn or Edward *with the broken nose*^d, and by his second wife called Christian, daughter of Gronow ap Owen ap Edwyn Lord of Englesfield, being his cosen, he had David who after him was Prince; he had also Rodri Lord of Anglesey, and Cadwallon who was Abbot of Bardsey, and Angharad wife of Griffith Maelor^e. He had besides these by diverse women Conan, Llewelin Meredith^h, Edwal, Fun, Howel, Cadelli, Madoc, Eneon, Cynwric, Philip, and Riryd Lord of Clochran in Ireland. (v. Powel's Chron) This Prince Owen with his brother Cadwalader (as the Welsh Chronicle maketh mention) in his father's time made many victorious voyages into South Wales against the Normans that incroached mightilie on that country, and in a pitched field slew 3000 men, and put the rest to flight. Being prince after his father's death, he overthrew the Earle of Chester and a number of March Lords, and (as Giraldus Cambrensis hath it in his History, intituled *Itinerarium Cambriae*) repulsed K. Henry II. who made three voyages royall against Wales with all the Power of England, Normandy, and Aquitane, together with the succours of Flanders and Britayne. In one of the voyages at Counfyllt wood the whole army of the King was put to flight, as the French Chronicle^f sayth, the King's person endangered, and

and he hath already mentioned a life of Griffith ap Conan written by a most *ancient Friar or Monk of Wales*.

Dr. Powel's History was published in 1584, and as the author refers to it in this page, it proves that this part of the MS. was written after that year.

^d "Yerworth Drwyndon near to Brute." Out of a charte of the Genealogie of the Dukes of Yorke inserted in Leland's Collect. vol. II. p. 616. 2d edit.

^e Gryffith Maelor Lord of Bromfield, who died in 1191. [See Anderson's Royal Genealogies.] He was brother of Maryed, mentioned hereafter. P.

^f As there are several French Chronicles which occasionally treat of what happened in England, it is difficult to ascertain what History the author

and the great standard of England overthrowne and forsaken ^g, which was the cause that Robert Mountfort, a noble baron, impeached Henry of Essex the standard bearer, (who held that office by inheritance), for beginning the flight, of treason, which being tried by combate, the standard-bearer was overthrowne, his office, lands, and goods, confiscate, and himselfe shaven a monke in the Abbey of Reading. After that this Prince had reigned most victoriously thirty-two years, he died. It is written of him, that he was soe fortunate, as that he never attempted that enterprife which he atchieved not.

Cadwalader, brother to prince Owen ^h, was married to Alice, daughter to Richard earl of Clare, and was lord of Cerdigiawn or Cardiganshire.

Though this record is attested by Cadwalader king of Wales ⁱ because he had kingly authority in this countrey, yet he was no more than a subject to his brother, by whom he was banished, and lost his lands, till by composition the same were restord. The

author alludes to. He also does not explain in any instance what Welsh Chronicle he so often refers to, whether that of Caradoc of Lancarvon, that before mentioned to have been written by a Friar of Conway, or perhaps some other compilation of the same sort. The author also cites the copy of a Welsh chronicle in the possession of his relation Sir Thomas Williams of Trefriw. See afterwards.

^g See Gulielmus Neubrigenfis's account of the action, l. 2. c. 5. which agrees with the author's in most particulars.

^h Cadwalader *frater Owini magni* salutem in Domino; Notum fit universitati vestre quod ego Cadwalader pro salute anime mee & omnium antecessorum & heredum meorum dedi & concessi Deo & Ecclesie S. Joannis i van' de Hageman & Canonicis ibidem Deo servientibus in puram & perpetuam Eleemosynam Ecclesiam de Nevin. T. Alic' de Clara uxore mea. Ranulpho comite Cestrie, &c. Precipio quod Abbas Salop' & Conventus habeant totam tenuram suam inter Ryblam & Merfam* T. R. comite de Clara & Cadwaladro ap Gr. ap Cynan rege Walliarum, & Roberto Basset & Gaufrid apud Cestriam.

ⁱ See note ^h.

* Two rivers in Lancashire.

Welsh

Welsh Chronicle calleth him Prince of Wales : he dwelled most at the castle of Aberystwythe. He was murdered by the English souldiers which the King sent to conduct him to his countrey.

After the death of Owen, Yerwerth (or Edward), his sonne, being thought unfitt to governe by reason of the deformity of his face, David his brother became Prince in his father's roome.

I find that Yerwerth Drwndwn, or Edward *with the broken nose*, being put from the government of the principality, had assigned him for his part of his father's inheritance, the hundreds of Nanconwy and Ardydwy^k. He dwelled at the castle of Dolwyddelan^l, where it is thought credible his son Llewelyn the Great, or prince Llewelyn, was borne, whose mother was *Maryed* the daughter of Madog ap Meredydd prince of Powys.

Conan ap Owen Gwynedd his son had for his part the country of Merioneth^m.

David married Emma sister to King Henry the II. and had by her a sonne called Owen ; upon confidence of that match he banished his base brethren, and imprisoned his brother Roderike, because he desired the portion of inheritance. But Rodericke breaking his brother's prison, entered the isle of Anglsey, and was received of the people as sovraine lord thereof, and within a while recovered all that parte of Wales which lyeth above the river of Conway. At such time as Giraldus Cambrensis in the company of Baldwyn Archbishop of Canterbury travailed through Wales, preaching the crosse against the infidells, David had noe other part of the principality of Wales save Ruddlan castle and

^k Nantconway is a hundred of Carnarvonshire, through which the river Conway runs ; Ardydwy is a hundred in the N. W. part of Merionethshire.

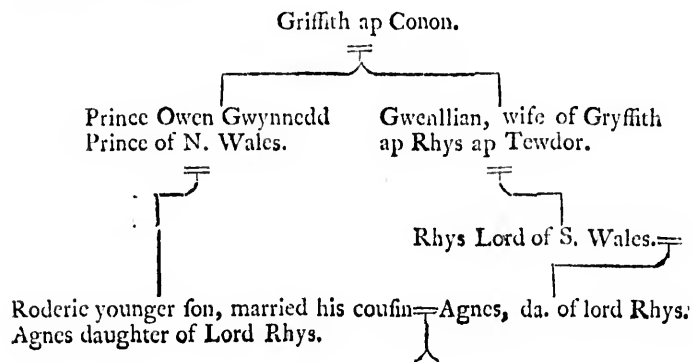
^l This castle is situated in the South Eastern parts of Carnarvonshire, and in perhaps the least frequented part of the mountains. The remains at present are very insignificant.

^m It is therefore always stiled by Giraldus Cambrensis, *Terra filii un Conani*.

the territorie adjacent, which he held with a garrison of English, where the Archbishop lodged one night to visit the King's sister, as the same Giraldus doth testifie in his booke intituled, *His Journey through Wales*.

Giraldus maketh mention, that Roderic was Prince at such time as the Archbishop preached the Crosse in Anglisy, and that he had in his court Llewelyn the son of Yerwerth, or Edward, his nephew, who, though he was overborne by his uncle David (that married the K. of England's sister, and had by her issue male), as alsoe by his uncle Roderic, (who, to strengthen himselfe with the power of South Wales, had married his own cosenⁿ, daughter of the Lord Rys ap Gruffith ap Rys ap Tewdwr mawr, and by her had issue Gruffith and Thomas), yet God soe advanced the right of the young prince Llewelyn, that in time he put down both his uncles from the princely scepter and their posterity, yet it may be imagined, (considering what places they held in their countrys and what friends they had abroad), not without an honourable composition and provision for themselves and their posterities first had.

ⁿ Agnes. See Collins's account of the Wynne family in his Baronetage, vol. I. 8vo. 1720. P.



It appeareth by the records in K. John's time remainyng in the Tower, that the King gave to Owen the son of David, being his cosen german, and to Gruffith the sonne of Rodri^o three cantreds, viz. Rhos, Rheviniog, and Duffryn Clwydd, excepting the castle of Gannocke^p and the territorie of Criddyn, wherein the said castle did stand, and alsoe gave them three other cantreds if they could winne them: the record followeth in hæc verba^q.

By this record, (as also by the Welsh historie, which mentioneth that David ap Owen often assayed by the power of the King of England to recover the principality against Prince Llewelyn his nephew) it may appeare that the cosens, Owen the sonne of

^o Rodri is a contraction for Roderic. Thus Odri is for Oderic. See Hist. Lit. de la France, t. VIII. p. 108.

^p The castle of Gannocke is supposed to have been situated below Conway, where the river empties itself into the sea.

^q JO' Dei gra, &c. Sciatis Nos concessisse & hac charta nra confirmasse Audoenno filio Davidis & Gruffi^o filio Roderici tria cantreda; sc. Rhos, salvo Nobis castro de Gannocke cum Creythyn ubi castrum illud seder, Rhevinioc & Duffryn Clwyd cum pertinentiis suis integre tenenda ipsi Audoenno & Gruffino & heredibus suis de Nobis & heredibus nris per servicia subscripta; s. singulis annis XII dextrarios de pretio: s. de unoquoq; cantred IIII dextrarios; & preterea de illis tribus cantredis unam *nataam** canum s̄ annum, & decem lepores & omnes accipitres & falcones gentiles & spervarios dicti trium Cantredorum, reddendo inde Nobis & heredibus nris singulis annis apud Salop ad Festum S. Petri ad vincula. Preterea ipsi ambo ibunt in servitio nrum cu gentibus de dicti cantredis & alias remanebunt si volumus. P'dicti vero Audoenus & Gruffinus obfides Nobis dabunt de fideli servitio suo. S. Audoenus filius David dabit filiu' suu' de uxore sua desponsat' &c. & si p' posse illorum & p' licentiam nram possint conquirere Arfon ar & clawddd et Lley, idon' servie' Nobis facient de illis tribus pdicti cantredis. His T. Dom', Winton Ep'o, W. Comite Sarum fratre nostro, G filio Petri Com' Warren, S. Com' Winton, Wm Com' Ferrar, Willimo Briover, Petro fil' Herberti, Tho de Ardiner, Ph'o de Arch Justie' Cestr'. Dat' apud Suwerit' xxxi Octob' anno regni nri XIIII^o.

* This is the word used in the MS.; it should however, probably, be *mentam canum*, from the French word *meute*.

David, and Gruffith the son of Rodri, joyned with the K. of England against their prince Llewelyn; but all in vaine, for Giraldus maketh mention, they got noe other portion but what they had by composition. In what place it was in Wales the sons of Rodri had possessions graunted them, or whether it was in diverse places (as is most likely it should be, to weaken men of their alliance, friends, and authority among the commons), it doth not appeare by certayne record.

Whether David ap Owen had any more children by the king's sister but Owen, and whether any, or who be descended, either by male or female, of them, I cannot yet find any certainty thereof. In a fragment of a Welsh cronicle, copied by Sir Thomas Williams, I find, that in the end Llewelin killed his uncle David, and all his posterity, at Conway. Soe that I think there is none descended from the said David and the Lady Emma his wife either male or female.

The posterity of Rodri had large possessions in Denbigh land, called Rhos Ravoniawg, neare and about Denbigh castle, in the chiefeit and best part of the same, as hereafter in this history shall appeare (whereby it may seeme K. John's graunt of that countrey was not wholly frustrate unto them, or perhaps they had that land given them by the last prince Llewelyn) and also were lords of diverse lordships in the county of Carnarvon, especialie in the hundred of Evioneth. The Evioneth men have it among them by tradition, that Llewelyn the Great gave the lands in Evioneth unto the posterity of Rodri. I find in a fragment of a Welsh cronicle, copied by my kinsman Sir Thomas Williams, that Rodri had another son called Einion (as is afore specified) by the daughter of the Lord Rys, Prince of South Wales, beside Gruffith before mentioned and Thomas.

Rodri his second wife was daughter to Gothic, King of Man. In anno Dom. 1243 Rodri ap Owen, by the help of Gothic K. of Man, invaded Anglsey, but within one yeare was thence repulſed by the ſons of Conan ap Owen Gwynedd, who held the iſle to themſelves. Quere, who are deſcended of this Conan? There is in the townſhip of Pennant Evioneth a *gwely* called *gwely woyrion Cynan*^r held very freely; many ſuppoſe that part of this Conan's inheritance was there. I remember the words of Giraldus Cambrenſis, that ſayeth, I will adviſedly omit the cruell and unnaturall warrs that were for ambition of government betwene Prince Owen's children and offſpring in the time of the ſaid Giraldus. Rodri lyeth buried in the Colledge of Kerkyby^s. This I had out of the Welſhe cronicle, copied by Sir Thomas Will^p of Trefriw^t.

Thomas ap Rodri married Marged, the daughter of Einion ap Sifyllt, and had by her Cariadog ap Tho', who married Eva the daughter of Gwyn ap Gruff', Lord of Kegidfa, and had by her Einion ap Cariadog, Lord of Penycen (where his manor is called to this day, Llys^u Einion ap Cariadog), Bala devlyn, Penyberth, and of many places more, as may be imagined by his greatneſs in his time. He had alſo Gruff' ap Cariadog Lord of Friwlwyd^x,

^r This may be rendered, The Tenement of the Nephews of Conan.—*Gwely* is literally a bed—metaphorically any place of reſt, hence houſe, habitation, manor, eſtate, or tenement.

[*Gwely* is likewiſe metaphorically a family, or houſehold.] E.

^s Kerkyby is at preſent called Holyhead in Angleſey.

^t Trefriw is a village in Carnarvonſhire, ſituated on the ſouthern ſide of the Conway, about two miles below Gweddir. It ſignifies the town on the bank or declivity.

^u Llys ſignifies a palace, or great manſion houſe.

^x Friwlwyd is a townſhip ſituated in the pariſh of Lanarmon and hundred of Evioneth in Carnarvonſhire: a ſmall river runs through it bearing that name. Yſtrad and Ekſibion muſt probably adjoin to this townſhip.

(where the ruins of his manor house do alsoe appeare), Ystrad, Elkibion, and of other great possessions in Rhos and Ravoniawg. He had likewise Syna married to Gruff' ap Llewelyn, by whom the said Gruff' begat Llewelyn ap Gruffith last Prince of Wales of the Brittainish race, who was slayne at Buel. Llewelyn ap Jerwerth ap Owen Gwynedd haveing by the helpe of his Cosens Conan ap Owen Gwinedd's sonnes, deprived his uncles, began to raigne anno 1194, who atchieved soe many noble enterprises that he obtained the name of Llewelyn the Great among all posteritie and writers. His workes and worthy deeds being remembred by soe many writers, do make me the lesse to dwell upon the rehearsal of them, seeing my purpose is no more than cursoriwise to touch the raigne of the princes, to the end to make the history y I write more easie to be understood. Only I have thought good to insert here a coppie of one of King Henry the Third's letters^y unto

^y The author by this means the history of his own family.

^z HENRICUS Rex Angliæ, &c. Leolino Principi Aberfr' Dño de Snowdon, Salutem & se totum. Cum propter innundationes aquarum & viarum discrimina nuncii nri ad vos accedere non possint, pcursorem quendam literas p'sentes duximus destinandas, p quas majestati vestre significamus qd Nos p Nobis & nris vobiscum & cum oibus vestris pacem tenuimus & tenebimus in futur', & hoc dedimus ballivis nris & impriis^{*} in mandatis, ut pacem cum suis Comarchionibus firmiter teneant & observent. Quare vestram rogamus serenitatem quod ballivis in Marchia comorantib' detis si placet in mandatis qd cum nris pacem teneant inviolatam: beneplacitum vestrum si placet nobis significetis. Valeat cõlencia vestra.

This letter is printed as copied by Sir John Wynne. It should not be concealed however that upon examining the records in Rymer for the year 1233 and 17th of Henry the Third, it turns out to be a letter from Lewelin to Henry the Third, and not from that King to Lewelin. See Rymer, vol. I. par. i. p. 114. Hague Ed.

^{*} This word signifies one who undertakes another's business, from *entreprendre*, an old French term used for *entreprendre*.

This

unto the said Prince Lywelyn, which is extant in the records of the treasurie at Westminster (because it is extant in noe cronicle that I have seen) and was thence brought to light by Richard Broughton, Esq. Justice of North Wales, the chiefe antiquary of England; a man to whom his countrey is much beholden, preferring nothing more than the honour thereof, which he most carefully raketh out of the ashes of ob'ivion, in searching, quoting, and copping, to his great chardge, all the ancient records he can come by.

Anno Domini 1253 onc Gruffith ap Conan ap Owen Gwynedd was buried in a monkes cowle in the Abbey of Conway, as sayeth the Welsh cronicle. Anno 1201 ^a Prince Llewelyn banished Meredith the sonne of Conan ap Owen Gwynedd suspected of

This letter is preceded by one from Henry the Third to Lewelin in the following words:

“Rex Lewelino Principi de Aberfrau, &c. Domino de Snawdun. Salutem. Noveritis quod die lunæ, proximo post instans festum natiuitatis beate Mariæ mittimus consilium nostrum usque Colewent, in occursum consilii vestri ibidem. Et ideo vos rogamus quod detis consilio vestro plenam potestatem ad exponendam consilio nostro plene voluntatem vestram, quia nos dabimus consilio nostro ex parte nostra plenam potestatem ad exponendam consilio vestro voluntatem nostram ad firmiter pacem faciendam inter nos & vos; ita quod nullus scrupulus sit inter vos & nos.

Et volumus quod id providebitur inter nos & vos, quod nullo modo vos, vel David filius vester aliquo tempore a *seruitio nostro* recedatis.

Teste R. apud Hayam 2 die Septembr.” Rymer, *ibid.*

The author seems to have ascribed the first letter to Henry the Third, on account of the expressions *Majestas vestra—rogamus serenitatem—valeat excellentia vestra*, which he chose should be applied to Lewelin. Whereas it appears by the letter from this King to Lewelin that he considered him as his vassal, *Quod nullo modo vos vel David filius vester aliquo tempore a nostro seruitio recedatis.*

^a It must be admitted that these facts are not stated with proper attention to their dates. A most ingenious and learned friend (the Rev. Dr. Benjamin Pyc) hath suggested, that if the two dates were transposed, they would agree with Wynne's History of Wales.

treason,

treason, and seized the cantreds^b of Llŷn and Evioneth, which were Conan's lands, into his own hands. Giraldus Cambrensis in his *Itinerarium Cambrie* sayeth, that the cantreds of Llŷn and Evioneth were the possessions of Owen Gwynedd's children when he passed through Wales, and that they had two castles; the one in Carnmadrin in Llŷn, the other called Dewdraeth juxta montana de Erryri, which confirmeth that Ardydwy and Evioneth made but one cantred, for Penrhyn Deudraeth, where that castle stood, is in Ardydwy^c. I am of opinion that the cantreds of Llŷn and Evioneth were the possessions of Rodri, and given by this Prince Llewelyn, upon the expulsion of Rodri from the principality, to this Meredith ap Conan: howsoever it was, the posterity of Rodri held it till the conquest of Wales by the King of England, and then how they lost what remayned undivided into small portions, shall hereafter be shewed in this history.

Llewelyn, Prince of Wales, married Joane the daughter of King John, begotten on his wife Agatha, daughter of Robert Ferrers, Earle of Darby. The King in marriage gave with his daughter the lordship of Elefmer in the marches of Wales. Some will affirme that Agatha was not the King's wife, but paramour. But that is most untrue, for he married her long before he was King, and because she bare noe issue male (as some affirme) divorced himselfe from her; others thinke she died anone after he was King^d.

Prince

^b A cantred is a district of country, which is thus described by Giraldus Cambrensis; "Unius commoti solum, i. e. quarta pars cantredi; habet autem hæc insula (sc. Mona) trecentas quadraginta villas, & pro tribus cantredis reputatur." The cantreds of Llŷn and Evioneth are in the S. W. parts of Carnarvonshire. The latter is so called from its being watered with many streams, as Aquitaine in France is supposed to be.

^c Ardydwy is a hundred in the N. Western part of Merionethshire.

^d Joane was, however, most certainly the illegitimate daughter of Agatha, as there is in Rymer an instrument thus entitled, "De remissione
"Lewelino

Prince Llewelyn in his youth, long before this recited marriage, had married Tangwystl, daughter of Lowarch Goch of Rhos. by whom he begate a most valiant sonne, called Gruffith ap Lewelyn^e, who, as heire apparent in his father's time, after many wars between him and his father, had the cantreds of Englefield, Ros, Rovoniog, and Dyffryn Clwyd given him by

“Lwelino Walliæ Principi qui *Joannam Regis filiam notham* duxerat in “uxorem.”—It concludes, “Et quod ipsum deinceps *pro filio* habebimus,” vol. I. par. i. p. 48. anno 1208. 10 Joh.

Accordingly, four years afterwards, King John sends a letter; “*Dilecto filio suo Lewelino Principi Walliæ.*” Ibid. p. 65.

What seems still more extraordinary, in the next reign, this spurious daughter of K. John's is stiled by Henry the Third, his sister, and Lewelin *sometimes* his brother, as likewise David, the son of this marriage, his nephew. See vol. I. par. i. p. 81. 98. & 100. in which last reference Lewelin's wife is also stiled *Domina Norwalliæ*.

The stone coffin in which, according to tradition, this daughter of K. John's was buried, is still used as a trough for the cattle to drink out of, not far from a farm house called Friars, which is situated in the island of Anglesey about a mile N. of Beaumaris, on the sea-coast. She is supposed to have been buried in the neighbouring church of Llanvays; and that this part of the tradition is true, appears by the following extract from an instrument in Rymer :

Pro Fratribus Minorum de Llanvayfii in Insula nostra de Angleseye.

..... Considerantes quod in eadem domo corpus tam *filie Regis Johannis progenitoris nostri* quam *filii Regis Daciæ*, necnon corpora Domini de Clyffort*, &c. *sepulta existunt.* Rymer, vol. IV. part ii. p. 83. A. D. 1414. & 2 Hen. V. The supposed coffin of Pompey's father is used as a watering trough for mules at Barcelona. Swinburne's account of Spain.

In the year 1236 died lady Johan Wife to Lewelin Prince of Wales the which was sister to King Henry by the father's side. She died in March at Haveringe in Essex, and was buried at Tarente Nunnery, in Dorsetshire. Lel. Collect. vol. II. p. 455. N. ed. It must be admitted, that these two accounts are very contradictory.

* In Dr. Powel's History of Wales, p. 298. this Gruffith ap Lewelyn is said to have been a lusty Gentleman, but base born. P.

* For an account of the action in which this Dominus de Clyfford was killed see Dec. Script, c. 2464.

his father, being countreys next adjoyning unto England, to the end he might defend his country from the English.

This Gruffith, in his father's time, married Sina, or Senena, as the Latine Booke^f calleth her, daughter to Cariadog ap Tho' Rodri ap Owen Gweyned: some of our Welsh pedigrees say she was the daughter of the King of Man, but it is an untruth; there are other most ancient records to the contrary^g, verififying as here is laid downe.

Also it is evident her brethren Eingan ap Cariodog and Gruffith ap Cariadog lost their lands in the quarrel of her sonne, Llewelyn ap Griffith, last Prince of Wales, when his uncle David held the principallitie against him, as shall hereafter appeare. In Prince Llewelyn ap Jerwerth's time you shall find mencion made of Howell ap Gruffith ap Conan ap Owen Gwynedd, whom the Prince doth banish in anno 1211, and after, in anno 1215, you shall find him first remembered in the honourable voyage Prince Llewelyn made unto South Wales, when he rased Carmarthen. (Quere, Where his possessions were? and who are come of him?) Howell ap Gruff' ap Codan was buried at Conway.

^f It is rather difficult to ascertain what history of Wales the author means to refer to by what he styles *the Latine booke*. Caradoc of Lancarvan's History ended with the year 1156, and therefore long before Gruffith's marriage. It was continued indeed by the bards (which belonged to the two abbeyes of Conway and Stratflur) to the year 1270; but Dr. Powel, who mentions the above particulars, does not state whether this continuation was in Welsh or Latin. As it chiefly depended upon the Bards at their *clera*, I should suppose that it was in the Welsh language. As for Geoffrey of Monmouth, whose history is in Latin, all the transactions he gives an account of are long anterior to what is here alluded to. It should therefore seem that the author refers to Matthew Paris or some of our Historians, who wrote in Latin, and occasionally take notice of Welsh occurrences.

^g See in Powel's History articles of agreement between Henry III. and Senena wife of Gruffith, p. 301. Yet some Welsh Pedigrees suppose he married Rhanult daughter of Rheinalt King of Man. P.

I find

I find not, during Prince Llewelyn ap Jerwerth's raigne, any mencion made of any thing done by the posterity of Rodri ap Owen Gwynedd: a man may easily guesse the reason, for this Prince held them under, and suspected lest they should aspire to the princely dignity, which their ancestors sometime had held.

In the raigne of David, sonne to the said Prince Llewelyn by Joane King John's daughter, who began to raigne anno 1240, Eignan and Gruff' ap Cariadog, tooke parte with their sifter's sonne, Llewelyn ap Gruff', the last Prince of Wales of that line, afterwards slayne at Buellt.

We receive it by tradition from father to sonne in Evioneth, that David ap Llewelyn being Prince by the ayde of his uncle, the King came to the towne of Pwllhely in Llŷn to parle with the bretheren Eingan and Gruff'; whom the bretheren met with such a force on the day of truce, that the Prince told them they were too strong to be subjects; whereto they answered, that he was rather too weake to be Prince, and soe parted without any conclusion or agreement. In the end they were forced by long warrs to forgoe that countrey, and to lose their land there, and to joyne themselves to their nephew Llewelyn ap Griffith, who then had his court at Maesmynan in Flintshire. He also held, as is before mentioned, the cantreds of Englefield, Dyffryn Clwyd, Ros, and Rovoniawg, against his uncle David; haveing warre on the one side with the King, on the other side with his uncle, who gave them greate possessions (as some thinke) as afore is remembred about Denbigh Castle.

Llewelyn, the sonne of Gruffith, their nephew, after the death of his uncle David, attayning the government of Wales, restored to his uncles their lands and possessions in the counry of Carnarvon. I find noe record of any thing done by them in the time of the same Prince.

E'ngan ap Cariadog had a sonne, of whome mention shall be made hereafter, called Tudur Lord of Penychen^b, Penyberth, and Baladeulyn, and whether he had any more sonnes is to me uncertain.

Gruff' ap Cariadog married Leuki, daughter of Llowarch Vaughan ap Llowarch Goch ap Llowarch Holbwrch, and had but one sonne to my knowledge, called David ap Gruffith^l, which David married Eva the sole heiress of Gruffith Vaughan ap Gruffith ap Mereithig of Penyfed in Evioneth, by whome he had three sonnes; viz. David, Meredith, and Howell. This appears by the record of the extent made of Denbigh land, in the time of Edward the first, by Henry Lacy Earle of Lincolne, to whome the King gave that land upon the conquest of Wales: for Henry Lacy minding to make a princely seate of the castle of Denbigh, per force compassed the children of the said David ap Gruff' to exchange their possessions about Denbigh Castle (which were great) with him for other lands of lesse value in the said lordship, in the furthest part from him: the words of the record follow thus^k.

How they left the Lordship of Friwlwyd, and other their lands in the County of Carnarvon, I can find no record of, but only have it by tradition, that it was taken from them by the King's officers, for to this day it is parte of the principallitie^l of Wales; which is not unlike, considering what befell to the other

^b This is a township near the sea, in the Parish of Abererch in Carnarvonshire, and situated between the towns of Crekeith and Pullhely.

^l He had also a daughter, Guerfil (or Gwerville) married to Inon ap Einion, according to Collins's account of the Wynne family. (Baronetage, vol. I.) But perhaps this may be a mistake, for Gwerville daughter of Eignan ap Cariadock mentioned hereafter. P.

^k By some mistake however the record is omitted in the MS.

^l *Principality* here means lands held under the Princes of Wales, eldest sons of the Kings of England.

cozens, the heirs of Penychen, Penyberth, and Baladeulyn, whereof there is a very good record and certaine, remaynyng in the prince's treasury in Carnarvon.

Eingan ap Cariadog had one sonne called Tudur ap Eingan, and one daughter called Gwervile, whereof the record ensueing after maketh mention. You are to understand, that after the conqueste of Wales, the countrey in generall, as well as in particular, found themselves aggrieved for the wronges offered by the English officers, and soe sent certaine men with their generall and private grieffes to the prince lying at Kennington^a neare London, in the time of the Parliament in anno 33^d of Edward the First. among the which these are mentioned^a.

It

^a This place in Domesday is stiled *Chenintunc*, but now *Kennington*. It is situated in the parish of West Lambeth, and was formerly a royal palace. See Maitland's London, vol. II. p. 1387.

^a Petitiones de Kennington factæ apud Kennington p homines North-Wallie p Comitatus p singlares personas exhibitæ Dño principi filio Regis Edwardi conquestoris Walliæ & concilio suo apud Kennington extra London tempore Parliamenti pdict' regis habiti apud Westminestorium 1^{ma} Dominica quadragesimæ año regni Regis pdict' Edwardi 33^o, & Responiones ad easdem Petitiones factæ & liberatæ Justic' North-Wallie sub privato sigillo dicti Dñi Principis ad executionem responsonum pdict' faciend' & eas firmiter observandum in ptib' North-Wallie.

Ad petitionem Leolini & Gruffini filiorū Oweni ap Llewelyn de eo qd Tudur ap Eingan avunculus erat Dñus de Baladeulyn, Penechyn, & Penyberth in Com' Carnarvon & seistus post pacem pelamat' fere p unum annum, post cujus decessum tenementa pdict' ad Gwervillam sororem dict' Tudur' descendisse debuerunt, sed domina Regina mater Principis affectavit tenementa illa & ea a Dño obtinuit, quæ quidem tenementa nunc sunt in manu principis & ad eos jure hereditatis spectant; unde petunt remedium. Responsum est, qd Justic' informet se sup content' in pdicta petitione, & quo tempore dictus Tudur obiit, & si forisfecit necne, & omnibus circumstanciis, & certificet inde dominum ad petitionem eorum dicti Llewelyn & Gruffini qd dominus velit concedere eis aliquas ballivās in Com' Carnarvon p debita firma inde reddenda quousq' discussum sit

T A B L E II.

[To front p. 373.]

David ap Griffith ap Ery, da. of Griffith Cartidge. See the former pedigree, Table I.

Howell ap Meredith of Eryonrh.

Evan, or Ievan

Gruffith

David Chwih.

Meredith.

Howell ap David

Ery, or Myhanwy.

Greenham, wife of Ievan ap Griffith ap Mndog ap Rihaid of Penllyn.

A third daughter mar. Howell ap Gronw ap Ievan ap Gronw, ap Howell of Melebr.

Einion ap Gruff

Meredith ap Howell. Maryd, da. of Ievan ap David ap Trahan Gwilym, of the house of Rhys ap Tudor. She died 1416.

David ap Howell, mar. (a daughter of Gaeamhan, as it should term in p. 376.)

... wife of Richard ap Beddlyn. (It rains the time that married David ap Howell. See p. 376.)

Gwerthig, Alicia, wife of Tudor ap Hobyddin. from whom are descended the Puffellions of Eweral.

Ievan, ancestor of many families in Carnarvon. Sir Howell of the Barleas, knighted at Pothers.

Robert ap Meredith when he was almost 80, married Angela, da. of David ap Llyn, &c. (She married zddy Meredith ap Rys ap Lewydd, &c.)

1 Ievan ap Meredith, married Elicki, da. of Howell Scd.

2 A da. wife of Ibel Vaughan.

3 Marli, wife of Jenkin Conwey, ancestor of the Con-Catharine, only da. of Rhys ap Eingham Vaughan.

Meredith ap Ievan, Margaret, da. of Einion ap Ibel, eq. to John of Gawn.

Howell ap Ievan, &c.

Luffy, a da. Gwenhyfer, married Robert, 4th son of Ithobas Sallibury, of Leawny, eq.

Another da. wife of Griffith ap Mndog Vaughan.

John ap Meredith, Probably a filier of guardian of his great uncle's children. Grant.

Robert ap Meredith, Albot or Bartley.

Ievan ap Robert, Catharine, filier of died in the 32d year of his age. 2d w. Gwensabyfar

1st wife. Howell ap Rhys, ap Howell Vaughan. One of the da. of Rob. Meredith. (2d w. a da. of Tudor ap Griffith, &c.)

Morris, eldest son.

Robert, 4th son in John Owen ap John Meredith.

Owen ap Griffith.

Meredith ap Ievan, obi. 1325. Iehad 5 wives and 26 children. Sir 24

Robert. John.

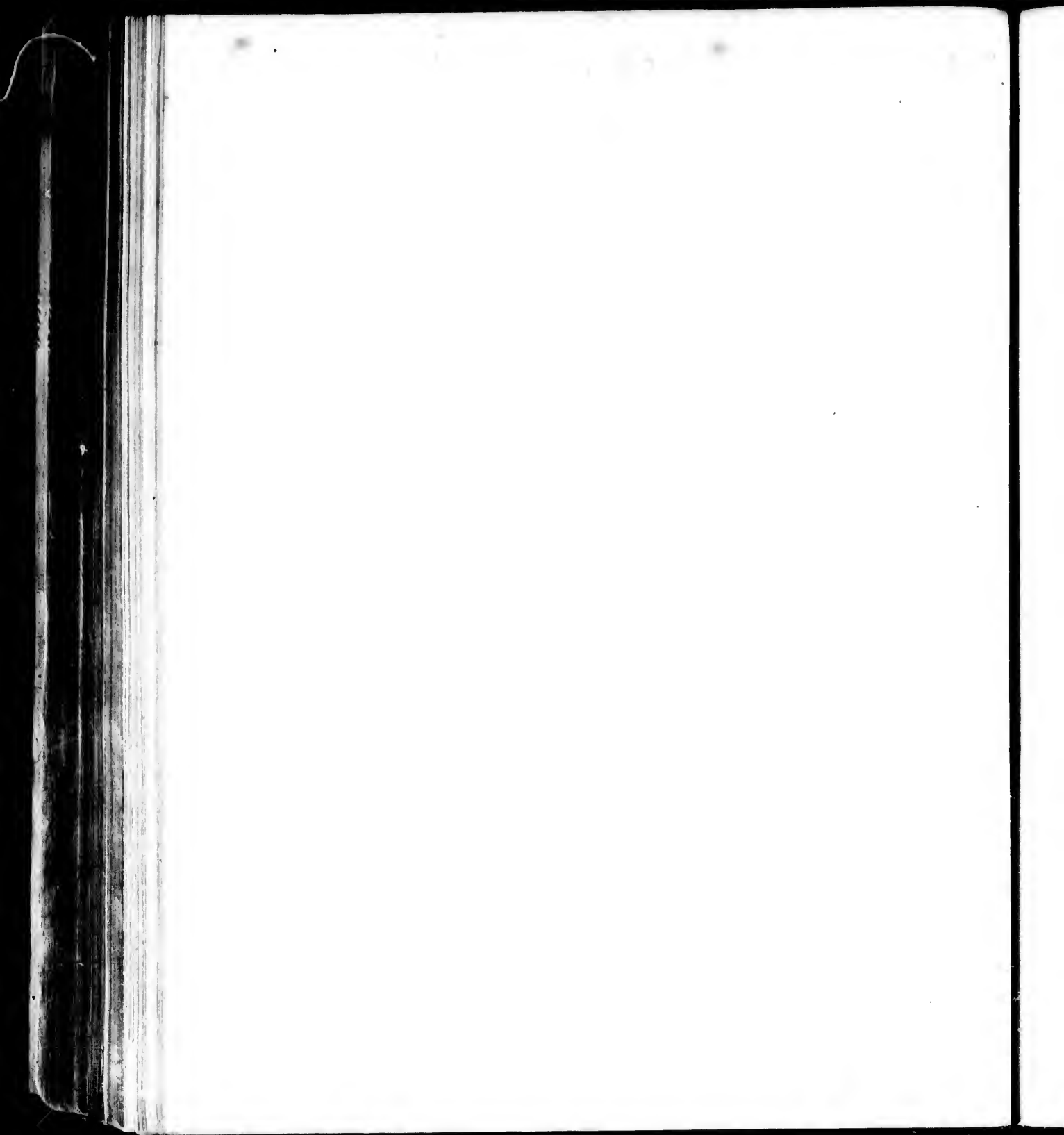
Ievan.

A daughter.

Gruffith Vaughan, A daughter.

David, Eiond ap Griffith

Owen ap Griffith ap Mndog



But to recurre to the offspring of Gruff' ap Cariadog, and their succession, with the estate and condition they lived in from time to time unto this day; it being my purpose to treat thereof. Out of the three brethren, David, Meredith, and Howell, who exchanged, as above is remembred, with the Earle of Lincolne, the posterity onely of Howell doth remaine in credite and shew in their countrey, the posterity of the other two being by division and subdivision of gavelkind (the destruction of Wales) brought to the estate of meane freeholders, and soe haveing forgotten their descents and pedigree, are become as they never had been. If you aske the question why the succession of Howell sped better than the posterity of the other two brethren, I can yeald no other reason, but GOD's mercy and goodnes towards the one more than the other, as GOD sayd in the booke of Moses, "I will have mercy " on whome I will have mercy," for they lived in the same commonwealth, and under the same storme of oppression, soe as if GOD had not left us a seed, we had beene like Sodom, or compared to Gomorrha. Nevertheless by the goodnes of GOD we are and continue in the reputation of gentlemen from time to time sithence unto this day, as shall appeare by the discourse following. The offspring of David ap Meredith hold the land exchanged by the Earle of Lincolne with their ancestors, viz. the towneship of Yfcorebryll in Eglwys vach^o and halfe Maethebroyd in Llanrwt^p, and are reputed to be descended from Gruffith ap Conan in the quarter where they dwell, but yet are not able to lay downe the certayntie of their pedigree.

David ap Gruff' ap Cariadog (as before mentioned) married Eva the daughter and heiress of Gruff' Vaughan ap Gruff' ap Mory-

^o Eglwys vach is a parish in the S. W. part of Denbighshire.

^p The town of Lanrwt is also in Denbighshire, not far distant from the parish of Eglwys vach.

thig, and by her had that land which in the extent of North Wales is called Gwely Griffry in Penyved in Evioneth in the county of Carnarvon; the quit rent of the Prince out of this Gwely⁴ is £. 3. 19s. Which Morithig the grandfather of this woman was, I am uncertaine, for there were two of that name; one in North Wales, who is descended from Sandde Hard O Vortyn, from whome the chiefe men in *Yale* and *Maclor*⁵ derive their descent; and another in South Wales, called Morithyg Warwyn, of whome are come all the Vaughans. It did not appear by the Welsh pedegrees, that this Griffry was descended of Morythig, till I found the record in the Exchequer of Carnarvon. If a man list to be curious which of both Morythigs this was, let him find whether of them lived nearest this time, and that sure was he.

Howell ap David married Eva the daughter and heire⁶ of Jevan ap Howell ap Meredith of Evioneth (by some cards⁷ of pedegree she is called Myfanwy⁸) and had with her large possessions in Evioneth, which to this day remaine in the posterity of the said Howell, yet mangled with division and subdivision of gavelkinde.

Memorandum, That Evan ap Howell ap Meredith had another daughter and coheirefs, married to one of Penllyn of the stocke of Riridflaidd of Penllyn, her name was Gwenllian, and she married Jevan ap Gruff⁹ ap Madog ap Riridflaidd of Penllyn¹⁰. The said Jevan ap Howell ap Meredith had a third daughter and coparcener

⁴ This word hath been before explained.

⁵ Extensive Lordships in Denbighshire.

⁶ Rather Co-heir. P.

⁷ This is used for charts.

⁸ See an ode to *Myfanwy Fechan* amongst Evans's Specimens of Welsh Poetry. *Meufanw*, i. e. my woman, or my dear. E.

¹⁰ Penllyn is a hundred in Merionethshire.

that married Howell ap Gronw ap Jevan ap Gronw ap Howell of Maelor, and by him she had two daughters, viz. Gwervile married to Tudur ap Hob-y-dili. the other was Alician, who married Puleston, and brought Havod y werne to that family. Evan ap Howell ap Meredith, father to this Eva, was brother to Gruff ap Howell ap Meredith, who was father to Einion ap Gruff, father to Jevan ap Einion and Howell. This Howell was knighted at the field of Poyctiers, and by our countrymen is reported to have taken the French King; but howsoever it was, he did such service there, that the Prince bestowed a messé of meate to be served up dayly during his life before his battle-axe, which after was bestowed on the poore, whereof he was called Sir Howell y *frevall*^{*}. He was also constable of Chester and Criketh Castles[†], and had the mills to farme, and other many great office, and places of profit. Of Jevan ap Eingan his brother are descended very many gentlemen of principall account in the county of Carnarvon. Howell[‡] begate Meredith and David, Meredith ap Howell dwelled in Evioneth at his houses Keffin y fan, and Kefelgiffarch, and David ap Howell in Llanrwst in Denbigh land, at his house called Henblas in Maethebroyd. Meredith ap Howell married Morvydd the daughter of Jevan ap David ap Trahayarn goch of Llân, who was descended of the house of Rys ap Teudwr. In the extent of North Wales, made in the 26th of Edward the Third, you shall find that Meredith

^{*} *Frevall* signifies an axe.

[†] Some small remains of this castle still continue. It is on the sea-coast of Carnarvonshire.

