

Introductory Lectures.

The ^{course} system of Lectures w^{ch} we are now about to give commenced 18 years ago at this ^{place.} U. of Cambridge. The ~~course~~ ^{system} was constructed with a view to promote among our young gentlemen a taste for the study of Nature.

Many & various are the methods adopted for cultivating the understandings of young persons. Of these, none produces a more lasting & beneficial effect, than properly exciting their natural curiosity respecting these works of ^{creation} nature. This desire of knowledge, this "thirst of the soul", called curiosity, is found to exert itself with peculiar efficacy in youth. At that animated period, the mind seizes with peculiar avidity every object presented to it; hence, the great importance of presenting proper objects to the contemplation of young people. The famous Dr. Johnson has made a remark that may be construed to the honor of the people of N. E. viz, that "where curiosity most predominates, it is a certain sign of a vigorous intellect." That the youthful mind, in its career of education, should

Tho' N.H. is the web, it is every where interwoven wth the various subjects of your collegiate education.

receive the full benefit of this happy disposition, the Lecturer should be careful to direct it to such objects as, while it engages the mind by pleasure, ^{should} at the same time fills it with clear & instructive ideas. This is, in fact, the very essence of education; the object of which is not to give talents, that is impossible, but to rouse the dormant energies of the youthful mind, and to draw forth and encourage it to a constant exercise of those in-
^{w^c is the peculiar attribute of a rational being} provable powers, with which the Creator has endowed it. ~~In one word to direct curiosity to useful objects.~~

The objects w^c excite youthful curiosity are, - the Earth on w^c we live, & its innumerable inhabitants; - the beautiful carpet of vegetables that covers & adorns its surface; the boundless ocean; the Sun, Moon & Stars; the regular succession of day & night, and the agreeable vicissitudes of the seasons, with their beautiful train of beneficent consequences.

As we step on in life, the relationship, & conformity which these objects bear to one another, & to ourselves, are so many voices, calling loudly & affectionately for our examination.

These various ^{subjects} compose what is called by a rhetorical figure, "The Great Book of Nature". A Book, w^c comprehends the objects of every Science. A Book, whose ample & splendid pages must charm all who have eyes to see, & hearts to feel!

For a series of years it has been our constant endeavour to ^{lead} ~~teach~~ the young ^{free} mind to read this Volume, by first pointing out to them the alphabet of Nature, then their connection into syllables; next to instruct them in spelling, or putting these syllables together, and lastly to read distinctly. We have held up this great Volume of Nature to our young men as a kind of Sacred Scripture, written by the finger of the Deity himself, upon every Animal, every Plant, and every Mineral. An uncorrupted scripture, this! If not a first, at least, a second revelation!

The study of this Book, or what is commonly called Natural history, is one of the most pleasing occupations that can exercise the rational mind. It has this peculiar to it, - that no frequency of contemplation, closeness of inspection, or keenness of investigation ever brings weariness or disgust. It is a pleasure differing from all others, from its bringing no satiety, for here gratification & appetite are perpetually interchanging.

We have never however, recommended N. History merely to amuse the imagination, & gratify the fancy. We have held it up as a study of the first importance in such a country as ours. But it is wasting time to say

a word more on that head. To recommend N.H. from motives of pleasure, or utility were to affront the understanding of a polished people. I might as well labor to convince you of the blessings of health, or the advantages of sobriety.

1/ It is really worth while to cast a look back on the history of mankind, to see at what periods of the world, and in what states of society, Natu^r: history flourished most. We shall see, that in the most enlightened periods of the human character, this science found cultivators and patrons; whereas in the darkest & most disgraceful states of society, superstition & cruelty erected their thrones on degraded Nature. We shall see

"The Grecian Commonwealths, while they maintained their Liberty, were the most heroic confederacy that ever existed. They were the politest, the bravest, and the wisest of men. In the short space of little more than a century, they became such States: men, Warriors, Orators, Historians, Physicians, Poets, Critics, Painters, Sculptors, Architects, and last of all Philosophers, that one can hardly help considering, says the author of the Hermes, that Golden period, as a providential event in honor of human nature to shew to what perfection

perfection the Species might ascend." Within this remarkable period lived Aristotle, the father of N.H. This extraordinary man was endowed with a most penetrating sagacity, by which advantage he became so exact an observer of natural things, that his preceptor Plato used to call him the Genius of Nature, as if their Deity, Nature, had made use of Aristotle's excellent Gen.

