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INSTAURATIO MAGNA PRELIMINARIES

[¶¶]

**¶ FRANCISCVS
DE VERVLAMIO,
SIC COGITAVIT;
TALEMQVE APVD SE
rationem instituit, quam Viuentibus &
Posteris notam fieri, ipsorum
interesse putauit.**

*Cvm Illi pro comperto esset, Intellectum humanum sibi ipsi negotium
facessere, neque auxilijs veris (quæ in Hominis potestate sunt) vti
10 sobriè & commodè; vnde multiplex Rerum Ignoratio, & ex
Ignoracione Rerum detrimenta innumera: omni ope connitendum
existimauit, si quo modo commercium istud Mentis, & Rerum (cui
vix aliquid in terris, aut saltem in terrenis, se ostendit simile) restitui
posset in integrum, aut saltem in melius deduci. Vt verò errores qui
15 inualuerunt, quique in æternum inualituri sunt, alij post alios (si
mens sibi permittatur) ipsi se corrigerent, vel ex vi Intellectus propria,*

[¶¶]

*vel ex auxilijs atque adminiculis Dialecticæ, nulla pror^lsus suberat
Spes; propterea quòd Notiones Rerum Primæ, quas Mens haustu facili
& supino excipit, recondit, atque accumulât (vnde reliqua omnia
20 fluunt) vitiosæ sint, & confusæ, & temerè à Rebus abstractæ; Neque
minor sit in Secundis & reliquis libido & inconstantia; ex quo fit, vt
vniuersa ista Ratio Humana, quâ vtimur quoad Inquisitionem*

naturæ, non benè congesta & œdificata sit, sed tanquàm Moles
aliqua magna sine fundamento. Dum enim Falsas Mentis vires
25 mirantur homines & celebrant, Veras eiusdem, quæ esse possint (si
debita ei adhibeantur auxilia, atque ipsa Rebus morigera sit, nec
impotenter Rebus insultet) prætereunt & perdunt. Restabat illud
vnum, vt res de integro tentetur, melioribus præsijs; vtque
fiat Scientiarum, & Artium, atque omnis Humanæ Doctrinæ, in
30 vniuersum Instauratio, à debitis excitata Fundamentis. Hoc verò
licèt Aggressu infinitum quiddam videri possit, ac supra vires
mortales; tamen idem Tractatu sanum inuenietur ac sobrium, magis

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quàm ea quæ adhuc facta sunt. Exitus enim huius rei est nonnullus.
In ijs verò, quæ iam fiunt circa Scientias, est Vertigo quædam,
& Agitatio perpetua, & Circulus. Neque Eum fugit, quantâ in
solitudine versetur hoc Experimentum, & quàm durum & incredibile
5 sit ad faciendam fidem. Nihilominùs, nec Rem, nec Seipsum
deserendum putauit; quin Viam, quæ vna Humanæ Menti perua est,
tentaret atque iniret. Præstat enim Principium dare Rei, quæ Exitum
habere possit, quàm in ijs, quæ Exitum nullum habent, perpetua
contentione & studio implicari. Viæ autem Contemplatiuæ, Vijs illis
10 actiuis decantatis ferè respondent; vt Altera ab initio ardua &
difficilis, desinat in apertum; Altera primo intuitu expedita &
procliuis, ducat in auia & præcipitia. Quùm autem incertus esset,
quando hæc alicui posthac in mentem ventura sint; eo potissimùm
vsus Argumento, quòd neminem hactenus inuenit, qui ad similes
15 cogitationes animum applicuerit; decreuit prima quæque, quæ
perficere licuit, in publicum edere. Neque hæc festinatio ambitiosa

[¶2]

fuit, sed sollicita; vt si quid Illi humanitùs accideret, ex^ltaret tamen
Designatio quædam, ac destinatio Rei quam animo complexus est;
vtque extaret simul Signum aliquod honestæ suæ & propensæ
20 in Generis Humani Commoda voluntatis. Certè
aliam quamcunque Ambitionem inferiorem
duxit Re, quam præ manibus habuit.
Aut enim Hoc quod agitur, Ni-
hil est; aut Tantum, vt me-
25 rito ipso contentum esse
debeat, nec fructum

¶2^v: blank.]

|
extrà quærerere.