[‡] Not Howel of the battle-axe, but Howell ap David ap Gruffith ap Cariadog, &c. According to Collins, Howel ap David had five Sons by Eva daughter of Jevan ap Howel ap Meredith; viz. Meredith, Robert, Tudor, Gruffith, and David. P.

ap Howell and others are the heires of Gwely. Griff' David ap Howell his brother married *

viz. Jevan ap Howell ap Meredith, the daughter of Gwenllian, and Jevan ap Griff' ap Madog ap Jerweth was wife to Reignall ap Bleddyn, and had by her issue Robin Vaughan ap David ap Howell, who married Angharad the daughter of Rys ap Gruff' ap Rys ap Ednyfed Vaughan, and had no issue male, but one daughter called Cattrin ap Robin Vaughan, who married Rys ap Eingan Vaughan of Llanrwt, a gentleman of the house of Penwyn in Nanconwy and Denbigh Land; who having noe issue male by her, but daughters, the greatest parte of the possessions of that house, which were now worth a thousand markes a yeare, came to the Salisburies. For Robert Salisbury the elder, fourth sonne of Tho. Salisbury of Lleweny, in the county of Denbigh, Esq. married Gwenhwyfar, the daughter of Rys ap Eingan and Cathrin the daughter of Robin Vaughan ap David ap Howell. Rys ap Eingan had one other daughter by her, called Lleify, to whom he gave faire possessions; but nothing comparable to the other, that was married to Gruff' ap Madog Vaughan in Abergeley ^b. All the inheritance of this Robin Vaughan ap David ap Howell, held after the Welsh tenure, within the lordship of Denbigh, was, by the custome of the countrey, to descend to his heire male, and so descended to Jevan, the sonne of Rob't ap Meredith his cosen, as hereafter shall be laid downe in the life of the said Jevan. I have in my house the probate of the testament of Morvydd, the wife of Meredith ap Howell, as faire to behold as at the first day, bearing date anno 1416. The probate of the

* There is some mistake here undoubtedly in the pedigree, probably occasioned by the chasm in the MS.

^b Abergeley is a town in the western part of Denbighshire, near the sea.

will is dated at Krikieth, before one Rob't Swaython, official of the Archdeacon of Merioneth. Meredith ap Howell had by her two sonnes, Rob't and Jevan, and a daughter, called Marfli, married to Jenkin Conwey of Ruddlan, mother to Hen Sion *acer* y Conwey, of whome all the Conweys, of Ruddlan and Bodridan, and Lords of Prestatyn, are descended. She was the first Welsh-woman that was married into that house, as John Conwey, Esq. my cosen, (now Lord thereof) told me. John Tudur, one of our Welsh heraulds, sayth, that there was a third brother, called Robin, whose daughter and heire Ithel Vaughan married, and therefore those descended from him doe quarter Owen Gwynedd's cgleths^d.

I find an obligacion, bearing date 20 July, 2^o Edward IV. whercin John ap Meredith standeth bound to Jevan ap Robert Meredith to stand to the award of Gruff' ap Robjn ap Gruff', and Lewis ap Howell ap Llewelyn, arbitrators elect for the said John ap Meredith, and Meredyth ap Rys, and Jevan ap Howell ap Rys ap Eingan, arbitrators elect for the said Jevan ap Robert, to parte certaine tenements betweene them in Evioneth: and in case they could not agree, then was Howell ap Eingan ap Howell Coetmore named umpire.

Memorandum, That during Robert ap Mered' his time, the inheritance descended to him and his brother was not parted after the custome of the Countrey, as being gavelkind; but Jevan being married enjoyed both their houses, xiz. Keven y vann and Kefelgyfarch: and for that Jevan, then Constable of Criketh,

^c There is no word in Dr. Davis's Dictionary nearer to this than *achor*, which he supposes to signify *little*.

^d These are mentioned in the Preface, to have been the arms of Owen Gwynedd.

clave fast to the King, Owen Glyndwr burned them both to *cold ashes*^e. Neither was the inheritance betwene their posterity divided, untill such time as Jevan the sonne of this Robert was married and had many children, as may appeare by the indentures of partition betwene Jevan the sonne of this Robert, and John ap Meredith ap Jevan, grandchild to the other brother Jevan, the one parte of which indentures I have. Those that made partition betwene them were these, Thomas ap Robin of Kychwillan, that married Gwenhwyfar, and Jevan ap Meredith. This Thomas ap Robin was after belecaded neare the castle of Conwey by the Lord Herbert, for that he was a follower of the house of Lancaster : and his wife is reported to have carried away his head in her apron. Some affirme Jevan ap Meredith to be the elder brother, and soe doth all the race that are of him contend : myself, and those that are come of Robert, have this reason to think him to be the elder. Robert had issue Jevan, Jevan his brother had issue Meredith, Meredith had issue John, John being of man's estate had the tuition of his uncle Jevan ap Robert, my ancestor, and yet Robin Vaughan ap David ap Howell's land in Denbigh land, being cozen to them both, descended to Jevan ap Robert, my ancestor, and not to John ap Meredith ; which I hold for an invincible argument that Jevan is descended from the elder. Alsoe I have the King's Writte, directed to Robert Meredith, Meredith ap Jevan ap Meredith, and to the principall gentlemen of Evioneth, for the apprehension of Jevan ap Robin Herwr, a notable rebell outlaw, and others of his qualitie ; which writt doth place Robert ap Meredith first before his nephew, which alsoe may fortifie the opinion of them who hold him to

^e A similar expression of *cold coals* is used afterwards in this History.

be the elder brother to Jevan ap Meredith. The wordes of the writ doe follow, in hæc verba ^f.

But howsoever it be, the gavelkind and custume of the country not yealding to the elder any prerogative or superiority more than to the younger, it is not a matter to be stood upon. Indeed Jevan ap Meredith married in his youth Llenau the daughter of Howell Sele ap Mereicke, of the house of Nannau in Merionethshire^g, and begat by her Meredith ap Jevan; whome in his youth he

^f HENRICUS Dei gratia Rex Angliæ & Franciæ & Dñus Hiberniæ, dilectis sibi Roberto ap Meredith, Meredith ap Jevan ap Meredith, Rys ap Tudur, Howell ap Madog ap Jevan, John ap Gronw, & Howell ap Jevan Vaughn, Salutem. Quia p certo sumus informati, qd Jevan ap Robin & alii diversi notorii utlegati & incogniti de die in diem vi & armis cum diversis felon' in comitiva sua, ut dicitur, faciunt ambulationes sup diversos fidelium nostrorum infra comitatum ñrum de Carnarvon & diversos de eisd' fidelib' spoliaverunt, & male tractaverunt in destructionem & depaupationem ligeorum nostrorum manifestam, ac contra formam statutorum progenitorum nostrorum in hac pte pvisorum. Adignavimus vos & unumquemq' vestrum conjunctim & divisim ad arrestandum & capiendum pdict' Jevan ap Robin & alios in comitiva sua existent' p corpora ubicumq' inventi fuerint infra comotum de Evioneth & eos salvos & securos usq' castrum ñrum de Carnarvon indilate duci faciatis constabulario ñro ibid' liberandos & in eodem castro moraturos quousq' de eorum deliberatione aliter duxerim' ordinandum; & ideo vobis mandamus qd circa pmissa diligenter intendatis & ea faciatis cum effectu sicut inde coram nobis respondere valueritis. Damus autem univ'is & singulis fidelibus ñris tenore p'sentium firmiter in mandatis quod vobis & cuilibet vestrum in omnib' quæ ad arrestationem & captionem pdicti Jevani ap Robin & aliorum p'tinent' intendent' sint, auxiliantes, fortificantes, & p omnia respondentes. In cujus rei testimonium has litteras nostras fieri fecimus patentes. T. meipso apud Carnarvon 28 die Augusti anno regni ñri vicefimo.

^g *Nannau* is a very ancient family-seat, about three miles N. of Dolgelly in Merionethshire. It stands perhaps on higher ground from the valley beneath, than any *Gentleman's* house in Great Britain. In Saxton's maps it is spelt *Nanna*, as it continues to be commonly pronounced. There are some traditional anecdotes about Howell Sele, or Selif, which is the same with

he matched with Margaret the daughter of Einion ap Ithel of Rhiwedog^h in Penllyn in the county of Merioneth Esq. of the tribe of Ririd flaidd, and Howell ap Jevan ap Meredith.

Quere. If any males descended of this Howell be living now? Owen Holland of Berw, and Rytherch ap Richard of Myfyriion in Anglesey are descended by females from him, as Richard Gruffith ap Hugh affirmith? Alsoe it should be knowne how this land is gone from his posteritie.

This Einion ap Ithel was Esquire to John of Gaunt Duke of Lancaster, to whome for his service, as well in the time of warre as peace, he gave a pension of twenty markes per annum, issuing out of his manor of Haltonⁱ: The charter I have seene being in French, with the Duke's seale and armes, and it remaineth in the custody of John Owen of Ystymcegid^k, Esq. the heire of Owen ap John ap Meredith. Me-

Solomon, in the neighbourhood of Nanney. Howel Seje of Nanney stood out for Hen. IV. against Owen Glendower.—MS. Life, penes the Rev. Mr. Price, Librarian of the Bodleian Library.—Howel was attacked by David Gam of Brecknock. Ibid.

^h Rhiwedog is also a very ancient family-seat in Merionethshire, about a mile S. E. from Bala. In Saxton's maps it is spelt Ruedok. The name is said to signify the bloody-bank, and by tradition a great battle was fought near this spot.

Llwarch hên addresses his son Cynddelw in the words following in a poem still extant,

Cynddelw, dadw dithan y rhus
Ar addel yma heddiw
Cudebam un mab nid gweir.

“Cyndelw, defend thou the steep pass of the hill against all that assault us to-day, it is in vain to be fond of the only son which is remaining.”

Llwarch hên in the *field at Rhiwedog*, after he had lost all his children but Cynddelw. E.

ⁱ There are many Halton's in England. See Spelman's Index Villaris.

^k Ystymcegid was formerly one of the seats of the Owens of Cleneny, and is in the parish of Dolbenman in Carnarvonshire. The mansion-house
of

Meredith ap Jevan ap Meredith, begat by the daughter of Einion¹ ap Ithel, John ap Meredith, (who married and was at man's estate afore his grandfather's brother, Robert ap Meredith, my ancestor, ever married;) and Robert ap Meredith, Abbot of Bardsey. This may be accounted for, as we have it by certaine tradition, that Robert was almost eighty years old before he ever married, and then in his dotage fancied and married Angarad the daughter of David ap Llyn ap David of Kefn-melgoed in the county of Cardigan, whose wife was the daughter of Rytherch ap Jevan Llwyd of that countrey; by her he had issue Jevan ap Robert and several daughters. From this Robert the Abbot are descended my three *Pencenedle*^m, because they are descended of church nobilitie, viz. Gruffith ap Richard of Madryn issa, Robert ap Richard of Llocheiddor, and Owen ap John ap Jevan ap Robert of Bron y foel, and Kefn Kyfanedd in Evioneth.

The cause why this Robert ap Meredith was so long unmarried may appeare partly by record, and partly by tradition; it is certaine, that as in the time of Henry the Fourth, Jevan ap Meredith had matched his sonne (as is afore said) to Einion ap Ithel's

of this family is now at Porkinton in Shropshire; and it may be perhaps said that there is stronger proof of the same spot having been the capital mansion of the Owens for a longer time, than probably can be produced by any other family in Europe. The following order of Henry III. transcribed from Rymer, proves that Porkinton belonged to the Owens nearly 650 years ago. "Rex Lewelino Principi Sal. Sciatis quod—& "Bledh filius *Oeni de Porkinton* venerunt ad fidem & servitium nostrum." See Rymer, vol. I. par. i. p. 79. A. D. 1218. and 2 Hen. III.

¹ This Einion, after the death of Walter Lord Mauney (who was by patent sheriff of Merionethshire for life) succeeded him in that office, being in great favour with Henry the Fourth, in the beginning of whose reign he died.

E. citing a MS. of Mr. Robert Vaughan of Hengwrt.

^m *Pencenedle* signifies *head of a family*.

daughter,

daughter, who belonged to the house of Lancaster: soe he clave fast to that house in the time that Owen Glyndwr rebelled in Wales. Soe that in the time of that warre he and Meredith ap Hwlkyn Llwyd of Glynllifon °, had the charge of the town of Carnarvon, and an English captain was over the castle; in revenge whereof, Owen burned his two houses, Keven y van and Kefelgyfarch in Evioneth. In the processe of continuance of this warre Jevan died at Carnarvon, and was brought by sea (for the passages by land were shut up by Owen's forces) to Penmorva °, his parish church, to be buried. Robert his brother, taking a clean contrary course, was out with Owen Glyndwr, as may be gathered by a pardon granted him in the ninth yeare of Henry the Fifth, then Prince of Wales, which I have to shew, whereof the true copie ensueth ¶.

Rys

* This place lies about six miles S. of Carnarvon.

° *Penmorva* signifies *at the end or head of the marsh*. This village is situated at the entrance of the Traethmawr sands, which divide Merioneth and Carnarvonshire.

¶ HENRICUS illustris Regis Angliæ & Franciæ primogenitus, Princeps Angliæ, Dux Aquitaniæ, Lancastriæ & Cornubiæ, & Comes Cestriæ, locum tenens metuendissimi dñi nri regis & patris in ptib' South-Walliæ & North Walliæ oibus & singulis p'sentes literas nras inspecturis, Salutem. Sciatis quod nos autoritate & potestate nobis p ipsum metuendissimum dnum nrum regem & patrem commissis, ac etiam pro quadam sine nobis p Robturm ap Meredith ap Howell nuper rebellem dicti dñi nri regis & patris in partib' Walliæ, ad opus ejusd' dñi nri regis & patris soluta; recepimus & admisimus dictum Robertum ad gratiam pdicti dñi nri regis & patris, & ei pardonamus noie ejusd' dñi regis & patris sectam pacis suæ quæ ad ipsum dnum nrum regem & patrem ptinet p omnimodis pditionib', rebellionibus, incendiis, felonis, adhæssonib', transgressionibus, misprisonib', & ma'efactis quibuscumq' p pdictum Robertum in ptibus & marchiis Walliæ ante hæc tempora factis sive ppetratis, unde indictatus, *vetatus* *, reatatus, vel appellatus existit, ac etiam ut-

* This word properly signifies to *injoin or forbid*; it is corruptly used for *vetitus*. See du Cange, in articulo. Reatatus from *rectum* signifies prosecuted.

legariis,

Rys Goch^a of Eryri, a bard of that time, made him a song, shewing what notable qualities he had, and yet durst not name him therein, for that as it seemeth he was an outlaw at that time when the song was made, but sheweth in the song his descent from Gruff' ap Conan', and that he was the hope of that stocke.

The Song that Rys Goch made to Robert ap Meredith be-
ginneth thus :

HIR y bu Ruffudd ruddbar
Waywdan fab Cynan ein car
Ar goefgeirch hir gwayw ysgwyd
Yn gorwedd Llew Flamgledd Llwyd
A'i dalaith Llwybr goddaith Llaw
Fynnodd gynt yn kelffeiniaw
Tann oerfab bid tan arfoll
Na chryu ddyd ni chrynodd oll.
Mae arno gaink llathrfaink Llv
Etifedd propr yn tyfv

legariis, si qua in ipsum his occasionib' fuerint pmulgata, & firmam pacem pdicti dñi regis & patris inde concedimus, ac ea bona & catalla sua quæcumq' dicto dño nro regi & patri occasionibus premissis forisfacta nōie & autoritate pdictis concedimus p p'sentes : ita tamen qd stet rectus in curia pdicti dñi regis & patris & nra, si quis versus eum loqui voluerit de pmissis vel aliquo pmissorum; in cujus rei testimonium has litteras nras fieri fecimus patentes. Dat' London xx die Septembris anno dicti metuentissimi nri regis & patris Henrici quarti post conquestum ix^o. Irrotulatur ad sessionem tentam apud Carnarvon die Lunæ proximo post festum assumptionis beatæ Mariæ Virginis año principatus dñi H. principis Walliæ, undecimo.

^a Rys Goch flourished about the year 1400. See Lluyd's Arch. He liv'd at Havod Garregog near Beddcelhert.—The late heirs of this place (who married Mr. Hughes of Trevan) was descended from him in a direct line. E.

^b i. e. Gruffith ap Conan Prince of Wales. P.

Yn dwyn ystod fragod frig
 Garw ben hydd gwr boneheddig
 O bryd a Llafn hyfryd hedd
 Ag ysgythr brwydr ag ofgedd
 O gampau anwydav naid
 Frytanawl hen frytaniaid
 Om Gofyn emyn ymwal
 Dyn anosbarthys ei dal
 Pwy i henw nim difenwir
 Bedydd ar dv gwerydd dir
 Y gwr a elwir yn gainc
 Dylwyth-fawr ar dalaith-fainc
 Alexander niferoedd
 A mvr a phen mawr hoff oedd
 Trystan ddoethran addeithryw
 Dvlath avr ei dalaith yw
 Bonedd ond odid benoeth
 Y cwysg yn hen farwn coeth
 Rhwng Hafren hoywdfiwr gloywglan
 Llugwrth a lli a garthan
 Ni ad gwawd pechawd heb pwyll
 O gandaith genfignedwyll
 Son am y cymro os iach
 Pwydlog doeth a fo pellach
 Pe megid evrid araith
 Cenav o neb Cynan iaith
 Hir ddewr lan hardd eryr lid
 Henw mygr o hwn y megid
 Ymgroesed gwawd dafawd hen
 Ymgais ni wn i amgen.

Rys Goch or Eryri ai kant.

“ Long

“ Long did our friend [or kinsman] Gryfudd ap Conan, with
 “ his bloody spear, fiery lance, shield, and flaming sword, lye
 “ dormant like a greyheaded lion, whilst his country was all in a
 “ blaze by the hands of the enemy, who heaped together dry
 “ wood to kindle [welcome] the fire. Tremble not at the re-
 “ lation, he did not tremble. From him there grows a beautiful
 “ branch eminent in battle and master of the British Games.
 “ If my *disordered head*’ is asked the Christian name of him who
 “ is called a descendant of the great family on the throne of the
 “ province, it is Alexander, the beloved chief of the multitude
 “ with the golden crown of *Trystan the Wise*’. I prophecy, he
 “ will deserve the high title of a wise baron, and withstand an
 “ army between the famous water of the Severn and the clear

’ This is a common expression in the Welsh language: when any thing dangerous was spoken, they feigned madness.—This explanatory note was added by the learned gentleman who made the version of this poem.

’ Trystan was the son of a King of Cornwall, who was educated under Merlin, and became a most famous Knight errant of Arthur’s Round Table*.

From his having been instructed under such a tutor, and many of his achievements having been performed in Cornwall, Wales, and Ireland, it is not extraordinary that he should be celebrated by the Welsh Bards. As for the epithet of *wise*, he merited this title probably from the instructions of Merlin, and the ancient Knight Errant was supposed commonly to have every other virtue, as well as that of valour. Hence *les neuf Preux* most properly signifies the *nine Worthies*, though they are at the same time *Champions*. Thus a MS. in the French King’s library is entitled, “ Les nobles faits du tres *preux* & bon Chevalier Messire Tristan.” See the *Bibliothèque des Romans*, p. 252.

Dean Percy hath a very fair MS. in old French, of the adventures of the same Knight amongst his curious and valuable collection: it is supposed to be of the 13th or 14th century, and is thus entitled, “ La Grande Histoire de Monseigneur Tristan.”

Vidi Paris, *Tristano* & piu di mille

Ombre Mostrommi, & nominoll’ a dito

Ch’amor di nostra vite dipartille. Dante, *Inferno*, c. 5.

* See the Adventures of this Knight, printed at Venice, 1552, 2 vol. 4to.

D d d

“ streum

“ stream of Garthen. Dark envy and detraction will not suffer
 “ his praise to be celebrated. If it is his desert, timid caution
 “ avaunt. If any strait, beautiful, and brave offspring of Cy-
 “ nan’s lineage” was ever bred, this must be he. Beware the
 “ scoff of those who have before detracted ; if I speak of him it
 “ must be to his honour.”

Composed by Rees Goch (or Rhys the Red) of Eryri *.

This is the most ancient song I can find extant which is addressed to any of my ancestors since the raigne of Edward the First, who caused our bards all to be hanged by martial law †, as stirrers of the people to sedition, whose example being followed by the governours of Wales, untill Henry the Fourth his time, was the utter destruction of that sort of men. Sithence, this kind of people were at some further libertie to sing and to keep pedegrees, as in ancient time they were wont ; since which we have some

* The expression *iaith* in the original signifies properly *tongue* : thus *lingua Walensium* in some old records signifies the *Welsh nation*. For more ample satisfaction, however, on this head, the reader is referred to Hurd’s learned and ingenious Dialogues, vol. ii. p. 17. where he instances the use of the word *laga*, which signifies both a law and a country.

† This Bard is placed by Llywd in his Archæologia in the 15th century, about 1420. He styles him *Rys Goch o Eryri*, or *of the Snowdon mountains*. It should seem that the inhabitants of this country have long been much addicted to poetry, as a rock is shewn by the shepherds, pretty near the summit, under which, if two persons sleep on a midsummer’s eve, the one will wike out of his senses, and the other a poet.

‡ Edward the First hath been also accused of having destroyed all the ancient records and writings in Scotland, after his conquest of that kingdom. See this however very ably refuted by Sir David Dalrymple, in his *Examination into the supposed antiquity of the Regiam Majestatem*. Edinburgh, 1769, 4to.

light of antiquitie by their songes and writings^z. From the reigne of Edward the First to Henry the Fourth, there is therefore noe certainty, or very little, of things done, other than what is to be found in the Princes records, which now^a, by tofinge the same from the Exchequer at Carnarvon to the Tower, and to the offices in the Exchequer at London, as alsoe by ill keeping and ordering of late dayes, are become a chaos and confusion from a total neglect of method and order, as would be needful for him who would be ascertained of the truth of things done from time to time. I have, to my chardge, done what I could, but for my travell have reaped little or nothing, as you see.

You shall finde in the ministers accompt, in Henry the Fourth his time, Robert ap Meredith, farmour of Dolbenman^b, the King's weare of Aberglaslyn^c, the mill of Dwyfor, and of other the King's thinges about his dwelling.

Jevan the sonne of Robert ap Meredith being a child of tender age, on the death of his father, was in the tuition of his cofen german's sonne, John ap Meredith ap Jevan, his next kinsman, who crosse married him and his sister with Howell ap Rhys ap Howell Vaughan of the house of Bron y foel in Evioneth. This family, in those dayes was of greate possessions and abilitie, and was then accounted the chief house descended from Collwyn, whereof there be many of great account in that countrie.

^z See a commission, in the time of Q. Elizabeth, to settle who were real bards or otherwise, prefixed to Evans's Specimens of Welsh Poetry.

^a It should seem, from this, that these records were removed from Carnarvon near the time when the author wrote.

^b Dolbenman is a village in Carnarvonshire, not far from Penmorva, the situation of which hath been before described.

^c There is a famous salmon-leap at Aberglaslyn in Carnarvonshire, about a mile from the mouth of the river of that name, which divides Merionethshire from that county.

The widdow of Robert ap Meredith married Meredd' ap Rhys ap Jevan Llwyd of Vchaf without the consent of her allie John ap Meredith, and soe was faine to flie the day she was married to her husband's house before she dined, foure and twentie miles off, and that of rough way.

At this time, or near about it, fell a dislike and variance betweene Will' Gruffith, Esq. Chamberlaine of North Wales, and John ap Meredith, who at that time bare chief rule and credit in the quarters where he dwelled: the one by reason of his authoritie (which in those dayes was greate to them who held that roome^d) expecting that all should reverence and obey him, the other in regard of his descent, kindred and abilitie in his countrey, ack owledgeing none but his Prince his superior. Hence grew the debate,

— *nec Cæsar ferre majorem* ^e,
Pompeiusve parem, —

which continued long. To John ap Meredith his kindred and friends clave like burres, soe that then it began to be a pro- verbe, or a phrase, to call the septe^f and family of Owen Gwynedd, *Tylwyth Sion ap Meredith*; which Englished is “the kindred of John ap Meredith.” This beginning of division how-

^d *Roome* is here used in the same sense with *place* or *office*. Thus we find in Rymer, vol. vi. p. iv. p. 69. a grant of Q. Elizabeth, anno 1559, of the office or *Roome* of reading the Civile Lectures in the university of Oxford. As alio ibid. p. 154 anno 1559, of the *Roome* or office of Chief Master of our games, pastimes, and sports, ibid. p. 155. See likewise afterwards a grant to Roger Askam of the *Room* or office of Yeoman of our bears. Ibid.

^e This is printed as it stands in the MS. though it may shew the author was not very accurate in his Latin profody.

^f This word is frequently applied by Spenser, and Sir John Davis, to the Irish families and clans.

ever bred in the posteritic of the two houses a conceit of dislike which continued long after in the kindred, the one towards the other, but with matches and continuance of time it is worn out.

This John ap Meredith was cofen to Owen Tudur, and went with a hundred gentlemen of North Wales his kinsmen to visit the said Owen, being in trouble at Rwfſg castle, called *Brynbyga*^g. In his returne being beset with enemies, favourers of the house of Yorke, he made an oration to comfort his people, willing them to remember at that time the support of the honour and credit of their ancestors, and concluding, that it should never in time to come be reported, that there was the place where a hundred North Wales gentlemen fled, but that the place should carry the name and memory, that there a hundred North Wales gentlemen were slayne. Because also some of his kinsmen had brought with them all their sonnes, and some others had but one sonne to succeed in their name and inheritance, (as Howell ap Llewelyn ap Howell, and others,) he placed all these in the rearward, out of the fury of the fight, whilst all his sonnes were in the vanward, which himself led, where he was fore wounded in his face, whereof he was called Squier *y graith*^h to his dying day: but God gave his enemies the overthrow, he opening the passage with his sword.

^g In Sir John Price's description of Wales prefixed to Wynne's History, p. 20. Ufk in South Wales is said to be called likewise *Brynbyga*; *Rwfſg* Castle therefore should perhaps be written *Yr Uſg* or *Wſg*, when it would signify the *Castle upon the Uſk*. As this place lies at such a distance from Gwedir, and the inhabitants of the two divisions of the Principality have so little connexion with each other even to this day, such a mistake is by no means improbable.

^h Squier *y graith* signifies Esquire with a scar.

Queen Catherine, being a French woman borne, knew noe difference betweene the English and Welsh nation, untill her marriage being published, Owen Tudur's kindred and countrey were objected to disgrace him, as most vile and barbarous; which made her desirous to see some of his kinsmen. Whereupon he brought to her presence John ap Meredith and Howell ap Llewelyn ap Howell his neare cosens, men of goodly stature and personage, but wholly destitute of bringing up and nurture, for when the Queene had spoken to them in diverse languages, and they were not able to answer her, she said, *they were the goodliest dumbe creatures that ever she saw.*

This being not impertinent to the matter I treat of, and preserved by tradition, I thought fit to insert here.

John ap Meredith had by his wife five sonnes, viz. Morris, Jevan, Robert, Owen, and Gruff', whereof Robert in his father's time was slayne without issue neare Ruthyn in the following manner. [The rest survived their father, and have many descended from them]:

The Thelwals of Ruthynⁱ being ancient gentlemen of that countrey, who came into it with the Lord Grey, on whome King Edward the First bestowed the countrey of Dyffryn Clwyd^k, were at contention with a septe or kindred of that countrey called the family of Gruff' Goch. These being more in number than the Thelwals (although the Thelwals carried the whole offices of the countrey, under the Lord thereof, the Lord of Kent, then treasurer of England) drave the Thelwals to take to the castle of Ruthyn for their defence, where they besieged them, untill

ⁱ Thelwal, who published the *Digest of Writs*, was of this family, and dates his work from his *poor house* near Ruthyn. It is about a mile from that town, on the road to *Mold* in Flintshire.

^k Or the *vale* of Clwyd, *Dyffryn* bearing that signification in Welsh.

the sledge was rayed by John ap Meredith, his sonnes, and kindred, to whome the Thelwals sent for ayde. In that exploite Robert the sonne of John ap Meredith was slayne with an arrow in a wood, within the view of the castle of Ruthyn called *Coed marchau*¹; in revenge wherof many of the other side were slayne, both at that time and afterwards. Some affirme John ap Meredith to have beene at a field in Penyal^m for Tho' Gruff, which field was fought betweene Tho' Gruff' ap Nicolas and Henry ap Gwillim, and the Earle of Pembroke's captaines, where Tho' Gruff' got the field, but received there his death's wound.

Henry VII. minding on his entry into England to clayme the crown against the tyrant Richard the Third, wrote this letter, which is still extant, to John ap Meredith in hæc verbaⁿ:

By the King.

Right trusty and well-beloved, wee greete you well: and whereas it is foe, that, through the helpe of Almighty God, the assistance of our loving and true subjects, and the greate confidence that wee have to the nobles and commons of this our principallitie of Wales, we be entred into the same, purposing by the helpe above rehearsed, in all haste possible, to descend into

¹ *Coed* in Welsh signifies a wood.

^m Pennal, the place where Tho' Gruff' ap Nicholas was wounded, is knowne by tradition; and lieth in Wttra Bernal, in the parish of Towin, over against Lliidiart y parke crache, and in the midst of the way: being a little round pavement, and almost covered with grafs*.

ⁿ Henry the Seventh, when he claimed the Crown of England against Richard the Third, landed at Milford Haven, and marched from thence through South and North Wales into Leicestershire, where the battle of Bosworth was fought. He had probably been informed at Milford, that John ap Meredith had considerable influence in N. Wales. [He might also know it from his family, as they were nearly related.] P.

* This note was added by some person who had perused the MS. with attention.

our realme of England, not only for the adoption of the crowne, unto us of right appertaining, but alsoe for the oppression of the odious tyrant Richard late Duke of Glocester, usurper of our said right; and moreover to reduce as well our said realme of England into its ancient estate, honour, and property, and prosperitie, as this our said principallitie of Wales, and the people of the same to their dearest^o liberties, delivering them of such miserable servitude as they have piteously long stood in. We desire and pray you, and upon your allegiance strictly charge and command you, that immediately upon the sight hereof with all such power, as ye may make, defencibly arrayed for the warre, ye addressse you towards us, without any tarrying upon the way, untill such time as ye be with us, wheresoever we shall be, to our aide, for the effect above rehearsed, wherein ye shall cause us in time to come to be your singular good Lord, and that ye faile not hereof as ye will avoyd our grievous displeasure, and answere it unto your perill. Given under our signet at our^p, &c.

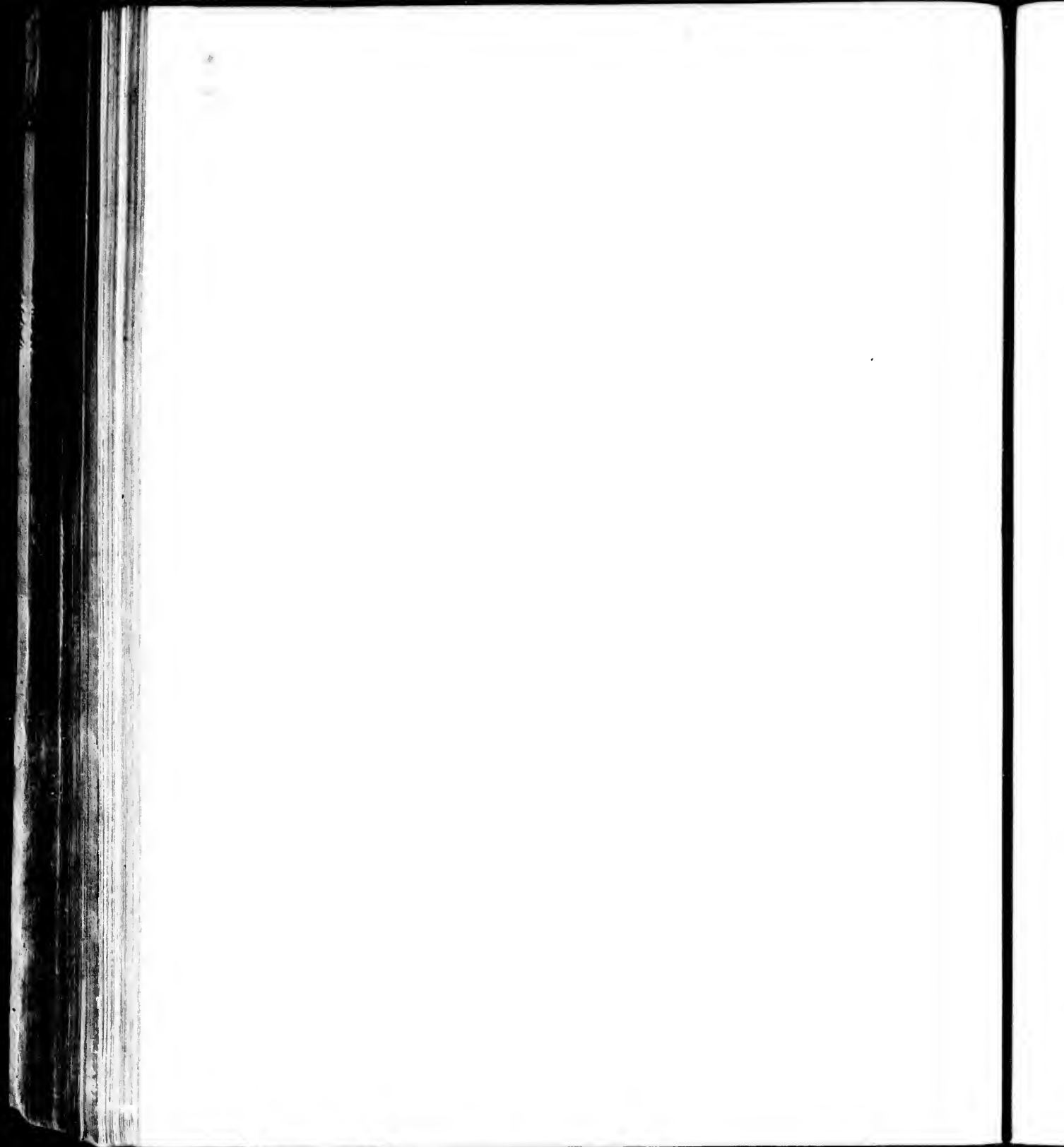
To our trustie and well-beloved John ap Meredith ap Jevan ap Meredith.

Jevan ap Robert ap Meredith, my ancestor, havinge, as afore is remembred, crosse married with the house of Bron y foel in Evioneth, had by his wife, called Catherine, three sonnes, Meredith, Robert, and John. After her death he married Gwenhwyfar, daughter of Madog Vaughan, of the house of Llwyn Dyrys, descended of Sir Gruff^l Lloyd, by whome he had two sonnes, Gruff^l Vaughan and Jevan, and a daughter. Jevan died^q, being

^o *erst*, liberties, in all the copies which I have examined. E.

^p The date and place from which this order issued are omitted in the MS.

^q i. e. Jevan ap Robert, the father. See before. P.



but one and thirtie yeares of age, of the plague, at Keselgyfarch his house.

In the warrs betweene the houses of Yorke and Lancaster, he (as all his) were Lancastrians, and he was one of the captaines who laid waste the Duke of Yorke's estate in Denbigh land; in revenge whereof, the King sent Will' Herbert, Earle of Penbroke, in Edward the Fourth's time, who came with a greate army to recover the Castle of Harddlech^r, held by David ap Jevan ap Einion for Jasper Earle of Penbroke, then beyond the seas. He also wasted with fire and sword all Nanconway, and the whole country lying betweene Conway and Dovi. He graunted at the same time a protection or safe conduct to Jevan ap Robert ap Meredith, and to his followers to come to parle with him, which I have tq shew, under his seale of armes, in hæc verba^r.

^r When this town is thus spelt, it is said to signify *the beautiful or high rock* *; when in the common way [*Harlech*], it may be rendered *the town upon the rock*. As unfortunately the lately published Memoirs of Lord Cherbury are become excessively scarce, it may not perhaps be improper to insert from thence an anecdote relative to this siege of Harlech. The governor being summoned to surrender, sent an answer to the following effect: "That he had held out a castle in France till all the old women in Wales talked of him, and that he would defend his Welsh castle, till all the old women in France should hear of it."

^s OMNIB^s, &c. fidelibus ad quos p̄sens scriptum p̄venerit, Guilielm^s Comes Pembrochiæ Justic^s dñi regis in ptibus suis North Wallia, salutem. Sciatis nos dedisse & p̄ p̄sentes concessisse Jevan ap Robt de conio^ro Evioneth in Comitatu Carnarvon saluum & securum conductum intrandi, veniendi, ambulandi, expectandi, comorandi ac salvo eund^s & redeundi p̄ & infra Comitatum de Carnarvon & Merioneth p̄ se, bonis, & caralis, sine arrestatione, molestatione, impechimento, danuo, violentia, manucaptione, pturbatione, seu gravamine aliquo tam ad sectam dñi regis, quam ad sectam partis alterius p̄sonæ cujuscumq^s a die consecutionis p̄sentium quousq^s p̄ nos habuerit p̄monitionem sex dierum. Datum sub sigillo nostro quarto die mensis Novembris anno regni regis Edwardi 4ti post Conquestum octavo.

* See Llywyd's Archaeolog. p. 276. article fair.

He was a most goodly man of personage, of greate stature¹, (as may appeare by the Welsh songes made unto him), and most valiant withall. Besides the turmoyles abroad, he sustayned deadly feud (as the northerne man termeth) at home in his *doore*², a warre more dangerous than the other.

His sifter, having been married to Howell ap Rys, died within few years after the marriage, leaveing noe issue male: and Howell ap Rys married Tudur ap Gruff³ ap Einion's daughter of Ardydwy a courageous stirring woman, who never gave over to make debate betweene her husband and his next neighbour and brother-in-law, my ancestor. Many bickerings passed betweene them, either makeing as many friends as he could, and many men were slayne, but commonly the losse fell on Howell ap Rys his side.

David ap Jenkin being a neare kinsman to Howell ap Rhys, and then an outlaw, a man of greate valour, came to aide his cosen against my ancestor, but prevailed not, though they came upon the suddaine on my ancestor's house, and whilst he was from home. Thereupon (as we have it by credible tradition) David ap Jenkin wished his cosen to keepe friendship with his brother-in-law, for, said he, I will not come with thee to invade this man's house when he is at home, since I finde such hot resistance in his absence.

This woman⁴ caused the parson of Llanwrothen⁵ to be murdered, beause he had fostered⁶ to my ancestor; but God so wrought,

¹ i. e. Jevan ap Robert. See before, P.

² A mode of expression which seems to explain itself.

³ The second wife of Howell ap Rhys, before mentioned. P.

⁴ Llanwrothen is a parish in Merionethshire, which borders upon Traethmawr sands.

⁵ The strong connexion and affection between the Foster-father and son seems to be now much dropped in Wales: it continues however in full

wrought, that the murderers, being three brethren, were all slayne afterwards by my ancestor; in revenge of the parson's unworthy death.

I have a number of obligations wherein Howell ap Rys standeth bounden for the observation of the peace, and awards touching that controversie; but the plague taking away my ancestor, ended the strife betweene them, which was likely (if he had lived) to have ended with the death of one of them or both. Soe bloody and irefull were quarells in those dayes, and the revenge of the sword at such libertie, as almost nothing was punished by law, whatsoever happened.

The cause of this mortal hatred betweene them grew (as it is credibly reported) in this sorte: John ap Meredith and Howell ap Rys were ever highly at variance; my ancestor having had bringing up with his cosen John ap Meredith, affected him best, though allied nearly to the other, which was taken foe heinously by Howell ap Rhys, that he converted the summe of his rancor upon his brother-in-law and next neighbour. This quarell, my ancestor being dead, never ended till, in assaulting the house of the said Howell, by the sonnes of John ap Meredith with their cosen Gruffith ap John ap Gronw (a gentleman of great account, who had been captaine, as is reported, of a company of launfiers in Aquitaine): the said Gruffith ap John ap Gronw was slayne, being shot into the beaver with an arrow out of the house, whereupon the said Howell was faine to leave the country to avoyd the furie of the revenge of blood.

full force in the uncivilized parts of Ireland. In a letter from Mr. Wynne [penes P. Panton, Esq.] to his father, and dated in 1623, he desires that the widow of an Evan Thomas may be bestowed on his *sister*-brother who worked in the garden at Gwedir.

In the partition of the inheritance of Jevan ap Robert ap Meredith betweene his five sonnes, according to the custome of Wales; Henblas in Maethbrood and all the land in Llanrwst in Denbigh land descending unto him, (as afore is mentioned, as cosen and next heire to Robin Vaughan ap David ap Howell ap Gruff^a), fell to be the parte and portion of Gruff^a Vaughan his sonne, who married the daughter^a of Gruff^a ap Madog Vaughan, who was grandchild to Rees ap Einion Vaughan, viz. his daughter's daughter. You are to understand, that though Robin Vaughan did not defeat his cosen and next heire Jevan ap Robert ap Meredith of the land held in the Welsh tenure, yet minding the preferment of his daughter, as much as law would suffer him, he charged the land with a mortgage of £. 12. to Rys ap Einion Vaughan his sonne-in-law, which the said Rys ap Einion Vaughan did release to Gruff^a ap Jevan ap Robert in parte of his marriage goods with his cosen, the daughter of Owen ap Gruff^a ap Madog: the very release I have in my custody.

God hath shewed such mercy to our kind, that ever since the time of Rodericke the sonne of Owen Gwynedd, Lord of Anglesey, our common ancestors, there lived in the commonwealth in eminent sorte one or other of our name, and many together at times. I have in my minde, in the perusal of the whole course of the history of our name and kindred, compared or likened God's worke, in that to a man striking fire into a tinder-box, by the beating of the flint upon the steele there are a number of sparkles of fire rayted, whereof but one or two takes fire, the rest vanishing away. As for example, in Einion ap Cariadog, Gruff^a ap Cariadog, and Sir Will^a Cariadog alias Willcocke Cari-

^a She is called soon after this the Daughter of Owen ap Gruff^a ap Madog. It is here given more contracted. P.

adog, brethren; Einion ap Cariadog as should seeme the elder brother, was Lord of Penychen, Penyberth, and Baladevlyn. His sonne, Tudur ap Einion, died without issue of his body, and his lands were begged by the Queene, King Edward the First his wife, as appeareth in this history. Gruffith, the second brother, was Lord of Friwlwyd, Ystrad, and Eskibion; he had issue David, which David had three sonnes; David Chwith ap David, Meredith, and Howell; which are mentioned before to have exchanged their estate at Denbigh with Henry Laeie, earle of Lincolne. Will' alias Wilcocke Craidog, the third brother, married an inheretrix in Pembrokeshire, where his posteritie have remained ever since, having, from the house called Newton, named themselves Newton Craidog, both in Pembrokeshire and Somersets-hire. Some of the Newtons claim their lineal descent from Howell ap Gronw, Lord of Ystradowin, an'o D'ni 1100, descended from Rytherch ap Jestin, Prince of Wales. Note, among these three brethren, the posteritie of the one remains; of the other two, the one is vanished, and the other gone out of the countrey. Of Gruffith^b his grand-children, only the posteritie of Howell are extant, who was before stated to be the youngest of the three sons of Gruffith Lord of Friwlwyd. Lastly, in Jevan ap Robert ap Meredith his children, which were five, only the posteritie of Meredith are extant, and of account. Whereupon comparing things past with things to come, I preface God's mercy to the kindred hereafter, as heretofore.