Understanding for her interpreter & see Rapin! —

After creating, ^{in a manner} ~~and~~ the Science of Logic; after writing profoundly on Ethics, and on Politics; ^{and Rhetoric} after delineating the vast region of human thought, actual & possible this mighty genius turned his ^{all} capacious mind to N. History. Philip of Macedon, who employed him in the education of his son, allowed him an immense sum of money for procuring rare animals & other natural productions. This sum was augmented by Alexander to ^{extent} ~~catch~~, that seems to us, almost incredible. Historians tell us that Aristotle wrote 500 volumes on Nat. History. If so, ten only have escaped the wreck of time & come down to us. By these we find, that what had been a mere chaos of descriptions detached, uncertain, and often fabulous narrations & descriptions, he reduced into a scientific form; and that too, with a success so complete, that, to this hour, no systematic view of N. History has been attempted

been attempted, the principles of which have not been adopted from Aristotle's history of Animals. He did not attempt to arrange & define every known species, but left this labor to men of less genius & more patience. His work consists entirely of philosophical dissertations on the general structure, manners, & dispositions of animals; and his particular facts are always employed to support the principles, w^{ch} he is endeavoring to establish.

The effulgence of Grecian genius, w^{ch} broke forth during their Commonwealth, shone till the time of Alex^r. the great, after which it disappeared & never rose again. For when their federal government was ~~broken~~ broken had her golden period, w^{ch} commencing in her ~~Commonwealth~~ Commonwealth, lasted to the death of Octavius. ~~Before~~ was broken, their strength wasted, & they became jealous of each other, then the way was paved ^{slavery by the Macedonian power.} for their contemptible ^{of Macedonia} ~~Kingdom~~ to enslave them all in its monarchy. ~~What happened in Greece~~ took place also at Rome: & Georgics; on the time of Octavius, Virgil wrote his Aeneid, and Horace, ~~Virgil~~ & other great ^{authors} ~~geniuses~~ flourished. Soon after Pliny wrote his thirty seven books on N. history. These, it may be said, grew, & flourished under the protection & munificence of their royal masters. But then it must be remembered, that these men were bred

and educated in the principles of a free ^{republican} government.
It was hence they derived that high & manly spirit,
w^c made them the admiration of after ages. The
~~forms of government left by Alexander, who was the~~
~~son of sparta of Greece, as well as those left by~~
~~Octavius soon stopt the growth of any thing further~~
~~in the kind.~~ So true is that noble saying of Lon-
ginus, that, it is Liberty that "formed to nurse the
" sentiments of great Geniuses; to inspire them
" with hope; to push forward the propensity of con-
" test one with another, and the generous emulation
" of being the first in rank". (Homer, note 419)

Soon after this golden period of literature among the
Romans, philosophy, including N. history, degenerated
from its noble birth, not meeting in succeeding ages
with men of equal abilities, or rather honesty to support
it.

When that vast Empire was on the decline, eloquence,
w^c was then only artful prevarication, & ^{the meanest} agreeable flattery,
was the only qualification that entitled men to places of honor.
That tyranny w^c began to exert itself in the reign of Tiberius,
^{continued by} and his successors, gave a new turn to every thing that had
been dignified by the name of philosophy. And, when the
glory, greatness, strength & learning of that famous people were
extinguished, philosophy, or a knowledge of the laws of Nature
was

was nearly extinguished also. The few men of quality who really possessed patriotism + honesty, endeavored to harden, still more, their natural roughness of temper, by the study of Stoicism, in order to enable them to endure without flinching the enormities of their tyrants. But the prevailing spirit of those times was intrigue and profligacy. Thus was good government & a benevolent philosophy buried in the same grave, by the same hands! There followed a heinous gap in the affairs of man science & of the arts,

At, or about VIth century, learning was almost totally abolished in Europe. a northern swarm of barbarians, the Goths quitting their cold & inhospitable regions, spread through the more fertile parts of the world, and extinguished the small light of learning that remained.

While the Goths were destroying learning & taste in the western Empire, the Arabians overran the eastern. and when Mahomed & his successors carried their victories, with the rapidity of a torrent over most parts of Asia, Africa, through Persia; Agypt & Palestine they completed the destruction the Goths began. They destroyed a library at the city of Alexandria, in Agypt, containing 700,000 greek & latin MS. Fortunately for the interest of learning, that notwithstanding the greatest part of the then known world was overrun by the Goths & Vandals, and by the Saracens, & all knowledge & civilization destroyed

destroyed, — fortunately, or rather providentially Constantinople,
together with some other parts of the eastern Empire remained,
by which ^{providential} ~~propitious~~ incident, the greek & roman learning
was preserved from total extinction; ^{and brought down to us.} for the Greek & Roman
emigrants took refuge in this city.