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[13^r]

**| SERENISSIMO,
POTENTISSIMOQVE
PRINCIPI, AC DOMINO
NOSTRO,
IACOBO,
DEI GRATIA,
MAGINÆ BRITANNIÆ,
Franciæ, & Hiberniæ Regi,
FIDEI Defensori, &c.**

10 Serenissime, Potentissimeque Rex,

*Poterit fortasse Maiestas Tua me furti incusare, quòd tantum
Temporis, quantum ad hæc sufficiat, Negotijs Tuis suffuratus sim.
Non habeo quod dicam. Temporis enim non fit Restitutio; nisi fortè
quod detractum fuerit Temporis Rebus Tuis, id Memoriam Nominis*

[13^v]

15 *Tui, & Honoris Sæculi Tui reponi possit; si modò hæc alicuius sint
pretij. Sunt certè prorsus noua; etiam toto genere: sed descripta ex
veteri admodum exemplari, Mundo scilicet ipso, & Naturâ Rerum &
Mentis. Ipse certè (vt ingenuè fatear) soleo æstimare hoc Opus magis
pro partu Temporis, quàm Ingenij. Illud enim in eo solummodò
20 mirabile est; Initia Rei, & tantas de ijs quæ inualuerunt Suspiciones,
alicui in mentem venire potuisse. Cætera non illibentè sequuntur. At
versatur proculdubiò Casus (vt loquimur) & quiddam quasi
Fortuitum, non minùs in ijs quæ Cogitant Homines, quàm in ijs quæ
Agunt aut Loquuntur. Verùm hunc Casum (de quo loquor) ita
25 intelligi volo, vt si quid in his quæ afferro sit boni, id immensæ
Misericordiæ & Bonitati diuinæ, & Fœlicitati Temporum Tuorum
tribuatur: Cui & Viuus integerrimo affectu seruiui, & Mortuus
fortasse id effecero, vt Illa Posteritati, nouâ hac accensâ face in
Philosophiæ tenebris, prælucere possint. Meritò autem Temporibus*

30 *Regis omnium Sapientissimi & Doctissimi, Regeneratio ista &
Instauratio Scientiarum debetur. Superest Petitio, Maiestate Tuâ
non indigna, & maximè omnium faciens ad id quod agitur. Ea
est, vt quando Salomonem in plurimis referas, Iudiciorum*

pg 8

*grauitate, Regno pacifico, Cordis latitudine, Librorum deniquè, quos
composuisti, Nobili varietate, etiam Hoc ad eiusdem Regis*

*[¶4^r] Exemplum addas, vt cures Historiam Naturalm^l &
Experimentalem, veram & seueram (missis Philologicis) & quæ sit in*

5 *Ordine ad condendam Philosophiam, denique qualem suo loco
describemus; congeri & perfici: Vt tandem post tot Mundi ætates,
Philosophia & Scientiæ non sint ampliùs pensiles & aëreæ, sed solidis
Experientiæ omnigenæ, eiusdèmq̃ benè pensitatæ, nitantur
fundamentis. Equidem Organum præbui; ve-*

10 *rùm Materies à Rebus ipsis petenda est.
Deus Opt. Max. Maiestatem
Tuam diù seruet inco-
lumem.*

15 *Serenissimæ Maiestati Tuæ
Seruus Deuinctissimus,
&
Deuotissimus,*

FRANCISCVS VERVLAM,

¶4^v: blank.]

CANCELLARIVS.

pg 10

[A1^r]

**l FRANCISCI
DE VERVLAMIO,
INSTAVRATIO
MAGNA.**

PRÆFATIO.

De statu Scientiarum, quòd non sit fœlix, aut maiorem in modum auctus; quodque alia omninò, quàm prioribus cognita fuerit, via aperienda sit Intellectui humano; & alia comparanda auxilia, vt mens suo iure in rerum Naturam vti possit.

10

Videntur nobis homines, nec opes, nec vires suas benè nosse; verùm de illis, maiora quàm par est, de his, minora credere. Ita fit, vt aut artes receptas insanis pretijs æstimantes, nil ampliùs quærant; aut seipsos plus
15 æquo contemnentes, vires suas in leuioribus consumant; in ijs, quæ ad