Now after this large digression, to returne to the course of this former historie, Rys ap Einion Vaughan having had warning, as aforesaid, that Henblas^c should be redeemed, hastned to

^b i. e. Gruffith ap Cariadog's grand-children. P.

^c *Henblas*, as well as *Brynlully*, is afterwards described, as being in the Lordship of Denbigh. It is supposed that *Henblas* is the same with *Plafôn*, or *The old mansion*.

build Brynfullty, before that Michaelmas appointed. I have seene an old man in my time called Jevan ap John ap David Vaughan, at least of ninety years old; this man's mother served Rys ap Eingan Vaughan at that time, and she was wont to reporte, that corne^d fayling them to *build*^e the house, they reaped the corne that grew in the *raine*^f to serve that turne, as the corne in the ridge was not readie.

The warrs of Lancaster and Yorke beginning this summer, made Jevan ap Robert ap Meredith forgetfull of his promise to redeeme the lands; for in the time of that civill warre land was not ought worth, neither was it redeemed during his life. In those warrs Jevan ap Robert ap Meredith, even in the sixth of Edward the Fourth, with David ap Jenkin and other captaines of the Lancastrian faction, wasted with fire and sword the suburbs of the town of Denbigh. In revenge of this, Edward the Fourth sent William Earle of Penbroke with a great army to waste the mountaine countreys of Carnarvon and Merioneth shires, and take the castle of Hardlech (held then by David ap Jevan ap Einion, for the two Earles Henry Earle of Richmond, and Jasper Earle of Pembroke) which Earle did execute his chardges to the full, as witnesseth this Welsh rime.

Hardlech a Dinbech pob dor
Yn Cunnev,
Nanconway yn farwor

^d i. e. to be used as straw. P.

^e i. e. to thatch it.

^f *Raine*, in some parts of England, is used for *furrow*, or the lower part of the ridge. Wormius derives the word *Rane* (from whence the Runic character) from either *ryn*, a furrow; or *ryn*, a gutter or channel. See lett. *Run*, p. 2. 1636. cited in the New Translation of Mallet's Denmark, vol. I. p. 363.

Mil a phedwarcant mae Jor
A thrugain ag wyth rhagor^z.

In that expedition Jevan ap Robert lay one night at the house of Rhys ap Einion at Henblas, who was married to his cousin Catherine daughter of Robin Vaughan; and setting forth very early before day unwittingly carried upon his finger the wrest^b of his cousin's harpe, whereon (as it seemeth) he had played over night, as the manner was in those days, to bring himselfe asleepeⁱ. This he returned by a messenger unto his cousin, with this message with all, that he came not into Denbigh land to take from his cousin as much as the wrest of her harpe: whereby it appeareth, that by his means neither her house, nor any of her goods were burnt, wasted, hurt, or spoiled. Thus both her houses, Henblas and Brinffyllty, escaped the Earle Herbert's desolation, though the same consumed the whole burrough of Llanrwst, and all the vale of Conway besides, to *cold coals*^k,

^z " At Harddlech and Denbigh every house was in flames, and Nantconway in cinders; 1400 from our LORD, and sixty and eight more." This translation was made by a learned Divine, well known in the literary world for several publications. He was also so obliging as to add the following metrical version in the stile of Sternhold and Hopkins:

" In Harddlech and Dinbech ev'ry house
" Was safely set on fire,
" But poor Nantconway suffer'd more,
" For there the flames burnt higher:
" 'Twas in the year of our LORD
" Fourteen hundred sixty-eight,
" That these unhappy towns of Wales
" Met with such wretched fate."

^b The wrest of a harp is the hollow iron with which the strings are tuned; this term is still used by the harpsichord tuners for an instrument which they use for the same purpose.

ⁱ The oldest Welsh tunes are very plaintive.

^k i. e. To cinders: the author hath before used *cold ashes* in the same sense.

whereof

whereof the print is yet extant, the very stones of the ruines of manie habitations, in and along my demaynes, carrying yet the colour of the fire. John ap Meredith being cofen german's sonne to Jevan ap Robert ap Meredith, notwithstanding he was soe much elder than he, (as the one was in man's estate, and the other but a youth), had the government of his uncle¹, and of his *livings*^m: during which time of his nonage, Robin Vaughan ap David ap Howell dying, as aforesaid, John ap Meredith came over with his uncle to Llanrwst and the Lordship of Denbigh, to take possession of the inheritance lately befallen him, called the Henblas in Maethbrood, where Rys ap Einion Vaughan and Catherine daughter of Robin Vaughan then dwelled. Haveing surveyed the land, they gave Rys ap Einion Vaughan then warning that he should avoyd the land at Michaelmas, for then he should have the twelve pounds mortgage-money payed him. On this he requested to be tenant, and was answered by Jevan ap Robert ap Meredith, that he should lie there at times himselfe, and therefore would not sett it. Whereupon Rys ap Einion Vaughan built Brynfullty house, upon parte of that land which Henry Lacie, Earle of Lincolne, Lord of Denbigh, exchanged with our ancestors, and which he had bought of some of our kinsmen that had the same by gavel-kind. Their name, however, is forgotten, as is the pedegree of two other freeholders in Maethbrood besides, which held land in my time in that towne, lineallie from that grant and exchange. The one was called Rys ap Llewelyn ap David, whose posteritie doth yet inherite parte of this land: the other the wife of one Lancelott a weaver,

¹ i. e. His Welch Uncle, for Jevan was cousin-german to John's father. P.

^m *Livinge* hath before been used by the author in the same sense with *estate*.

whose inheritance my uncle, Gruff Wyane, bought, being but a matter of three pounds a-year. Into ſoe little partes did the gavelkind by many defcents chop our inheritance, being at firſt large. Conſerring oft with the freeholders of the pariſh of Llanrwſt, my neighbours, how they held their lands; and from what common anceſtor they were deſcended; moſt of them are ſaid to be deſcended lineallie from Ednyfed Vaughan, in the townſhip of Tybrith and Garthgarmon. Inquiring alſo of them whence the freeholders of Maethebrood Rys Llevelyn ap David, and Lancellot's wife were deſcended, they ſaid they were foreigners, and came from the caſtle of Denbigh, as though the caſtle of Denbigh did procreate men: which ſheweth that the tradition is not yet forgotten, from whence they came. The moſt parte of that towne of Maethebrood is in our brood, bleſſed be God!

Robin Jachwr, the greateſt antiquarie of our countrey, being at Gwedir with my grandfather, and going one day to a *chwarev-fa gampaw*^o, where the countrey was aſſembled at a place called Gardd y felin in the pariſh of Llanrwſt, asked whether he would command him any ſervice thither. Nothing, ſaid my grandfather, having a noſegay in his hand by chance, but deliver this noſegay to the beſt gentleman thou ſeeſt in the company, upon the credit of thy ſkill; who delivered the ſame with proteſtation of his charge in the preſence of all the company to Llyn ap David, Rys Llyn ap David's father. I cannot however get his pedigree, nor Lancellot's wife's pedigree in any certaintie, to joyne them to ours: the reaſon is, that poverty ſoone forgets whence it be deſcended, for it is an ancient received ſaying, that

ⁿ Of Berth-ddu. See the pedigree at the end of the MS. P. Berth-ddu is in Llanrwſt pariſh.

^o *Chwarevfa gampau*. Country games or exerciſes.

there is noe poverty but is descended of nobilitie, nor noe nobilitie but is descended of beggerie.

When Adam delv'd and Eve span,
 Who was then a gentleman?
 Then came the churle and gathered good,
 And thence arose the gentle blood.

Yet a great temporall blessing it is, and a greate heart's ease to a man to find that he is well descended, and a great griefe it is for upstarts and gentlemen of the first head^p to looke backe into their descents being base, in such fort, as I have known many such hate gentlemen in their hearts, for noe other cause, but that they were gentlemen. The conditional promise by God to David was, "that if his children would keepe his laws, he should not want " a man of his loynes to sit on his seat for evermore." Whereby he had two things promised him, propagation of his seed, and eminence of continuance in the world. The Recabites, for their obedience to their father's commandment, not to drinke wine, have the like promise of God^q.

During the time the Earle of Pembroke's armie lay in Snowdon, Jevan ap Robert was faine to leave his owne house, and lodge at night in the rocke called Ogo filen, standing at Meillionen, in the parish of Beddcelert, and continued all the next day with the Eancastrians. His friends and followers skirted the armie, and skirmished with them in the strait and rough passage of Nantwhynen^r, untill at last he was sent for by the Earle

^p A metaphor from deer, a young buck of the second year is called a buck of the first head. P.

^q See Jeremiah, ch. xxxv.

^r *Nantwhynen* lies within a small distance of Bedd-celert. The rough and strait passage, mentioned by the author, soon opens into a most picturesque valley.

under his protection and received into grace, as may appear by the Earle's deed under his hand and seale; the like he did not graunt to any in North Wales, as farre as I can heare.

The begining of the quarell and unkindnes between Jevan ap Robert and Howell ap Rys ap Howell Vaughan grew in this sort. Jevan ap Robert, after his sister's death, upon some mislike, left the company of Howel ap Rys, and accompanied John ap Meredith his nephew, and his children, who were at continuall bate with Howell ap Rys. The fashion was, in those days, that the gentlemen and their retainers met commonly every day to shoote matches and mafferies: there was noe gentleman of worth in the cuntry, but had a wine cellar of his owne, which wine was sold to his profit; thither came his friends to meete him, and there spent the day in shooting, wrestling, throwing the sledge, and other actes of activitie, and drinkeing very moderately withall, not according to the *bealthing*^s, and gluttonous manner of our dayes.

Howell ap Rys ap Howell *did draw a draught*^t upon Jevan ap Robert ap Meredith, and sent a brother of his to lodge over night at Keselgyfarch, to understand which way Jevan ap Robert ap Meredith meant to goe the next day, who was determined to shoote a match with John ap Meredith's children at Llanvihangel y Pennant^u, not farre from John ap Meredith's house. This being understood, the spie, Howell ap Rees, his brother, slips away the night to his brother, and lets him know where he should lay for him. Now had Howell ap Rys provided a

^s i. e. *Drinking of bealths.*

^t This is a phrase frequently used by the author, and imports *drawing a plan*, or *settling a scheme*.

^u This parish is very near to Beddcelert. All this part of the country is very mountainous, and therefore very proper for ambuscades.

butcher for the purpose, that should have murdered him; for he had direction by Howell to keepe himselfe free, and not to undertake any of the company untill he saw them in a medley, and every man fighting. Then was his charge to come behinde the tallest man in the company (for otherwise he knew him not, being a stranger), and to knocke him down; for Howell ap Rys sayd; "Thou shalt soone discern him from the rest by his stature, and he will make way before him. There is a foster-brother of his, one Robin ap Inko, a little fellow, that useth to match him behind: take heed of him; for, be the encountre never soe hot, his eye is ever on his foster-brother." Jevan ap Robert, according as he was appointed, went that morning with his ordinary company towards Llanvihangel to meete John ap Meredith. You are to understand, that in those dayes, and in that wild worlde, every man stood upon his guard, and went not abroad but in fort and soe armed, as if he went to the field to encountre with his enemies. Howell ap Rys ap Howell Vaughan's sister being Jevan ap Robert's wife, went a mile, or thereabout, with her husband and the company, talking with them, and soe parted with them; and in her way homewards, she met her brother a horseback, with a great company of people armed, riding after her husband, as fast as they could. On this she cried out upon her brother, and desired him, for the love of God, not to harme her husband, that meant him noe harme; and withal steps to his horse, meaning to have caught him by the bridle, which he seeing, turned his horse about. She then caught the horse by the tail, hanging upon him soe long, and crying upon her brother, that, in the end, he drew out his short-sword, and struck at her arme. Which she perceiving, was faine to lett slippe her hold, and running before him to a narrow passage, whereby he must pass through a brooke, where there was a foot-bridge

bridge near the ford; she then steps to the foot-bridge, and takes away the *canllaw*^x, or handstay of the bridge, and with the same lets flie at her brother, and, if he had not avoyded the blow, she had strucke him downe from his horse.

—*Furor arma ministrat.*

Howell ap Rys and his company, within a while, overtooke Jevan ap Robert and his followers, who turned head upon him, though greatlie overmatched. The bickering grew very hott, and many were knocked downe of either side. In the end, when that should be performed which they came for, the murdering butcher haveing not strucke one stroake all day, but watching opportunity, and finding the company more scattered than at first from Jevan ap Robert, thrust himselfe among Jevan ap Robert's people behind, and, making a blow at him, was prevented by Robin ap Inko his foster-brother, and knocked downe; God bringing upon his head the destruction that he meant for another: which Howell ap Rys perceiving, cryed to his people, "Let us away and be gone, for I had given chardge that Robin ap Inko should have been better looked unto:" and soe that bickering brake with the hurt of many, and the death of that one man.

It fortun'd anon after, that the parson of Llanvrothen^y tooke a child of Jevan ap Robert's to foster, which sore grieved Howell Vaughan's wife, her husband haveing then more land in that parish than Jevan ap Robert had; in revenge whereof she plotted

^x Richards, in his Dictionary, renders this word accordingly a long rail used as a side fence to a bridge. It also signifies a *counsellor* or *attorney*.

^y Llanvrothen is a small village in Merionethshire, situated near Tracthmawr sands.

the death of the said parson in this manner. She sent a woman to take lodging of the parson, who used not to deny any. The woman being in bed, after midnight began to strike and to rave; whereupon the parson, thinking that she had been distracted, awaking out of his sleepe, and wondering at soe suddaine a crie in the night, made towards her and his household also; then she said that he would have ravished her, and soe got out of doores, threatening revenge to the parson. This woman had her bretheren three notable rogues of the damn'd crew fit for any mischief, being followers of Howell ap Rys. In a morning these bretheren watched the parson, as he went to looke to his cattle, in a place in that parish called Gogo yr Llechwinn, being now a tenement of mine, and there murdered him; and two of them fled to Chirkeland in Denbighshire, to some of the Trevor's who were friends, or of a kinne to Howell ap Rys, or his wife. It was the manner in those dayes, that the murtherer onely, and he that gave the death's wound should flye, which was called in Welsh a *llawerudd*, which is a *red band*, because he had blooded his hand: the accessories and abettors to the murtherers were never hearkened after.

In those dayes, in Chirkeland and Oswaldstreland², two sects or kindred contended for the sovereignty of the countrie, and were at continuall strife one with another: the Kyffins and Trevors. They had their alliance, partisans, and friends in all the countreys round thereabouts, to whome, as the manner of the time was, they sent such of their followers as committed murther or manslaughter, which were safely kept as very precious jewells; and they received the like from their friends. These

² Now called *Oswestry*: it adjoins to Chirkeland, where the Trevors continue still to be a very considerable family.

kind of of people were stowed in the day time in chambers in their houses, and in the night they went to the next wine-house that belonged to the gentleman, or to his tenants houses not farre off, to make merrie and to wench. Meredith ap Howell ap Moris, in those days chief and leader of the sect of the Kyffins, was a kinne to Jevan ap Robert, and in league with him, to whome he sent to desire him, to draw him a draught to catch those murtherers; who sent him word, that he should come privately into Chirkeland only accompanied but with six, and he made noe doubt to deliver the murtherers into his hands. As Jevan ap Robert was in his way going thither, passing by Ty yn Rhos*, being a winehouse, standing in Penrhyn Deydraeth, Howell ap Rys ap Howell Vychan's wife, being in the house, said to the people that were with her, Yonder goeth Jevan ap Robert, *Hwyr y dial ef ei dadmaeth*, which is as much as to say, "that he would not in haste be revenged of the wronge done to his foster." Being come to Chirkeland, he abode there many dayes in secret and unseene, sleeping in the day, and watching all night. In the end, with the helpe of his friends, he caught the two murtherers, whom he had no sooner in hand, but the crie did rise, *The Trevors to their friends, and the Kyffins to their leaders*. To the latter of these cries Meredith ap Howell ap Moris resorted, who told Jevan ap Robert that it was impossible for him to carry them out of the country to any place to have judiciall proceeding against them, by reason that the faction of the Trevors would lay the way and narrow passages of the countrie; and if they were brought to Chirke castle gate to receive the triall of the countrie lawes, it was lawfull for the offender's friends, whosoever they were, to bring £. 5. for every man for a fine to

* *Ty yn Rhos*, signifies the house in the rough common.

the Lord, and to acquit them, soe it were not in cases of treason. A damnable custome used in those dayes in the lordships marches, which was used alsoe in Mowddwy^b, untill the new Ordinance of Wales, made in the seven and twentieth yeare of Henry VIII. Hereupon Jevan ap Robert ap Meredith commanded one of his men to strike off their heads, which the fellow doeing faintely, the offēder told him, that if he had his necke under his sword, he would make his sword take better edge than he did: soe resolute were they in those days, and in contempt of death; whereupon Jevan ap Robert in a rage stepping to them, strucked off their heads.

David Llwyd ap Gruffith Vychan, grandchild to Jevan ap Robert ap Meredith, in his youth waited upon Hugh, sonne to Mr. Robert ap Rys at Cambridge, clected Abbot of Conway by his father's procurement in his minoritie. He being at Plas Jolyn^c, at the house of Mr. Robert ap Rys, an old woman that dwelt there in Rys ap Meredith's time, told him that she had seene his grandfather Jevan ap Robert at that house, both in goeing and comeing from his voyage into Chirkeland, and that he was the tallest and goodliest man that ever she had seene: for, sitting at the fire, upon the spûr^d, the hinder parte of his head was to
be

^b Mowddwy is by that statute of Henry the Eighth now annexed to Merionethshire, whereas it was before part of Montgomeryshire.

^c Plas Jolyn is in Denbighshire, not far from Gelar and Voclas: it now belongs to Mr. Myddelton of Chirk Castle.

^d Spûr (or, as it should seem to have been pronounced by the author, *Spere*) means that seat near a kitchen or hall fire, which generally goes by the name of a *Settle*. It is not very obvious however whence such a seat should have obtained the name of *Spûr* or *Spere*. I find the following passage in the Saxon Chronicle, which shews the word Spûr to be originally a term in that language "namen þa fet fot-ppupe:" which Bishop Gibson renders scabellum. See the Chron. A. D. 1070.
It

be seene over the spûr, which she never saw to any other man. She alsoe said that in his returne from Chirkeland she saw Lewry, daughter of Howell, Rys ap Meredith's wife, his kinswoman wash his eyes with white-wine, being bloudshot by long watching^o.

Jevan ap Robert in his returne from Chirkeland, riding home to his house by Gallt y Morfa-hir by moonshine (the tide in Traeth mawr^f giving him noe sooner passage) talking with his men carelessly, and out of danger, as he imagined, suddenly lighted an arrow shot amongst them from the hill side, which was then full of wood. On this they made a stand, and shot wholly all seven towards the place from whence the other arrow came, with one of which arrowes of theirs shot soe at randome they killed him that shot at them, being the third brother of the murtherers; God revenged that wicked murther by the death of every one of the three bretheren. Howell ap Rys ap Howell Vaughan, and especially his wife, boyling in revenge, drew another draught against Jevan ap Robert, in this manner. Jevan ap Robert's mother was of the house of Kefumelgoed, in the countie of Cardigan, whose mother was sister to Rytherch ap Jevan Llwyd, then and yet the greatest family in that countie. It hath before been mentioned to have been customary in Chirkelande and other

It appears from the context to have been the stool on which an image of CHRIST was represented to place his foot on. If therefore the word *ppupe* had been used instead of *pot-ppupe*, it would signify a seat or bench.

^o It appears before that that Jevan had been obliged to watch for some time in Chirkland, sleeping in the day, and watching in the night, for the murtherers, &c. P.

^f Traeth mawr signifies the *greater* tract of sand, to distinguish it from the *less*, which is the road from Penmorva in Carnarvonshire to Harlech in Merionethshire. These sands are not commonly passable till the tide hath ebbed nearly three hours.

parts of Wales, for the *Llawrudds* ^g to resort to the most powerfull of the gentry, where they were kept very choisely. Howell ap Rys understanding that Jevan ap Robert and his people had occasion to goe to Carnarvon to the assises, thought it fit time by force to enter on his house; and to apprehend all those, and to bring them to Carnarvon to be hanged; for there was none of them but was outlawed of murder. To this end, to strengthen himselfe in this purpose, he sent for his trustiest friends about him, and among the rest procured David ap Jenkin his cosen german, then a famous outlaw in the rocke of Carreg y Walch ^h, with his crew and followers to assist him, and suddenly came in a morning to the hall of Jevan ap Robert's house, where they were in out-houses about, and stowed in upper chambers in the lower end of the hall, and none to be seene. These people of Jevan ap Robert's that were in the hall rayfed aerie, and betooke themselves to their weapons; whereupon the outlawes awaked, and betooke themselves to their weapons, and besirred themselves handsomely. It happened the same time that Jevan ap Robert's wife stood at the fire side, looking on her mayd boyling of worte to make metheglyn, which seething worte was bestowed liberally among the assistants, and did helpe the defendants to thrust backe them that were entered, and afterwards to defend the house. The house was assailed with all force, and pierced in diverse places, and was well defended by those that were within; for having made diverse breaches, they durst not enter, a few resolute men being able to make a breach good against

^g The signification of the word *llawrudd* hath before been explained by the author, and to import a *red* or *bloody hand*, or the murderer who had given the blow.

^h There is a rock on the road from Shrewsbury to Oswestry, which is to this day called *Kynaston's Cave*, from its having been a receptacle to some robbers of that name.

many. Upon this the cry of the country did rise, and Jevan ap Robert's tenants and friends assembled in great numbers, (whereof Robin ap Inko was captain), who fought with the besiegers, and in the end with their arrows did drive the besiegers from the one side of the house, who continually assaulted the other side. After they had continued all that day and all that night in that manner, the next morning, seeing they could prevail little to enter the house, they came to a parley with Robin ap Inko, who advised them to be gone in time: "For," said he, as soon as "the water of Traeth mawr will give leave, Jevan Krach, my "master's kinsman, will be here with Ardydwy men, and then "you shall be all slain." (This Jevan Krach was a man of great account in those days, in Ardydwy¹, and dwelt at Kelli lydan, in the parish of Maentwrog.) Whereupon they gave over their enterprise, and returned to Bron y foel, to Howell ap Rys ap Howell Vaughan his house, where David ap Jenkin advised his cousin Howell ap Rys to take Jevan ap Robert for his brother-in-law, neighbour, and friend: "For," said he, "I will "not be one with you to assault his house when he is at home, "seeing I find such hot resistance in his absence."

Dayly bickerings, too long to be written, passed betweene foe neare and hateful neighbours. In the end the plague, which commonly followeth warre and desolation, after the Earle of Pembroke's expedition, tooke away Jevan ap Robert, at his house in Keselgyfarch, in the flower of his age, being thirty-one years of age; whose death ended the strife of those houses; for his three eldest sonnes were sister's sonnes to Howell ap Rys ap Howell Vaughan.

¹ Ardydwy is a district in the north-western part of Merionethshire. Maentwrog is also a parish of the same county, not far distant from Ardydwy; it adjoins to Llanwrothen, the parish of which the author hath before had occasion to mention.

Enmitie did continue betweene Howell ap Rys ap Howell Vaughan, and the sonnes of John ap Meredith. After the death of Jevan ap Robert, Gruffith ap John ap Gronw, (cozen german to John ap Meredith's sonnes of Gwynfryn,) who had long served in France and had charge there, coming home to live in the countrey, it happened that a servant of his coming to fish in Stymillyn^k, his fish was taken away, and the fellow beaten by Howell ap Rys his servants, and by his commandment. Gruffith ap John ap Gronw tooke the matter in such dudgeon, that he challenged Howell ap Rys to the field; which he refusing, and assembling his cozens John ap Meredith's sonnes and his friends together, assaulted Howell in his owne house, after the manner he had seene in the French warres, and consumed with fire his barnes and his out-houses. Whilst he was afterwards assaulting the hall, which Howell ap Rys and many other people kept, being a very strong house, he was shot out of a crevice of the house, through the sight of his beaver, into the head, and slayne out-right, being otherwise armed at all points. Notwithstanding his death, the assault of the house was continued with great vehemence, the doores fired with great burthens of straw; besides this, the smoake of the out-houses and barnes not farre distant, annoyed greatly the defendants, soe that most of them lay under boordes and benches upon the floore in the hall, the better to avoyd the smoake. During this scene of confusion, onely the old man Howell ap Rys never stooped, but stood valiantly in the middest of the floore, armed with a *gleve*¹ in his hand, and called unto them, and bid them " arise like men, for shame, for he

^k Stymillyn is on the Carnarvonshire coast, not far from Creckieth. There is a pretty large pool of water near the sea, where there are some good trouts, and in which this fishing probably happened.

¹ *Gleve* signifies a sword, from the French *Glaiive*.

" had

“ had knowne there as greate a snoake in that hall upon a Christ-
 “ mas even.” In the end, seeing the house could noe longer de-
 fend them, being overlayed with a multitude, upon parley be-
 tweene them, Howell ap Rys was content to yeald himselfe pri-
 soner to Morris ap John ap Meredith, John ap Meredith’s eldest
 sonne, soe as he would sweare unto him to bring him safe to
 Carnarvon castle, to abide the triall of the law, for the death of
 Gruff’ ap John ap Gronw, who was cofen german removed, to
 the said Howell ap Rys and of the very same house he was of.
 Which Morris ap John ap Meredith undertakeing, did put a guard
 about the said Howell of his trustiest friends and servants, who
 kept and defended him from the rage of the kindred, and espe-
 cially of Owen ap John ap Meredith his brother, who was very
 eager against him. They passed by leisure thence, *like a camp*^m,
 to Carnarvon; the whole countrie being assembled, Howell’s
 friends posted a horse-backe from one place or other by the way
 who brought word that he was come thither safe, for they were
 in great fear lest he should be murdered, and that Morris ap
 John ap Meredith could not be able to defend him, neither durst
 any of Howell’s friends be there for feare of the kindred. In the
 end, being delivered by Morris ap John ap Meredith to the con-
 stable of Carnarvon-castle, and there kept safely in ward untill
 the assises; it fell out by law, that the burning of Howell’s houses
 and assaulting him in his owne house, was a more haynous offence
 in Morris ap John ap Meredith and the rest, than the death of
 Gruff’ ap John ap Gronw in Howell ap Rys, who did it in his
 owne defence; whereupon Morris ap John ap Meredith, with
 thirty five more, were indicted of felonie, as appeareth by the
 copie of the indictment, which I had from the records.

^m i. e. Like an army, which makes regular encampments during their

Howell,

Howell, delivered out of prison, never durst come to his owne house in Ewioneth, but came to Penmachno^a, to his mother's kindred, Rys Gethin's sonnes, and there died. It is a note worthy observation that the house by little and little decayed ever since, neither hath any of his posterity beene buried in his owne sepulchre, being four descents besides himselfe.

Rys ap Howell ap Rys his sonne, cofen german to my greate grandfather Meredith ap Jevan ap Robert, married to his first wife, an inheretrix of the Trevors, by whom he had greate possessions in Hopefand^b. He afterwards, by the procurement of my great-grandfather, married Margaret, daughter to Hugh Conwey the elder, Reinalt ap Meiricke's widdow, his next neighbour in Gwedir, and was overseer of his workes when he built Gwedir-house, as William David ap Ellis Eytyn his cofen, who lived with him in those dayes, told me. He was buried on the right side in the chancel in Llanrwst; and was taken up at the burying of Cadwalader ap Robert Wynne of Havod y maidd^c, as my uncle Owen Wynne guessed by the greatnes of the same.

Thomas ap Rys ap Howell sold all his mother's lands and *weaving* in Hopefand, and a great part of his owne, and was buried in Hopefdale.

Cadwalader ap Thomas, his son and heire, lying at Chester, died there.

Ellis ap Cadwalader, (who had married my cofen german, my uncle Owen Wynne's daughter), my kind cofen and friend, a man endued with many good parts, being sicke of an impostume,

^a Penmachno is a small village in Carnarvonshire, on the road between Llanrwst and Fefliniog.

^b Hopefand is a part of Flintshire, situated in the hundred of Rhew.

^c Havod y maidd is a farm in Denbighshire, not far from Caerydrydion, it signifies the *weby* farm.

went to one Dr. Davies neare Brecknock, and there died. This man's name I am bound to make an honourable mention of, for diverse kindnesſes he ſhewed unto me, and eſpecially for the wiſe advice and counſell he was wont to give me. Among many, one eſpecially is by me and my poſterity to be remembered, which I doe thinke worthy to be recorded in writing. Unkindneſs and variance befalling betweene myſelfe and my uncle Owen Wynne, being neighbours, for wayes croſſe my ground for the carrying of his hay from the King's meadow in Trefriw to his houſe at Caer-melwr, I grew to a great heat, and ſaid that he ſhould not paſſe that way without the loſſe of mens lives. Whereupon, he being preſent, and wiſhing well unto us both, reprov'd me ſharply, wiſhing me to follow the courſe of my anceſtors, who with wiſdome, unanimity, and temperance, from time to time, had raiſed their fortunes, aſſuring me his anceſtors might be an example unto me of the contrary, who with headineſs and raſhneſs did diminiſh and impaire their eſtates from time to time. Which counſel of his tooke deepe roote in me ever after, and, to my great good, I bridled my choller, whereunto I was much ſubject.

Owen Ellis, the ſonne of Ellis Cadwalader, died by a fall from his horſe going home from Crikeith in the night, having bene there all the day drinking.

Ellis Ellis, his ſonne, full mad, and continued ſoe a long time, and at length *in that caſe* died.

Owen Ellis, his ſonne, being a young man, newly married, going home in the night betweene Nanhoren and Vaerdre, in Llân¹, where his wife lived, having by her one daughter, and

¹ This is a ſingular method of expreſſing himſelf, which the author frequently uſes.

² Llân is the S. W. ſtern peninſula of Carnarvonſhire.

having

leaving her greate with child, (which after proved to be a sonne), by a fall from his horse, upon the way, died.

These three were buried in their owne sepulchres in the church of St. Katherine's in Crikeith, after this booke was by the author written.

It may be a question here, and a doubt to the reader, wherefore the land of Robin Vaughan ap David ap Howell should descend to Jevan ap Robert ap Mer. lith, his cosen and next heire, he having a daughter and heire of his owne body lawfully begotten? To answer this question, you are to understand that Henry Lacie, Earle of Lincoln, upon the conquest of Wales, having received of Edward the First his gift the countries of Ros and Rovoniog, now Denbigh land, and planted the same with diverse Englishmen, who held their lands, as well as their posteritie, by the English tenure; the rest of the Welshmen, loaded with many bad customes, held their lands in the Welsh tenure. One condition thereof was, that the inheritance should not descend to daughters, but should goe to the heire male of the house, if there were any such within *their*^s degrees to the dead man, and if not, that it should escheate to the Lord of the soyle; yet in respect of the possibilitie of issue male, which the owner of the land might have while he was alive, the custome of the countrie did permit him to mortgage the land to serve his need, without the Lord's leave. You see hereby that Robin Vaughan did what he could, according to the custome of the countrie, towards the preferment of his daughter, and the reason why Jevan ap Meredith his next kintman and heire, had the lands. Which proveth alsoe that Robert ap Meredith was eldest brother to Jevan ap Meredith, John ap Meredith's grand father, which his

^s *Three*, perhaps.

which

posteritic greatly gainſaid¹; for if Jevan ap Meredith had been elder brother, then John ap Meredith ſhould have inherited this land, and not Jevan ap Robert his father's coten.

Meredith, ſonne to Jevan ap Robert his eldeſt ſonne, in the time of his father, was taken to nurſe by an honeſt freeholder in the hundred of Yſcorum Iſgurvai², who was owner of the Creigjau in Llanvaire, and the beſt man in the pariſh, and having noe children of his owne, gave his inheritance to his foſter-child. Creige ſtandeth ſome ſixteen miles from Keſelgyfarch, whereby it may appeare how deſirous men were in thoſe dayes to have a patron that could defend them from wrong, though they fought him never ſoe far off. Creige ſtandeth betweene Carnarvon and Bangor, two miles off from Carnarvon. In thoſe days Carnarvon flouriſhed as well by trade of merchandiſe as alſoe for that the King's exchequer, chauncery, and common law courts for all North Wales were there continually reſiding, whiſt the way to London and the marches was little frequented. By this, civility and learning flouriſhed in that towne, ſoe as they were called, *the lawyers of Carnarvon, the merchands of Beazemares, and the gentlemen of Courway*. I heard diverſe of judgement, and learned in the lawes, to report that the records of the King's Courtes, kept in Carnarvon in thoſe dayes, were as orderly and formally kept as thoſe in Weſtmiſter. Thither did his foſter father ſend my greate grandfather to ſchool, where he learned the Engliſh tongue, to read, to write, and to underſtand Latine, a matter of great moment in thoſe dayes. For his other brethren loſing their father young, and nurſed in Evioneth, neare their father's houſe, wanted all this; ſoe as to the honeſt man, his

¹ This is a repetition of what hath been mentioned before.

² In Carnarvonſhire.

foster and second father, (for he gave him with breeding alsoe his inheritance) may be attributed his good fortune (God's providence always excepted) which sometyes worketh by secondary meanes, whereof this man was the instrument. Having lived there till the age of twenty yeares, or thereabouts, his foster-father being dead, he fell in liking with a young woman in that towne, who was daughter-in-law to one Spicer, the reputed daughter of William Gruffith ap Robin, sheriffe of the county of Carnarvon. This Spicer was a landed man of £. 50. per annum, which descended to him from his ancestors, yet had an office in the Exchequer^z, and dealt with trade of merchandise alsoe, that he became a great and wealthy man. His sonne, John Spicer, was a justice of the peace in the first commissions after the new ordinance of Wales, and was brother by the mother to Alice William, the wife of Meredith ap Jevan ap Robert. Their mother is said to be of the Bangors, whom I have knowne often to have claymed kindred of me by that woman. At Crieg he began the worlde with his wife, and begate there by her two daughters, Jonett, the first, married to Edmund Griffith, and afterwards to Sir John Puleston; and another called Catherine, married to Rowland Gruffith of Plas Newydd^y. After this, finding he was likely to have more children, and that the place would prove narrow and straight for him, he was minded to have returned to his inheritance in Ewioneth, where there was nothing but killing and fighting, whereupon he did purchase a lease of the castle and

^z The author means the Exchequer for the Principality, then kept at Carnarvon.

^y Plas Newydd signifies *the new Mansen* or *Gentleman's house*; the name is therefore very common in Wales, and it is difficult to determine what Plas Newydd the author alludes to. It should seem that our modern expression of a *Gentleman's Place* is taken from this Welsh term.

frithes² of Dolwyddelan, of the executors of Sir Ralph Berkinnet. I find in the records of the Exchequer of Carnarvon, the transcript of an act of resumption enrowled, made in the third yeare of king Henry the Seventh, by which act all king Richard's gifts are resumed, excepting one lease of the frith of Dolwyddelan, granted to Sir Ralph Berkinnet of the countie of Chester, knight, Chamberlaine of North Wales. Haveing purchased this lease, he removed his dwelling to the castle of Dolwyddelan, which at that time was in part thereof habitable, where one Howel ap Jevan ap Rys Gethin, in the beginning of Edward the Fourth his raigne, captaine of the countrey and an outlaw, had dwelt. Against this man David ap Jenkin rose, and contended with him for the sovrainety of the countrey; and being superiour to him, in the end he drew a draught for him, and took him in his bed at Penanmen with his concubine, performing by craft, what he could not by force, and Irought him to Conway castle. Thus, after many bickerings betweene Howell and David ap Jenkin, he being too weake, was faine to flie the countrey, and to goe to Ireland, where he was a yeare or thereabouts. In the end he returned in the summer time, haveing himselfe, and all his followers clad in greene³, who, being come into the countrey, he dispersed here and there among his friends, lurking by day, and walkeing in the night for feare of his adversaries; and such of the

² Frith is a very common term in Wales, and signifies generally a small field taken out of a common. There is a market town in Derbyshire called *Chapel in the Frith*, which is situated in a valley amongst such inclosures. The term of *frith* is originally Saxon, hence *ƿeorƿ and* signifies a forest with its bounds. Chron Sax. A. D. 1086.

³ The tradition is well known, that Robin Hood, and the outlaws his followers, were clad in the same livery. As they generally lived in forests, perhaps it might be conceived that they were less distinguishable when dressed in this colour.

countré as happened to have a fight of him and his followers, said they were the faïries, and soe ran away. All the whole countré then was but a forest, rough and spacious, as it is still, but then waste of inhabitants, and all overgrowne with woods; for Owen Glyndwr's warres beginning in 1400, continued fifteen yeares, which brought such a desolation that greene grass grew on the market place in Llanrwst, called Bryn y botten, and the deere fled into the church-yard, as it is reported. This desolation arose from Owen Glyndwr's policie, to bring all things to waste, that the English should find no strength, nor resting place. The countré being brought to such a desolation, could not be replanted in haste; and the warres of York and Lancaster happening some fifteen yeares after, this countré being the chiefeest fastness of North Wales, was kept by David ap Jenkin, a captaine of the Lancastrian faction, fifteen yeares in Edward the Fourth his time, who sent diverse captaines to besiege him, who wasted the countré while he kept his rocke of Carreg y Walch; and, lastly, by the Earle Herbert, who brought it to utter desolation. Now you are to understand, that in those dayes, the countré of Nanteonway was not onely wooded, but alsoe all Carnarvon, Merioneth, and Denbigh shires seemed to be but one Forrest having few inhabitants, though of all others Nanteonway had the fewest, being the worst then, and the seat of the warres, to whom the countré about paid contribution. From the towne of Conway to Bala, and from Nanteonway to Denbigh^b, (when warre did happen to cease in Hirwethog, the countré adjoining to Nanteonway), there was continually fostered a wasp's nest, which troubled the whole countré, I mean a lordship belonging

^b All this tract of country is mountainous, though not very rocky; it may therefore have been formerly covered with wood, according to the account, though there is at present little or none to be seen.

to St. Johns of Jerusalem, called Spytty Jevan, a large thing, which had privilege of sanctuary. This peculiar jurisdiction, not governed by the king's lawes, became a receptacle of thieves and murtherers, who safely being warranted there by law, made the place thoroughly peopled. Noe spot within twenty miles was safe from their incurfions and roberies, and what they got within their limits was their owne. They had to their backstay friends and receptors in all the county of Merioneth and Powisland*. These helping the former dofolations of Nanteonway, and preying upon that countrey, as their next neighbours, kept most part of that countrey all waste and without inhabitants. In this estate stood the hundred of Nanteonway, when Meredith removed his dwelling thither, being (as I gueffe) about the four and twentieth yeare of his age, and in the beginning of king Henry the Seventh his time. Being questioned by his friends, why he meant to leave his ancient house and habitation, and to dwell in Nanteonway^d, swarming with thieves and bondmen, whereof there are many in the king's lordship and townes in that hundred; he answered, "that he should find elbowe roome in that vast countrey among the bondmen, and that he had rather fight with outlawes and thieves, than with his owne blood and kindred; "for if I live in mine house in Evioneth^e, I must either kill mine owne kinfmen or be killed by them." Wherein he said very

* Powisland formerly included a large district of country, chiefly Montgomeryshire. The *Reguli* of this part of North Wales are said to have been buried at Myford in that county, which is situated on the river Vurnwy.

^d Nanteonway signifies the valley situated on the Conway.

^e Evioneth is a hundred in the S. Western part of Carnarvonshire: it is supposed to have obtained this name from its being watered by a great number of small rivers. The same etymology is given by Leland to the province of Aquitaine in France.

truly, as the people were such in those dayes there; for John Owen ap John ap Meredith, in his father's time, killed Howell ap Madoc Vaughan of Berkin, for noe other quarrell, but for the mastery of the countrey, and for the first good-morrow; in which tragedie Meredith had likely beene an actor, if he had lived there, for the reasons aforesaid. He and his cosen the heire of Bron y foel, were both out of the countrey, Morys ap John ap Meredith and Owen ap John ap Meredith were also growne old men, for as there was none in the countrey, that durst strive with John Owen ap John ap Meredith, but Howell ap Madoc Vaughan of Berkin', which cost him his life.

Howell ap Madog Vaughan his grand mother, was Jevan ap Robert ap Meredith his sister, for he was cosen german's sonne to Meredith. John Owen that killed him was cosen german to my grandmother, being the daughter of Morris ap John ap Meredith. In respect of the feude of my grandfather he could not abide any descended of Owen ap John ap Meredith, neither could she abide any of his kindred of Berkin. I write it but to shew the manifold divisions in those days among for private friends.

Howell ap Madog Vaughan having most valiantly fought out with his people, received his deadly wound in the head. Being downe, his mother being present, clapped her hand on his head, meaning to ward the stroke, and had halfe her hand and three of her fingers cut off at the blowe.

David Llwyd Gruffith Vychan, my uncle, told me, that his father dwelling at Cumstrallyn in Evioneth, hearing of the affray, but not of his cosen's death, (for Howell ap Madog Vychan outlived the fray certaine dayes), sent him, being a child, to see how his cosen did; and he coming to Berkin found him layd in his

[Berkin (or Aberkin) is situated in the parish of Llanfildwy.

bed, and his wounded men in great number lying in a *cocherie* §, above the degree near the high table, all in breadth of his hall, all gored and wallowing in their owne blood. He likewise saw the gentleman's milch kine brought to the hall doore, and their milk carried hot from the kine, to the wounded men, by them to be druncke for the restoring of their blood.