It happened that a vast host of those Barbarians, who
issued from the northern regions & overturned Rome
and her whole western Empire, embraced the
christian religion. Being informed that the Jews
put to death the founder of the religion, they had just
embraced; and being all warriors, & having none in
the western Empire to fight with; they thought it ~~was~~
would be an exploit of eternal merit & renown, to go
and take from out of the hands of infidels, the city of
Jerusalem, & the adjacent country, w^{ch} they denominated
"the Holy Land". You all know how every power in
Europe combined in this bloody expedition, dignified
by the name of "the holy crusade". read Tasso's Jerusalem,

The ignorance of the age favored the growth of an
odious ecclesiastical tyranny, w^{ch} was exercised, not merely
over the persons, but the minds of men. By the light of
history we ~~have~~ ~~seen~~ with astonishment & horror, what con-
templable instruments could set half the human race in motion!
A miserable looking

A miserable looking, illiterate fellow, called Peter the Hermit who had just returned from a pilgrimage to Jerusalem, paraded the streets & high-ways, covered with rags & barefoot, and, assuming the name of a prophet, called on all christian people to take up arms & follow him to recover the "holy land" from the Infidels. Strange as it may to us, appear, this contemptible creature, with a thick cord girt round his middle, soon marched at the head of 80,000 men, without either discipline or provisions, fully persuaded (says Millot) that GOD would employ miracles to supply their wants. One million, three hundred thousand men actually marched on the several expeditions against "the holy land". ^{In these dark & dismal times, see last page.}

Such was the wretched state of that part of the human race called christianity, during the dark ages of gothic, arabian, & ecclesiastical tyranny. In those times one part of the people were manufacturing their fellow creatures, because they did not think with them in matters of religion; and the other part were making pilgrimages to Jerusalem & Mecca. ^{to expiate their sins.} Europe was one large field of battle. Fighting & Devotion divided the world! ~~while~~ Ignorance & brutue force quenched almost every spark of knowledge; while fear debased the noble faculties of the mind. For more than 500 years nothing was fixed, or moulded together. Discord sprang from various quarters.

From the mixture of Christianity with the antient customs
of the Barbarians, sprung a discord in manners. From a
mixture of the rights of the priesthood with those of the
empire sprung a discord in Laws & Politics. From a mixture
of the rights of Sovereigns with those of the Nobility sprung
a discord in Government, and from a mixture of the
Arabians with the Christians sprung a discord in re-
ligion. Anarchy, confusion & barbarity were the result of
many contractions. Thomas! +

Amidst all this confusion, and during this long night
of barbarism, when all the sciences were nearly extinguished,
a discerning eye could sometimes discover, shining here & there,
cheering rays of Nat. history. This may perhaps require some
explanation.

In antient times, ^{few,} very few (excepting Kings, Priest & Law-
givers, & those denominated Philosophers, were able ^{to read, i. e.} to exhibit
thoughts to the eye, by the art of writing. In those days they
had not the advantage of hearing moral lectures every week
from the pulpit. These illustrious characters found it necessary
to inculcate certain salutary doctrines, ^{by the living voice,} on those with whom they
were nearly connected, ^{and who could not read.} ~~by the living voice.~~ They, at length, found
it needful to instruct all they employed, even those who worked
in mechanic arts, & laborious occupations, such as the ^{erection of Temples,} ~~cases~~ &
construction of

construction of Pyramids, & building of Cities. Nay farther, they found it expedient to instruct them how to teach others - Accordingly the wisdom of ancient times contrived a system of instruction, or scheme of discipline, which had for its ultimate object the culture of the human heart. The object of this ~~sublime~~ theory was to teach something "agreeable" to our nature; conducive to our well being, and accomo-
dated to all places & times? This catholic science could only be taught by means that would strike the universal conceptions of all mankind. It was calculated to over leap the artificial boundaries of the geographer; and to persuade every Religion, sect & nation. To carry this sublime theory into effect, it was needful to cloath abstract truths with a body, and to exhibit the solemn maxims of ^{universal} morality in the drapery of Allegory. This master science was an application of the contemplations and observations of Nature to a moral sense. With this view, the Wisdom of antiquity selected apt objects from the Great Book of Nature; w^{ch} lay open to the view of all mankind. Some analogies were therefore sought for, that as often as the external eye caught them, a recollection of the doctrines they were employed to inculcate should rise up with them; that thus, while man was eagerly & anxiously panting after riches, fame & power, he should sometimes have

have his attention arrested by such natural objects, as would induce him to remember the duty he owed himself - his neighbours, - and his maker. And thus did wisdom convert the face of Nature into a mirror reflecting the sublimest truths. ^{and hence a fruitful source of metaphors & figures of speech.} The whole of this regular system of morality, conceived in a strain of interesting allegory, had for its basis Natural history; w^{ch} accounts for its living through the long, dark & dismal night of gothic, arabian and ecclesiastical barbarity, when written codes & systems expired.