[A1^v]

summam rei faciant, non experiantur. Quare sunt & suæ Scientijs Columnæ, tanquam fatales; cùm ad vlteriùs penetrandum, homines nec desiderio, nec spe excitentur. Atque, cùm opinio copiæ, inter maximas causas inopiæ sit; quùmque ex fiduciâ præsentium, vera auxilia
20 negligantur in posterum; ex vsu est, & planè ex necessitate, vt ab illis quæ adhuc inuenta sunt, in ipso operis nostri limine (idque relictis ambagibus, & non dissimulanter) honoris & admirationis excessus tollatur; vtili monito, ne homines eorum aut copiam, aut vtilitatem, in maiùs accipiant, aut celebrent. Nam si quis in omnem illam librorum
25 varietatem, quâ Artes & Scientiæ exultant, diligentius introspectat, vbi que inueniet eiusdem rei repetitiones infinitas tractandi modis diuersas, inuentione præoccupatas; vt omnia primo intuitu numerosa, facto examine, pauca reperiantur. Et de vtilitate apertè dicendum est: Sapientiam istam, quam à Græcis potissimùm hausimus, pueritiam
30 quandam Scientiæ videri, atque habere quod proprium est puerorum; vt ad garriendum prompta, ad generandum inualida & immatura sit. Controuersiarum enim ferax, operum effœta est. Adeò vt Fabula illa de Scylla, in literarum statum, qualis habetur, ad viuum quadrare videatur; quæ virginis os & vultum extulit, ad vterum verò monstra latrantia

.....
pg 12

succingebantur & adhærebant. Ita habent & Scientiæ, quibus insueuimus, generalia quædam blandientia, & speciosa; sed cùm ad particularia ventum sit, veluti ad partes generationis, vt fructum & opera ex se edant, tum contentiones & oblatrantes disputationes exoriuntur,

[A2^r]

5 in quas desinunt, & quæ partus locum obtinent. Prætereà, si huiusmodi Scientiæ planè res mortua non essent, id minimè videtur

euenturum fuisse, quod per multa iam sæcula vsu venit; vt illæ; suis
immotæ ferè hæreant vestigijs, nec incrementa genere humano digna
sumant: eò vsque, vt sæpenumerò non solùm assertio maneat assertio,
10 sed etiam quæstio maneat quæstio, & per disputationes non soluatur,
sed figatur, & alatur; omnisque traditio & successio disciplinarum
repræsentet & exhibeat personas Magistri & Auditoris, non Inuentoris,
& eius qui inuentis aliquid eximium adijciat. In artibus autem
mechanicis, contrarium euenire videmus—quæ, ac si auræ cuiusdam
15 vitalis forent participes, quotidie crescunt & perficiuntur; & in primis
authoribus rudes plerunque & ferè onerosæ, & informes apparent,
postea verò nouas virtutes, & commoditatem quandam adipiscuntur, eò
vsque, vt citius studia hominum & cupiditates deficiant & mutantur,
quàm illæ ad culmen, & perfectionem suam peruenerint. Philosophia
20 contra, & Scientiæ Intellectuales, statuarum more, adorantur &
celebrantur, sed non promouentur. Quin etiàm in primo nonnunquam
authore maximè vigent, & deinceps degenerant. Nam postquam
homines deditij facti sint, & in vnius sententiam (tanquam pedarij
Senatores) coierint, Scientijs ipsis amplitudinem non addunt, sed in
25 certis authoribus orandis & stipandis, seruili officio funguntur. Neque
illud afferat quispiam; Scientias paulatim succrescentes, tandem ad
statum quendam peruenisse, & tum demùm (quasi confectis spatijs

[A2^y]

legitimis) in operibus paucorum sedes fixas ^lposuisse; atque postquam
nil melius inueniri potuerit, restare scilicet, vt quæ inuenta sint,
30 exornentur, & colantur. Atque optandum quidem esset, hæc ita se
habuisse. Rectius illud, & verius: istas Scientiarum mancipationes nil
aliud esse, quàm rem ex paucorum hominum confidentiâ, & reliquorum
socordiâ, & inertiâ natam. Postquam enim Scientiæ, per partes
diligenter fortassè excultæ, & tractatæ fuerint, tum fortè exortus est
35 aliquis, ingenio audax, & propter Methodi compendia acceptus, &
celebratus, qui specie tenus Artem constituerit, reuera veterum labores
corruperit. Id tamen posteris gratum esse solet, propter vsum operis

.....
pg 14

expeditum, & inquisitionis nouæ tædium, & impatientiam. Quòd si
quis, consensu iam inueterato, tanquam Temporis iudicio moueatur;
sciat se ratione admodùm fallaci, & infirmâ niti. Neque enim nobis
magnâ ex parte notum est, quid in Scientijs & Artibus, varijs sæculis &
5 locis, innotuerit, & in publicum emanârit; multò minùs, quid à singulis
tentatum sit, & secretò agitatum. Itaque nec Temporis Partus, nec