Howell Vaughan, upon his death-bed, did say, "that this quarrell should never be ended while his mother lived; and looked upon her hand." Which was true indeed; for the persecuted eagerly all her time, and John Owen was kept in prison seven years in Carnarvon castle, for soe long she survived her sonne, and his life was saved with much ado. After her death the feude was *compounded for* ^h.

John Owen and his followers were exceedingly fore hurt in that bickering; soe that returning to his father's house from the fray, and his aged father sitting or walking before the doore of his house, and seeing his son and his company all hacked, wounded, and besmeared with their owne blood, he said unto them, *Dryg yw'r drefn yma, a wnaethoch ebrwi eich gaweth*; which is as much as to say, "You are in an ill-favoured pickle. Have you done nothing worthy yourselves?" "I," said the sonne, "I feare me we

§ This term seems to be derived from an old French word *coucherie*; it may therefore signify a long boarded bed, placed with a proper inclination from the side of the room, which was the common dormitory of the servants. A shelf of boards thus disposed might answer the purpose of what in England was formerly called a *palke*, and slanting shelves of this sort are sometimes used in barracks for the soldiers to sleep upon. As for what is mentioned of its being *above the degree near the high table*, it is well known that the principal table in an ancient hall is always raised a step or two, as it continues to be in most colleges.

^h Such compositions were common in Wales before the Statutes of Henry the Fifth.

ⁱ *I* is probably used here for *ay*, as it is throughout the folio editions of Shakspere. P.

"have.

“ have done too much.” “ If that be foe,” said Owen ap John ap Meredith, “ I was this morning the best man in my country,” meaning Evioneth, “ but now I know not who is.”

You are to understand, that in Evioneth of old there were two sects or kindred, the one lineally descended of Owen Gwynedd, Prince of Wales, consisting then and now of four houses, viz. Kefelgyfarch, y Llŷs ynghesu y fann, now called Yflinkegid, Cneuenny, and Brynkir, Glastrin or Cwmfrallyn; the other sect descended of Collwyn, whereof are five houses or more; viz. Whelog, Bron y foel, Berkin, Gwnsfryn, Talhebont, and the house of Hugh Gwyn ap John Wynne ap Williams called Penardd, all descended of their common ancestor, Jevan ap Einion ap Gruffith. His brother was Howell ap Einion ap Gruffith, that worthy gentleman called Sir Howell y fwyall^k, who behaved himself so worthily at the field of Poitiers^l, (where John the French King was taken by the Blacke Prince), that he received of the Prince in guise the constablership of Criketh castle, and other great things in North Wales, alsoe the rent of Dee milles in Chester; and, what was more, a messè of meat to be served before his battle-axe or partisan forever, in perpetual memory of his good service^m. This messè of meat was afterwards carried downe to be given to the poore, and had eight yeomen attendants found at the King's charge, which were afterwards called yeomen of the crowne; who had 8d. a day, and lasted till the beginning of Queene Elizabeth's time. Sergeant Roberts of Havod y bwch, neare Wrexam, was, at his beginning, ycc-

^k i. e. The axe.

^l This circumstance hath been before mentioned by the author. See p. 40.

^m Our author here repeats what hath before been stated, of which there are some other instances when the matter was particularly interesting.

man of the crowne. He married Sir William Gerard's halfe-sister by the mother, as did Robert Turbridge of Caervallen, neare Ruthyn, Esq. another: to whom he told, "that being yeoman of the crowne, he had heard it by tradition in the King's house, that the beginning of their order was upon the occasion as is afore remembred." This did Robert Turbridge relate unto me, upon the creditte of the other man. The countrey people, grounding upon the songes, which say, "that he bridled the French King," will have it, that he took the French King prisoner: a matter unlikely, as the one served on foot, and the King on horsebackⁿ. But the foot captaine is a brazen wall of the army, and may be said truely to winne the field.

After

ⁿ Notwithstanding the author's doubts with regard to this tradition, it seems scarcely to admit of a cavil, as such an extraordinary and expensive establishment could not have been granted by the crown, but for most meritorious services. As for the impossibility relied upon, that a soldier on foot could not take the French King on horseback, this circumstance is most fully accounted for by a MS. given to the Lord Treasurer Oxford by Mr. Hugh Thomas, and now deposited in the British Museum.

— "Sir Howell ap Fywall, ap Griffith, ap Howell, ap Meredith, ap Einion, ap Gwgan, ap Meredith Goch, ap Cothwyn, ap Tangvo, called Sir *Howell y Fwyall*, or Sir *Howell Pole Axe*, from his constant fighting with that warlike instrument.—It is said he dismounted the French King, *cutting off his horse's head* at one blow with his battle axe, and took the French King prisoner; as a trophy of which victory it is said that he bore the arms of France, with a battle axe in bend sinister, argent." Harl. MSS. N^o 2298. p. 348.—the reference in the printed catalogue to p. 21. of this number being inaccurate.

The conqueror anciently had a right to quarter the arms of his prisoner. This appears by a treatise on heraldry, printed by Wynken de Worde, without date, in which there is the following passage: "We have armys by our meryts, as very playnly it appeareth by the addycyon of the arms of Fraunce to those of Englande after the taking of K. John of Fraunce in the battayle of Poytiers, the which certayn addition was lawfull and ryght, and wysely done. And on the same manner of



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After Meredith had lived certaine yeares at Dolwyddelan castle, he builded the house in Penanmen, being the principal best ground in Dolwyddelan, and also within certaine yeares after, he removed the church of Dolwyddelan from a place called Brin y bedd, to the place where now it is, being parte of the possessions of the priory of Bethkelert. He also there new-built the same as it is now, one crosse chapell excepted, which my uncle Robert Wynne built. It should seeme, by the glasse window there, that it was built in anno 1512; but whether it was in that yeare glazed, (which might be done long after the building of the church), I am uncertaine. The church, which is very strongly built, the castle, and his house of Penanmen stand three square,

“ wyce a poor archer might have taken a prynee or noble lord,
“ and so the arms of that prisoner he may put to him and his heys.”
Book of St. Albans, by dame Julian Bernes.

The author seems also to have forgotten some Welsh verses which are inserted in the margin of the MS. commemorating the grant of the mess of meat to be served at Sir Howell's table, whilst the battle axe followed.

Segir fy feiger wyall doeth honn garr bron y brenin
Gwedyr maes gwaed ar y min; i dyfaig ai dewifwr
Ai diod oedd waed a dwr.
Kowydd * i Jevan ap Meredith O Cefelgyfarch
Howell ap Reinalt ai cant.

“ Place on the table my *sewer*, (bearing the axe which came from the
“ presence of the king, with blood on its edge) the two dishes which I
“ have chosen. The drink must be blood and water.

“ The poem in praise of Jevan ap Meredith of Cefelgyfarch, by Howell
“ ap Reinalt the Bard.”

* Towydd (or distich) was inserted in the margin by a different hand from that of the copier: it is said to be very incorrect, and consequently not perfectly intelligible. The above translation is supposed to be nearly the sense of it.

like a trivett, either a mile distant from each other. Questioning with my uncle, what should move him to demolish the old church, which stood in a thicket, and build it in a plaine, stronger and greater than it was before : his answer was, he had reason for the same, because the countrey was wild, and he might be oppressed by his enemies on the suddaine, in that woodie countrey ; it therefore stood him in a policie to have diverse places of retreat. Certaine it was, that he durst not goe to church on a Sunday from his house of Penanmen, but he must leave the same guarded with men, and have the doores sure barred and bolted, and a watchman to stand at the Garreg big, during divine service ; being a rock whence he might see both the church and the house, and raise the crye, if the house was assaulted. He durst not, although he were guarded with twenty tall^o archers, make knowne when he went to church or elsewhere, or goe or come the same way through the woodes and narrowe places, lest he should be layed for : this was in the beginning of his time. To strengthen himselfe in the countrey, he provided out of all parts adjacent, the tallest and most able men he could heare of. Of these he placed colonies in the countrey, filling every empty tenement with a tenant or two, whereof most was on the Kinge's lands. Many of the posteritie of these tenants remaine untill this day. One William ap Robert of Itcorum, being one of his followers, he placed in a tenement of the towneshippe of Gwedir, called Pencraig Inke, now worth £. 30. per annum, who paid for the same onely a reliefe to the King or lord, which was 10s. 4d.

Such were the lawes in those days, and are still, that if the King's tenant holding in freehold, or freeholder holding under

^o *Tall* at this time often signifies *stout*, and is used by Shakspeare in that sense. P.

any other Lord, did cease for two years to do his service to the King or Lord, the said may re-enter. The writte is called *Cessavit per biennium*; the exactions were, in those dayes, soe manifold, that not onely the bondmen ranne away and forsooke the Kinge's land, but alsoe freeholders their owne land.

Here to lay downe in particular the Welsh customes would make the volume too great.

Owen ap Hugh ap Jevan ap William, great grandchild to the said William, enjoyeth the land to this day; though in my grandfather's time it was in sute, by the contrivance of John ap Madog ap Hofhell, but it is now recovered by the meanes of my grandfather. Einion ap Gruffith ap Jokes, a freeholder of Festiniog and Llanvrothen, he placed in the King's frith at Bryntirch, of whom are descended many in Nantconway, Festiniog, and Llanvrothen. Howell ap Jevan ap Pellyn, a Denbighshire man, and a tall archer, of whom are descended the race of the Pellyns, he placed in the tenement of Garth. He alsoe placed Gruffith ap Tudor, a Denbighshire man, in Rhiw Goch; as likewise Jevan David ap Ednyfed, an Abergeley man, (who felled, in one day, eighteen oakes, towards the building of a parte of Penanmenhouse), in Bwlch y kymid. Lastly, he placed Robert ap Meredith in Berthios, whose sonne John ap Robert was dayry-man there, untill the beginning of my time.

In Dclanhadog he found Rys ap Robert, a tall stout man, who being originally (as they say) a Vaynoll Bangor^p man borne, and a freeholder, killed a man there, forsook his land, and fled thither. Rytharch and Richard ap Rys ap Robert were my father's fosters; and from the said Richard ap Rys ap Robert is lineally descended

^p So called from being near Bangor, to distinguish it from other places bearing that name.

Humphrey

Humphrey Jones of Craveleyn, Gentleman. Diverse other tall and able men dwelt in the countrey, which drew to him, as to their defender and captaine of the countrey, soe as within the space of certayne yeares, he was able to make seven score tall bowmen of his followers, arrayed, as I have credibly heard, in this manner. Every one of them had a jacket or armolett coate, a good steele cappe, a short sword and a dagger, together with his bow and arrowes; most of them alsoe had horses, and chafing slaves¹, which were to answer the crie upon all events.

Whereby he grew soe strong that he began to put back and to curbe the sanctuary of thieves and robbers², which at times were wont to be above a hundred, well horsed and well appointed.

It is to be noted likewise, that certaine gentlemen and freeholders dwelt in the countrey, but not many, who were to answer the crie, and to come also upon the like distresse.

The Issue of MEREDITH ap JEVAN ap ROBERT of Kefelgyfarch Gwedir, com. Carn.

By his first wife Alice, sixth daughter of William Griffith ap Robin of Cochwillan, he had,

- I. William Wynne, who died without issue.
- II. John Wynne ap Meredith of Gwedir.
- III. Rees Wynne.
- IV. Rytherch.

¹ *Q. slaves, i. e. hunting spears. P.*

² This was before described to be Ysphytty Evan, which belonged to the Knights Hospitalers, and is not far from Dolwyddelan, where this chieftain resided. These knights had St. John for their patron, and hence it is possibly called Ysphytty Evan; it is now a small village situated on the Conway. Dr. Davis renders Ysphytty *hospitium*.

V. Mar-

V. Margaret, wife first of Rees ap David ap Guillim of Anglesey, then of Jevan ap John ap Meredith of Brynkir, and after him of Robert ap Meredith of Bronheulog.

VI. Jonet, wife first of Edmund Gruffith, son of Sir William Gruffith the elder Knight, after him of Sir John Puleston, Knight.

VII. Catherine Lloyd, wife of Rowland Gruffith of Plasenwidd.

VIII. Catherine Gwinniow, wife of Lewis ap Jevan ap David of Festiniog.

IX. Lowry, wife of Rytherch ap David ap Meredith of Bala.

X. Margaret, wife of Thomas Griffith Jenkin.

By his second wife Gvenhover, daughter of Gruffith ap Howell y Farf, relict of Robert Griffith of Porthaml,

XI. Elizabeth, wife of John ap Robert ap Lⁿ of Penllech.

XII. Elen.

By his third wife Margaret, daughter of Morris ap John ap Meredith, he had,

XIII. Humphrey Meredith, of Keselgyfarch.

XIV. Cadwalader of Wenallt, father of Thomas, father of Cadwalader, father of John Vaughan, father of Cadwalader, M. A.[†]

[‡] This contraction is probably for Llewelin.

[†] Degrees were at this time considered as the highest dignities, and it may not be improper to observe, that a clergyman who hath not been educated at the universities, is still distinguished in some parts of North Wales, by the appellation of *Sir John*, *Sir William*, &c. Hence the Sir Hugh Evans of Shakespeare is not probably a Welsh knight, who hath taken orders; but only a Welsh clergyman, without any regular degree from either of the universities.

XV. Elen,

- XV. Elen, wife of Edward Stanley Constable of Harddlech.
 XVI. Jane, wife of Catwalader ap Robert ap Rees of Rulas.
 XVII. Agnes, wife of Robert Salisbury.
 XVIII. Alice, wife of Thomas ap Rees ap Benet of Bodel-
 widdur.
 XIX. Gwen, wife of Owen ap Reinalt, of Glynllwygy.
 XX. Margaret, wife of John Griffith of Kichlew.
 XXI. Elliw, wife of John Nookes of Conway.

By Jonet, daughter of Jenkin Gruffith Vaughan, he had,

XXII. Mr. Robert, a Priest.

XXIII. John Coctmor, father of William, father of John Williams^u, goldsmith in London; who had issue Sir John Williams of the isle of Thanet, Bart. Sir Edmund Williams, Bart. &c. From him alsoe came Sir Morris Williams, Phyfician to the Queene.

XXIV. Catherine.

By a daughter of Jevan ap John ap Heilin of Penmachno he had,

XXV. Hugh.

XXVI. Jevan.

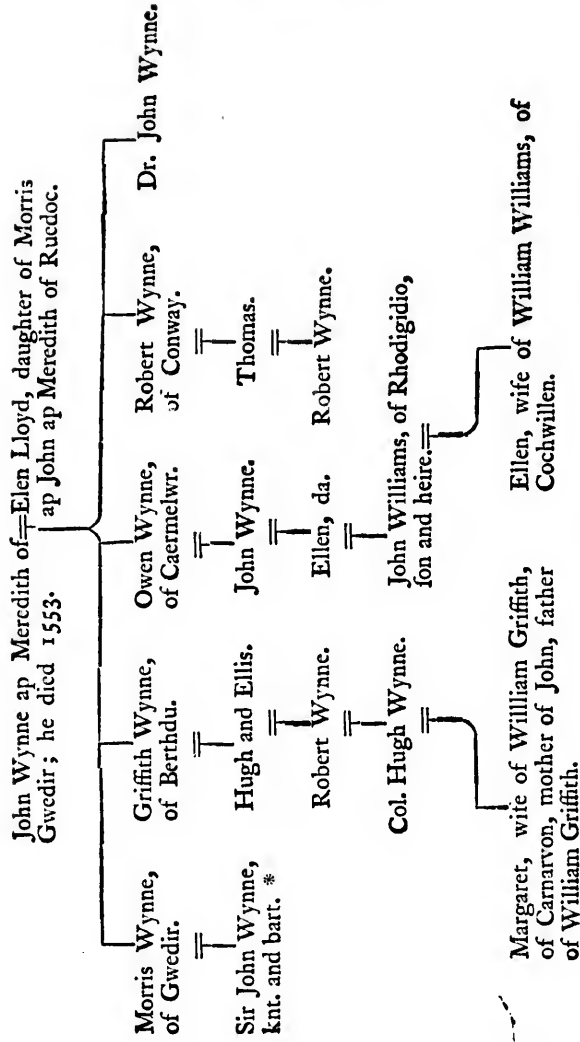
He died A. D. 1525.

^u This John Williams, goldsmith, was an antiquary of considerable eminence, and furnished Drayton with many of the particulars relative to Wales, which he hath taken notice of in the Polyolbion. Bishop Nicolson therefore need not have been surpris'd, "that it should contain a " much truer account of this kingdom, *and the dominion of Wales*, than " could be well expected from the pen of a poet." Hist. Libr. p. 5. Mr. Bagford also in his letter to Hearne prefixed to the First Volume of Leland's Collectanea says, that John Williams the goldsmith furnished Drayton with Leland's papers.

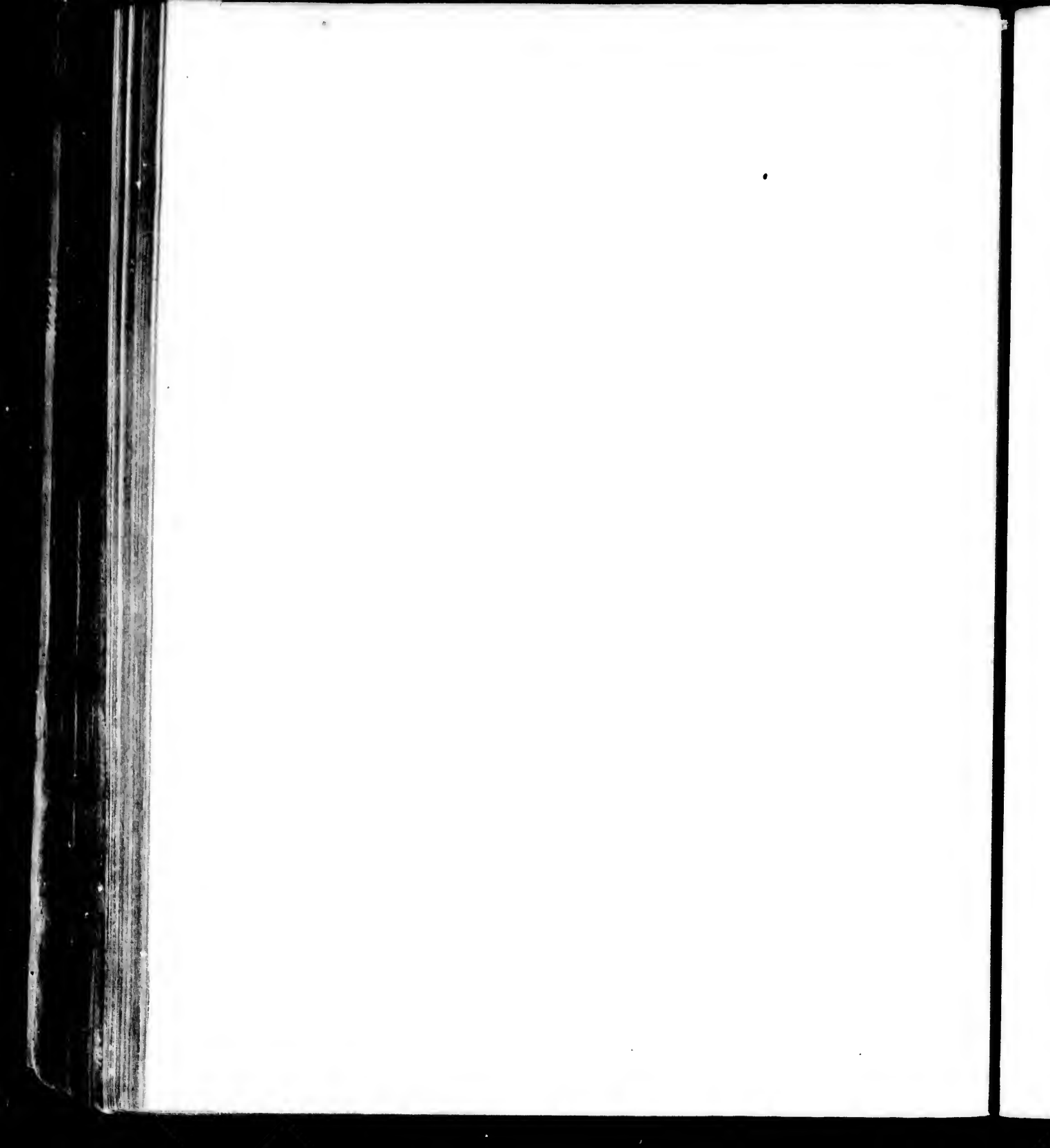
John Williams was founder of a chapel in Nanwhynen, and endowed it with £. 5. per ann. the chapel is now in ruins. E.

It should seem from this, that Nanwhynen was probably the place of his birth.

John



* The author.



Oxford, May 12, 1746^a.

Mr. DODSLEY,

NOTHING which hath lately appeared in print, hath given me greater satisfaction than the superior merit of our English authors to the French, which hath been so ingeniously supported in one or two of your Museums. After the perusal of them, the agreeable reflexion so naturally resulting to an Englishman produced in me the following dream. Methought I was conveyed into a large library, in which I heard a confusion of French voices, which, by the frequent repetition of the word *Museum* with anger, I imagined to proceed from discontent at your late criticisms. Seeing however no person in the library, I was examining, with no small astonishment, from whence this uproar arose; and was not a little surprized, you may imagine, to find that each book had the faculty of expressing itself for its author. After I had tolerably reconciled myself to this unusual manner of intercourse, I found that I was not mistaken in my

^a The above letter was written at the time it bears date, and was addressed to the Editor of a periodical paper, intituled, *The Museum*, which was printed for Dodsley. I did then intend it should have followed two dissertations in that work, which asserted the superiority of our English to the French authors; but from some circumstance, which I do not now remember, it never reached the Editor. I need not inform the Reader that the idea of this engagement between the writers of the two nations, is taken from, *The Battle of the Books*.

first conjecture; for Descartes, desiring that he might be heard, after having with difficulty obtained silence, spoke in the following words; "I need not mention to you the indignities offered to the whole French nation, and to me in particular, by the author of the Museum: shall my ingenious hypotheses be destroyed by Newton, whose low genius was obliged to depend entirely on experiment for his reputation? This tedious circumspèct manner of philosophising may suit well with the phlegmatic temper of an Englishman, but let the French vivacity and genius never be reproached with having had recourse to such low and mechanical means of discovering truth. I would dwell longer on this, but resentment will not suffer me; my advice however is, that we immediately take signal vengeance on the author of our disgrace. The English, as they are so deeply concerned, will undoubtedly support him with all their force; therefore let us immediately make choice of a general, and dispose of our strength in such a manner as to execute our design in spite of opposition. Believe me, we cannot fail of success, for I will engage that our engineers shall play such quantities of *materia subtilis* upon them, that they shall dread us as much, as Nature does a *vacuum*." When he had ended, the French by their shouts approved of his proposal; but then, every one thinking that he had the justest pretensions to the command, there arose a second confusion of voices, each author proclaiming his own deserts to the assembly. This continued for a considerable time: many at last finding that there would be no end of this dissension, unless they agreed to fix upon some person of distinguished merit, Racine, with the consent of the major part of the assembly, proposed Boileau. What induced them to make choice of him for this important charge was, that he had composed some excellent rules for military discipline, which, if they strictly adhered to, they

could not well fail of defeating their enemies. Every one now waving their particular pretensions, Boileau was upon the point of being declared Generalissimo, when Descartes, with great indignation, reproached them for not making a proper distinction between a rhymers and a philosopher. You cannot but be sensible, added he, that the English will pitch upon Newton for their Commander : and who is capable of opposing him but myself? I have already prepared one of my largest vortexes to receive his attack with, in which I will make him so giddy, that he shall for ever repent denying the existence of them. He concluded with saying, that any one who opposed his just pretensions, must expect a more dreadful fate than that which he had just threatened to Newton. The French, who most of them thought that he was able, and would not fail to execute his menaces, insisted no longer on their former choice, and Boileau himself, who was rather more proper for celebrating the actions of his Monarch, than performing any himself, sneaked away, and left his adversary in quiet possession of the command. Descartes no sooner found himself master of the authority he aspired to, than he disposed of his troops in the following manner. He resolved himself to lead on the centre of the army : Corneille had the command of the right, and Boileau of the left wing ; the former of which had in his division Racine, Malherbe, the Comtesse de la Suz, Racan, and many others : the latter had Moliere, Rabelais, Scarron, and Voiture. Descartes himself placed on one side of him Voltaire's Henriade and Chapelain ; on the other Ronfard and Marot ; and being desirous of having some intelligence concerning the strength and disposition of the English, he pitched upon Voltaire as the properest person for that purpose, who engaged to acquit himself in this trust to the General's satisfaction. It was not long before he returned, and informed him in what part, and

by what means, the enemy might be attacked with the greatest probability of success. There is Shakspeare, said he, who hath the command of the English right wing: now there are some parts of his troops, which, if they were not mingled with bad ones, it would be impossible for the whole French army to sustain the shock of. I should advise therefore that you give orders to your engineers to charge the artillery which is to be pointed against him with the unities of time and place, which cannot fail of producing its proper effect. This advice had its weight with Descartes, who began to enquire further how formidable he thought his antagonist Newton. Voltaire seemed very unwilling to make any reply to this question; but being much pressed, answered him in the following manner: "I have often with attention considered the surprising greatness of that man, and you must pardon my freedom when I tell you, that if you was to join to your assistance all the philosophers that ever existed, they would not be able to withstand even a small degree of the force he is capable of exerting. It is impossible to express the indignation of Descartes at this reply; he turned from him without vouchsafing an answer, and joined the other generals who were waiting his orders. He there accused Voltaire of an inclination to desert, said he could not put sufficient confidence in him to entrust him with any command, and desired their advice in what manner he should be treated. Racine, who was sensible of their want of an Epic Poet to make some small stand against Milton, gave it as his opinion that the *Henriade*, being the best poem of that kind in their language, should be allowed to remain in the place where Descartes had first placed it; which as it was very near himself, he might have a watchful eye over it during the engagement. This was approved of, and now every thing being thus settled, orders were given to charge. The English, in the mean

mean time, did not want intelligence of the attack designed by the French : there were no factions or cabals raised about the person to be fixed upon as General ; for every one, with a kind of reverential awe, intreated Newton to accept the post ; he modestly complied with their request, and begged that Milton might be joined with him in command. Milton did not decline this honour, and, on account of his loss of sight, desired that Addison might be appointed to assist him, for he found that he was infinitely stronger when that able critic was near. The whole army was led on in the following manner : Newton and Milton took their post in the centre, in which were likewise Bacon, Locke, and Spenser. Shakspeare commanded the right wing, and had in his division, Rowe, Otway, Dryden, Waller, Cowley, and Gay. Pope had under his command, in the left wing, Congreve, Swift, Butler, Jonson, and many more. I have forgot, I believe, as yet mentioning one very particular circumstance, which was, that after Descartes first spoke, each book had occasionally taken upon itself the shape of its author. The engagement had now begun. Descartes advanced with great intrepidity, but his troops, every step he took towards Newton, visibly decreased, and his Vortexes, which he had so much relied on, immediately disappeared. I was a good deal surpris'd at this sudden change ; but looking towards Newton, I saw that he had a shield of adamant presented to him on that occasion by Natural Philosophy, which the moment any thing false, though never so ingenious, struck against, it was immediately reduced to its proper state of *nothing*. Newton, being content with having humbled Descartes's arrogance, took pity on his condition ; and no enemy in the field being of consequence enough for him to honour with a defeat, he chose, like Edward the Third, to be only spectator of the fight, and view with pleasure the valour of his countrymen.

Locke,

Locke, who was behind Newton before, now being the first in the line, attacked Malbranche, and drove him presently from the field; then, together with Bacon, finding no more enemies remaining, he retired towards Newton, where it was easy to perceive in their conversation, the reciprocal esteem these great men had for each other. Milton, the moment he was informed by Addison that Voltaire was preparing to attack him in front, while Brebeuf and Chapelain flanked him, could not help laughing at their insignificance, and said that he should do right in sending Sir Richard Blackmore's Prince Arthur to engage them; but as the enemy had the presumption by this time to begin the attack, he desired Addison only to play the description of the artillery of Satan upon them, which immediately occasioned a rout. Spenser met with as great success against Marot and Ronsard. Many of the Italian allegorical poets were seen hovering round him, and preventing any prejudice that might have otherwise been done to him by his antagonists; particularly Ariosto, who descended from an upper shelf upon an unruly Ippogriſ, and presented him with an enchanted dart, which nothing could withstand, whilst he at the same time proclaimed him the chief of allegorical poets. Thus every thing in the centre was obliged to give way to the superior merit of the English. The engagement in the two wings, during this time, was extremely obstinate. The right wing of the French, as before mentioned, was commanded by Corneille, as that of the English was by Shakspeare; Shakspeare, immediately upon the sound of the trumpet, advanced to attack his adversary, but notwithstanding he behaved himself with the greatest resolution, yet he did not meet with all the success he had promised himself; for the artillery charged with the unity of time and place, made a terrible havock among his troops. Addison, observing this, desired leave of Milton that he might assist him,

him, which being granted, he charged the English artillery with an essay against bombast declamation in tragedy. This had as terrible an effect upon Corneille as the other had on Shakspeare; upon this the battle was renewed with still greater obstinacy, but neither being able to obtain a decided advantage over the other, though Shakspeare had the superiority, Corneille proposed a cessation, and presented Shakspeare with his *Cid*, who in return gave him his *Othello*, and both retired to their different parties, fully convinced of each other's abilities. Racine all this while maintained his post against the united forces of Otway and Rowe; his were all select troops, which were headed by the *Athalia*, and formed all together a kind of Macedonian phalanx that could not be broke through. Dryden, seeing this, was advancing at the head of six battalions to the assistance of his countrymen; but, upon his coming pretty near to the enemy, being hasty levies, they immediately went off, and left him disconsolate to maintain the attack alone. Newton, in the mean time, perceiving that there was no impression made upon the enemy, sent Sir William Temple to instruct the English writers of tragedy how to attack Racine in the most advantageous manner. Temple, with an eager zeal for the honour of his country, gave Otway a sword, round the blade of which was engraved some short but excellent objections against representing Turks and Romans with the manners of a Frenchman. This was of signal service to Otway, for Racine could not prevent its driving some of his greatest heroes from the field; but notwithstanding this, with his remaining force, it was impossible to put him in disorder, so excellent discipline and regularity had he kept up among his troops. Homer, who had all this while been spectator of the fight, thinking that the struggle had already lasted too long, sent *Talthybius* and *Idæus*, in order to put a stop to the contest, which, by their medi-

ation,

ation, was effected, to the satisfaction of both parties. And now the Countess de la Suz, Malherbe, and Sarrazin, advanced against Waller, Cowley, and Gay; the tender Waller however could not be prevailed upon to engage any of the fair sex with weapons that did not suit their delicacy, and answered all the Countess's attacks with passionate and melting couplets, which made such an impression on the lady, that a mutual passion presently banished all national resentments. The dispute between Malherbe and Cowley was infinitely more warm. Cowley's Pindaricks attacked with great briskness, but their fire however was not by any means regular, which indeed is agreed on by most masters of military discipline to be the properest method for those kind of troops to charge. Malherbe however stood the shock tolerably well, when Pindar presented Cowley with a horse that had won a prize at the Olympic games; this Cowley immediately mounted, and at the same time crying out,

— I'll cut through all,
And march the Muse's Hannibal.

(Cowley's 1st Ode.)

He rushed into the thickest of the enemy, and bore down every thing before him. Pope and Boileau were by this time engaged in the left wing, in which every one on both sides seemed to have forgot all animosities, while they were attending to the contest of these two great men. The Rape of the Lock, and Essay on Criticism, immediately singled out the Lutrin, and Art of Poetry; and notwithstanding the address of each general, it was difficult to determine on which side the victory would incline. The Satires of the French Poet at the same time attacked those of the English, which, being assisted by the Essay on Man, began
to

to make their adversaries think of retreating, when Homer, who had such infinite obligations to his excellent translator, appeared at the head of 48 battalions, and said that he should look upon all those as his enemies, who opposed a poet who had made him speak English with the same spirit and force, that he himself should have done, had he wrote in that language. Boileau, who had the greatest reverence for Homer, was now upon the point of retiring, when Pope advancing, said that he had long before been sensible of the excellencies of his poems, was now more than ever convinced of them by the late trial, and at the same time begged he would honour him with his friendship. Boileau answered his compliments with great politeness; and added, with a smile, that satirists, above all other kind of writers, ought to live in the strictest amity with each other, as they generally had a great number of enemies, who would rejoice at their dissensions. I am much mistaken, continued he, if this engagement hath not already given great satisfaction to Cibber and Cotin. Fontaine, who was posted ready to assist Boileau, seeing Chaucer and Prior, who attended upon Pope, advanced with reverence towards Chaucer, and said that if such a genius as his had appeared in the most elegant and learned age, it could not have been sufficiently admired; but as he had lived in a time when the Muses were so little regarded, he could scarce refrain from adoring. Chaucer embraced Fontaine, called him his son, and said he was the only writer since himself that had told a story with a beautiful simplicity. Rabelais had now the presumption to attack Swift; but he only exposed his weakness, for Swift with his Tale of a Tub (which dilated to a vast size) immediately covered nine parts out of ten of his forces; the few remaining, rallied by Pantagruel, made some resistance; but Swift producing one of his Brobdingnag heroes presently put him to flight. Scarron, who was just

by Rabelais, seeing Swift and Butler advance towards him, and knowing that to oppose would be in vain, laughed at Rabelais as he was sneaking off, and had even the impudence to cut a joke upon Pantagruel. He then began being witty upon his own person; and said he was surprized that Descartes could think of taking him for a foldier, as he was some feet below the standard of any nation; he at the same time made such a droll compliment to Swift and Butler, that they could not help beginning a conversation with him, in which they were infinitely delighted with his wit. Nothing now remained to be decided but the dispute between the Comic Poets, which was just going to begin with great warmth on each side, when Plautus interposing presented Moliere with a crown. Congreve and Jonson, notwithstanding their merit, acquiesced in this determination, and were advancing to pay their respects to the French Poet, when the *Laureat*, thinking that proper regard was not paid to his deserts, stepped abruptly in with an intention to dispute the authority of Plautus; but unluckily for him some enemy of his repeating the first stanza of his last Ode, there followed so universal a laugh, that it prevented the continuation of my dream.

THE following Dialogue was written at Oxford, during the year 1746, having been preceded by some observations upon Homer; which perhaps fortunately for the reader I have now mislaid. I had at that time perused most of the ancient Greek and Roman writers, and conceived, that amongst their numerous beauties, there were some few defects, which the moderns had been more happy in avoiding.

The elegant writers of antiquity become our earliest models, nor can we have better; but as our taste is formed from these excellent examples, should not their mistakes be pointed out to the young scholar, as well as their perfections? Yet every commentator becomes so zealous a partisan for the Latin or Greek author which he is to explain or illustrate, that we never hear of a blemish; or, if there be a palpable one, it is often defended by such reasons, as the annotator must himself be sensible are very insufficient.

I could therefore wish, that when any new edition of a classic was published, the commentator would rather dwell upon the imperfections than perfections of the writer; our present classical charts always representing a clear coast, and never pointing out the rocks or shallows which lie contiguous.

Sophon.] We seem to have sufficiently considered both the beauties and failings of Homer: suppose we were now to examine into the merit of the ancient dramatic writers? Whether the Chorus is an advantage or not to the drama, when properly made use of, will in a great measure determine the dispute between us to which the preference is due, and therefore I do not think it will be improper to begin with examining a little into the nature of this part of the ancient tragedy. The peculiar office of the Chorus cannot be better explained than by the lines in Horace's Art of Poetry, which comprehend almost every circumstance that it ever interferes with.

Actoris partes Chorus officumque virile
 Defendat, neu quid medios intercinat actus.
 Quod non proposito conducatur, & hæreat apte.
 Ille bonis faveatque & concilietur amicis
 Et regat iratos, & amet peccare timentes, &c.

The exact manner in which the Chorus performed its part seems to have puzzled the most diligent enquirers into antiquity; and to enter into a discussion of this nature would not at all suit our present design. I shall only say in general what hath occurred to me upon reading the ancient tragedies, with regard to its having been originally introduced. Thespis, the first writer for the stage that we have any account of, acting his tragedies from town to town^a; and that species of poetry being by no means carried by him to any great perfection, his audiences probably consisted of the lower kind of people, who I believe in all coun-

^a Ignotum tragicæ genus invenisse Camœnæ
 Dicitur, & plaustris vexisse poemata Thespis.

tries have been much pleased with a song or music of any kind.^b Thespis, finding this part of his tragedies most attended to, thought, and perhaps very judiciously, that no kind of song or music would be so proper as that which in general might have some connexion with the drama, though possibly he did not inviolably adhere to the rule.

— Neu qui' medios intercinat actus
Quod non proposito conducatur, & hareat apertè.

which indeed was generally observed by the later writers of tragedy. Æschylus then, and the other poets that followed him, finding the Chorus already established, had by no means the courage to banish it, though at the same time they must have been sensible that it was not essential to the drama; and indeed I am not at all sorry that they preserved it, for these Choruses often are the most elevated and touching pieces of poetry that we have any where extant. In these the poet gave his genius the free scope, which he indulged with the greatest fire and happiness; and if they are still considered as excrescences, they are such which for my own part I could not consent to lop off.

Horace lays it down as a rule, that the Chorus should keep inviolably secret every thing intrusted to them; this indeed is a most necessary injunction, and which I believe hath always

^b It is not contended by this that what the Chorus said was always set to music, it oftentimes is to be considered as a single person concerned in the play, which part of its office was probably performed by the Coryphæus only.

been observed by the ancients; but this fidelity however in the Chorus doth not take from the absurdity of the principal characters, in trusting those (who sometimes have not the least connection with them) with their most important schemes and designs! There is a most flagrant instance of this in the *Medea* of Euripides: *Medea* is represented by the poet, according to her just character, crafty, dissembling, and at the same time of implacable revenge; this designing woman, who in other parts of the tragedy shews herself a perfect mistress of dissimulation, discovers to the Chorus her resolution of murdering her own children and Jason's second wife, by sending her a present of an envenomed garment*. The Chorus, though they are bound by no oath of secrecy, make their usual reflections upon this design; and though Jason comes in immediately afterwards, whilst they continue upon the stage, conceal it from him, when they must be induced by all kinds of considerations to reveal it. There is in the *Hippolytus* of Euripides another instance, to the full as strong as this: *Phædra*, who is represented in the greatest depth of distress, through a passion which she cannot gratify, is earnestly pressed by her nurse to let her know the cause of the alteration in her health. *Phædra*

* Who could suppose however that this Chorus, in which she puts so entire a confidence, are Corinthian women to whom she is an utter stranger, and who, as being Corinthians, must be supposed to be attached to the interest of the person she intends to destroy? When she hath also discovered to them these horrid intentions, she at last intreats their secrecy by no better reasons than if "*they kiss her well, and eye women.*"

I should rather suppose, that this absurdity also arose from what was usual in the time of *Theſpis*, when there was only a stage of boards, probably for the actors to perform upon, without any retiring room for the Chorus, who were therefore necessarily present. Possibly the whole play was performed from the cart, without any stage at all, when the chorus would have still less opportunity to withdraw.

How-

however is obstinate, for a considerable time, in concealing the source of her affliction; and when doth she disclose it at last? Not while her nurse, whose fidelity she can absolutely depend upon, is *only* present, but when the Chorus (a number of Træzenian women, with whom she doth not appear to have had any great intimacy) have intruded themselves into her presence. How infinitely better is this conducted in Racine! where the confidant is the sole person attending, whose affection for her Phædra cannot doubt. I promised you I would not dwell long on the imperfections of the Chorus, and I have been, I hope, as good as my word; however, I cannot help taking a little notice here of the ancient prologues, which sometimes are made by a Deity (as by Venus in the Hippolytus); and sometimes by a ghost (as that of Polydorus in the Hecuba). My objection however to these prologues is not their being spoken by deities^d, but that they generally choose to discover and anticipate all the principal events in the play, particularly the catastrophe. This I take to be excessively improper, and very prudently avoided by the moderns in their prologues, for when the audience is acquainted with the event, the story becomes less interesting, and prevents all the agreeable surprize that might arise from well chosen and unforeseen incidents. Deities too are sometimes introduced into the ancient tragedies, when there is by no means any *dignus vindice nodus*, as in the *Αίας μαγιστοφορος*^e, where Minerva appears in

^d Not but that perhaps it would be as well if they were spoken by mortals. But as a prologue is by no means a part of the tragedy (as it certainly is not less a tragedy without it); I should imagine that the poet may by the severest critic be allowed this liberty, particularly as it hath the sanction of Tasso and Gu. .ini, the first of which poets makes the God of Love speak the prologue to his Aminta, and the latter the river Alphæus to his Pastor Fido.

^e Of Sophocles.

the first scene, and holds a conversation with Ulysses, without any absolute necessity for the presence of a Goddess.

Museodorus.] I admit in general of your objections; but while the ancient tragedies have that simplicity of subject which is almost peculiar to them, (for few indeed of our moderns seem to have followed them in this point), some trifling improprieties will never prevent the preference that is due to them upon the whole.