Literature & the arts began to revive first in Italy, about the year 1200. The works of the Greek & Roman writers were sought after, translated & imitated by Petrarch & Boccaccio and afterwards by the famous Lorenzo de Medici, & those whom he patronised. ^{Petrarch reigned a royal & barbarous age, by filling Europe with love & poetry. John}

after so many ages of darkness & stupor, these rays of light emanating from the Greek & Roman authors appeared like something divine. When learning was thus first rising on a barbarous world, ages so long accustomed to darkness were too much dazzled with its splendor to see things distinctly. And now, as one extreme generally produces another, every thing that was not Greek and Roman was pronounced barbarous & therefore despised. What was the consequence? Why, the learned

learned, (under w^c denomination was included only those who knew how to read the Greek & Roman languages) - these overwhelmed with admiration of the knowledge of the ancients, sat down in despair of ever equalling the power & knowledge of former times. They rested content, and thought it sufficient to know what the ancients wrote as to the works of Nature, and Natures laws, they were neglected for the study of words. This remarkable era in human affairs is called the revival of letters. (L. Bolingbroke calls it the resurrection of letters.)

Soon after this ^{period} there happened a mighty change in the affairs of men. 3 seemingly insignificant mechanical discoveries, influenced the world more than any Empire, Sect or Congregation ever did. Whoever attentively considers the disposition of things in the Universe will find, that the Creator & Legislator of Nature, w^c we express by the single word Providence, makes use of the smallest means & causes to operate the greatest and most powerful effects. Thus, three mean, and seemingly insignificant mechanical discoveries effected a mighty change in the affairs of men, & influenced the world more than any Empire, Sect, or Congregation ever did. These were the Mariners compass, the discovery of gun powder, and the art of Printing. Before the discovery of Printing books were so scarce & so very valuable as to be only in the hands of Princes, and of people of equal opulence; whereas printing gave, as it were, wings to literature & spread knowledge around the globe. The very diffusiveness & manner

manner of writing now crept in, and grew up among authors. At that day, it was the fashion to print not only all that a man thought, but to quote all that he found any body else thought; and he was scarcely esteemed a literary "man" who published any thing less than a folio.

Altho' philosophy appeared again on earth, ^{tho' Empiric & Superstition was not entirely demolished} yet ^{the} ghosts and witches, & enchantments still maintained their ground in the imaginations of men. It required an age or two of the study of Nature, to dispel these offsprings of ignorance. Natural history as a separate science progressed but slowly.