Soph.] I most readily own that simplicity in the subject of the drama cannot be too much commended, and that the ancients have in general attended more to it, than the moderns, but I believe I may venture to assert, that many of their subjects are so *simple* indeed that they are almost entirely uninteresting*. I beg you would for example consider a little the Rhesus of Euripides, which I will allow you is perhaps as simple as a subject can well be; but I do not recollect a single circumstance, or incident in the whole, that can be said to be affecting. The play opens with a scene between Hector and the Chorus, who inform him, that the Græcians are lighting fires in their camp; Hector imagines from this that they are going to retire: the Chorus, however, who do not appear to be of any great distinction in the army, but only common centinels, doubt much of this: he is after-

* It is not pretended by this that the subject's being uninteresting proceeds from its simplicity, but only that by a too scrupulous attention to the latter, the play often becomes so, and this is generally the case when a writer pitches upon a simple story, when at the same time he hath not genius and imagination sufficient to render it affecting, for the greater the simplicity is, the greater is the difficulty in this point. This is therefore not a charge upon the ancients for their adherence to this simplicity; but only for choosing such subjects as they wanted genius sometimes to make interesting, or perhaps that were incapable of becoming so, which I take to be the case of Euripides's Rhesus.

wards overruled by Æneas in his scheme for attacking the enemy, and it is agreed that a spy should be sent into the Grecian army. Upon this Dolon offers himself, bargains with Hector for his reward, and is promised by him the chariot of Achilles. A messenger then makes his appearance, and gives an account of the arrival of Rhesus at the Trojan Camp: Rhesus himself follows immediately after, where he is very coldly received by Hector, for having so long delayed his march; and this scene, which is a pretty long one, and in which the expectation of the audience is reasonably raised, while these two principal characters are present, is as dull and tiresome a one I believe as was ever penned. Diomedes and Ulysses, in the mean time, favoured by the night, come with an intention to surprize Hector in his tent; but are diverted from this by Minerva, who advises them to fall upon the quarters of Rhesus, which they accordingly do, and succeed in killing him while asleep. This is not done on the stage, but the audience hath very properly an account of the disaster from a servant of Rhesus's, who taxes Hector with the murder. After this the Muse Terpsichore laments the loss of her son, and I think, really, that from a Muse, one might have expected something more pathetic and touching upon the occasion. Now I appeal to you whether in this whole play there is any single interesting circumstance; and if I was to ask you what the moral was, I am afraid you could not easily find it out.

Phil.] I recollect having read, some time ago, this tragedy of Euripides (as it is generally called) and remember that it appeared to me almost below criticism; but I must own, that for my own part, I cannot hesitate a moment to declare that the play is not written by that author. There always have been disputes, I believe, who this tragedy is to be attributed to, and if I was acquainted with the name of the worst

writer in that age, I should make no scruple of giving the honour of that performance to him.

Mus.] Well, this is one way of getting rid of the charge; and I will not insist upon many arguments that might be produced against this liberty of disowning whatever makes for our own discredit. Father Hardouin, you know, will carry this farther, and prove that none of the tragedies ascribed to Euripides were written by him. I will not say of the *Alceſtis* that the subject is uninteresting; but I believe I may say, that it is a very improper one for a tragedy; at least as Euripides hath managed it. A wife that resolves to save her husband by her own death, will certainly always prejudice the audience in her favour; but I believe no woman, under those circumstances ever occasioned so little pity as *Alceſtis*, which proceeds entirely from the improbability and absurdity of the whole story; such a one I think as a judicious writer would never have pitched upon. The rule of Horace,

Ficta voluptatis causâ, sint proxima veris.

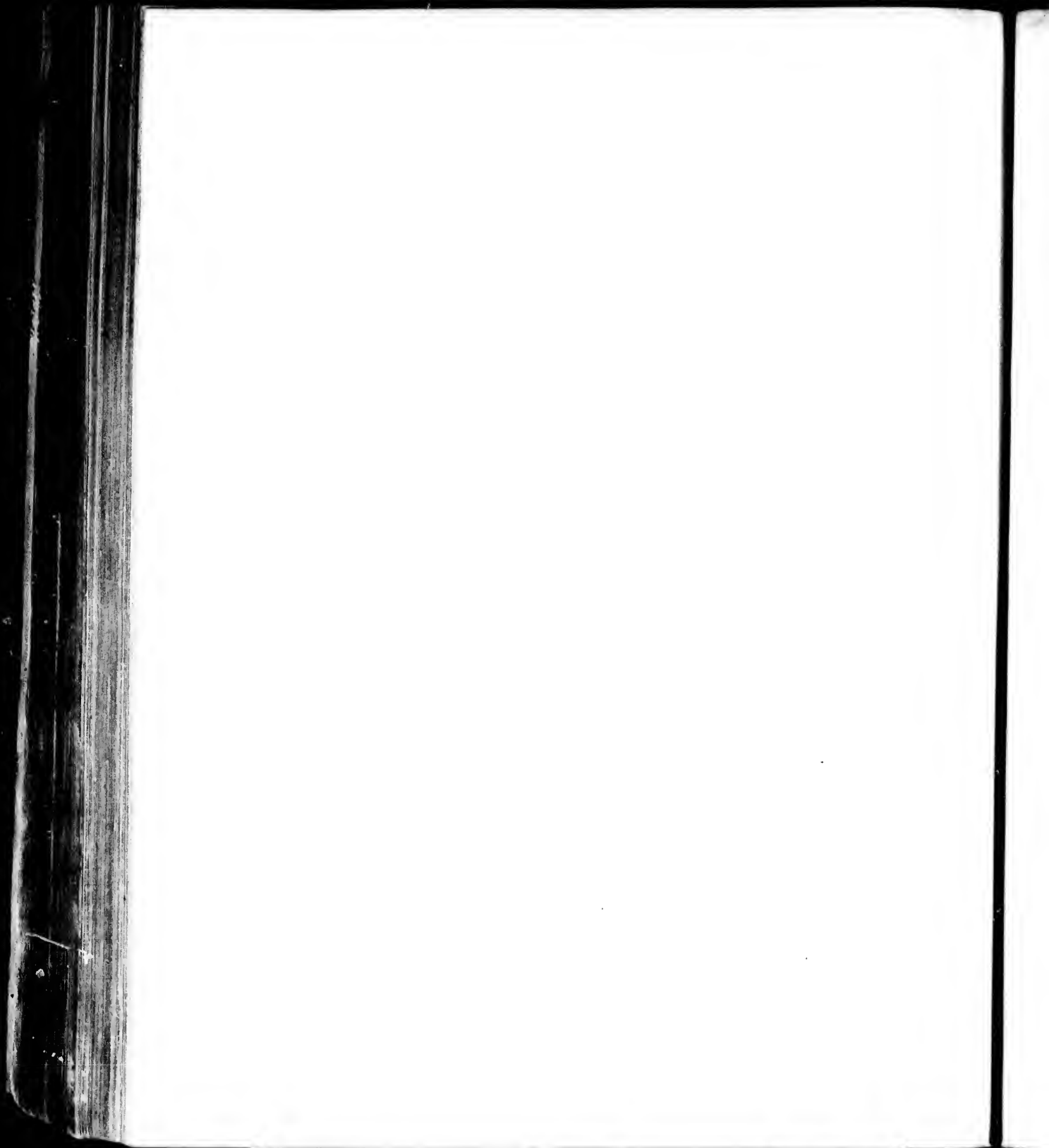
can never be too much attended to; Euripides however seems in this play not to have the least considered it. The piece throughout is consistent (if I may be allowed^e the expression) in impropriety; for I do not recollect a single incident in the whole which doth not shock, as being improbable. The evening advances; but as we return to the house I shall state, for your consideration another objection to parts of the dialogue in

^e Suppose an anachronism is not by this incurred, as to suppose that Euripides could really have attended to this rule, as laid down by the moderns; but as the maxim is founded on common sense, whether it was at that time or no an axiom, every writer of tragedy should not have neglected it.

most

most of the ancient tragedies, when the characters answer each other for a considerable time by a single line, and often the same number of words. This short and abrupt intercourse might now and then be attended with propriety, by expressing anger, but this obscure dialogue generally happens when the persons speaking are in their usual temper, and about the most indifferent circumstances. I cannot expect, however, that you should be able to defend the ancient writers on tragedy upon this head till you have examined the parts I refer to in your library; when, out of many others, I can, from a memorandum in my pocket, point out Euripides's *Medea*, l. 663, *et seq.* as also his *Hippolytus*, l. 80. *et seq.*

I have already presumed to mention some uninteresting tragedies of the ancients, and conceive that I may also venture to say, that there are few scenes even that command the involuntary tear from the reader, which circumstance I shall always consider as the true test of the merits of a tragedy; as the involuntary laugh seems to be that of a comedy. Critics may write ingenious dissertations; but if the reader is not affected till he is taught to be so, I shall always distrust the abilities of the author.



IN the year 1773 I translated and published King Ælfred's Anglo-Saxon Version of Orosius, in which the Royal Author hath made some insertions, which are not borrowed from the Latin Historian.

Amongst others an account is introduced of Othere's navigation to the Northern Seas, which I have endeavoured to illustrate by a geographical map, containing the then state of the globe, with the Anglo-Saxon names and orthography of the countries, and in which also the supposed tracts of Othere are particularly marked.

As I conceive this map to be interesting for explaining the geography of the 9th century, and may cite no less an opinion than that of Monf. d'Anville, for its being so considered, I have directed a proper number of copies to be rolled off from the plate, for the present miscellaneous publication, as also great part of the first chapter from the Anglo-Saxon version to be reprinted.

My principal reason for doing this is, that the number of copies which I published from King Ælfred's translation was very small, and consequently cannot have fallen into the hands of many readers.

OUR *elders* have divided all the circuit of the earth into three parts (quoth Orosius) comprehending what is surrounded by *Oceanus*, which men call GARSEGG^a; and they named these three parts Asia, Europe, and Africa, though some have said that there are only two divisions, Asia and Europe. Asia is bounded to the southward, northward, and eastward, by the Ocean,

^a This word signifies a vast tract of Sea or Ocean, and when narrower is always termed sea or sea, as Fensel-sea, the Mediterranean, &c. I take an early opportunity of saying, that I am not answerable for the

Ocean, and thus divides all this earth from the eastern parts. All to the northward is Asia, and to the southward Europe and Asia are separated by the Tanais; then south of this same river (along the Mediterranean, and west of Alexandria) Europe and Asia join.

Europe begins (as I said before) at the river Tanais, which takes its source from the northern parts of the Riphæan mountains, which are near the Ocean that men call *Sarmondisc*^b; and this river runs directly south, on the west side of Alexander's temples, to the nation of the Rhocovasci^c. Here rises that *fen*^d (which men call *Maëotis*;) and thence it issues with a great flood near the town called Theodosia^e, from whence it empties itself to the eastward into the Euxine Sea, and then becoming narrow for a considerable tract, it passes by Constantinople, and thence into the Mediterranean. The south-west^f end of Europe is in Spain bounded by the Ocean; but the Mediterranean almost entirely closes at the islands called Gades, where Hercules's pillars

accuracy of either Ælfred or Orosius in this geographical description; and where such a number of places are mentioned, one after another, it is something difficult to discover to which of them the context relates; it is therefore very probable that I have myself made some mistakes also in the junctuation, upon which much depends.

^b *Sarmatico Oceano* in Orosius: where the Saxon however plainly refers to a known name of a place or sea, I generally shall translate the Saxon corruption, by what is the real, and commonly accepted name.

^c *Roxolani*, in Orosius; and those who desire to know where this nation was situate, may consult Havercamp's edition.

^d I have translated this literally, by using the Saxon term *fen*, as I shall in every instance where the modern English is clearly derived from that language, and shall commonly print such word in Italics.

^e Literally, which men call Theodosia; but as I have given two instances before of this Saxonism, I shall not repeat it.

^f *West-south*, in the Saxon, which we never say, through so many of our nautical expressions are borrowed from the Saxon, as *Starboard*, &c.

land. In this same Mediterranean, to the westward, is *Scotland* ^g.

Asia and Africa are divided by Alexandria (a city of Egypt); and that country is bounded to the south by the river Nile, and then by Ethiopia to the westward, quite to the southern Ocean. The north-western boundary of Africa is the Mediterranean sea, where it is divided from the Ocean, near Hercules's pillars; the true western boundaries are the mountains called Atlas, and the islands *Fortunatus*.

Thus have I shortly mentioned the three divisions of this earth; and I will now (as I before intimated) state how these are bounded by land and water.

Opposite to the middle of the eastern part of Asia the river Ganges empties itself into the Sea, whilst the Indian Ocean is to the southward, in which is the port Caligardamana. To the south-east of that port is the island Taprobane, and to the north of this port are mouths of the river called Corogorre, in the Ocean named Sericus.

Now these are the boundaries of India. Mount Caucasus is to the north, the river Indus to the west, the Red Sea to the south, and the Ocean to the east. In this land of India are four and forty nations, besides the island of Taprobane, which hath ten *boroughs* in it, as also many others which are situated on the banks of the Indus, and lie all to the westward of India. Betwixt this river of Indus, and another river to the west, called the Tigris (both which empty themselves into the Red Sea), are the

^g This is a strong additional proof, that some of the Scoti came from Spain, as is asserted by Lhuyd, in his Welch Preface to the Archæologia, where he argues both from this colony being called, in the old Irish MSS. *Kin-Skuit*, (or the Scottish nation) as also from the great affinity between the Irish language and the old Cantabrian. See the translation of this Preface, in Bishop Nicolson's Hist. Library.

countries of Oracassia, Parthia, Ailia, Pasitha, and Media (though writers call all this land both Media and Assiria); the country is much parched by the sun^b, and the roads very hard and stony. The northern boundary of this land is Mount Caucasus, and to the southward the Red Sea; in this country are two great rivers, the Hytaspes, and the Arbis; in this land also are two and twenty nations, though it is all called by the general name of Parthia. To the westward from hence, all that lies between the Tigris and Euphrates is either Babylonia, Chaldea, or Mesopotamia. Within this country are eight and twenty nations, the northern boundaries of which are mount Caucasus, and Taurus, and to the south the Red Sea. Along the Red Sea, and at the north angle of it, lies Arabia, Sabæa, and Eudomane. Beyond the river Euphrates, quite westward to the Mediterranean, and northward to mount Taurus, even unto Armenia, and southward, near Egypt, are many countries, namely, Comagena, Phœnicia, Damascus, Coelle, Moab, Ammon, Idumæa, Judæa, Palestine, and Sarracene, though all these nations are comprehended under the name of Syria. To the north of Syria are the hills called Taurus, and to the north of these is Cappadocia and Armenia (the latter being west of the former), and to the west of Cappadocia is the country called the Lesser Asia, and to the north of Cappadocia is the plain called Temisere, and betwixt Cappadocia and the Lesser Asia is Cilicia and Isaurio.

Asia is entirely surrounded with salt water, except to the eastward; to the north is the Euxine Sea, but to the west the Propontis, and the Hellespont; whilst the Mediterranean is to the south. In this same Asia is the high mountain of Olympus.

^b The Saxon word is beoþhte, or bright, which I have ventured to translate *parched by the sun*, as this signification agrees well with the context.

To the northward of *hither* Egypt is Palestine, to the eastward the land of Saracene, to the west Libya, and to the south the mountain called Climax. The head of the Nile is near the *cliffs* of the Red Sea, though some say it is in the western part of Africa, near mount Atlas, whence it flows over a large tract of sand till it sinks; it then proceeds in its course till it becomes a great sea; and the spot where the river takes its rise, is called by some Nuchul, and by others Dara. Hence, at some distance from the wider part, before it rises from the sand, it runs westward to Ethiopia, where the river is called Ion, till it reaches the eastern parts, where it becomes widerⁱ, and then it sinks again into the earth; after which it appears opposite to the cliffs of the Red Sea (as I mentioned before), and from this place (where it rises again) is the river called Nilus. Then running from thence westward, the Nile divides its stream round an island called Meroë, and taking a turn to the northward, it empties itself into the Mediterranean, where (in the winter season) the current at the mouth is opposed by the northern winds, so that the river is spread all over Egypt, and by the rich earth which it carries along with it, fertilizes all that country. The *further* Egypt lies along the southern part of the Red Sea, and to the east lies the Ocean, and to the west is the nearer Egypt, and in the two Egypts are four and twenty nations.

As we have given a description of the north part of Asia, now will we speak of the south part. We have before informed you that mount Caucasus is to the north of India, which begins first eastward of the Ocean, and lies due west of the Armenian mountains, which the inhabitants of the country call Parcoadræ, from which mountains the river Euphrates takes its rise, and from

ⁱ Literally *a great sea*.

the Parcoadrian ridge, mount Taurus continues due west quite to Cilicia. To the north of these mountains, along the Ocean (quite to the north-east end of the earth) the river *Bore* empties itself into the Ocean, and from hence westward along the Ocean, to the Caspian Sea (which extends to mount Caucasus); all this land is called *Old Scythia*, and Ircania. In this country are three and forty nations, situated at great distances from each other, on account of the barrenness of the soil. Then to the west of the Caspian Sea, unto the river Tanais, and to the *fen* Mæotis, thence south to the Mediterranean and mount Taurus, and north to the Ocean, is all Scythia; though it is divided by two and thirty nations, and the land on the eastern bank of the Tanais. The country is inhabited by a nation called the *Albaori*, in the Latin tongue, and which we now name *Liobene*: Thus have I shortly stated the boundaries of Asia.

Now will I also state those of Europe, as much as we are informed concerning them. From the river Tanais, westward to the river Rhine (which takes its rise in the Alps, whence it runs northward to the *arm* of the Ocean, that surrounds Bryttaniâ, and south to the river Danube, whose source is near that of the Nile, and runs northward of Greece till it empties itself into the Mediterranean) and north even unto the Ocean (which men call *Cwen* sea) are many nations, and the whole of this tract of country is called Germany.

Hence to the north of the source of the Danube, and to the east of the Rhine, are the East Francon, and to the south of them are the Sævæ; on the opposite bank of the Danube, and to the south and east are the Beath-ware in that part which is called Regneburgh. Due east from hence are the Beme, and to
the

the north-east ^k the Thyringæ, to the north of these are the *Seaxan*, to the north-west are the Fryfæ, and to the west of *Old Saxony* is the mouth of the Elbe, as also Friseland. Hence to the north-west ^l is that land which is called *Angle*, Sillende, and some part of *Dena*; to the north is *Apdrede*, and to the north-east the wolds ^m which are called *Æfeldan*. From hence eastward is *Wineda-land*, which men call *Syilye*, and great part of the country to the south-west *Maroaro*, and these *Maroaro* have to the west the *Thyringæ* and *Behemæ*, as also half of the *Beathware*, and to the south, on the other side of the *Danube*, is the country called *Carendre*. Southward, towards the Alps, lie the boundaries of *Beathwara*, as also *Swæfa*; and then to the eastward of the *Carendre* country, and beyond the west part, is *Bulgaria*. To the east is *Greece*, to the east of *Maroara* is *Wiseland*, and to the east of that is *Datia*, though it formerly belonged to the *Goths*. To the north-east of *Maroaro* are the *Dalamenfæ*; east of *Dalamenfæ* are the *Honithi*, and north of the *Dalamenfæ* are the *Sarpe*, to the west also are the *Syfele*. To the north of the *Honithi* is *Mægthaland*, and north of *Mægthaland* is *Sermende*, quite to the *Riphæan* mountains. To the south-west of the *Dene* is that arm of the Ocean that surrounds *Brytannia*, and to the north is that arm of the Sea which is *Ost Sea*, to the east and to the north are the *North Dene*, either on the continent or on the island, to the

^k East-north, in the *Saxon*, as I have before observed, with regard to the south-west, which in the *Saxon* is west-south; a single instance follows, however, where the point south-west is mentioned, and not west-south.

^l This should be north-east.

^m *Fylde*.

east are the Afdrede, to the south is the mouth of the Elb, and some part of Old Saxony. The North Dene have, to the northward, that same arm of the sea which is called *Ost*, to the east is the nation of the *Osti*, and Afdrede to the south. The *Osti* have, to the north of them, that same arm of the Sea, as well as the *Winedæ* and the *Burgundæ*, and to the south is *Hæfeldan*. The *Burgundæ* have this same arm of the Sea to the west, and the *Sueon* to the north; to the east are the *Sermende*, to the north, over the wastes, is *Cwenland*, to the north-west are the *Scride Finnas*^p, and to the west the *Northmen*.

“ Ohtere told his Lord (King *Ælfred*) that he lived to the north of all the *Northmen*. He *quoth* that he dwelt in that land to the northward, opposite the west *Sea*; he said, however, that the land of the *Northmen* is *due north* from that *Sea*, and it is all a waste, except in a few places, where the *Finnas* for the most part dwell, for hunting in the winter, and in the summer for fishing in that *Sea*. He said, that he was determined to find out, once on a time, how far this country extended due north, or whether any one lived to the north of the wastes before-mentioned. With this intent he proceeded due north *from this country*^q, leaving all the way the *waste*

^p Hakluyt terms the country *Scrick-finnia*; and Richard Johnson, in his account of *Nova Zembla*, says, “ That south-east of the castle of *Wardhus*, are the *Scrick-finnes*, who are a wild people, who neither know God nor good order; and these people live in tents made of deer skins, and they have no certain habitations, but continue in herds and companies, by one hundred and two hundreds.” Hakluyt, vol. i. p. 283.

^q þa for he norðrite be ðæm lante, which is not fully translated; “ atque ea propter se ressa versus septentrionem esse profectam.” See the Oxford edition, by the scholars of University College.

“ land

“ land on the starboard, and the whole sea on the Bærbord^r.
 “ He was within three days as far north as the *Whale-bunters*
 “ ever go, and then proceeded in his course due north, as far as
 “ he could sail within another three days, whilst the land lay
 “ from thence due east, even unto the *inland Sea*, he knows not
 “ how far [in that direction]^s. He remembers, however, that
 “ he staid there waiting for a western wind, or a point to the
 “ north, and sailed near that land, as far as he could in four
 “ days, where he waited for a due north wind, because the land
 “ there lies due *south, quite to the inland Sea, he knows not how*
 “ *far*^t: from whence he sailed along the coast due south, as far
 “ as he could in five days. A great river lies up this land, and
 “ *when they had gone some way up this river, they returned*^u, be-
 “ cause they could not proceed far, on account of the inha-
 “ bitants being hostile, and all that country was inhabited on
 “ one side of this river, nor had Othhere met with before any
 “ land that was inhabited since he came from his own home.
 “ All the land to his right, during his whole voyage, was a de-
 “ sert, and without inhabitants (except fishermen, fowlers, and
 “ hunters)^v, all of which were Finnas, and he had a wide sea
 “ to his left. The Beormas, indeed, had well-peopled their

^r Or to the left.

^s The words in the original are, *oþþe ƿio ƿea in on þæt land he nýrte hƿæþep*, which, in the Latin translation, runs, “Nescire autem se num. “infra terram illam *fit* mare;” but the objection to this translation is, that there is no word in the Saxon to be rendered *fit*.

^t By this the land and inland Sea before-mentioned is plainly alluded to.

^u I must here object again to the Latin translation of the following words *ƿa cýnþon hý up on ƿa ea*, viz. “ad ejus ostia se substitisse,” which is by no means the sense of the passage.

^v Oththere hath explained before this resort to have only been occasional.

“ country,

“ country, for which reason *Ohthere* did not dare enter upon it; and the *Tarfenna* * land was all a desert, except when it was inhabited by fishers and fowlers.

“ The *Beormas* told him many particulars about their land †, as well as of the other countries near them; but *Ohthere* could not rely upon their accounts, because he had not an opportunity of seeing with his own eyes; it seemed however to him, that the *Beormas* and the *Finnas* spoke the same language. He went the rather, and *shaped* his course to each of these countries ‡, on account of the *horse-whales*, because they have very good bone in their teeth §, some of which he brought to the King ¶, and their hides are good for ship-ropes. This sort of whale is much less than the other kinds, it being not longer commonly than seven ells; but [*Ohthere* says] that in his own country is the best *whale-hunting*, because the whales are eight and forty ells long, and the *largest* †† fifty; that he had killed *some* six; and *sixty* ††† in two days.

* Mr. Lye, in his Saxon Dictionary, refers to this word in this chapter of *Orosius*, and renders it *Tartary*.

† It must be owned that this rather contradicts what is mentioned in the preceding period.

‡ Sc. of the *Finnas* and the *Beormas*.

§ It is said that one of these teeth, in the 16th century, sold for a ruble. Hakluyt, vol. i. p. 280.

¶ Sc. *Ælfred*. From this circumstance it hath been inferred, that *Ohthere* was sent by this king on this discovery, which however is by no means conclusive; for every traveller, in relating his voyage, shews the product of the countries he hath visited. Richard Chancellor, speaking of the commodities of *Russia*, says, “I here are also a fish's teeth, which fish is called a *Morse*.” Hakluyt, vol. i. p. 237.

†† *Ḍærtan*, very improperly rendered in the Latin translation *numulla*.

††† I conceive that *þýxa* should be a second time repeated here instead of *þýxtiḡ*, or *sixty*; it would then only be asserted that *six* had been taken in two days, which is much more probable than *sixty*.

“ *Ohthere*

“ Ohthere was a very rich man in such goods as are valuable in
 “ those countries (namely, in wild deer), and had, at the time
 “ he came to the king^e, six hundred tame deer, none of which
 “ he had purchased; besides this, he had six decoy^f rhein-deer,
 “ which are very valuable amongst the Finnas, because they catch
 “ the wild ones with them.

“ Ohthere himself was one of the most considerable men in
 “ those parts, and yet he had not more than twenty horned
 “ cattle, twenty sheep, and twenty swine; and what little he
 “ ploughed was with horses. The rents in this country consist
 “ chiefly of what is paid by the Finnas, in deer-skins, feathers,
 “ and whale-bone, ship-ropes, made of whales hides, or those
 “ of seals. Every one pays according to his substance; the weal-
 “ thiest pay the skins of fifteen martins, five rhein-deer, one
 “ bear's skin, ten bushels of feathers, a cloak of bear's or otter's-
 “ skin, two ship-ropes, (each sixty ells long,) one made of whale's
 “ and the other of seal's-skin.

“ Ohthere moreover said, that Northmanna land was very
 “ long and narrow, and that all of the country which is fit either
 “ for pasture or plowing is on the sea coast, which however is in
 “ some parts very rocky; to the east-ward are wild moors, pa-
 “ rallel to the cultivated land. The Finnas inhabit these moors,
 “ and the cultivated land is broadest to the eastward, and grows
 “ narrower to the northward. To the east it is sixty miles

* This shews, that Ohthere was a man of considerable substance when he left his own country to come to England, and there is not the least allusion to his having been sent to the northward by Ælfred, as his voyage seems to have happened long before he was known to that king.

^f The Saxon word is *ræel-phanar*; and we apply, even to this day, the word *stale* to a dead bird, which is placed on a tree in a living attitude, surrounded with lime-twigs, in order to entice the wild ones.

“ broad,

“ broad, in some places broader, about the middle it is perhaps
 “ thirty miles broad, or somewhat more, to the northward
 “ (where it is narrowest) it may be only three miles [from the
 “ Sea] to the moors, which are in some parts so wide, that a
 “ man could scarcely pass over them in a fortnight, and in
 “ other parts perhaps in a week^ε. Opposite this land, to the
 “ south, is Sweoland, on the other side of the moors, quite to
 “ that northern land^h, and opposite to that again, to the north,
 “ is Cwenalandⁱ. The Cwenas sometimes make incursions
 “ against the *Northmen* over these moors, and sometimes the
 “ Northmen on them; there are very large fresh meres amongst
 “ the moors, and the Cwenas carry their *ships*ⁱ over land into
 “ the meres, whence they make depredations on the Northmen;
 “ their *ships* are small and very light.

“ Ohthere said also, that the *shire* which he inhabited is called
 “ Halgoland^k, and that no one dwelt to the north of him^l;
 “ there is likewise a port to the south of this land, which
 “ is called Sciringes-heal, which no one could reach in a
 “ month, if he watched in the night^m, and every day had a fair
 “ wind;

^ε These very minute particulars seem plainly to be taken down by Ælfréd, from Ohthere's own mouth, as he corrects himself most scrupulously, in order to inform the king with accuracy.

^h i. e. Normanna land, Ohthere's own country.

ⁱ These *ships* were probably the same with the small boats to this day called coracles, which are used both on the Towy and the Wye. They make them near Moamouth, not to weigh above 45 lb. and they are easily therefore carried on a fisherman's back over shallows.

^k “The land was full of little islands, called Ægeland and Halgeland, in lat. 66. deg. N.” Hakluyt, vol. i. p. 235. where the following note is inserted in the margin, “In this land dwelt Ochther, as it seemeth.”

^l It should seem that this is to be understood as confined to Halgeland, as the port to the south, which follows plainly, relates to the same province.

^m The word in the original is *πικουσι*, which is rendered *cursum fitens*; but it properly signifies *to go back*, and not stop. I cannot, therefore,

“ wind; during this voyage he would sail near land, on his
 “ right hand would be Iraland, and then the islands which are
 “ between Iraland and this land. This country continues quite
 “ to Sciringes heal, and all the way on the left, as you proceed
 “ northward to the south of Sciringes heal, a great sea makes
 “ a vast bay, and is so wide, that no one can see across
 “ it. Gotland is opposite on the other side, and afterwards
 “ the Sea of Sillende lies many miles up in that country.
 “ Oththere further says, that he sailed in five days from Sciringes
 “ heal, to that port which men call Æt-Hæthum, which is be-
 “ tween the Winedum, Seaxum, and Angle, and makes part of
 “ Dene.

“ When Oththere sailed to this place from *Sciringes heal*, Den-
 “ mark was on his *left*, and on the right a wide sea for three
 “ days, as also two days before he came to Hæthum, Gotland,
 “ Sillende, and many islands [these lands were inhabited by the
 “ Angle before they came hitherⁿ]; for two days the islands
 “ which belong to Dene were on the left.”

“ Wulftan said, that he went from Heathum to Truso in
 “ seven days and nights (the ship being under sail all the time)
 “ that Weonothland was on his right, but Langoland, Læland,

therefore, but think that it should be *pacode*, and the meaning would
 then be, that this port was distant a month's sail, if the vessel continued
 its course both by day and night. As for this port called Sciringes-
 heal in order to find out what place is hereby intended, we should sup-
 pose it to be pronounced *Shiringes*-heal, for *sc*, followed by the vowels
i and *e* (and sometimes by others) seems always to have been pro-
 nounced by the Saxons, as it is by the Italians in the word *Sciolto* pro-
 nounced *Shiolto*. Thus we pronounce *scip* *ship*, *scell* *shell*, *scild* *shield*,
scina *shin*, *scipe* *shire*, *scycas* *fish*, &c.

ⁿ This clears up most decisively the doubts in Camden's preface,
 p. clviii. with regard to the situation of the Angles.

○ ○ ○

“ Falster,

“ Falster, and Scoley on his left, all which belong to Denemar-
 “ ca, *we*° had also Burgenda-land on our left, which hath a
 “ king of its own. After having left Burgendaland, the islands
 “ of Becinga, Meroe, Eouland, and Gotland, were on our
 “ left, which country belongs to Sweon; and Weonodland
 “ was all the way on our right, to the mouth of the Wesel.
 “ This river is a very large one, and near it lies Willand and
 “ Weonodland, the former of which belongs to Estum, and the
 “ Wesel does not run through Weonodland, but through Est-
 “ mere, which lake is fifteen miles broad. Then runs the
 “ Ilfing, from the eastward into Estmere; on the bank of which
 “ stands Truso, and the Ilfing flows from Eastland into the Est-
 “ mere, and the Wesel from Weonodland to the south; the
 “ Ilfing, having joined the Wesel takes its name, and runs to the
 “ west of Estmere, and northward into the Sea, when it is
 “ called the Wesel’s mouth. Eastland is a large tract of coun-
 “ try, and there are in it many towns, and in every town is a
 “ king; there is also a great quantity of honey and fish, and
 “ the king and the richest men drink nothing but milk, whilst
 “ the poor and the slaves use mead. They have many contests

° It seems very clear, from this expression of *we*, that when King
 Ælfred came to this part of Orosius’s geography, he consulted Othere
 and Wulfstan, who had lived in the northern parts of Europe, which
 the ancients were so little acquainted with, and that he took down this
 account from their own mouths. For the same reason it is not impro-
 bable that there may be some mistakes in the King’s relation, as though
 these northern travellers spoke a language bearing an affinity to the
 Anglo Saxon, yet it was certainly a dialect with material variations. For
 proof of this let a chapter of the *Speculum Regale*, written in the old
 Icelandic, or Norwegian, be compared with the Anglo-Saxon. This
 very curious work was published at Seroc, in 1763.

“ amongst

“ amongst themselves, and the people of Estum brew no ale,
 “ though they have mead in profusion.”

“ There is also a particular custom amongst this nation, that
 “ when any one dies, the corpse continues unburnt with the re-
 “ lations and friends for a month or two, and the bodies of
 “ kings and nobles” (according to their respective wealth) lie
 “ for half a year before the corpse is thus destroyed, and it
 “ continues above ground in the house, during which time drink-
 “ ing and sports last till the day on which the body is consumed.
 “ Then, when it is carried to the funeral pile, the substance of
 “ the deceased (which remains after these drinking bouts and
 “ sports) is divided into five or six heaps (sometimes into more)
 “ according to what he happens to be worth. These heaps are
 “ disposed at a mile’s distance from each other, the largest heap
 “ at the greatest distance from the town, and so gradually the
 “ smaller at lesser intervals, till all the wealth is divided, so that
 “ the least heap shall be nearest the town where the corpse lies.

“ Then all those are to be summoned who have the fleetest
 “ horses in that country, within the distance of five or six miles
 “ from these heaps, and they all strive for the substance of the
 “ deceased; he who hath the swiftest horse obtains the most dis-
 “ tant and largest heap, and so the others, in proportion, till the
 “ whole is seized upon. He procures, however, the least heap,
 “ who takes that which is nearest the town, and then every one
 “ rides away with his share, and keeps the whole of it; on ac-
 “ count of this custom, fleet horses are extremely dear. When
 “ the wealth of the deceased hath been thus exhausted, then they
 “ carry the corpse from the house, to burn it, together with the

¶ Here Wulfstan’s voyage ends in Hakluyt.

¶ *Higb men* in the Saxon.

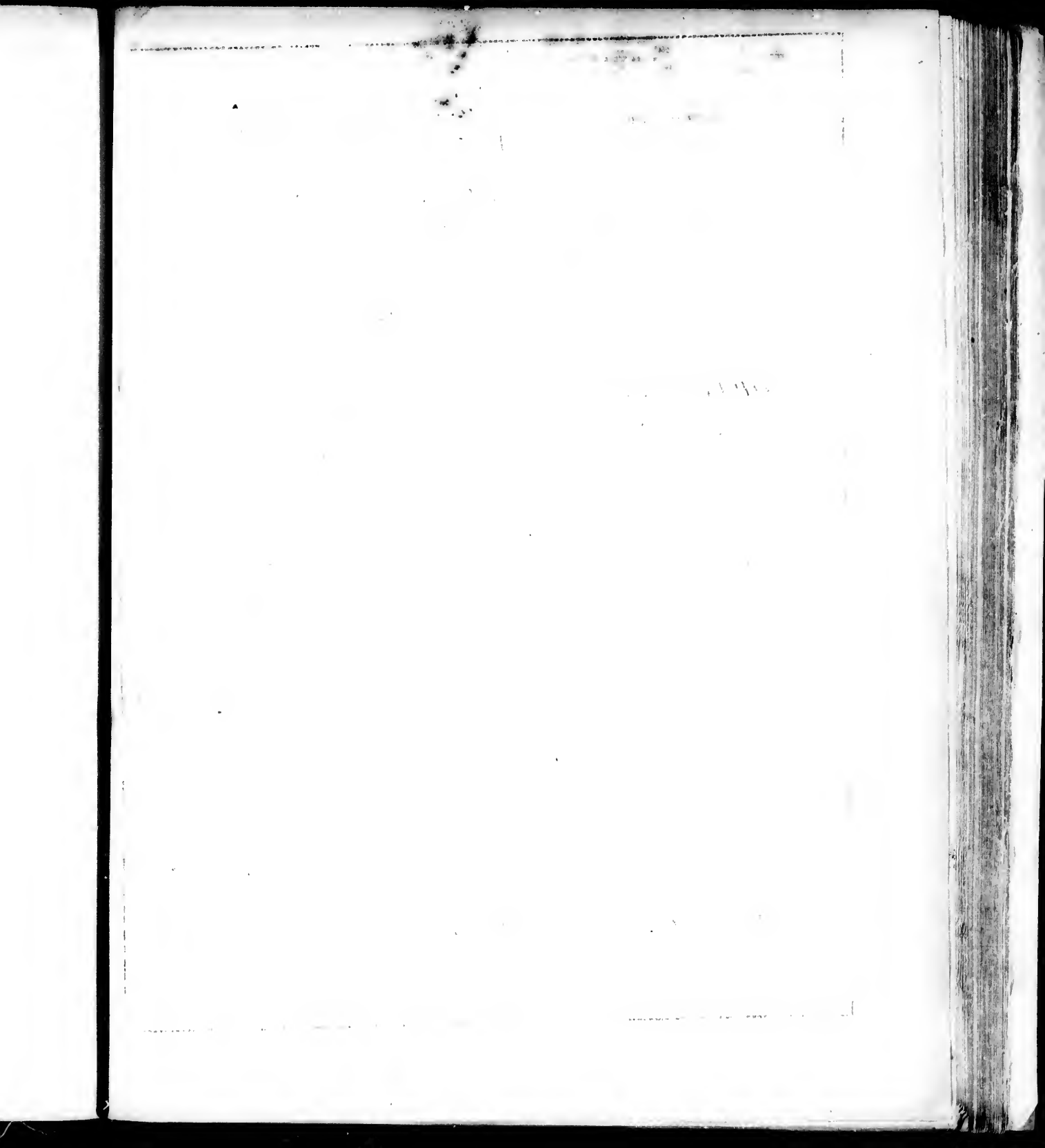
“ dead man’s weapons and cloaths ; and generally they spend
 “ the whole wealth of the deceased, by the body’s continuing so
 “ long in the house before it is buried ; what, however, remains,
 “ and is thus disposed in heaps on the road, is taken away by
 “ these foreign competitors.

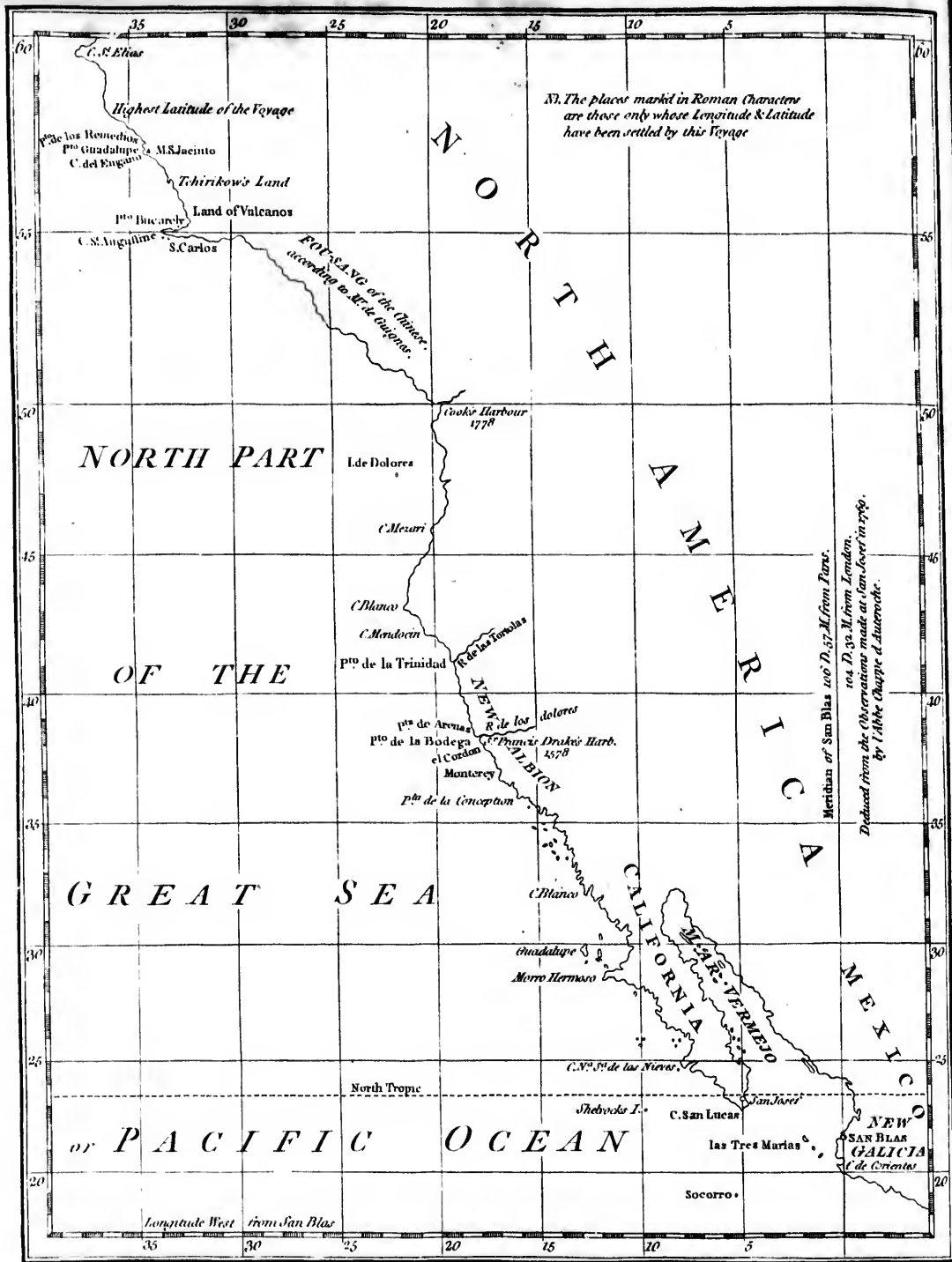
“ It is also a custom with the Estum, that the bodies of all the
 “ inhabitants shall be burned ; and if any one can find a single
 “ bone unconsumed, it is a cause of anger. These people also
 “ have the means of producing very severe cold, by which the
 “ dead body continues so long above ground without putrefying ;
 “ and if any one sets a vessel full of ale or water, they contrive
 “ that the liquors shall be frozen, be it summer or be it winter.”

‘ That is, by the consequential expences.

‘ Phineas Fletcher, who was ambassador from Queen Elizabeth to
 Russia, gives an account of the same practice continuing in some parts
 of Muscovy. “ In winter time, when all is covered with snow, so many
 “ as die are piled up in a hovel in the suburbs, like billets on a wood-
 “ stack ; they are as hard with the frost as a very stone, till the spring-
 “ tide come and resolve the frost, what time every man taketh his dead
 “ friend, and committeth him to the ground.” See a note to one of
 Fletcher’s eclogues, p. 10, printed at Edinburgh, in 1771, 12mo. See
 also a poem written at Moscow, by G. Tuberville, in the first volume of
 Hakluyt, p. 386, where the same circumstance is dwelt upon, and the
 reason given, that the ground cannot be dug. Bodies, however, are now
 buried at Moscow during the winter.

‘ This must have been effected by some sort of an ice house ; and it
 appears by the *Amœnitates Academicæ*, that they have now ice-houses
 in Sweden and Lapland, which they build with moss.





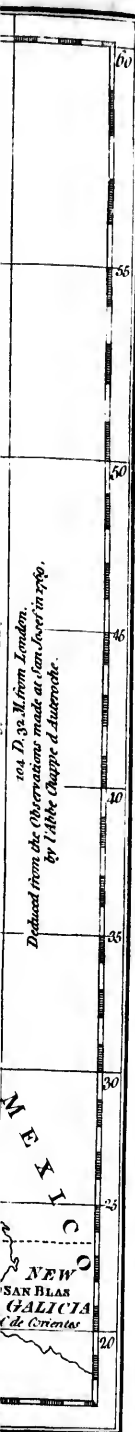
JOURNAL

OF

A VOYAGE IN 1775.

To explore the coast of America, Northward of California,

By the second Pilot of the Fleet, Don FRANCISCO
ANTONIO MAURELLE, in the King's Schooner,
called the Sonora, and commanded by Don
JUAN FRANCISCO DE LA BODEGA.



JOURNAL

OF

TRAVEL IN THE

WESTERN PART OF THE AMERICAN CONTINENT

BY

JOHN W. FULTON

AND

JOHN W. FULTON

P R E F A C E.

THE following journal having been placed in my hands for perusal, I conceived it to be so interesting for the improvement of Geography, that I desired permission to translate and publish it.

I was principally induced to take this trouble, because I supposed, that the Spaniards, from their most peculiar jealousy with regard to their American dominions^a, would never permit that navigators of other countries (particularly the English) should know the excellent ports of the Western part of America in high Northern Latitudes, which are here laid down with such accuracy and precision, together with the abundant supply of masts, fire wood, and water which may be procured in most of them.

^a That most able Historian Dr. Robertson, after having mentioned, that most of the American papers are deposited in the Archivo of Simanca, near Valladolid, thus proceeds:

“ The prospect of such a treasure excited my most ardent curiosity; but the prospect of it only is all that I have enjoyed. Spain, with an excess of caution, hath uniformly thrown a veil over her transactions in America: from strangers they are concealed with peculiar solicitude.” Preface to the History of America, p. ix.

It appears, by Venegas's History of California, published in 1747^b, that great jealousy was then entertained of our discovering a N. W. passage^c, because they apprehended we should annoy the coasts of Mexico and Peru.

Nothing however can be more groundless than these suspicions, for whenever a N. W. or any other Northern communication is found between the Atlantic and Pacific Oceans, it may be boldly pronounced that such passage will be so very precarious, as never to answer the purpose of expeditions in time of war, or commerce during peace.

The Spaniards should, after our late voyages of discovery (which reflect so much honour upon his Majesty's reign), be convinced that the English Nation is actuated merely by desiring to know as much as possible with regard to the planet which we inhabit, and to which our geographical inquiries are necessarily bounded.

This distrust on the part of Spain would more wisely be directed against the Russians, who from Kamtsatka might easily establish themselves on the W. coast of America, and from thence perhaps in time shake their unwieldy, and already tottering empire^d.

From these ill-founded apprehensions of what the English may meditate against their American Dominions on the Western coast of that vast continent, they will not permit an individual,

^b Madrid, 3 vol. Quarto.

^c Iguualmente notorias son las ruidosas, y pasadas tentativas de los Ingleses, para hallar un passage al mar del Sur, por el Norte de America. Ibid. T. III. p. 225.

^d I am accordingly informed, that the Empress means to fit out four vessels on the coast of Kamtsatka, which are to be employed in discoveries, during the proper season of 1781.

even of our nation, to set his foot in their part of America, even for scientific purposes.

Notwithstanding this perpetual distrust of this country in the Spaniards, and our present war with them, I will venture to say, that an attack upon the city or province of Mexico, would not be advisable on our part. If the Spaniards indeed acted wisely, they should themselves abandon it, for the mines

* The transaction I here allude to is the following. Lord Morton, as President of the Royal Society, applied to the then Spanish ambassador at our Court in 1766, for leave that an English Astronomer might observe the Transit of Venus (expected in 1769) on some part of California. This was however refused, when his Lordship requested, that Father Boscowich, a *foreigner* and *good Catholic*, might have the same permission; in which he was at first more successful, but the favour was even then granted with many clogs, and the permission at last recalled, on account of his being a Jesuit, who were at that time banished from Old and New Spain.

At the same time Chappe Dauteroche obtained this permission, and for the same purpose; the consequence of which hath been, that a draft of the city of Mexico, in its present state, was found amongst his papers, and published by his Catholic Majesty's good allies, the French, for the information of his enemies.

I once applied myself to the late Prince Mafferano (so deservedly esteemed whilst resident as Minister of Spain in England) that an ingenious German, named Kukahn*, might be permitted, under any restrictions, to go from La Vera Cruz, to any part of the province of Mexico, merely to collect specimens of Natural History. I was also responsible that he never would attend to any thing, during his journies, but the animals he might meet with. Though I made this application by a channel which his excellency would have been desirous to oblige, yet he excused himself, from its being a fundamental rule with the Court of Spain, that no foreigner be permitted to pass through any part of their dominions on the continent of America.

* See an account of his method of preserving animals, and placing them in their proper attitudes. (Ph. Trans.) He is now established in Jamaica, and hath succeeded in raising many European fruits, as also products of our kitchen-gardens, in some ground which he hath purchased, about half way up a mountain.

within any convenient distance are nearly exhausted, whilst the charge of bringing quicksilver from La Vera Cruz is thereby greatly augmented. Venegas therefore informs us, that it is not worth while to work the more abundant mines of Sonora to the Northward, from this increase of expence. The silver indeed, at so distant a period as 150 years ago, was chiefly brought from St. Lewis de Sacatecas, which is nearly 100 leagues N. of Mexico. This objection does not hold with regard to the continuing to work the silver mines of Peru, as the famous one of quicksilver, called *Guanacabellca*, is situated in the same province. It is believed also, that the *gold mines* in America, as they are improperly called, answer as little to the Spaniards. At least I have been informed, by a person who resided two or three years in Brasil, which furnishes the greatest quantity of this precious metal, that those who go in search of it are not paid above a shilling per day for their labours. Gold is never found in the state of ore, or by digging deep into the bowels of the earth; the adventurers therefore go in companies of five or six to explore those parts where they conceive themselves to have the best chance of finding it near the surface, but often return after being out months, with a very small portion, by which the fatigues and dangers they have incurred are poorly compensated.

As little would it answer to take possession of Acapulco, for the sake of an annual ship which would presently change its rendezvous for another port, or of Panama, in order to inter-

[†] To this it may be added, that the situation of Mexico is very unhealthy, *Gage* comparing the many canals to those of Venice, which are often highly offensive. [See *Gage's Survey of the W. Indies.*] It is also subject to great inundations; and Don Alzate informs the Academy of Sciences at Paris, that during the years 1736 and 1768 more than one-third of the inhabitants died of the black vomit.

cept the flotilla, which by late regulations is never to touch there ^s.

The Spaniards moreover should learn from what England hath suffered by conquering Canada for our ungrateful colonies, that the settlement of a rival nation to the Northward of Mexico, would possibly operate in favour of the mother country.

We have experienced this most unnatural rebellion within a few years after we had removed the dread of the French in Canada from them, and after every fostering indulgence on our part. What may the Spaniards therefore have occasion to dread from their vast American Empire, the inhabitants of which they are perpetually oppressing, with their enormous duties and taxes?

Thus much have I ventured to say in hopes that the court of Spain will rather promote, than obstruct, any future voyage of discovery, in the Northern parts of the Pacific Ocean.

I am sorry that I have not an opportunity of engraving with this journal the nine charts which should accompany it; but as the Latitudes and Longitudes of the new Discoveries on the coast of America are so accurately stated, I should hope that the publication will at least convince the Spaniards how little it will answer the purpose of mystery to withhold them.

It appears by this journal that the Viceroy of Mexico sent some other ships on discovery to the Northward in a preceding year, and

^s The silver from Peru and Chili is either now sent over part of the Andes to Buenos Ayres, or otherwise transmitted in single register ships round Cape Horn. The establishment of Galeons sailing in a fleet from Cadiz being now also abolished, Carthagena, Porto Bello, and Panama, are become more than useless to the Spaniards, as the climates are bad, whilst the civil and military establishment at each is very expensive.

that.

that they proceeded to N. Lat. 55. Don Juan Peres, who was *ensign*^h on board the Frigate in the present voyage, had some station in the former, and carried with him a chart of the coast, in many of the parts which were then explored.

I am sorry not to be able to state any further particulars, but think it right to mention thus much, in hopes that it may produce some account of this former voyage.

I should conceive, that both the one and the other were produced by our attempts to discover a N. W. Passage; because it will be found, that wherever the Spaniards landed they were instructed to take possession (though not to keep it) with every possible formality, which undoubtedly was to be set up as a complete title against future claimants, by right of discovery.

The compiler of the present journal, D. Antonio Maurelle, served on board the schooner employed on this voyage (together with a frigate) under the title of Second Pilot of the Fleetⁱ.

In one of the written opinions which he gave whilst thus employed, he states, that he had served ten years in the Bay of Biscay^k, and seems to have been a most diligent navigator; whilst, to his honour, he always advises the proceeding to as high a Northern Latitude as possible, though some of his brother officers almost despair.

At the close of the journal a very accurate table is given of the ship's course for each day, with no less than nine columns.

Having however consulted some most experienced and able sea-officers on this occasion, they have advised me only to print

^h *Alferes*.

ⁱ I understand that we have no rank in our marine service which answers at all to this.

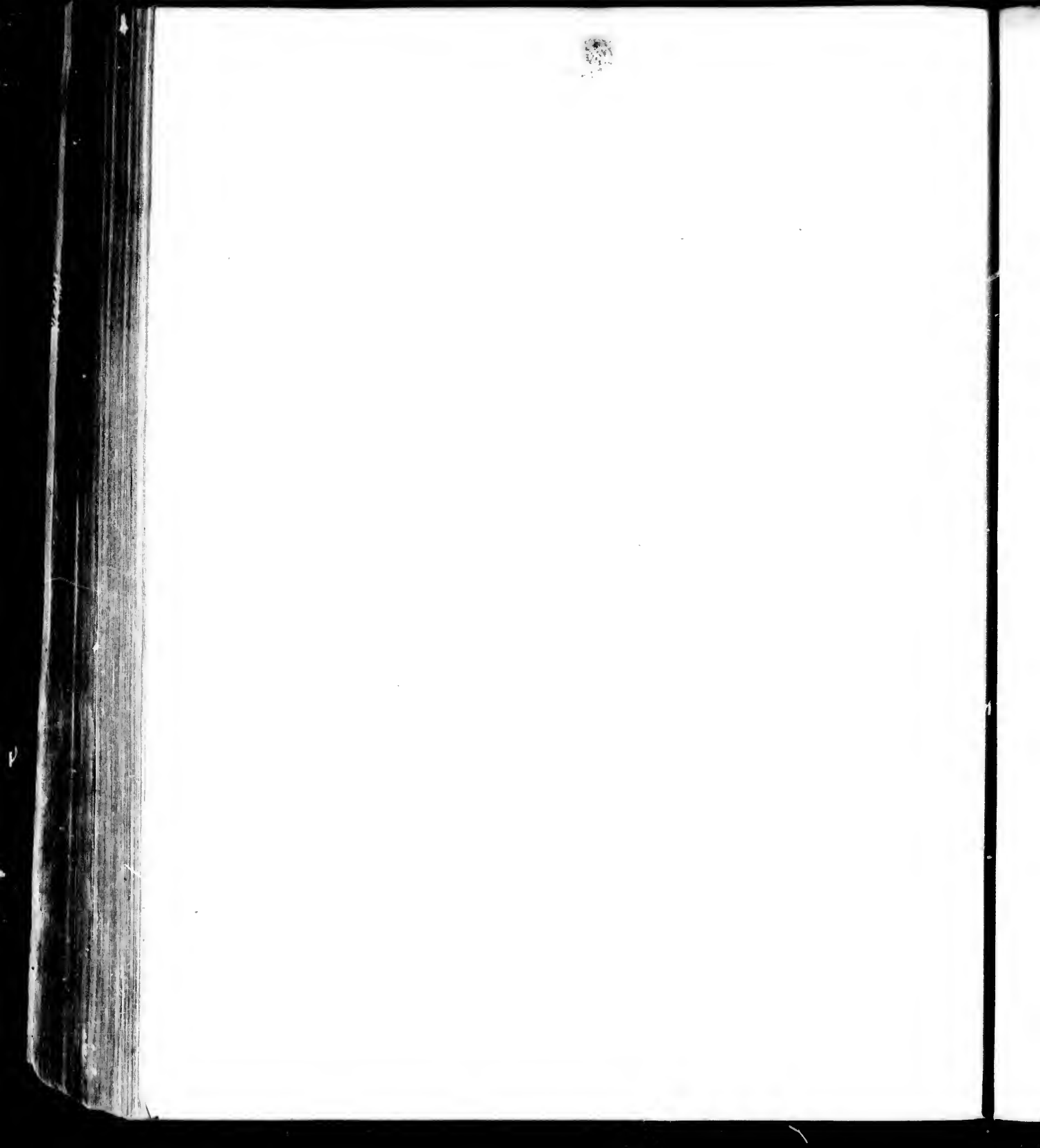
^k The expression in the original is *Golfo de las Vegas*, or the *Gulf of Mars*. The Spaniards also call the gulf of Mexico *Golfo de las Ciervas*, or *Gulf of Deer*.

a few of these heads¹, as some of them would not be easily understood by any navigator, who is not a Spaniard.

Upon the whole, it is hoped, that this account of an eight months navigation on the unfrequented coast of America, will prove a valuable addition to geography; especially as our immortal Captain Cook had so few opportunities of examining most parts of the same continent to the Westward^m, though his discoveries to the Northward will prove so interesting.

¹ It is right also to observe, that (though I give the column which states the Variation of the Needle) it is not specified whether the Variation is West or East; I should rather indeed suppose it to be the latter, on the authority of Dr. Halley, though perhaps the direction may have altered since the last century. This doubt however will be settled when Capt. Cook's last voyage is published.

^m This is said to have been occasioned by unfavourable winds.



PREFACE OF DON ANTONIO MAURELLE.

FOR the better understanding this Journal, it will be proper to premise the following particulars.

The charts which we used during the voyage were those of Monf. Bellin, the one published in 1766, and the other in 17—; the first of which places the port of St. Blas, 110 degrees W. Long. from Paris, and the second 114, differing consequently 4 degrees. For this reason I have always reckoned the Western Longitude from St. Blas^s, and not from Paris.

At the end there is an accurate table, every page of which includes a month, with an account of the Ship's course each day, together with the number of leagues sailed, the longitude, latitude, variation of the needle (which last, when attended to, is marked with an asterisk), and the distance from the nearest land.

* San Blas is a very small hamlet, on the W. coast of the province of Mexico, at the mouth of the River S. Pedro. It is but within these few years that the Spaniards have made a settlement there, for the convenience of transporting the troops and provisions they send to California. Dr. Robertson's map places it about the 22d degree of N. Lat. and 88th W. Long. from Ferro. See also Chappe D'Auteroche's account of his journey from La Vera Cruz to S. Blas in 1769. The Latitude of this port is not settled by this Journal, nor Longitude except by reference.

The plans of the ports which have been discovered, follow these tables, as also a chart of the whole coast, drawn with the greatest accuracy, as we always marked the most distinguishable points. In order also that we might be more exact, we compared the ship's course with that of the coast, and repeated our observations, both in sailing Northwards, and returning to the South.

We likewise have omitted every longitude, in which we conceived there had been mistakes, by accidents that had happened, and when we only doubted in distances of no great moment, we have laid them down, making the proper allowances.

The latitudes of the charts^b are marked with the greatest precision, in those situations where it may be of the most use, having had sufficient time to make the proper observations, whilst the allowances for refraction were attended to.

^b These charts unfortunately did not accompany the Journal.

January, 1775.

BEING on board the King's storeship ^c the *Santa Rica*, which then lay in the port of Vera Cruz, I received on the 10th of that month an order from his Excellency the Viceroy ^d Don Antonio Maria de Bucarely and Orsua, to undertake the function of first pilot in the expedition, which was then fitting out at the port of St. Blas for discoveries on the Northern coast of California ^e.

As I have always had the strongest desire to serve his Majesty (be the risque what it may) I readily accepted this commission, and setting out from La Vera Cruz on the 12th of January, I reached Mexico on the 18th in order to receive his Excellency's further commands. I left Mexico again on the 16th of February, and arrived at the Port of St. Blas ^f, putting myself under the orders of the officer, who was to fit out the expedition, Don Bruno Heceta. The ships prepared for this purpose were a frigate and schooner^g, the latter being 36 feet long ^h, 12 feet wide, and 8 deep, commanded by the Lieutenant Don Juan de Ayala, assisted by Don Juan Francisco de la Bodega, of the same

^c Urcu.

^d Sc. of Mexico.

^e It should seem from this journal, that the Spaniards deem all the N. W. coast of America beyond California to be part of that province.

^f The journey from La Vera Cruz to Port S. Blas is supposed to be 300 leagues, thus divided: from La Vera Cruz to Mexico 110 leagues; and from the latter to S. Blas 190.

^g Goleta.

^h 18 codos, each codo being two feet.

rank, and I embarked in the schooner. It so happened that the packet-boat S. Carlos was at this time in the port of S. Blas, commanded by the Lieutenant D. Miguel Maurrique, who was to proceed to the establishment at Montereyⁱ.

Whilst we continued here, we laid in provisions for a year's voyage; all of which were procured from the neighbourhood.

On the 16th of March we had taken on board all such necessaries; and at 10 o'clock at night the three vessels set sail, steering N. W. with a gentle land-breeze at N. N. E. but though we did every thing in our power during the night to keep company with the other ships, we were not able, which we conceived to arise from the cargo not being properly stowed, because the schooner's reputed rate of sailing, by those who were well-acquainted with her, left us scarcely any doubt with regard to this being the real cause.

As soon as day appeared on the 17th it grew calm, and continued so till three in the afternoon; when a breeze from the N. W. arising, we steered N. N. E. and towards the coast, till sun-set, when the wind fell. At this time we cast anchor, and found ourselves 4 leagues N. N. E. of S. Blas, and in this manner we prosecuted our voyage, making use of the sea-breeze during the day, and the land-breeze during the night, gaining very little to windward^k, and casting anchor when the wind fell, in order not to lose ground by the currents^l, after so little progress, and with such trouble.

ⁱ The latitude of Monterey is settled afterwards by this journal to be in 36 44 N. Lat. and 17 0 W. Long. from St. Blas. It is situated on the Western coast of California, and a mission of Jesuits is there established.

^k Barlovento.

^l The currents are so strong in this sea that a promontory S. of S. Blas is called Corrientes.

On the 13th at three in the evening the S. Carlos Pacquet-boat made a signal for help, on which our captain sent a boat, in which Don Mignel Maurique (who commanded the Pacquet) was brought to our ship, when we plainly discovered, by his actions, that he was out of his senses. On this our principal officers accompanied him on board the frigate, that the captain might give the proper orders on this occasion, when a council being held, and the surgeons examined, as well as ocular proofs appearing of D. Maurique's madness, it was determined to set him on shore, as also to give the command of the pacquet-boat to Don Juan d'Ayla, lieutenant of the frigate, and that of the schooner to Don Juan Francisco de la Bodega and Quadra, who had the same rank.

On the 20th, the breeze being moderate, it was discovered that the foretop-sail^m was rent in several places, which defect it was necessary to repair immediately.

Whilst the wind thus continued, the commander of the schooner tried many experiments, to make her sail better, one of which indeed rather improved her rate; but the frigate, notwithstanding, was still obliged to shorten sail, in order to keep us company, and indeed to take us in towⁿ.

On the 24th at noon we had sight of the Southernmost of the Marias^o, lying to the N. E. at the distance of three leagues, which makes the then situation of our ship exactly a degree W. of S. Blas, according to M. Belin's map of 1736, and in N. Lat. 21. 4. m. Now this differs from my observations, being 26 minutes too far Northwards.

^m El mastelero de velacho.

^a In the original another experiment is stated, which I have not translated, as I conceive it would be uninteresting to the reader.

^o There are three islands thus called.

Whilst we were in this situation we lost sight of the packet-boat, but we continued our course steering S. W.^r when we observed many birds, some of which were black, with a white spot on their breast, the wings long, beak rather large, belly prominent, and tail like a pair of scissars^a; others again were entirely white; whilst some were grey, with a single large feather. We likewise saw other birds, which dived often under the water, named bobos.

During great part of March the wind freshened in the day, and fell at night, particularly a little before the new moon^r, (which happened on the 29th,) after which we had often calms, the wind having before blown from the N. W. to the N. on this same day (viz. the 29th) we saw an island at sunset, which is said to be called Socorro^s, by which name it is not to be found in the French maps, nor in the History of California^t. We had a view of it whilst it lay to the Eastward at the distance of 9 or 10 leagues, which with difficulty we gained to windward^u, wishing to sail as nearly as possible upon the meridian of that island.

On the 30th we endeavoured to approach nearer to Socorro, when it lay W. N. W.^x at the distance of four leagues, but

^r Sudocste quarta al oeste.

^s Tixra.

^t Great attention to the moon, and its supposed effects on the weather, is to be observed in other parts of this journal.

^u This island, in Dr. Robertson's map, is placed in 19 N. Lat. and 94 W. Long. from Fero.

^x This is probably the history of that country published by Miguel Venegas (a Mexican Jesuit) at Madrid, in 1758, which was translated into English, and printed at London in 1759. It is not at all extraordinary however that this island should not be mentioned in that account, as Venegas chiefly describes the E. coast of California. Socorro is considerably to the South of that Peninsula.

^y Orzando.

^z Quarta al oeste.

we could not effect this on account of the currents to the S. which carried us to Leeward^y.

From the 31st of March till the 4th of April we had either calms or light breezes, on which account we could not sail farther from this island than we lost by the currents. For this reason also we tried by towing the schooner, and using of our oars, whether we might not make some part of the island, where we might procure water; but in this we could not succeed on account of the violent currents.

This island, which, as was said before, is not named Socorro in any maps, is undoubtedly that which was discovered by Hernando Triabba, who commanded a ship dispatched from Guantepeque, by Hernan Cortes, to explore the coast of California. This vessel sailed 300 leagues ———^z and fell in with an island named St. Thomas, which is so called in the French maps, though erroneously placed, because its real latitude is 18° 53' N. Lat. and W. Long. from S. Blas 5° 18'.

On the 4th of April we lost sight of Socorro to the E. N. E. and prosecuted our voyage to windward as much as possible, without any other accident but the frigate's bowsprit being damaged, which we soon repaired.

At this time we found that the sky was not so clear as before, we approached Socorro, that the sun did not appear so frequently, that the mists were not so thick, that the wind was much more cold, and in short we experienced a very different temperature.

Till the 14th, when the full moon happened, the breezes were slight, and the currents always to the South, after this

^y Sotovento.

^z There is a chasm in the MS with regard to the direction in which she sailed.

however.

however the wind freshened to the N. N. E. sometimes flitting to the N. E. and blowing more strongly from that point. By these means we had an opportunity of trying the sailing capacity of the schooner, for the rougher the sea the more sail was set, so that the deck was constantly two planks^a under water to leeward; which thoroughly convinced those on board the frigate of our determined resolution to prosecute our voyage.

The crews of both ships, who observed what a press of sail was carried by the schooner, from the determined resolution of the officers to proceed as far Northward as possible, saw plainly that they were in some degree mistaken, by conceiving at our first departure that the schooner would be obliged to return to S. Blas in a fortnight. They however still shewed their apprehensions if she pursued her voyage, whilst some of the schooner's company began to sicken, and wish themselves on board the frigate, where there were medicines and a surgeon. The surgeon however declared, that if such seamen were removed to the frigate, they would be probably seized with a fever, on which the Captain thought it right that this opinion should be made known to the schooner's crew, as he supposed it would have a greater effect than the threats of any punishment. To say the truth, we could not but be sorry to observe the horror that the crew conceived of the bad condition of the schooner, which afforded miserable quarters for the sick, as the seamen could not do the business without being thoroughly wet, except when it was calm.

These distresses would have become insufferable, had not the commander behaved with the greatest kindness to the crew, he encouraged them to persist also, by giving them frequently small

^a Tablas.

presents, and reminded them of the glory they would obtain on their return, if they reached the proper latitude ^b. He added also, that the risque was nearly equal ^c to both vessels, and that as each ship's company valued their lives, they might be sure that it would not be attempted to proceed further than was consistent with their mutual safety. This interposition of the commander had at length the proper effect, and we agreed to live and dye together.

On the 11th of May the wind began to veer about, and on every point to the Eastward, but ended to the E. & S. E. with many squalls ^d and mists. The strong currents which we had before experienced to the S. were now scarcely to be perceived.

On the 21st our commander held a council, in which it was to be determined whether we should continue our voyage, or put into the establishment at Monterey, and that the resolutions we should come to might be the more deliberate, our opinions, with the reasons on which they were founded, were reduced to writing. As the wind however was very violent, there could be no personal communication between the officers of the two ships, and our opinions were therefore transmitted by means of a cask.

[These opinions follow, in the journal at length, but as they would not be very interesting even to the navigator, I shall only state that they all agree in advising that they should proceed as far N. as 43. rather than put into Monterey. The principal

^b It appears afterwards that they were instructed to proceed as far N. as 65 if practicable.

^c It must be recollected that at this time the frigate towed the schooner.

^d Chuvascos, which is supposed to be a term used in the Mexican Seas.

reason for this advice is, that Martin de Aguilar had discovered a river in this latitude, where they hoped consequently to water, and repair their vessels*.]

We proceeded on our voyage therefore with brisk winds from the N. & N. N. E. the sea running high till the 30th, when the new moon happened during which interval we made many tacks, and did not accurately observe our longitude or latitude.

On this same day we had gentle breezes between N. W. & S. W. varying thus for the three following days, after which the wind was steady in the W. N. W. and blew fresher as the moon increased.

On the first of June one of our seamen was so drunk with spirits that we thought it right to remove him to the frigate^f, where he afterwards died in less than six hours. On the same day we observed some sea-weeds, the top of which much resembled an orange^g, from the upper part of which hung large and broad leaves.

At the extremity of this plant is a very long tube, which fixes to the rocks on the coast till it is loosened by the sea, when it often floats to the distance of 100 leagues. We named this plant the *Orange-head*.

The next day we saw another plant, with long and narrow leaves like a ribband, which is called *Zacate del Mar*; we also saw many sea-wolves, ducks, and fish.

* In the account of this voyage in 1601, added to Venegas's History of California, this river is said to have been discovered by the pilot Lopes and not by Martin de Aguilar. In some maps it is placed in 45^{N.} Lat.

^f Because there was a surgeon on board that ship, probably.

^g Una naranja.

On the 5th our towing rope^b was broke; which indeed had happened several times before, notwithstanding the greatest care of both ship's companies, on which accident we resolved to proceed, as well as we could, without this very inconvenient appendage.

On the 7th, from the colour of the sea, we judged ourselves to be in soundings, and we supposed ourselves to be about thirty leagues from the coast.

By noon on the same day we distinguished a large tract of the coast (though at a considerable distance) lying from the S. W. to the N. E. but we were not able to get nearer to it, by the winds falling calm during the night and the following day.

On the 8th we saw the coast much clearer at the distance of about 9 leagues, and the next 24 hours the currents to the S. increased strongly, so that there was a difference in the latitude by observation and our reckoning of 29 minutes.

The same day the wind freshening, the commander made signal for the schooner to reconnoitre the coast, which direction we complied with to our utmost, steering to the N. N. E. and hoping to do this before the night. In effect, by six in the evening, we distinguished many headlands, bays, plains, and mountains, with trees and green fields.

By eight at night we were not more than two leagues distant from the land, nor the frigate more than three; we then sailed towards her, and thus passed the night.

On the 9th at break of day the frigate made us a signal to join them, and by 10 in the morning we followed their course till we came to another part of the coast, where we saw, with the greatest clearness, the plains, rocks, bays, headlands, breakers,

^b El remorque.

and trees : here we sounded in 30 fathoms, the bottom being a black sand. At the same time we sailed along the coast, and endeavoured to find out a port, being at the distance only of a mile, and approaching to a high cape, which seemed to promise shelter, though we were obliged to proceed cautiously, as many small islands concealed from us some rocks, which scarcely appeared above the surface of the sea.

As we now perceived a land-locked harbour to the S. W. we determined to enter it, making at the same time a signal to the frigate to lend us an anchor, which however they were not able to do, from their distance, as well as that the wind blew fresh. For these reasons the schooner entered the port alone, founding all the way, with the greatest care, and the frigate followed in our wake.

Whilst we were thus entering the port, we observed two canoes from the N. which came close to the frigate, and exchanged their skins for bugles, and other trifles, with our seamen, whilst in the mean time the schooner cast anchor opposite to a little village^k, which was situated at the bottom of a mountain : the inhabitants however did not send out any canoes to us.

After this we sounded the interior parts of the port, and we found sufficient depth of water to anchor at a bow's shot from the land, we saw likewise the frigate at the bottom of the port, and fastened our cables to some rocks which nature seemed to have fixed there for this purpose. We took however the precaution to let fall two anchors on the opposite side ; (viz. to the S. and S. W.) on which the frigate followed our example.

^k Rancheria.

As soon as we had anchored, some Indians in canoes came on board, who, without the least shyness, trucked some skins for bugles.

And here it may be right to observe the inaccuracies of the French map¹, both with regard to the capes, and the lying of the coast. It should seem indeed that the absolute want of authentic materials hath been the occasion of laying down at random some large bays, which we neither found to the N. or to the S. as we must certainly have fallen in with them above Cape Fortuna, which is placed 18 leagues to the S. of Cape Mendocino^m, whereas we were twenty leagues to the N. which makes an error of two degrees of latitudeⁿ.

On the 11th we had fixed every thing with regard to our anchorage, and we determined to take possession of the country, upon the top of a high mountain, which lyes at the entrance of the port. For this purpose our crews divided into different parties, which were properly posted, so that the rest might proceed without any danger of an attack. We moreover placed centinels at a considerable distance, to reconnoitre the paths used by the Indians, who possessed themselves of those parts from which we had most to fear. With these precautions the crews marched in two bodies, who adored the holy cross upon disembarking, and when at the top of the mountain formed a square, the centre of which became a chapel. Here the holy cross was again raised, mass celebrated, with a sermon, and possession taken, with all the requisites enjoined by our instructions. We also fired both

¹ Of Mons. Bellin.

^m So called from Mendoza, a Viceroy of Mexico, who sent some ships on discovery. Most maps place this on the N. W. point of California.

ⁿ De ocho cavos.

our musquetry and cannon, which naturally made the Indians suppose we were irresistible. After they had recovered their fright however, and found that we had done them no harm, they visited us again, and probably to examine more nearly what had occasioned the tremendous noise which they had never heard before. As we thus took possession on the day when holy mother church celebrates the festival of the most holy Trinity, we named the port accordingly °.

The following days were taken up in procuring wood and water, whilst the schooner was careened. We likewise cut some masts for her.

We could not but particularly attend to all the actions of the Indians, their manner of living, habitations, garments, food, government, laws, language, and arms, as also their ^p hunting and fisheries. The distrust indeed which we naturally entertained of these barbarians, made us endeavour to get as great an insight into all these as possible, yet we never observed any thing contrary to the most perfect friendship and confidence which they seemed to repose in us. I may add, that their intercourse with us was not only kind, but affectionate.

Their houses were square, and built with large beams, the roofs being no higher than the surface of the ground, for the

° There is certainly some use to geographers in this custom of the Spaniards naming places from the Saint's day in which they take possession, or make the discovery, as it points out to posterity the time of the year when the event happened.

^p *Sus cazas*, which like the French word *chasse* and Italian *caccia*, comprehends also fowling. In Sir Ashton Lever's most capital museum may be seen what contrivances are used by the Indians of St. George's Sound N. Lat. 50. on this same coast and for these purposes. There is also in the same noble repository some birdlime from the newly discovered Sandwich islands.

doors.

doors to which they make use of a circular hole, just large enough for their bodies to pass through. The floors of these huts are perfectly smooth and clean, with a square hole¹ two feet deep in the centre, in which they make their fire, and round which they are continually warming themselves, on account of the great cold. Such habitations also secure them, when not employed out of doors, from the wind and noxious animals.

The men however do not wear any covering, except the cold is intense, when indeed they put upon their shoulders the skins of sea-wolves, otters, deer, or other animals: many of them also have round their heads² sweet-smelling herbs. They likewise wear their hair either dishevelled over their shoulders, or otherwise *en castaña*³.

In the flaps of their ears they have rings like those at the end of a musquet⁴.

They bind their loins and legs quite down to the ancles, very closely, with strips of hide or thread.

They paint their face, and greater part of their body, regularly either with a black or blue⁵ colour.

Their arms are covered with circles of small points in the same manner that common people in Spain often paint ships and anchors.

¹ Oyo or eye literally.

² Una rueda, literally a garland in the form of a wheel.

³ The Spaniards apply *castaña* to a particular method of dressing the hair—*peinado en castaña*, literally signifies, hair dressed to resemble a chestnut tree.

⁴ I am informed by a gentleman long resident in Spain, that it is not unusual to have rings so placed, and that they are of use to prevent the knapsack from falling off.

⁵ Azarcon.

The women cover the tops of their heads with an ornament like the crest of a helmet^x, and wear their hair in two tresses^y, in which they stick many sweet-smelling herbs. They also use the same rings in their caps (which are of bone) as the men are before described to do, and cover their bodies with the same skins, besides which they more decently wear an apron of the same kind, about a foot wide, with some threads formed into a fringe. They likewise bind their legs in the same manner with the men.

The underlip of these women is swelled out into three *fascias*, or ridings, two of which issue from the corners of the mouth to the lowest part of the beard^z, and the third from the highest point, and middle of that point to the lower, like the others^a, leaving between each a space of clear flesh, which is much larger in the young than in the older women, whose faces are generally covered with punctures^b, so as to be totally disfigured.

On their necks they wear various fruits^c, instead of beads; some of these ornaments also consist of the bones of animals, or shells from the sea-coast.

This tribe of Indians is governed by a ruler, who directs where they shall go both to hunt and fish for what the community stands in need of. We also observed that one of these Indians always examined carefully the sea-shoar, when we went

^x Copa de timbras.

^y Colgadas par las mefillas.

^z That is, I suppose, what would be beard in men.

^a I must own, that I do not thoroughly comprehend this description, though I think I cannot have mis-translated it.

^b *Picadura*, so that I conclude these swellings on the face, in such forms as described, must be occasioned by a sort of *tattooing*.

^c Rather feeds perhaps.

to our ships on the close of twilight^d, the occasion of which probably was to take care that all their people should return safe to their habitations about that time.

It should seem that the authority of this ruler is confined to a particular village of these habitations, together with such a district of country as may be supposed to belong to the inhabitants of such a community, who sometimes are at war with other villages, against whom they appeared to ask our assistance, making us signs^e for that purpose. There are however many other villages which are friendly to each other, if not to these Indians; for on our first arrival more than 300 came down in different parties, with their women and children, who were not indeed permitted to enter the village of our Indians.

Whilst this sort of intercourse continued between us, we observed an infant who could scarcely be a year old, shooting arrows from a bow proportioned to his size and strength, and who hit one's hand at two or three yards distance, if it was held up for a mark.

We never observed that these Indians had any idols, or made sacrifices: but as we found out that they had a plurality of wives, or women, at least, we inferred, *with good reason, that they were perfect atheists.*

Upon the death of one of these Indians they raised a sort of funeral cry, and afterwards burned the body within the house of their ruler; but from this we could not pronounce they were idolaters, because the cry of lamentation might proceed from affliction, and the body might have been burnt, that the corpse

^d *A la oracion*, in the original, at which time the Spaniards usually make a short prayer.

^e What these were is not stated.

should not be exposed to wild beasts ; or perhaps this might have been done to avoid the stench of the deceased, when putrefaction might commence.

We were not able to understand one of their regulations, as they permitted our people to enter all their houses, except that of their ruler ; and yet when we had broken through this etiquette, we could not observe any thing different between the *palace*, and the other huts.

It was impossible for us to understand their language, for which reason we had no intercourse but by signs, and therefore both parties often continued in a total ignorance of each other's meaning : we observed however that they pronounced our words with great ease^f.

Their arms are chiefly arrows pointed with flint, and some of them with copper or iron^g, which we understood were procured from the N. and one of these was thus marked C_u. These arrows are carried in quivers of wood or bone, and hang from their wrist or neck.

^f From hence it may be inferred, that these Indians pronounce gutturally, as all the nations of Europe indeed do, except the English, French, and great part of Italy.

^g Such are to be seen at Sir Ashton Lever's Museum from K. George's found N. Lat. 50. which confirms the journal in their being brought from the North. I should conceive that the copper and iron here mentioned must have originally been bartered at our forts in Hudson's Bay, with the travelling hordes of Indians who resort there at stated times. Some of our own people are also very enterprising in their excursions, as one of them within these few years hath been as far as N. Lat. 72. W. Long. from Fort Churchill 24. where he saw an open sea.—In the same noble Museum is a most particular bow from the W. coast of America N. Lat. 50. which exactly resembles one from the Labradore Coast.

But

But what they chiefly value is iron, and particularly knives or hoops of old barrels; they also readily barter for bugles, whilst they rejected both provisions or any article of dress. They pretended however that they sometimes approved the former, in order to procure our esteem; but soon after they had accepted any sort of meat, we observed that they set it aside, as of no value. At last indeed they took kindly to our biscuits, and really eat them.

Amongst these Indians there was one who had more familiar intercourse with us than all the rest, sitting down with us in sight of his countrymen.

They used tobacco, which they smoaked in small wooden pipes, in form of a trumpet, and procured from little gardens where they had planted it ^b.

They chiefly hunt deer, cibusos, sea-wolves, and otters, nor did we observe that they pursued any others. The only birds we met with on this part of the coast were daws, hawks, very small paroquets, ducks, and gulls; there were also some parrots with red feet, bills, and breasts, like lorics both in their heads and flight.

The fish on that coast are chiefly sardines, pejeroy ⁱ, and cod; of which they only bring home as much as will satisfy the wants of the day.

We tried to find if they had ever seen other strangers, or ships than our own, but though we took great pains to inform ourselves on this head, we never could perfectly comprehend what they said; upon the whole we conceived that we were the only foreigners who had ever visited that part of the coast.

^b It need scarcely be observed that tobacco is an indigenous plant in N. America, as it is also of Asia.

ⁱ In this and other instances where I do not know the animal alluded to, I shall give the Journalist's name.

We likewise endeavoured to know from them whether they had any mines or precious stones; but in this we were likewise disappointed.

What we saw of the country leaves us no doubt of its fertility, and that it is capable of producing all the plants of Europe. In most of the gullies of the hills there are rills of clear and cool water, the sides of which are covered with herbs (as in the meadows of Europe) of both agreeable verdure and smellⁱ. Amongst these were Castilian roses, smallage, lilies, plantain, thistles, camomile, and many others. We likewise found strawberries, raspberries, blackberries, sweet onions, and potatoes, all which grew in considerable abundance, and particularly near the rills. Amongst other plants we observed one which much resembled percery (though not in its smell), which the Indians bruised and eat, after mixing it with onions.

The hills were covered with very large, high, and strait pines, amongst which I observed some of 120 feet^k high, and 4 in diameter towards the bottom.

All these pines are proper for masts and ship-building.

The outline of the port is represented in Chart the 6th^l, which was drawn by D. Bruno Heceta, D. Juan Fr. de la Bodega, and myself. Though the port is there represented as open, yet it is to be understood that the harbour is well sheltered from the S. W. W. & N. W. as also from the N. N. E. & E.

[This discovery was made by the schooner on the 9th of June.]

ⁱ Perhaps the accounts given by navigators of the beauty of a country or its productions after a long voyage may be not entirely relied upon, as they are commonly exaggerated.

^k Sefanta varas.

^l These Charts, which amount to nine, have never been transmitted to England.

In the W. part there is a hill 50 fathoms^m high, joining to the continent on the N. side, where there is another rising of 20, both of which afford protection not only from the winds, but the attack of an enemy.

At the entrance of the port is a small island of considerable height, without a single plant upon it; and on the sides of the coast are high rocks, which are very convenient for disembarkingⁿ; goods also may be shipped so near the hill^o, that a ladder may be used from the land to the vessel; and near the sand are many small rocks, which secure the ship at anchor from the S.E. and S. W.

We completed our watering very early from the number of rills which emptied themselves into the harbour; we were likewise as soon supplied with wood.

We paid great attention to the tides, and found them to be as regular as in Europe.

We made repeated observations with regard to the latitude of this harbour, and found it was exactly 41 degrees and 7 minutes N. whilst we supposed the Longitude to be 19 degrees and 4 minutes W. of S. Blas.

We had thus thoroughly investigated every thing which relates to this harbour, except the course of a river which came from the S. W. and which appeared whilst we were at the top of the hill^p. We took therefore the boat on the 18th, and found that the mouth was wider than is necessary for the discharge of the water, which is lost in the sands on each side, so that we

^m Tueffas.

ⁿ By the water being deep close to these rocks.

^o Sc. That of 50 fathoms in height.

^p The going thither hath been before mentioned.

could not even enter it except at full tide. However we left our boat, and proceeded a league into the country, whilst the river continued of the same width; viz. 20 feet, and about five deep.

On the banks of this river were larger timber trees than we had before seen, and we conceived that in land-floods the whole plain (which was more than a quarter of a league broad) must be frequently covered with water, as there were many places where it continued to stagnate.