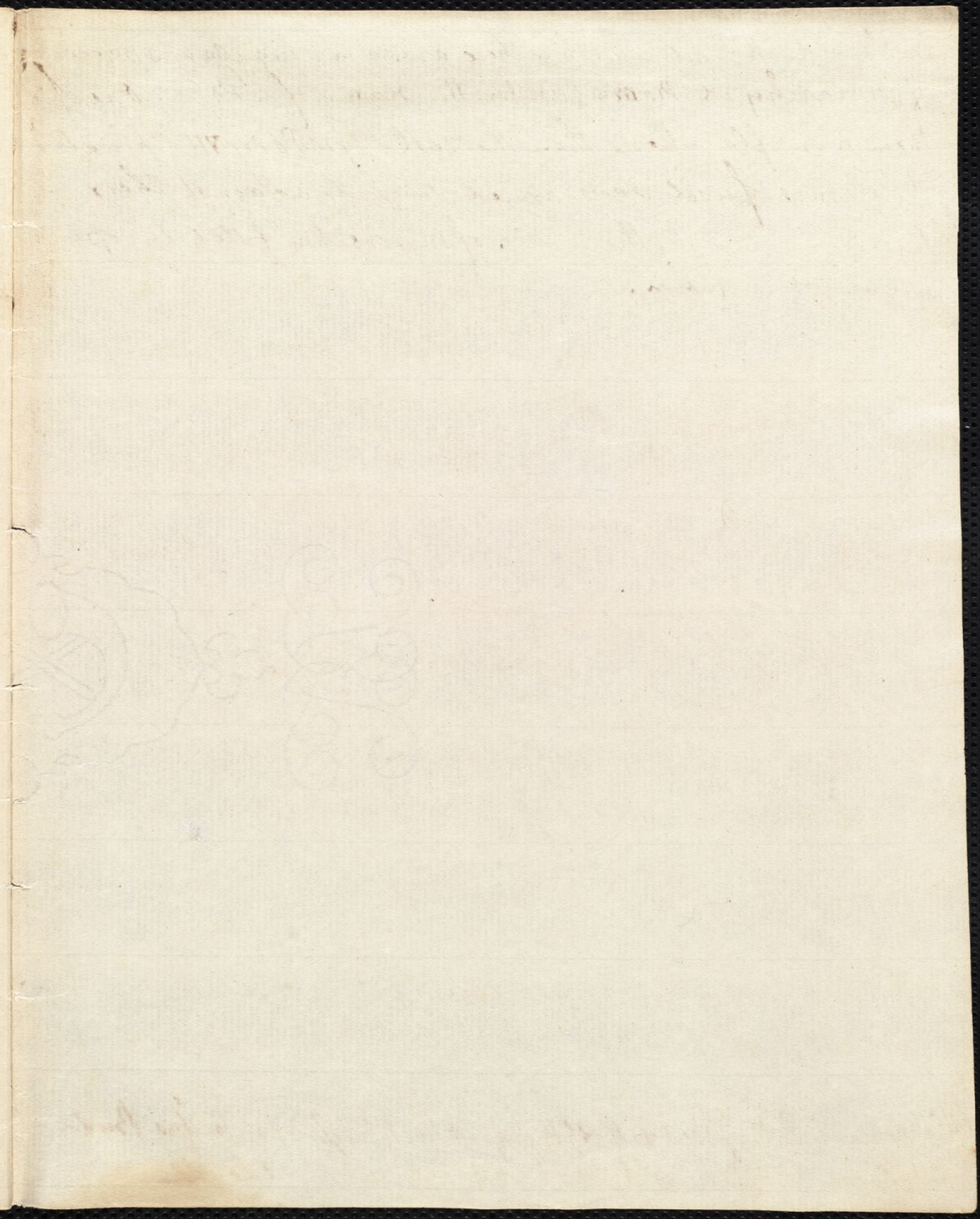
At length the voluminous Gesner, & no less voluminous Aldrovandus appeared with their ponderous folios! It was the object of these authors to amass every thing that had been said on the various subjects of natural history by Poets, grammarians, Travellers, Philosophers, Physicians and old women. Gesner published 13. huge volumes in folio. Boerhaave calls him "monstrum eruditionis". The labors of Gesner and Aldrovandus may be regarded as rude quarries from which some valuable materials may be dug, especially ^{and the description of Animals.} in Botany & Mineralogy, but the labor of digging will ~~not~~ at this period, over ballance their ^{value} ~~value~~. Aldrovandus after ruining his fortune in these pursuits, died in a hospital; and Gesner shared a still more wretched fate! for such is the gratitude ^{of mankind toward their teachers!}

After these two gigantic authors, came Wotton, Belon, Mondeletius, Johnson, and a herd of similar writers, not much better than the former. They translated, they transcribed, and sometimes abridged the labors of their predecessors, but they lost sight of chaste nature and sound philosophy.

About this time Turner published the first book of Botany in the English language (1551)

This race of phlegmatic writers was succeeded by May, Willouby & Grew in England, who stripped nature history of its ~~old~~ stuff, gothic dress, and decked her out in her native brilliancy. They rejected the dubious & fictitious relations of their predecessors, and added many new facts from observation & experiment. Grew who flourished about 100 years ago, gave us the anatomy of a plant, and that in so perfect a manner that it is the best book on that subject, now extant. These English Naturalists described with accuracy, and clasped, arranged and subdivided their subjects with great judgment. They pointed out the importance of the science to the Nation; and recommended the study of it by the clearness of their views, and by the solidity, brevity & perspicuity of their compositions. Nor were the French behind the English. Among them arose Meadus, Trembley, Bonnet (Geneva) & Spallanzani in Italy. Nor must we pass in silence the learned & very elegant Buffon who may justly be called the Pliny of France, as a writer; but his rich materials were drawn from ~~his~~ ^{his} ~~own~~ ^{his} ~~country~~ ^{country} ~~and~~ ^{and} ~~abroad~~ ^{abroad}.

Above them all towers that Prince of Naturalists
the great Sinnars of Sweeden



In these dark & dismal times there arose a singular species
of Monarchy at Rome, under the name of a Pope. One of
them more flagitious than the rest, Gregory VIIth kindled
the flames of civil wars, armed subjects against their
Sovereigns, and, by the terrors of superstition, filled Europe
with blood & confusion.

Mr. Herman is Prof. of Med & Nat. History at Strasburgh 3 Vol. Buffon's Birds
Mr. Allermann is Prof. of Exp^d. Philosophy & of Nat. History at Leyden —