We gave this river the name of *Pigeons*, because at our first landing we saw large flocks of these, and other birds, some of which had pleasing notes.

On the sides of the mountains we found the same plants and fruits, as in the more immediate neighbourhood of Trinity-Harbour.

On the 19th of June, at 8 in the morning, we took up our anchors, and sailed with a gentle breeze from N. W. which had continued in the same direction all the time we were in port. It fell calm however at ten, on which we cast anchor about a cannon's shot from the little island, where we had ten fathom water, and a muddy bottom.

On the 20th in the evening the wind blew again from the N. W. and we sailed to the E. S. W. & S. E. the wind continuing N. W. which made the sea run high.

On the 21st was new moon, and the wind veered about to the W. with small rains and mists, which separated the two ships for six or eight hours, during which we made our signals by lights, and firing guns.

In order to get into the course we were to steer, if the wind proved favourable, I mentioned to our commander what I had read

read in D. Juan Perez's journal⁹, which had been delivered to him, where it was observed that this navigator had the winds from the S. & S. E. with which it was easy to run along the coast, to a high Northern latitude, and for that reason Perez was of opinion that the coast should not be approached till 49, in which I agreed with him. Our commanders indeed kept as much to windward as possible in order to take advantage of the wind, when it should become fair; but it soon changed to the W. & N. W. which drove us on that part of the coast which we wanted to avoid.

On this same day we repaired several damages which our ship had suffered, with the greatest alacrity, in hopes of prosecuting our discoveries, and found that she sailed better comparatively with the frigate than she had done before¹⁰.

On the 2d of July some other damages were repaired.

Although we laid great stress upon getting to the Westward, in order that we might afterwards proceed N. as also discover some port in a lower latitude than 65, yet we were not able to effect this, as the wind from being W. turned to the N. W. and drove us upon the coast [too early].

On the 9th of July I conceived myself to be in the latitude of the mouth of a river¹¹, discovered by John de Fuca (according to the French map) which we therefore endeavoured to make for, whilst at the same time we observed that the sea was coloured, as in soundings; many fish¹², reeds 20 feet long, and the *Orange-*

⁹ It appears afterwards that this D. Juan Perez was *ensign* on board the frigate, and that he had sailed in a former voyage of discovery to a considerable N. Latitude on the W. coast of America.

¹⁰ The particulars of these repairs, as also in what respect she sailed better, are omitted as uninteresting.

¹¹ Perhaps *gulf* [boca].

¹² *Toninas*, supposed to be porpoises.

Leads^u likewise appeared; all of which circumstances shewed that we were not far distant from the coast.

The same day both wind and sea increased so much that our deck was thoroughly wetted, and our cistern of water also was much damaged, on which account it became necessary to steer S. W. from five in the evening till day-break, when the sea became more calm, and wind more fair; so that we sailed N. and a point to the E. hoping to discover the land.

At sun-set the horizon was more clear, and the signs of approaching the coast greatly increased; as we could not distinguish it however we kept in the wake of the frigate, by very clear moonlight.

On the 11th at day break^l the sky was very bright, there was an appearance of soundings, much sea-weed, many birds, and the greatest signs of being near land. In effect at 11 the sun shone, and we distinguished the coast to the N. W. when we were about 12 leagues from it.

In the evening both wind and sea rose so much that the frigate thought it right to keep us in sight, and we were much fatigued by the violence of the weather.

On the 12th we had got five or six leagues to the N. of the frigate, whilst we were but three leagues from the land, with a more favourable wind and calmer sea, so that we joined her by eleven. At six in the evening the coast was not more distant than a league, when we distinguished various headlands, many small islands, as also mountains covered with snow.

We likewise found a barren island about half a league in circumference, which we called *de Dolores*.

^u A sea-plant before described.

We now carried all the sail we could to follow the frigate, but we could not do so at the proper distance, in so much that at sunset we lost sight of her, and although during the whole night we hung out lights, fired our guns, as also rockets, she never answered our signals, from which we concluded that they could not be distinguished by our companion.

On the 13th however the frigate appeared at a great distance, and seemed to be making for the coast.

We now founded, and found 30 fathoms of water, casting anchor two leagues and half from the land. At twelve on the same day we saw the frigate still at a greater distance to leeward, though she endeavoured to approach the coast. On this we set sail to join her, keeping at the same time as near to the land as we could, and being not farther distant than a mile, we plainly distinguished, as we passed to the S. W. the plains, small detached rocks, and low headlands, till six in the evening. As we could not however find any port, and could not bear to lose the Northing we had gained with so much trouble, we determined to cast anchor near a point, where we thought we should be able to procure wood and water, as well as masts.

The frigate was now not more than half a league distant, and we therefore made a signal to her to cast anchor, having eight fathoms of water upon sounding.

After this I soon went on board the frigate, the Captain of which told me that the Commander of the schooner should come to him, in order to hold a council, whether the schooner should proceed or not to a higher latitude, as every minute we stayed longer on the coast, would subject us to greater risques, both from the winds and sea. This was also the more to be dreaded, as the whole crew of the frigate had been sick for the two last days, whilst the commander himself was far from well. The
captain

captain of the schooner therefore was to keep near, and jointly take possession of this part of the coast. I accordingly carried these orders to the schooner, whose captain directed that the next day we should join the frigate.

In the mean while nine canoes of tall and stout Indians appeared, who invited the crew of the schooner with great cordiality to eat, drink, and sleep with them.

Our commander took care to regale them in the best manner he could, and particularly their chieftains, as well as those who came the most readily on board, giving them whatever they seemed most to desire.

The Indians, being obliged by these civilities, rowed near to our ship, making friendly signs, and as we answered by the same civilities, they left us at nine, and soon returned with fish of many sorts, *pagro*, whale, and salmon, as also flesh of several animals, well cured under ground. These presents, in sufficient abundance, were offered to our commander, after which they returned to their villages, leaving us in high admiration of their noble proceedings.

On the 14th in the morning the sea ebbed so low, that the ridges of rocks appeared along the coast, which prevented us from then sailing, and obliged us to wait for the full of the tide, which was to happen at 12 at noon. During this interval the Indians trafficked with us for various skins of animals, for which they expected some pieces of iron in exchange, which they manifested by putting their hands upon the rudder-irons*; our people therefore procured them such, from old chests, after which they returned to their village, making the same signs as they had done the day before.

* Los Machos del timon.

On the 1st of July we were to go on shore by order of our commander; and as we were still to continue our voyage for some time, it was necessary we should procure a sufficient quantity of water (so much being used since we sailed from Port Trinity) though hitherto we had not been able to effect this from want of a proper tide, which at the same time prevented us from getting wood and a mast. For this reason such part of the crew was pitched upon who were likely to be most active in the service, each of them taking a gun and pistol, and some of them a cutlass^y and cartridge-box, the whole party being put under the command of Pedro Santa-Ana^z, who always distinguished himself upon such occasions. They also took with them hatchets, and were directed to send us back the boat, that we might fill it with casks, after which they were to carry them to that part of the coast where they could soonest compleat their watering.

Our detachment therefore contrived to land where there was the deepest water, and the nearest possible to a river. They had scarcely done this, however, when the Indians rushed out from the mountains to the number of 300, and surrounding our seamen immediately, we concluded that the whole detachment would have been cut off, as we only perceived a single fire from our people, and that two of them running to the shore threw themselves into the sea, whose fate we could not know on account of the shallows of the coast.

As we therefore could not help our comrades, by not having sufficient depth of sea for our vessel, we fired our great guns and

^y Sabre.

^z He is stated to have been contro-maestre, or perhaps master's mate.

muskets; but as our shot did not reach the Indians, nor could they know what damage we might do them at a less distance, they did not move at all, or desist from their treacherous attack. On this, not being able to succour our comrades, we hoisted a signal of distress, which the frigate being so far off could not distinguish. The Indians however at eleven returned to their villages, whilst we neither could see our seamen or their boats.

By twelve at noon it was full sea, and we endeavoured to reach the frigate, every one exerting themselves to the utmost; our whole crew, indeed, now consisted of but five men and a boy, who were in health, with four that were sick.

As soon as we had set sail, nine canoes of Indians, with an increased number of men on board, placed themselves at a fixed distance from us, whilst one of them, with only nine chieftains^a on board, rowed pretty near to the side of our vessel, offering us, whilst their bows were unbent, some handsome jackets, and practising their former arts of deceit, by tempting us with the provisions they had before supplied.

But we were now upon our guard, and preparing for our defence, though we still thought it right on our part to entice them nearer, by shewing bugles and other trifles, which had as little effect upon our enemies, who contrived however to make signs that we should go on shore. At last they were tired of these overtures, and knowing the small number of our crew, they made a shew of surrounding our vessel; holding their bows bent against us.

On the other hand, though we had but three on board able to handle a musquet (viz. our Captain, his servant, and myself)

^a So the original; and I conclude the meaning to be, that in this canoe there were none but chieftains.

yet we soon killed six of the Indians, as also damaged their canoe. They now experienced how much we were able to annoy them, and seemed to be astonished. They afterwards covered their dead with their jackets, and at last returned to such a distance that we could not reach them with our shot; in which retreat they were assisted by the other canoes, who had not before supported them. They then held a council, which ended in their going back to their village.

Our commander, in the mean time, hearing the discharge of our musquets, thought we should want ammunition, and sent us some in the launch, in which we cast anchor along side of the frigate. We then went on board, hoping that we should be permitted to use the launch, land with an armed force, destroy the villages of the Indians, and try to recover those of our own people, who perhaps had hid themselves in the woods, or had saved themselves by swimming.

On this point we held a council, at which the commander stated our dangerous situation, the difficulties in landing we were to expect, both from sea and weather, and the distance of the village; he also added, that the destruction of our people was almost distinctly seen, and therefore that there could be little probability of any one's having escaped.

D. Cristoval de Revilla and D. Juan Perez were of opinion we should directly sail, although the commander^b and myself pressed taking some revenge for the butchery of our comrades, as likewise waiting to know the fate of those who might have survived by swimming, and who must necessarily surrender themselves to the Barbarians. We also dwelt upon the strong presumption, that it would be agreeable to his majesty that the In-

^b The commander seems to have given different advice before.

dians should feel the superior force of his arms, who would otherwise treat future discoverers in the same manner; we added, that though the village was not near, yet if we waited till next day we might reach it, whilst it might be expected that the winds would not blow with violence at the new moon.

The reasons on both sides having been thus urged, the commander readily consented to follow the advice and wishes of the majority.

When this point was decided, our commander took our opinions with regard to the schooner's proceeding, as she was in so bad plight; when (except D. Cristoval de Revilla) we all agreed that she should continue to prosecute her voyage. These our opinions were reduced into writing on the 16th.

[These are again omitted, as probably uninteresting to the reader: but both the captain of the schooner, and the journalist agreeing to proceed;]

On the 14th of July we sailed, at five in the evening, from this road, which lies in 47. 21 N. Lat^c. the wind being N. W. and N. N. W. by which we left the coast, steering S. W.

On the 19th our captain received some letters from Don Juan Perez (ensign^d of the frigate) as likewise the surgeon, in which they stated the then health of their crew, and desiring our opinion thereon.

[Here follow the answers of the captain of the schooner and Maurelle the journalist, who, to their great credit, persist in their voyage of discovery.]

^c The longitude is not stated, but by the ship's reckoning I find that the W. Longitude from St. Blas was 21 19.

^d Alferéz.

Till the 24th the wind continued N. W. & N. when the schooner received from the frigate a cannon, with a box of powder and ball.

From the 24th to the 30th we steered N. W. when at sunset there were great threatenings of a storm, and the weather becoming dark, the sea ran so high, that we could not distinguish the lights of the frigate, and were obliged to make our signals by guns and rockets.

On the 31st it continued to be so dark that even during the day we could not see the frigate.

On the 1st of August at day-break we had the same dark weather, so that we could not distinguish at half a league's distance, nor had we sight of the frigate: we kept on however (the wind abating) with a Westerly course, till the 4th, when we supposed ourselves to be 17 leagues W. of the continent.

On the 5th the wind began to be favourable from the S. W. and the frigate still not appearing, our captain consulted us whether we should prosecute our discoveries. We had indeed for the last two months been reduced to short allowance of provisions, and a quart of water each day, since we left the last land; our bread also was almost spoiled by the sea getting into the bread-room, and the season for sailing to the Northward began almost to end. Yet notwithstanding these, and other objections, we continued unanimously of opinion to execute our orders; as, if we did otherwise, his majesty must have incurred the expence of a fresh expedition. Our crew likewise was now animated, and every one agreed to contribute proportionably for a solemn mass to our Lady of Bethlem, intreating her that we might be able to reach the Latitude enjoined by our instructions. This proposal of the crew being communicated to the captain, he applauded much their ardour and devotion, which was rewarded before evening, by the winds blowing from a favourable quarter.

On

On the 10th there was a full moon, and the wind blew fresh from the S. W.

On the 13th we conceived ourselves to be in soundings from the colour of the sea; at the same time appeared *Orange heads*, many flags, many birds, with red feet, breast, and beak, as also many whales; all which were certain signs of our nearer approach to land.

During the 14th and 15th these signs increased, when we found ourselves in N. Lat. 56, 8. & 154 leagues W. of the continent, and 69 leagues from an island to be found in our chart^e, which likewise pointed out an archipelago in the same parallel. This search however was attended with great difficulty, as the wind blew with great violence, whilst the mists did not permit us to distinguish any distant object.

At noon on the 16th we saw land to the N. W. at the distance of six leagues, and it soon afterwards opened to the N. E. presenting considerable headlands and mountains, one of which was of an immense height, being situated upon a projecting cape, and of the most regular and beautiful form I had ever seen. It was also quite detached from the great ridge of mountains. Its top was covered with snow, under which appeared some wide gullies, which continue till about the middle of the mountain, and from thence to the bottom are trees of the same kind as those at Trinity^f.

We named this mountain *St. Jacinthus*^g and the cape *del Enganno*^h, both of which are situated in N. Lat. 57. 2. and by two

^e I should rather suppose that this was the chart of D. Juan Perez, who was on board, and had been on a former voyage of discovery.

^f Before described to be pines.

^g There is a monastery of *St. Jacinthus*, at a small distance from Mexico. Gage's Survey of the W. Indies.

^h Or of deceit.]

repeated observations at a mile's distance we found the W. Long. from St. Blas to be 34. 12.

From this cape we fixed the principal points on the coast, as will appear by our chart.

On the 17th the wind blew moderate from the S. by means of which we entered a bay that was three leagues wide at its mouth, and which was protected from the N. by cape *del Enganno*; on the opposite side to this cape we discovered a port more than a league wide at the entrance, perfectly secure from all winds but the S. We nearly approached the sides of this bay, and never found less than fifty fathoms in depth; but we could not perceive any kind of flat or plain, as the mountains come quite down to the shore. Notwithstanding this we distinguished a small river, which (it being night) we did not further attend to, but cast anchor in 66 fathoms, the bottom being a clay, as we found upon drawing up our anchors.

This port is situated in 57. 11 N. Lat. and 34. 12. W. Long. from S. Blas; which, together with the headland, we named Guadelupe.

On the 18th we sailed again, with little wind; when two canoes, with four Indians in each, appeared (viz. two men and two women) who, however, did not seem to wish to come on board us, but only made signs that we should go on shore.

We continued our course however (the wind being N. W.) till nine in the morning, when we entered another port, not so large indeed, but the adjacent country much more desirable to navigators, as a river empties itself here of eight or ten feet wide, whilst the harbour is protected from almost every wind, by means of a long ridge of high islands, almost joining each other, with anchorage of 18 fathoms, the bottom being a sand. Here we cast anchor at a pistol's shot from the land, where we saw, on the

the bank of the river, a high house, and a parapet¹ of timber supported by stakes drove into the ground, where we observed ten Indian men, besides women and children.

We named this port *de los Remedios*, and found that it was situated in 57. 18 N. Lat. and 34. 12 W. Long. from St. Blas.

The same day, having prepared ourselves for defence against the Indians, five of us landed about noon, when, having posted ourselves in the safest place we could fix upon, we planted the crosses with all proper devotion, cutting another on a rock^k, and displaying the Spanish colours, according to our instructions on that head.

When we had thus taken possession of the country we advanced quite to the bank of the river, in order to fix upon the most convenient place for water, which we were in great want of, as well as still greater of wood; so that we were under an absolute necessity of providing ourselves with both. Having fixed upon the proper spot, we now returned to the ship, the Indians having not come forth from their parapet.

We soon however perceived them approach the place where we had fixed the crosses, which they took away, and fixed it on the front of their house, in the proper direction, whilst at the same time they made us signs with their open arms, that they had thus taken possession of our crosses.

On the 19th we landed at a point somewhat distant, to procure wood and a mast, whilst we secured our retreat by a proper disposition of swivels and musquetry.

Afterwards we returned to the mouth of the river, to fill our barrels with water, when the Indians hung out a white leaf^l from

¹ Probably this was a stage for curing fish, of which these Indians soon offered a present to the Spaniards.

^k Penna.

^l Oja.

a pole, fixed very near to their house, and advancing to the opposite bank without any arms, they made several signs, which we did not comprehend. We however signified to them in the best manner we could that we came only for water ^m; on which the chieftain of the Indians, conceiving that we were very dry, brought with him a cup of it, with some cured fish, as far as the middle of the river, where it was received by one of our seamen, who directed the Indian to present the water and fish to our captain, who immediately returned him in exchange bugles and small pieces of cloth. The Indians however were not to be so satisfied, but insisted on other barter for the water, which we refusing on our part, they threatened us with long and large lances pointed with flint, which we paid no other attention to but that of securing our post. Our assailants at last finding that
we

^m The behaviour of these Indians in their intercourse with the Spaniards seems to prove a rather superior degree of civilization, than is generally experienced from Barbarians.

We find by this account, that the Spaniards, having fixed a cross upon their ground, the Indians resent this mark of ownership, and (as a Spaniard would have done in his own country if his neighbour thus endeavoured to make good a claim) immediately remove the cross; in which the laws of Europe would certainly have supported them. The leaving any symbol of possession upon an uninhabited and uncultivated district may indeed give a right against posterior claimants who cannot set up a better; but this part of the American continent was not only peopled, but we are informed a house and fishing-stage had been built upon it.

We find by this journal, that the Viceroy of Mexico most particularly enjoined by his instructions that possession should be thus taken, conceiving probably that the converting Indians to the Christian faith, entitles the converter to every thing which may belong to the converts. This flimsy right however could not be maintained an instant even upon this ground, in any Court of common sense, for the Spaniards neither intended then, or hereafter, to make a settlement in this Northern Latitude, without which it is impossible that such pious intentions could be accomplished.

we did not wish to surround them, but held them in contempt, went back to their houses, as we did to our ship, having procured the wood and single mast which we wanted, though not so much water as would have been convenient; but we did not think it right to carry away more, that we might not further irritate the inhabitants.

At the mouth of the river there was abundance of fish, of which our people caught many whilst we were on shoar, and we could have procured a sufficient quantity to have lasted us a great while, had we been prepared with proper tackle. They were well tasted, and in vast numbers.

The mountains were covered with the same sort of pines as at *Trinity*: the inhabitants also use the same dress, only rather longer; they likewise wear a cap over their hair, which covers their whole head.

The Spaniards, after this, inform the Indians, by signs, that they want water, on which one of the Americans brings a cup thus filled, with some cured fish, half way across the river, and stops there till a Spaniard advances the other half to receive it, whilst bugles and other trifles are offered in exchange by the Spaniards, and refused by the Indians, who insist on a better sort of payment.

It is evident, by the presents of the cup of water* and cured fish, that the Indians wished to supply all the wants of these strangers as far as they were able, notwithstanding they had thus endeavoured to gain a wrongful possession of their country; they seem therefore to have had a right to that species of barter which they stood most in need of.

This contempt for bugles, and other trifles, offered by the Spaniards, is a further proof of the civilization of these Indians, whose progenitors, it should seem, must be rather looked for on the Asiatic, than Labradore coast, as I am informed that they have beards, which the Indians of the central and Eastern coast of N. America have not. It is said indeed by some, that these Indians eradicate their beard from its earliest appearance; but I can as little believe that this can be effected by any industry, as that they could by any art or pains make hair grow upon the palms of their hands.

* I am informed, that the inhabitants of K. George's Sound, on this same coast, insisted upon Capt. Cook's paying for the grass he had cut.

We found the weather excessively cold, with much rain and fogs, nor did we see the sun for the three days we continued here. At the same time we had only faint land-breezes; from all which circumstances, as well as the great fatigue of our seamen, little cover from the bad weather, and great want of proper cloaks to keep them warm, our ship's company so sickened, that we could only muster two men for every watch.

On the 21st we steered N. W. the wind being at S. E. in order to discover whether there was any land to the E. when we might reach two degrees of higher latitude to the N. or whether it did not lie to the W. which we conceived to be more probable.

On the 22d we knew, by our reckoning, that we must be near the Eastern part of the coast^m, as we found ourselves by an observation at noon to be in 57. 18 N. Lat.

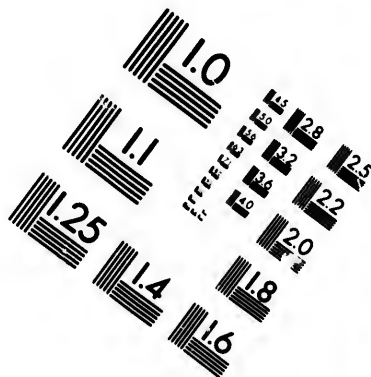
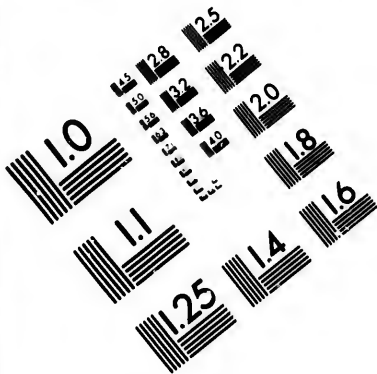
At two in the evening the wind blew fresh at N. W. when we wanted to gain so much Westing as to permit the reaching a higher Northern Latitude, in which attempt we must have therefore lost many days, whilst the season for prosecuting our discoveries drew so near to an end. To this it must be added, that the sickness of our crew increased every day, by their great fatigues, on which account we desisted from our Northern course, and steered S. E. approaching the coast at a less distance than a mile, and endeavouring to observe every projection of it.

Though we now therefore determined to return to S. Blas, yet we comforted ourselves in having reached so high a latitude as 58ⁿ, beyond what any other Navigators had been able to effect in those seas, though our vessel sailed so indifferently that we often had thoughts of quitting her.

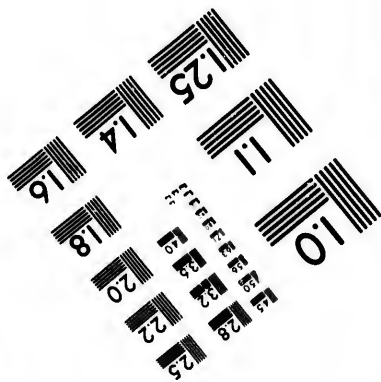
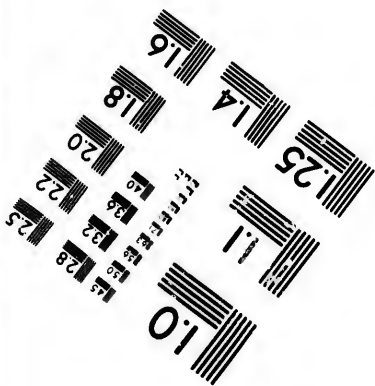
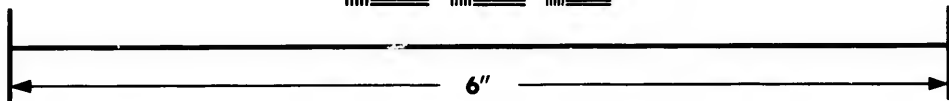
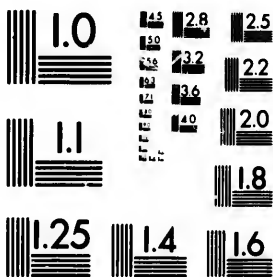
^m Sc. as laid down by Bellin.

ⁿ By the table only 57. 57. Capt. Cook however is said to have traced the W. coast of America beyond 60 N. Lat. when it runs for some degrees nearly E.





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In sailing along the coast we took indefatigable pains to observe with precision how it lay, from which innumerable objections offered themselves to M. Bellin's Charts.

This engineer hath chiefly founded himself upon the tracks of two Russian Navigators, Beering and Tschirikow, who were sent upon discoveries in 1741. It is evident however that the Russian maps are not to be depended upon, for if they had been tolerably accurate we should have fallen in with the land to the Westward, more easily than to the East^o.

Bellin is not less erroneous in laying down the American coast, and indeed it is not at all extraordinary that his errors should be so numerous, as he had no materials for his charts, but his own fruitful imagination; no navigator having visited many parts of the American continent in these high latitudes but ourselves.

We now attempted to find out the straits^p of Admiral Fonte, though as yet we had not discovered the Archipelago of S. Lazarus, through which he is said to have failed.

With this intent we searched every bay and recess of the coast, and sailed round every headland, lying to during the night, that we might not lose sight of this entrance; after these pains taken, and being favoured by a N. W. wind^q, it may be pronounced that no such straits are to be found.

On the 24th at 2 in the evening, and being in 55. 17 N. Lat. we doubled a cape, and entered into a large bay, discovering to

^o The Journalist seems to speak here with regard to the then situation of the schooner. Other objections follow to Bellin's map, which cannot be comprehended without having the chart before one.

^p Entrada, or entrance into them rather. In a map which I have procured, this entrance is laid down in N. Lat. 48. and said to have been discovered by Juan de Fuca in 1592.

^q It must now be recollected that the schooner is returning to S. Blas.

the N. an arm of the sea, where the temperature was very unpleasant^a, but the sea perfectly calm, being sheltered from the wind. This *arm* also affords excellent water from rills and pools, whilst the anchorage is good, with a vast plenty of fish. It is delineated in one of our charts.

As we were now becalmed, the schooner rowed till we cast anchor in the entrance or mouth, the water being 20 fathoms, and the bottom soft mud. At this time we were not more than two musquet shots from the land, and wished to lay down the interior parts, but were not able to effect this for want of wind: We now experienced a pleasant temperature, which probably arose from some large volcanoes, the light of which we perceived during the night, though at a considerable distance. This unexpected warmth totally restored the health of our crew^b.

As we thus lay at anchor, and so much to our satisfaction, our Captain gave me orders (being himself indisposed) that I should land with some of our crew, and with the same precautions as at *Los Remedios*. He also directed me to take possession for his Majesty of this part of the coast, and name it Bucarely^c. I accordingly obeyed his instructions in all particulars, without seeing a single Indian, though there were the following proofs of the country's being inhabited; viz. a hut, some paths, and a wooden outhouse^d. On the 24th we went a second time on shore, and provided ourselves with as much wood and water as we wanted.

^a It is to be supposed on account of the cold.

^b It must be recollected, that they were now sheltered from the wind as well as warmed by the Volcanoes.

^c Then Viceroy of Mexico.

^d Corral.

We made two observations on different days, and found our latitude to be 55. 17. and W. Long. from S. Blas 32. 9.

The mountains near this port or inlet are covered with the same trees as those at the other places, where we had landed, but I can say nothing with regard to the inhabitants, from what hath been before stated.

To the S. we saw an island of a moderate height, at the distance of six leagues, which we named S. Carlos, and sailed on the 29th with a gentle breeze at N. but which fell calm at noon, when we were opposite to a bare island, which scarcely appeared above the sea; there are many rocks however, both to the E. and W. Here we anchored in 22 fathoms, and about two leagues distant from the island of S. Carlos.

In this situation we observed a Cape, which we named St. Augustine, at the distance of four or five leagues; after which the coast trended to the E. so much that we lost sight of it. We found also that there were here such violent currents in opposite directions, that we could not sound. As these currents rose and fell with the tide, it should seem that this inlet hath no communication but with the sea.

This cape S. Augustine is nearly in 55 N. Lat. and we having heard that in a former voyage D. Juan Perez had discovered an arm of the sea in this same parallel, where there were many currents, we justly concluded this must be the same, though several seamen who were in that voyage, did not recollect either the cape or mountains in the neighbourhood, but this probably arose from their not approaching them in the same direction.

What we observed on this part of the coast strongly inclined us to have a more perfect knowledge of it; the wind however (it being new moon) became variable, and fixed at last in the S. W.

We

We concluded that it would thus continue till the full², which would prevent us from approaching the mouth of this bay, and consequently make it impossible to explore the sides of it. We likewise considered that we were now in such a latitude that we might easily reach 60 degrees if the wind was favourable³, that moreover we were provided with what we had occasion for, that the health of our crews was re-established, and that for all these reasons it would be better to attempt reaching the highest Latitude we could.

To these arguments it was added, that we should have fewer difficulties in this trial from our knowledge of the coast; and this measure being thus resolved upon, the two ships divided some cloaths² (which the schooner had on board, to truck with the Indians at Port Trinity) so that our people seemed now to have forgotten all their sufferings. We accordingly sailed, steering N. W.

On the 28th the wind was variable, obliging us to approach the coast at 55. 50. when it fixed in the evening to the S. W. according to our wishes.

On the 29th and 30th the wind was S. though often veering to the S. W. with occasional squalls and tornadoes, accompanied by high seas, which drove us on the coast in 56 70 from whence we clawed off with the land breeze and tornadoes, in which disagreeable situation we continued till the first of September.

During the two preceding days six of our crew were seized with strong symptoms of the scurvy, which not only shewed

² The Spaniards, during this voyage, seem to have paid great attention to the moon, as having an effect upon the wind.

³ A S. W. was so.

² This additional cloathing was probably thought necessary, as the ships were now to sail N. whilst the winter was approaching.

itself in their gums, but from the great swellings on their legs they had lost the use of them. From this calamity we could only muster two on each guard, one of which steered, and the other handled the sails. We unfortunately caught this terrible distemper from the seamen of the frigate, with whom we had occasional communication. In consequence of this distress we agreed now to return, making as many observations as we could in relation to the lying of the coast.

At the beginning of September the wind was variable, but on the 6th it fixed in the S. W. blowing with such force that at midnight we were obliged to take in all our sails, and turn the ship's head to the S. whilst the wind and sea increased, in so much that at two in the morning of the 7th neither vessel could resist its violence, though we each endeavoured to keep where we were, on account of the coast being at so small a distance.

Whilst we were thus employed a sea broke in, which damaged most of our stores. [The particulars of other damage to parts of the ship here follows, but is omitted for reasons that have been before mentioned.]

On this same day (viz. 7th of September), both wind and sea became more calm; on which we steered E. from 6 in the evening till day-break of the next day, when the wind was favourable from the N. W. and we pursued our intentions of falling in again with the coast, in Lat. 55. finding ourselves, since the storm, with only one seaman who could stand to the helm, whilst the captain or myself managed the sails.

The wind continuing favourable, our captain endeavoured to cheer those who were sick, but we could only prevail upon two of them who were recovering to assist us during the day; as for the master's mate, we conceived that he would die.

On

On the 11th we saw land, at the distance of eight or nine leagues, and in Lat. 53. 54. but as we wished not to approach, so near as not to be able to leave it, on account of our having so few hands capable of working, we kept at a proper distance, only having a view of it from day to day, and not examining its capes, bays, and ports.

In Lat. 49. however we endeavoured to draw nearer to the land, both because we were persuaded that the wind would continue favourable, and that some of the convalescents might now begin to assist us; so that in Lat. 47. 3. we were not farther distant than a mile, when we attended to all proper particulars*, as before.

On the 20th, at eight in the morning, we were within half a league, precisely in the same situation as on the 13th of July; we found however 17 leagues difference with regard to our Longitude.

On the 21st, being still nearer the coast, the wind blew from the S. & S. W. which, though moderate, obliged us to sail from the land.

On the 22d the wind was N. W. but as both the captain and myself were ill of a fever, the ship steer'd for the port of Monterey. This our sickness made the rest of the crew almost despair; for which reason the captain and myself shewed ourselves upon the deck as often as we could, in which efforts the Almighty assisted us.

On the 24th, finding ourselves somewhat better, we discovered the land in 45. 27. sailing along the coast at about the distance of a cannon's shot; and as we therefore could distinctly see every considerable object, we lay to during the night,

* That is, for laying the coast down in their charts.

hoping thus to find the river of Martin Aquilar, and continued this search till we were in Lat. 45. 50. when we distinguished a cape exactly resembling a round table, with some red gullies^b, from which the coast trends to the S. W. From this part rise ten small islands, and some others which are scarcely above the sea; the Latitude of this Cape hath before been mentioned, and its Longitude is 20. 4. W. from S. Blas. As we therefore could see nothing of Martin de Aquilar's River in this second trial, we conclude that it is not to be found, for we must have discovered it, if any such river was on this part of the coast.

It is said indeed that Aquilar observed the mouth of this river in 43°, but the instruments of those times^d were very imperfect. Allowing the error however to have been in making the latitude too high, and that therefore we might have found it in 42 or lower; yet this we can scarcely conceive to be the truth, as we examined all that part of the coast, except about fifty minutes of Latitude.

After this last return to the coast, we endeavoured to make for the port of S. Francisco, which having discovered in 38. 18. we entered a bay which is sufficiently sheltered from the N. and S. W. We soon afterwards distinguished the mouth of a considerable river, and some way up a large port exactly resembling a dock^e; we therefore concluded this to be the harbour of S. Francisco (which we were in search of), as the History of California places it in 38. 4.

^b Barancas.

^c This is stated before, when the river was looked out for in that latitude.

^d Viz. in 1603.

^e Digue.

We wished, on this account, to enter this port, which we should have easily accomplished, if the sea had not run very high. We began however to doubt whether this was really the harbour of S. Francisco, because we did not see any inhabitants, nor the small islands which are said to be opposite. In this state of suspense we cast anchor near one of the points which we called *de Arenas*, in six fathoms and a clay bottom.

A vast number of Indians now presented themselves on both points ^f, who passed from one to the other in small canoes made of *Fule* ^g, where they talked loudly for two hours or more, till at last two of them came along side of the ship, and most liberally presented us with plumes of feathers, rosaries of bone, garments of feathers, as also garlands of the same materials, which they wore round their head, and a canister of seeds, which tasted much like walnuts. Our captain gave them in return bugles, looking glasses ^h, and peices of cloth.

These Indians are large and strong, their colour being the same as that of the whole territory ⁱ; their disposition is most liberal, as they seemed to expect no recompense for what they had furnished us with: a circumstance which we had not experienced in those to the Northward.

We were not able to sound the interior parts of this port, on account of our sick, who were to be as soon as possible landed in a place of safety, in order that they might have the better chance of recovering.

^f Sc. Those just now named by the journalist *de Arenas*.

^g Some sort of wood, and probably well known in the province of Mexico.

^h In the former intercourse with the more Northern Indians the Spaniards never produced this article of barter, which seems to have been ill-judged economy. They were now returning however, and must have thrown away these trifles at S. Blas.

ⁱ It is not very clear whether the Journalist means by this of Mexico, or the whole N. Western continent of America.

Whilst we were in this port (which we did not conceive to be that of S. Francisco) we had no further intercourse with the inhabitants, and we prepared to clear the point *de las Arenas*, in order that, with a N. W. wind, the next day we might, with less difficulty, leave this part of the coast. Having effected this, we cast anchor in six fathoms, the bottom being a clay.

This port, which we named *de la Bodega*¹, is situated in 38. 18 N. Lat. and 18. 4 W. Long. from S. Blas.

On the 4th of October, at two in the morning, on the first flow of the tide, in a contrary direction to that of the currents, the sea ran so high that our whole ship was entirely covered by it, at the same time that the boat on the side of her was broken into shivers.

There is not sufficient depth of anchorage at the mouth of this port, for a vessel to resist this violence of surge, when it is occasioned by the causes before-mentioned.

If we had been apprized of this circumstance, we should have either continued where we were first at anchor, or otherwise sailed further from the mouth of the harbour.

In all parts of this port, which we had an opportunity of sounding, the bottom is nearly of the same depth^k. The entrance is very easy with the prevailing wind of N. W. but in leaving it, if the wind blows from the same quarter, it is necessary to get further out to sea from the *Points*^l. If the wind blows from the S. W. E. or S. it is not necessary to take this precaution^m.

¹ The Captain of the Schooner. The Latitude of this harbour coincides nearly with that discovered by Sir *Francis Drake*; but the Spaniards would scarcely insert this brave heretic in their Calendar.

^k A draft was made of this harbour.

^l *Se. de las Arenas*.

^m Because then the wind and currents do not oppose each other.

We observed, that the tides in this Latitude are regular, as in Europe, it being high water at noon, when the moon is new.

The mountains near this port are entirely naked in every part of themⁿ; but we observed that those more inland were covered with trees.

The plains near the sea-coast had a good verdure, and seemed to invite cultivation.

About eight in the morning of the 4th of October the sea became more calm, on which the Indians came round us as before, in their canoes, offering us the same presents, which had the same return.

At nine we set sail, and having doubled the point *del Cordón*^e we steered S. S. W. the wind being moderate, and at W. in order to reach a Cape, which appeared to the S. at the distance of about five leagues.

On the fifth we sailed near those small islands which the charts and history of California place at the entrance of the harbour of S. Francisco; but as we were very clear that the harbour which we had just left, was not that thus called, we continued to steer N. E. (and between some of these islands) in order to reach the Cape before mentioned, when we intended to approach the coast, and look out for the port of S. Francisco.

At noon on this same day we had an observation, and found these islands to be in 37. 55. N. Lat. lying to the S. W. of the Cape at the distance of three leagues.

As soon as we reached the Cape we ran along the coast which lay to the E. and N. E. about the distance of a cannon's shot; and by six in the evening we were not above two miles distant

ⁿ This probably arises from their being exposed to the N. W. which is the prevailing wind.

^e This point undoubtedly is marked in the Spanish Chart.

from the mouth of the harbour of St. Francis; but having no boat^p, or other convenience for this purpose, we resolved to stand for Monterey, and double another Cape, which projected still further from the coast^q.

At ten at night it fell calm; which continued till the 6th at noon, when the wind was moderate at W. and we steered S. S. W.

By eight at night the wind freshened from the N. W. with squalls and mists.

On the 7th, at eight in the morning, we conceived ourselves to be in the latitude of Monterey, which we endeavoured therefore to keep in, though the weather was so misty, that we could not see half a league.

At three in the evening we discovered the coast to the S. W. at the distance of a mile; and finding that we now entered a bay, we soon afterwards discovered the S. Carlos at anchor, and therefore knew that we were now in the port of Monterey. On this we fired some cannon, and boats immediately came out to us, by whose assistance we anchored in three fathoms, the bottom being a sand.

This port is situated in 36 44. N. Lat. & 17 W. of S. Blas.

On the 8th we landed our sick, and amongst the rest our captain and myself, who had suffered more from the scurvy than any of them. Not one of the whole crew indeed was free from this complaint.

We immediately experienced the kind offices of the Fathers established at this mission, who procured for us all the refreshments they were able, with the most perfect charity. In truth,

^p It having been demolished by a heavy sea not long before.

^q That is, than the before-mentioned Cape.

we could not possibly have so soon recovered from our distressed situation, but by their unparalleled attentions to our infirmities, which they removed by reducing themselves to a most pitiful allowance.

Don Fernando de Rivuera, who commanded at this port, was equally kind, in supplying our wants, so that in about a month we were pronounced to be so much better in point of health, that we determined to return to S. Blas.

We sailed therefore from Monterey on the 1st of November, and D. Bruno Heceta supplied us with some hands from the Frigate, the crew of which had not suffered so much from the scurvy as that of the schooner. At the distance however of two leagues it fell calm so that we continued in sight of the port till the 4th, the wind being at S. & S. W.

On the 4th at noon the wind was favourable from the N. W. and we continued steering S. till the 13th when we approached the coast of California in 24. 15. N. Lat. and kept along it till Cape St. Lucas, which we left at six in the evening on the 16th.

We suppose this Cape to be in N. Lat. 22. 49. & W. Long. from S. Blas 5. 0.

On the 16th we saw the Islands of Maria, and on the 20th in the evening we cast anchor in the port of S. Blas.

Thus ended our voyage of discovery; and I trust that the fatigues and distresses which we suffered will redound to the advantage and honour of our *invincible* Sovereign, whom may God always keep under his holy protection!

FRANCISCO ANTONIO MAURELLE.

Observations of the Journalist D. ANTONIO MAURELLE;
arising from what happened during the course of the voyage,
with regard to the best method of making Discoveries on the
W. coast of AMERICA, to the Northward of California.

IT may be objected, at the outset of these Observations, that the experience arising from a single voyage in those seas is not sufficient to form any solid advice on this head, which may be thoroughly depended upon. To this I answer, that our continuance on this coast was for more than eight months, and therefore must have afforded us sufficient grounds on which to build reasonable presumptions, though I cannot presume to offer them to future navigators in any stronger light.

There is no occasion to give any directions about the passage from S. Blas to Monterey, since this course hath been so frequently sailed after the establishment at the latter, and the best method of making this navigation is therefore so well known.

Suffice it then to say, that the short passage to windward, as far as the islands of Maria, is necessary, on account of the currents, which would otherwise soon carry a ship in sight of Cape St. Lucas, where probably the voyage would be retarded by calms.

Some are of opinion, that you should not sail Northward till you are considerably to the Windward of these islands; but I do not see the use of this loss of time, and think that it is sufficient just to get to the W. of them, and then steer Northerly on the very day you reach the parallel of the Marias.

In order to effect such voyage of discovery, it is necessary to gain as much W. Longitude as the winds will permit, which
blow

blow from the N. W. to the N. as far as 15 degrees W^a. and which only permit a course to the W. N. W. E. or E. S. E. whilst often such trade wind extends still further to the W. Notwithstanding this circumstance the ship should never lie to, much less steer Eastward, as thus the voyage would be much retarded.

From these 15 degrees of Westing, to 30 in the same direction, the wind is generally from N. E. to N. which will permit a N. W. course. It may perhaps be advisable even to get a Westing as far as 35 degrees, if the object of the voyage is to reach 55. 60. or even 65^b of Northern Latitude, because the greater the Westing, the greater is the certainty of S. & S. W. winds, which will be so favourable to such a destination.

If when this Westing hath been gained, the winds should prove variable, I should still advise a N. E. course^c. Under the supposition that the discoverer wants to fall in with the coast of America, in 55 N. Lat. he should keep between 35 & 37 W. Long. till he reaches that Latitude. If, on the contrary, he wants to explore the same coast in N. Lat. 60. I should then advise a N. W. course to be pursued till he hath gained a Westing of 39 degrees. If the navigator wishes to make discoveries even so high as 65 N. Lat. I conceive that he should then have a westing of 45 degrees, when he hath gained this parallel.

With these precautions I imagine that the persevering navigator would accomplish the height of his wishes.

^a i. e. probably from S. Blas.

^b It appears by the Journal, that they were instructed to proceed thus far N. if possible, which idea was probably taken from Ellis's Preface to the N. W. Passage, many extracts from which are made by Venegas, in his History of California, and particularly what relates to this supposed Latitude of 65.

^c *en el primer cuadrante*, as I conceive the Spaniards make the N. E. the first quarter; the S. E. the second; the S. W. the third; and the N. W. the fourth.

As accidents however will happen in all voyages, which may drive the ship upon the coast in a lower latitude, I would then by all means advise to gain a Westing, as far as 200 leagues from the land. But it must be remembered that at perhaps 150 leagues W. the wind may be variable, though I am confident it cannot be depended upon, as favourable for any time, and would soon veer to the N. W. For these reasons I hold it to be absolutely necessary, that a westing of at least 200 leagues should be procured, till N. Lat. 50 is reached.

If the ship is blown upon the coast in lower latitudes, the crew not only suffers commonly from fatigue and sickness, but so much time is lost, that winter comes on before the great object of such a voyage can be compleated. I would therefore advise sailing from S. Blas at the end of January, or at latest the beginning of February; and for this additional reason, that the crew would not suffer so much from change of temperature in the different climates, if without stopping in any lower latitude, they at once come upon the coast of America in 55. Here they might rest a little from their fatigues, procure water, recover by that fine air ^d if indisposed; besides, that in this latitude there would be no occasion to lose time in procuring a further Westing, as here the winds are very variable.

It need be scarcely said, that the knowing the weather, which commonly prevails in these seas, is of much importance to navigators; and it is still less necessary to advise, that particular attention should be paid to the appearances in the horizon which

^d The port of *los Remedios* is here alluded to, which is in 57. 18. and where the crew recovered very fast from the warmth of the air, attributed to Vulcanoes in the neighbourhood. S. Blas, being in N. Lat. 22. is consequently more cool in January than perhaps any month of the year, whilst they would be in 55 perhaps at Midsummer.

threaten

threaten a storm. These however are not much to be apprehended till N. Lat. 40. as between S. Blas and that parallel, such lowering clouds either disperse themselves very soon, or fall in rain, which lulls the sea.

From 40 to 50 degrees N. (supposing the ship to have gained a Westing of 200 leagues from the American coast,) these appearances are more to be watched, as in these latitudes the S. wind blows fresh, though pretty constant.

It is to be observed also, that the S. W. in these parallels is sometimes stronger than the S. for which reason I would advise not to carry much sail.

This last precaution is still more necessary in higher latitudes than 50, since the S. W. often blows so violently that it is prudent to lie to, as these squalls do not last for any time.

I also particularly advise the navigator to guard against the effects of winds from the E. which sometimes are violent in these latitudes; not but that sometimes W. winds are equally blustering, yet they are not so common, nor last so long. It should also be noticed, that the higher the latitude, the more such weather is to be apprehended.

When the coast of America is *very near*, there is no regular wind but the N. W. and this holds to the Southward from 54 N. Lat. it sometimes blows indeed fresh from this quarter, but there is no objection to this, when the ship is on its return^e.

The sea from S. Blas to 40 degrees N. Lat. runs commonly high, when the wind is at N. W. or N. but as it does not often blow with violence from this quarter, these seas are generally

^e It must be remembered, that for this reason the Journalist advises the navigator who wants to reach a high N. Latitude, to gain so large a Westing from the coast of America.

navigable. From Lat. 40 to 50 (when near the coast) the sea often runs still higher, meeting the tide from the shoar, but I do not mean to raise too great apprehensions on this account.

At the distance however of 100 leagues from the coast the seas are often still heavier; so that I would advise lying to, if the wind is not favourable.

From 50 degrees upwards the seas rise proportionably with the winds, particularly if they blow from the S. or S. W. but soon become calm when the weather clears.

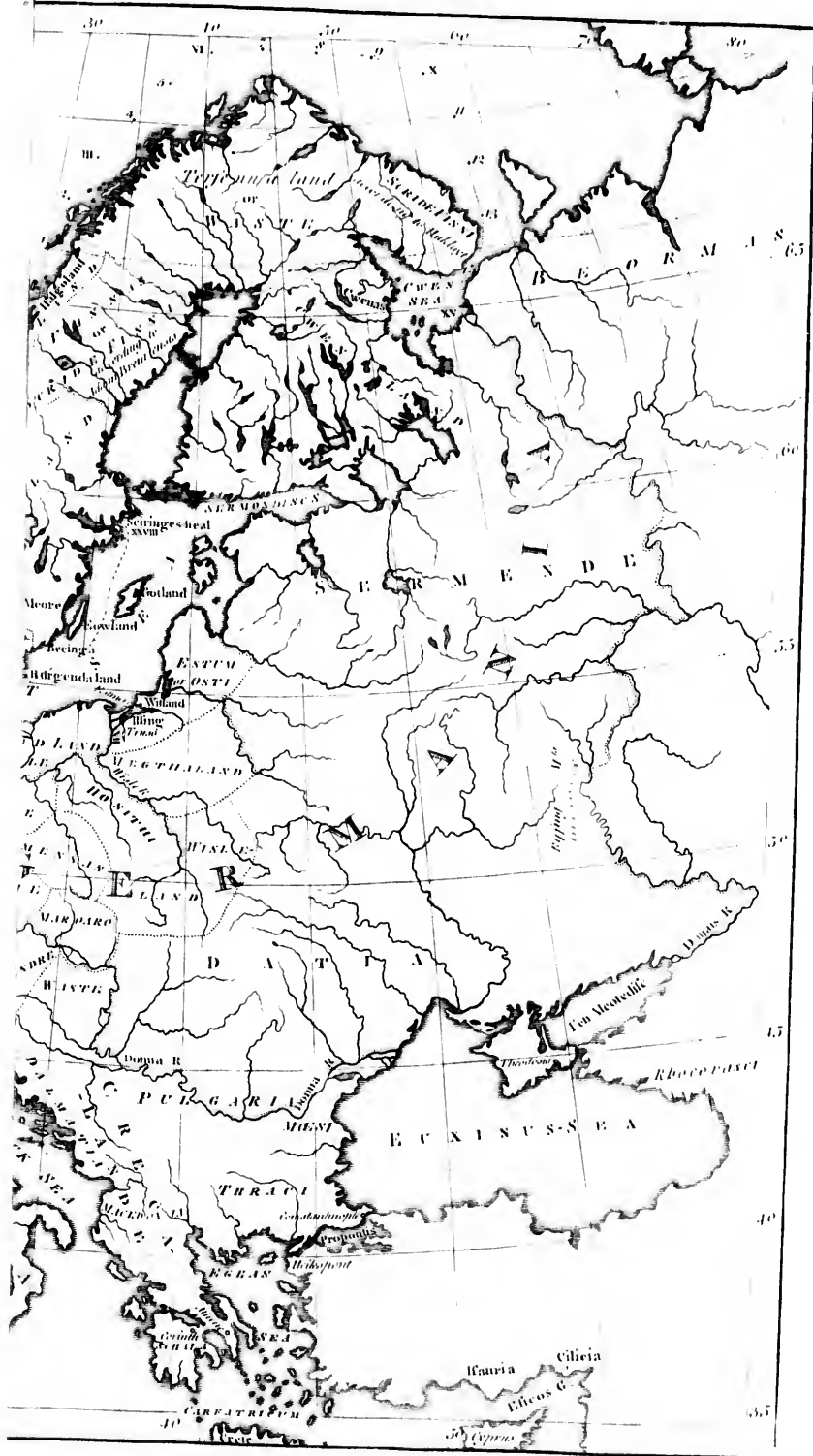
[Here follow some observations, with regard to the effect of the moon upon the weather, which I shall not translate, as the influence of this planet in such respect seems now to be much exploded.]

As approaches to the coast ought always to put the navigator on his guard, he may depend upon the following signs for its not being far distant.

When the coast is about 80 or 90 leagues to the E. those sea-plants appear which I have before called *Orange beads*; but I must now add, that from the state of them, as they float, one may sometimes infer, that the land is not so far distant.

Its figure much resembles the fistular stalk of garlick^e; and from the top of its head hang some long leaves, by which the plant is fixed to the rocks. Now if these leaves are tolerably perfect, they afford a strong presumption, that they have not floated far from the coast. On the contrary, those which have been waisted to a considerable distance, have generally lost this head, and the stalk becomes more rough, when you may suppose that you are 50 leagues from the land.

^e The appearance of this plant on the coast of California, is noticed in Lord Anson's Voyage.





A MAP OF
 EUROPE
 for the Illustration of
 KING ALFRED'S
 Anglo-Saxon Translation of
 OROSIUS.
 Engraved by J. Bayly

O C E A N O R G A R S E C C

10 E. from Ferro.

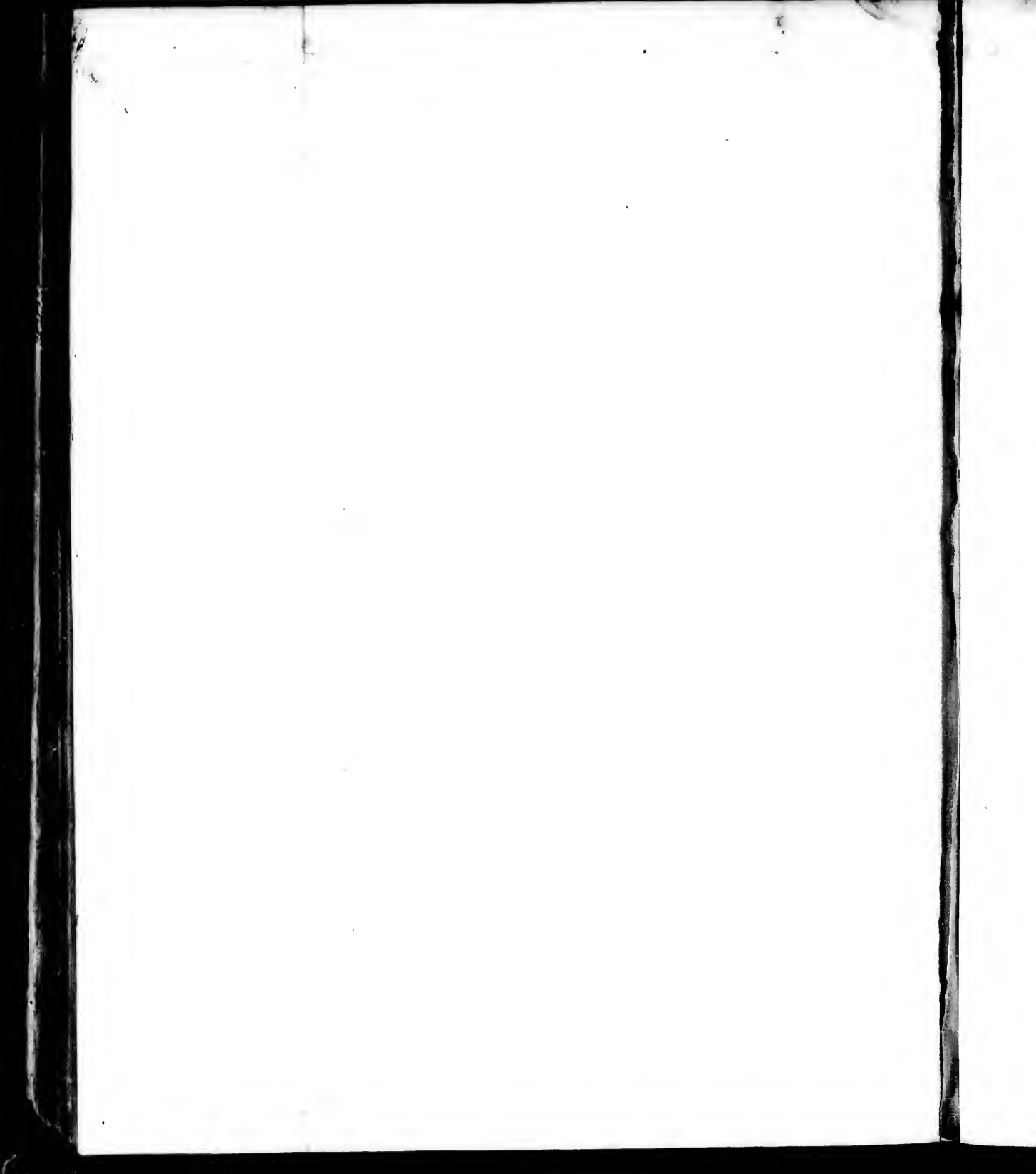
20

30

MAP OF
 EUROPE
 Illustration of
 ELPRED'S
 Conquest of
 SWEDEN.

By J. Bach





At the same distance the sea begins to indicate, by its colour, that you are in soundings, but this circumstance requires some attention and habit; when you are not more than 30 or 40 leagues from the coast, this appearance is much more distinguishable, though if you was to cast anchor you would not find any bottom. In this same situation you will likewise perceive birds, sea-wolves^f, otters, and whales, together with the plant *Zacate del Mar* before-mentioned, which hath long and narrow leaves. When these circumstances are observed, you may depend upon seeing land the same day, or that following.

At the same time you will perceive, that the sea is of an iron colour, and looks as if it had small boats, with sails upon the surface^g, whilst birds resembling lorics, with a red head, bill, and legs, fly around; their body is black.

As concealed shoals are often so dangerous to the navigator, I think I may pronounce you may sail in perfect safety at the distance of a league from the most suspicious parts of this whole coast.

If the discoverer should first put into port in N. L. 55. 17. he will find an inlet^h, which hath good soundings in all parts of it towards the N. and perhaps the best pointⁱ of the whole coast, if the ship keeps at the distance of three leagues from it.

^f Lobos Marinos, perhaps Seals.

^g Unas aguas malas de color morado, que parecen unos barquichuelos, con belas latinas.

^h Una entrada.

ⁱ The Journalist does not any further explain why *best*.

1775. Day of the month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
March 1					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16		21 25			
17					2
18					1
19					2
20		21 34		4 30*	2
21		21 39		*	2
22		21 43		*	1
23		21 47			2
24		21 14			3
25	21 36	21 34	1 20		38
26	20 15	20 10	1 59		48
27	19 51	19 49	3 2	5	73
28	19 25	19 17	4 10		79
29	19 23	19 4	5 1		86
30	18 56	18 42	5 37		100
31	18 42	18 33	5 37		104

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America.
April 1	18 36	18 33	5 37	5	104
2	18 35	18 33	5 48	5 13*	107
3	18 56	18 48	5 27	*	102
4	18 36	18 30	6 8		108
5	18 25	18 15	6 37		117
6	18 2	17 48	7 31½		132
7	17 48	17 43	8 36		140
8	17 42	17 42	9 28		148
9	17 43	17 45	10 22½		155
10	17 42	17 35	11 8		165
11	17 47	17 48	12 42	6	166
12	17 54	17 44	12 22½		176
13	17 49	17 44	13 54		181
14	17 55	17 47	14 39		186
15	18 28	18 20	15 35		186
16	19 6		16 24½		190
17	19 51	19 50	17 25½		201
18	20 33	20 19	18 16½		206
19	20 42	20 37	18 50½		209
20	20 53		19 14		210
21	21 8		20 47		211
22	21 16	21 4	21 34½		222
23	21 24	21 21	22 15		232
24	21 55	21 47	23 13		248
25	23 31	22 32	23 8		259
26	23 20	23 22	24 13		277
27	24 8	24 14	24 58		284
28	24 48	24 50	25 32		294
29	25 25	25 17	25 30		300
30	26 3	25 57	26 22	7	

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
May 1	26 29	26 31	27 07	7	302
2	26 45	26 44	27 19		303
3	26 55	26 50	27 31		303
4	27 39	27 30	28 18		304
5	28 39	28 37	28 12	8	295
6	29 30		29 15		281
7	30 9		30 14		284
8	30 19		30 54		284
9	30 36	30 45	31 41		291
10	31 18		32 15		297
11	32 12	32 10	32 50		294
12	33 13	33 15	32 45		280
13	33 57	34 3	31 56		261
14	34 29	34 35	30 50		239
15	34 26	34 30	30 12		231
16	34 46	34 54	31 6		238
17	34 50	34 50	31 82		240
18	34 49	34 49	31 17		240
19	35 46	35 45	30 20		220
20	36 42	36 45	28 42	9	184
21	37 6	37 1	27 46		167
22	37 42	37 46	28 41		178
23	38 9	38 8	29 33		185
24	37 48	37 46	29 10		183
25	37 29	37 26	29 3		184
26	37 14	37 11	28 51		179
27	37 6		29 12		186
28	37 10		29 3		185
29	37 48	37 25	28 15½		174
30	37 47	37 45	27 21		156
31	37 59		26 35	10	145

1775. Day of the month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
June 1	38 21	38 14	26 12	10	128
2	39 3		25 26	12	122
3	39 46	39 51	24 38		107
4	40 13		23 55	13 30	89
5	41 11	41 22	22 58		70
6	41 41	41 37	21 15		42
7	41 49	41 30	20 19	14	33
8	49 59	41 14	13 13	14 30	
9	41 25		19 4		
10					
11					
12					
13					
14					
15		41 17			
16					
17		41 7			
18		41 7	19 4		
19		40 59	19 21		
20		40 53	19 41	14	12
21	40 59	40 7	20 56		31
22	40 25	40	21 41		48
23	40 2		23 1		67
24	39 45	39 23	24 7		85
25	39 24	39 20	25 40	13	106
26	39 21	39 21	26 40		121
27	39 22		26 30		113
28	39 51		26 45		118
29	33 43		26 25		107
30	40 26	40 16	26		

Y y y

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Leng. from San Blas	Variation of the Needle	Dist. from the coast of America
July 1	41 2	41 1	26 14	13	100
2	47 17	42 15	26 49	14	90
3	43 25	43 24	26 50		70
4	44 21		26 30 $\frac{1}{2}$		57
5	44 27		26 10	15	47
6	44 24		25 47		32
7	46 10		26 6	16	26
8	46 59	47 3	25 47		12
9	47 44	47 37	24 20		
10	47 45	47 35	23 28 $\frac{1}{2}$	17	
11	48 32	48 26	22 17		10
12	48 1	47 39	21 53		6
13	47 41	47 28	21 34		2
14	47 24	47 20	21 19		
15	47 23	47 7	21 40	17 30	9
16	47 20	47 13	22 3		17
17	47 17	47 9	22 22	17	18
18	47 3	46 32	23 32	16*	35
19	46 34	46 26	24 28		50
20	46 18	46 17	25 29		61
21	46 6	45 57	27 5	15	82
22	45 50	45 44	28 18		100
23	45 44	45 41	29 24		115
24	45 51	45 52	30 32		124
25	46 4	46 9	29 59		120
26	46 34	46 32	29 52		169
27	47 6	47 5	29 19	16*	117
28	47 45	47 40	29 41		103
29	48 10	47 50	28 44		92
30	47 21	47 21	29 32		102
31	46 55		30 9		117

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
Aug. 1	46 34		30 56	16	131
2	46 45	46 40	31 52		141
3	46 40	46 35	32 46		157
4	46 29	46 16	33 39		157
5	46 47	46 47	34 5		171
6	47 49	47 50	34 6		164
7	48 26	48 24	34 12		159
8	48 39		34 7	17*	156
9	49 11	49 9	34 7		154
10	50 18		34 54	18	160
11	51 24	51 34	34 58		159
12	52 18	52 27	35	19	158
13	53 39	53 54	35 26		161
14	54 58	55 4	36 7		166
15	55 53	56 8	35 47		154
16	56 43	56 44	35 15		4
17	56 54	57 2	35 27		
18	57 21		35 27		
19					
20					
21					
22	57 55	57 57	38 2	20	
23	57 10	57 8	35 50	22*	2
24	56 1		33 46	24*	1
25	55 17	55 17	33 24		
26	56 6	55 6	33 22	24	
27					
28	55 36		34 39	23*	2
29	55 55	55 55	34 32		
30	56 21		35		
31	56 41	56 47	35 32		

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dift. from the coast of America
Sept. 1	56 31		16 10	23	10
2	56 5	56 3	36 22	23 30	17
3	55 45	55 47	36 39	23	21
4	55 28		36 33		22
5	55 8	55 7	37 5		26
6	54 40	54 42	36 27	22	20
7	54 53		36 56	23	26
8	55 4		36 56		26
9	54 39	54 32	35 22	21	7
10	54 4	54 6	34 6		6
11	53 54	53 52	32 19	20	8
12	52 58		31 5		8
13	52 11	52 9	30		9
14	51 14	51 16	29 35		9
15	50 4	50 12	27 2		9
16	49 23	49 21	25 38		9
17	48 51	48 53	24 35		7
18	48 37	48 33	23 40	19	6
19	47 50	47 49	23 10		$\frac{1}{2}$
20	47 11	47 12	22 33		$\frac{1}{2}$
21	46 21		21 58		11
22	46 20		22 42		10
23	45 38		22 35		$\frac{1}{2}$
24	44 47	44 47	21 12		$\frac{1}{2}$
25	44 17	44 19	21 2	18	$\frac{1}{2}$
26	43 15	43 16	21 20	17	10
27	42 37		21 41		12
28	42 37		21 41		10
29	41 1	40 54	21 41		$\frac{1}{2}$
30	39 38	39 42	21 11	16	$\frac{1}{2}$

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
Oct. 1	39 17	39 15	20 26	16	$\frac{1}{2}$
2	38 49	38 49	19 5	16	$\frac{1}{2}$
3	38 16	38 16	19 2	16	
4	38 16	38 16	19 22	16	
5	37 54	37 53	19 24	15	3
6	37 45	37 43	19 4	15	1
7	36 43	36 42	18 47	14	
8	36 46		17 17	14	

1775. Day of the Month	Latitude by reckoning	Latitude by observation	W. Long. from San Blas	Variation of the Needle	Dist. from the coast of America
Nov. 2	36 44	36 42	17 5	14	7
3	36 28		17 27	13	8
4	36 6	36 11	17 42	12	8
5	34 41	34 36	17 25	11	23
6	32 50	32 48	16 58	10	45
7	30 56	30 57	16 2	9	48
8	29 32		15 18	8	46
9	28 52		14 45	7	45
10	28 21	27 52	14 13	7	42
11	27 16	27 8	13 26	7	35
12	26 16	26 12	12 13	7	24
13	25 18	25 16	10 46	6	38
14	24 53	24 37	8 58	6	6
15	24 15	24 1	6 56	6	10
16	23 2	23	5 25	5	1½
17	22 20	22 22	4 3	5	40
18	21 54	21 53	2 38		10
19	21 45	21 44	0 46	5	3
20	21 36	21 34	0 2	5	

ADDENDA to the other Instances of REACHING HIGH
NORTHERN LATITUDES, p. 40.

CAPTAIN ELLIOT, of the Sea Horse Indiaman (now employed as an ordnance transport) during the passage from New York to England in September, 1780, informed Dr. Morris and some general officers,

“ That, in the *beginning of June, 1756*, he served as mate on board the King George Greenland ship, and fished for whales in N. Lat. 82. 30. when the sea was perfectly clear and open. Captain Elliot at the same time observed, that the attempt to proceed to high Northern Latitudes should not be made later than the time abovementioned.”

There is a very scarce tract, in the Bodleian Library, entitled, N. W. Foxe, or Foxe from the N. W. Passage *; to which is annexed, a map representing three islands in 85. and nearly N. of Spitsbergen.

Foxe failed on this attempt in 1631, and had a letter from Charles I. to the Emperor of Japan; this navigator having intended to return to Europe by the East Indies.

One of the articles to which his crew were obliged to subscribe was the following :

“ No one shall speak doubtfully or despairing words about the success of the voyage.”

* Quarto. London, 1638.

ADDENDA to p. 151. with regard to TURKIES.

MONARDEZ, who was a physician, and published a medical history of America in 1574^b (where he seems to have long resided), makes mention of many Mexican birds, but *not of turkies*.

Torquemada's *Monarquia Indiana* was printed in 1615^c, and states that he had lived in the province of Mexico 25 years, yet does not particularize *turkies* in the famous aviary of Montezuma, the account of which he seems to have received from an ancient eye-witness.

There is the same omission in another Spanish Historian inserted in Venegas's History of California.

Ruyfch, in his history of animals, published in 1718, observes, that the Gallo-Pavus is *Calecutensis*, or from Calecut, which was so much the emporium of the Indian ocean, after the Portuguese discoveries, that in the 1st. Vol. of Ramusio, printed at Venice in 1554, there is a wooden engraving of a map, in which a ship is represented under sail, with the following words on the side,

“ *Vado a Calicut.* ”

Count Francesco Ginnani, in his account of the pine forests near Ravenna^d, makes the following observation under the article Gallina Indica, or Gallo-pavone.

“ *Quest' uccello fu da naturalisti chiamato Gallina Indiana, non perche dall India a noi prima venisse, perche nella Boetia e Grecia nascono frequentemente.* ”

An undoubted Bassan was sold at Christie's in 1780, representing a whitish Turkey Cock and hen going into Noah's Ark. This

^b Seville. Quarto.

^c Seville, 3 vol. Quarto.

^d Roma, 1774. Quarto.

bird was therefore become very common in Italy, where it was probably introduced from Greece according to the above citation from Ginnani.

A description of the Animals and Plants of the Indies by Cosmas the hermit was published at Paris in 1664, in which a Flora and Fauna Sinensis also is inserted from Michael Boym; amongst the animals is an engraving of the Chinese bird called a *Teki*, named by Boym *Gallina Sylvestris*, and said to be very large. As the bird thus engraved is represented with a caruncle of flesh covering the bill, and a bunch of hairs on the breast, there can be little doubt but that this is a turkey.

Le Bruyn states that in 1704 a large turkey was usually sold in Persia for 7 or 8 sols; when a tame goose could not be procured under 40 or 50. **Q**uow this is at all reconcileable to Tavernier's account that these birds are not known in Persia?

The 3d volume of De Bry's America^c mentions that hawks and Eagles were sent from Mexico to the Spanish nobles, but is silent as to turkies.

Rabelais wrote his history of Pantagruel in 1533, which was but 13 years after the conquest of Mexico, and makes Poulles de Inde a dish at an entertainment^f.

Dr. Grew, in his Catalogue of the Royal Society's Museum, observes that one of the known gems is called *Turcois*, because it is found in that part of Asia, or at least purchased there. From the same circumstance only could this bird therefore receive its appellation.

I conceive, lastly, that some of the American fowls mentioned by early Geographers, are the Curasoa birds, and not turkies, as they do not differ materially in size, and are said to be good

^c Printed in 1602.

^f l. i. ch. 37. See also l. IV. ch. 52. and l. V. ch. 7.

meat. The first describers of the animals of the new world are very inaccurate, as they always enumerate *lions* amongst the quadrupeds, to which there is no American animal that bears the least resemblance.

ADDENDA to the ESSAY ON THE MIGRATION OF BIRDS,
p. 174.

STORKS are a bird of passage at Persepolis as elsewhere, and only stay to build and rear their young. Le Bruyn, vol. IV. p. 306. This is precisely what they do in Holland, though there are so many degrees of difference in Latitude. In Cyprus they say, that during winter storks retire beyond the Jordan. Ibid. vol. II. p. 205. As they thus migrate from all places during the winter, I rather suspect that they are torpid during that time. If the size of this bird is considered as an objection, why should it not for the same reason be seen somewhere during that season?

Birds are sometimes by storms of wind blown from the sea coast far inland; a puffin was, not many years ago, killed upon Tharfield-common, in Hertfordshire.

Turnefort mentions woodcocks, amongst other birds of game, in the island of Crete, where he happened to be during the month of July, which seems to imply that they were to be found on that island after Midsummer.

ADDENDA to the ESSAY ON THE TORPIDITY OF THE
SWALLOW TRIBE, p. 225.

PROFESSOR Fabricius of Copenhagen informed me, that six or seven years ago he saw a Swallow which was fished up from a pond near that city, and which revived.

Plot, in his *Plinius Anglicus*, hath an article de avibus subterraneis (*sc. hirundinibus*) qui brumali tempore in mineris Cornubiensibus reperiuntur. This work of Plot's is supposed to be a MS. and I am indebted for the reference to the Reverend and Learned Mr. Price, Bodley Librarian.

Mr. Rouse hath likewise informed me, that he was present when a swallow was taken out of a hole, by a sailor, in the winter, on the banks of the Thames, near Long-Reach, who said he had often found them there, and could procure more.

ADDENDA to the ESSAY ON CUCKOWS, p. 245.

IN the continuation of the History of the French King's Collection, it is asserted, that almost all the Cuckows killed are males; does not this most strongly prove, that the females are sitting on their eggs?

P. 247.

I would add to other prevailing and erroneous notions relative to animals, that of the Camelion's being able to vary its colours at pleasure, and to the greatest extremes.

ADDENDA to p. 268.

“*LA liberté temeraire de faire des methodes ;*” des petits systêmes nouveaux, dans lesquels on classe des etres qu'on n'a jamais vu, & dont on ne connoit que le nom—nom souvent equivoque, obscur, mal appliqué.” Buffon, T. II. p. 374.

Je ne me lassèrai jamais de repeter que ce n'est pas par des petits caracteres particuliers, que l'on peut juger la nature, & qu'on doit en différencier les especes, les methodes loin d'avoir éclairci l'histoire des animaux n'ont au contraire servi qu'à l'obscurcir &c. p. 370.—“C'est par cette raison que nos *nomenclateurs* se trompent à tout moment & écrivent presque autant des erreurs que des lignes.” Ibid. Buffon's Nat. Hist.

“*Præcipua illi voluptas est spectare formas, ingenia, & affectus diverforum animantium. Proinde nullum fere genus est avium, quod domi non alat, si quod animal aliud vulgo rarum, veluti simia, vulpes, viverra, mustela, & his similia. Ad hæc si quid exoticum, aut alioqui spectandum occurrat avidissime mercari solet, atque his rebus domum undique instructam habet, ut nusquam non sit obvium, quod oculos ingredientium demoretur, ac toties sibi renovat voluptatem quoties alios conspicit oblectari.*” Erasmus's Life of Sir Thomas More, printed in 1519.—This English chancellor, therefore, seems to have formed a more early collection of live animals, than perhaps any other person in Europe. As for the *Tower lions*, the use made of them even so late as the reign of Q. Elizabeth, was for presents to the Northern powers, who, by having scarcely any Mediterranean trade, had not frequent opportunities of procuring them.

ADDENDA to the ACCOUNT OF MASTER SAMUEL WESLEY.

P. 306.

DR. JOHNSON had never seen or read *Othello* when he wrote his *Irene*; but had (unintentionally) imitated some part of it so strongly, that he struck it out from fear of the imputation of plagiarism. [Note of Mr. Steevens on *Pericles Prince of Tyre*.]

P. 323.

“ Sampson Estwick, a Minor Canon of St. Paul’s, performed “ choral duty till nearly 90 years of age, preserving his voice, “ which was a deep base.” Sir J. Hawkins, vol. V. p. 14.

In the same most useful compilation we find mention of a boy named Pierſon, who, rather before the age of nine, played extemporary voluntaries on the organ; he had been however a scholar of Dr Green’s for two years.

ADDENDA to the ESSAY ON THE DELUGE, p. 326.

THE cabinets of the curious exhibit often more supposed fossil bones of elephants found in Europe, than they do of those common quadrupeds, horses, cows, and sheep. The inference from this need not be dwelt upon.

Mr. Ellis, in the *Philosophical Transactions*, enumerates the following resemblance of plants, which are generally found on different substances:

“ The ramified configurations of *Sal Ammoniac*, the elegant “ branched figures in *Mocha* and other gems, the *Arbor Dianæ*, “ or arborescent figures of *Cornish native copper*.” Vol. XXXVI.

Part I. p. 17. Thus again we are informed, that in the mines of Huajannato, N. of Mexico, there are petrifications which, in whatever direction they are divided, always exhibit an exact imitation of a cedar tree. [Letter of Don Joseph Anthony de Alzate, to the Academy of Sciences at Paris.]

There are so many of the supposed fossil animals unknown, that Esper published, in 1774, a Folio, at Nuremberg, of several, with coloured engravings.

“Cataclysmi Universalis certa rudera ego nondum attigi.”
Linnæus’s Introduction to his *Regnum Lapideum*.

Shells, in rude times, may have passed for money, as they do now in some parts of Asia. Why therefore may they not have been sometimes buried under ground, as coin was generally secreted, before paper credit took place?

ADDENDA to the HISTORY OF THE GWEDIR FAMILY.
P. 356.

I HAVE received the following inscription, in Wimbledon Church, from Mr. Jones, of Park-street, Westminster, and F. S. A. to whom I have not only this obligation.

“Hic jacet Ricardus Wynn de Gwedir, in comitatu de Carnarvon, M. et Baronettus, Thesaurarius, necnon Conciliarius honoratissimi principis, & Henriettæ Mariæ Reginae, qui lineâ parentali ex illustri illa familia & antiquissima stirpe Britannica Northwalliæ principum oriundus, denatus 19 die Julii, 1640. æt. 61.”

In the Temple Church there also is a monument to Henry Wynn of Gwedir, who died in 1671.

ADDENDA TO p. 356.

EXTRACT from "An Account of some of the most Romantic Parts of NORTH WALES. Lond. 1777." 12mo. by JOSEPH CRADOCK, Esq.

P. 72. "I could not possibly leave this part of the country without seeing the Vale of Llanroost, the Bridge built by Inigo Jones, and the Chapel supposed to have been planned by him, which contains the rich monument of the Guedir Family.—The Vale upon the whole I thought inferior to that I had seen in Montgomeryshire, but the Bridge is certainly a very elegant structure, and speaks itself to be the work of a great Architect, most probably of Jones, for I incline to the opinion that Llanroost was the place of his Nativity.

"The chapel which adjoins to the parish church was erected by Sir Richard Wynne, one of the grooms of the bed-chamber to Charles the First when Prince of Wales, and was chiefly made use of for the alms-house in the neighbourhood, which was endowed by the Guedir Family. I took the pains of copying the different inscriptions in it; and as they are not contained in the history of that family lately published, they may not be unacceptable to the curious Antiquary."

P. 75. "This chapel was erected Anno Domini 1633, by Sir Richard Wynne of Gwydir, in the county of Carnarvon, Knight and Baronet, Treasurer to the High and Mighty Princess Henrietta Maria Queen of England, daughter to King Henry the

“ Fourth King of France, and wife to our Soveraing King Charles.
 “ Where lieth buried Sir John Wynne of Gwedir, in the county
 “ of Caernarvon, Knight and Baronet, son and heyre to Maurice
 “ Wynne, son and heyre to John Wynne, son and heyre to
 “ Meredith; which three lye buried in the church of Dolwyd-
 “ delan, with tombs over them. This Meredith was son and heyre
 “ to Evan, son and heyre to Robert, son and heyre to Meredith,
 “ son and heyre to Howel, son and heyre to David, son and heyre
 “ to Griffith, son and heyre to Carradock, son and heyre to
 “ Thomas, son and heyre to Roderick Lord of Anglesey, son
 “ to Owen Gwynedd Prince of Wales, and younger brother to
 “ David Prince of Wales, who married Ema Plantagenet, sister
 “ to King Henry the Second. There succeeded this David three
 “ Princes; his nephew Leolinus Magnus, who married Jane
 “ daughter to King John; David his son, nephew to King Henry
 “ the Third, and Leoline the last Prince of Wales of that House
 “ and Line, who lived in King Edward the First his time. Sir
 “ John Wynne married Sydney, who lyeth buried here, the
 “ daughter of Sir William Gerrard knight, Lord Chancellor of
 “ Ireland, by whom he had issue Sir John Wynne, who died at
 “ Lucca in Italy, Sir Richard Wynne now living, Thomas
 “ Wynne who lieth here, ROGER * [rather Owen] Wynne who
 “ lieth here, William Wynne now living, Maurice Wynne now
 “ living, Ellis Wynne who lieth buried att Whitford in the
 “ county of Flint, Henry Wynne now living, Roger Wynne
 “ who lieth here, and two daughters, Mary now living, married
 “ to Sir Roger Mostyn, in the county of Flint, Knight, and Eli-
 “ zabeth now liveing, married to Sir John Bodvil, in the County
 “ of Caernarvon, Knight.”

* I suspect *Roger* here to have been a mistake of the Transcriber, in-
 stead of *Owen*.—See the Pedigree, &c. Besides *Roger* occurs below. P.

“ On the floor are four brass plates, with drawings of figures
 “ upon each of them in the dresses of the times; one of Maria
 “ Mostyn wife of Roger Mostyn, another of Sir Owen Wynne,
 “ another of Sir John Wynne, and a fourth of Lady Sydney
 “ Wynne, wife of Sir John Wynne. And in the corner of the
 “ Chapel a stone coffin, which was removed from the Abbey of
 “ Conway, about two miles from hence, on which is the follow-
 “ ing inscription:

“ This is the coffin of Leolinus Magnus Prince of Wales,
 “ who was buried in the Abbey of Conway, and upon
 “ the Dissolution, removed from thence.

“ On each side are six carved recesses in the figure of Flower
 “ de Luces, which bear evident marks of having contained
 “ brass plates, and two at the bottom of the coffin.

“ There is now erected in the church a gallery of exquisite
 “ workmanship, which was removed likewise from the abbey;
 “ and I was at the trouble of having a large quantity of rubbish
 “ taken away from under an old stair-case, that I might inspect
 “ a stone effigy, which is said to be of Hoel Coetmore, who
 “ sold the Guedir estate to the Wynne Family; the word
 “ Gwedir is supposed to signify glass, and that family probably
 “ was the first who, in these parts, had a house with glazed
 “ windows.

“ I ought to make some apology for the foregoing heavy
 “ articles: but elaborate inscriptions frequently illustrate history;
 “ and these will at least shew that some of the Welsh were not
 “ totally regardless of Pedigree.” See Mr. Cradock's Tour.

At Mostyn Castle in Flintshire (the ancient mansion of Sir Roger Mostyn) is a portrait of Sir John Wynne of Gwedir, æt. 65. A. D. 1629, with the following words;

“Nec timet, nec tūmet.”

The dress is a black cap and cloak, with a ruff round the head; the beard is large and silvery.

There is also another portrait of him at Sir. W. Williams Wynne's, at Winstay in Denbighshire.

ADDENDA TO THE SPANISH VOYAGE.

P. 482. Fifth line from the bottom.

I have there mentioned, that I did not thoroughly comprehend from the description, how the face of the Indian was marked; but this will be explained by a masque in Sir Ashton Lever's Museum brought from the American coast in N. Lat. 50.

P. 486, note [a].

I am informed by a gentleman long resident at Cadiz, that *espiare* signifies *to warp* as well as to *spy*; and I rather conceive that in this passage it should have been so translated.

P. 155.

“Nature does nothing in vain.”---A very remarkable instance of this hath of late occurred.

Dr. Dowglas had discovered, that in the neck of the cock bustard a bladder was lodged capable of holding two quarts of water. Sir Ashton Lever lately purchased from a poulterer a hen of this bird, in the neck of which there was not the same provision. Now bustards build their nests in large tracts of corn at a distance from water: the male therefore seems to be provided with such a receptacle, to be used whilst the female is sitting, or whilst her young brood cannot move far from the nest.

A gentleman long resident at Morocco, where they frequently fly their hawks at bustards, hath also informed me that the cock makes use of this reservoir of liquor against these assailants, and commonly thus baffles them.

It is well known that in most birds the male is the warrior; and the bustard wants not only the common defence for so large a fowl, of a spur, but hath no hind claw whatsoever. Such a reservoir therefore seems necessary for this second purpose.

P. 274.

All these circumstances in a plant are neglected from attending only to the parts which class according to different systems, and particularly that of Linnæus.

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The Portrait of MOZART before the account of him. — That of Sir JOHN WYNNE before the History of the Gwedir family. — The map of Ohthere's Voyage *after* p. 468. — And the map of the N. W. coast of America *after* p. 525.

CORRECTIONS of the more MATERIAL ERRORS.

- P. iii. l. 16. for " *Endeavour*," read " *Discovery*."
P. 22. for *memoirs* read *memories*
P. 61, note ^b, for *πιπηγοτα κροισις τε* read *πιπηγοτα τε κροισις τε*.
P. 84. l. 9. for *wobo* read *wobich*
P. 140, note ^c, l. 4. dele " *of both sexes*."
P. 157. l. 9. from the bottom, for *ptarmiganu* read *ptarmigan*.
P. 166, note ^a, for *αα αλληλοισις εχονται*, read *αα τ' αλληλοισις εχονται*.
P. 214. for *Gifner* read *Gefner*; and for *Longolius*, *Longolius*.
P. 280. l. 10. for certain *conscioufness*, read *a certain conscioufness*.
P. 370, note ¹, l. 1. for *Inon*, read *Irien*
P. 381, note ¹, l. 1. for *Mauney* read *Manney*
P. 392, note ^a, and P. 394, note ^c, for *see before*, read *see below*.
P. 424, note ¹, l. 2. for " *See p. 40.*" read " *See p. 375.*"
P. 426. l. 5. from the bottom of the note for *fewer* read *fewer*.
P. 428. l. 11. for *Hesbell* read *Howell*.
Ibid. l. 12. for *Jockes* read *Jockos*
P. 453. l. 8. for *tracls* read *tracks*
P. 478. l. 6. from the bottom, for *the bufiness* read *their*

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... before
p. 468. —