Abortus extant in Fastis. Neque ipse consensus, eiusque diuturnitas,
magni prorsus æstimandus est. Vtcunq̄ue enim varia sint genera
Politiarum, vnicus est status Scientiarum, isque semper fuit, &
10 mansurus est popularis. Atque apud populum plurimùm vigent
doctrinæ, aut contentiosæ & pugnaces, aut speciosæ & inanes; quales
videlicet assensum aut illaqueant, aut demulcent. Itaque maxima
ingenia proculdubiò per singulas ætates vim passa sunt; dum viri captu

[A3^r]

& intellectu non vulgares, nihilo seciùs existimati suæ consulentes,
15 temporis & multitudinis iudicio se submiserint. Quamobrem altiores
Contemplationes si fortè vsquàm emicuerint, opinionum vulgarium
ventis subindè agitatæ sunt, & extinctæ. Adeò vt Tempus, tanquàm
fluuius, leuia & inflata ad nos deuexerit, grauia & solida demerserit.
Quin & illi ipsi authores, qui dictaturam quandam in Scientijs
20 inuaserunt, & tantâ confidentiâ de rebus pronuntiant; cùm tamen per
interualla ad se redeunt, ad querimonias de subtilitate Naturæ, veritatis
recessibus, rerum obscuritate, Causarum implicatione, ingenij humani
infirmitate, se conuertunt: In hoc nihilò tamen modestiores, cùm malint
communem hominum & rerum conditionem causari, quàm de seipsis
25 confiteri. Quin illis hoc ferè solenne est, vt quicquid Ars aliqua non
attingat, id ipsum ex eadem arte impossibile esse statuunt. Neque verò
damnari potest Ars, quùm ipsa disceptet, & iudicet. Itaque id agitur, vt
ignorantia etiam ab ignominiâ liberetur. Atque quæ tradita & recepta
sunt, ad hunc ferè modum se habent: quoad opera sterilia, quæstionum
30 plena; incrementis suis tarda & languida; perfectionem in toto
simulantia, sed per partes malè impleta; delectu autem popularia, &
authoribus ipsis suspecta, ideoque artificijs quibusdam munita, & osten-
tata. Qui autem & ipsi experiri, & se Scientijs addere, earumque
fines proferre statuerunt, nec illi à receptis prorsus desciscere ausi sunt,
35 nec fontes rerum petere. Verùm se magnum quiddam consequutos
putant, si aliquid ex proprio inserant, & adijciant; prudenter secum

[A3^v]

reputantes, se in assentiendo modestiam, in adiiciendo libertatem tueri

.....
pg 16

posse. Verùm dum opinionibus & moribus consulitur, mediocritates
istæ laudatæ, in magnum Scientiarum detrimentum cedunt. Vix enim
datur, authores simul & admirari, & superare. Sed fit aquarum
more, quæ non altiùs ascendunt, quàm ex quo descenderunt. Itaque
5 huiusmodi homines emendant nonnulla, sed parùm promouent; &

proficiunt in meliùs, non in maiùs. Neque tamen defuerunt, qui ausu
maiore, omnia integra sibi duxerunt, & ingenii impetu vsi, priora
prosternendo, & destruendo, aditum sibi & placitis suis fecerunt;
quorum tumultu non magnoperè profectum est; quùm Philosophiam &
10 Artes non re ac opere amplificare, sed placita tantùm permutare, atque
regnum opinionum in se transferre contenderint: exiguo sanè fructu,
quùm inter errores oppositos, errandi causæ sint ferè communes. Si qui
autem nec alienis, nec propriis placitis obnoxii, sed libertati fauentes,
ita animati fuere, vt alios secum simul quærere cuperent; illi sanè
15 affectu honesti, sed conatu inualidi fuerunt. Probabiles enim tantùm
rationes sequuti videntur, & argumentorum vertigine circumaguntur, &
promiscuâ quærendi licentiâ seueritatem inquisitionis eneruârunt.
Nemo autem reperitur, qui in rebus ipsis, & Experimentiâ, moram fecerit
legitimam. Atque nonnulli rursus qui experientiæ vndis se commisere,
20 & ferè Mechanici facti sunt, tamen in ipsâ experientiâ Erraticam
quandam inquisitionem exercent, nec ei certâ lege militant. Quin &
plerique pusilla quædam pensa sibi proposuere, pro magno ducentes, si

[A4^r]

vnum aliquod inuentum eruere pos^ssint; instituto non minùs tenui,
quàm imperito. Nemo enim rei alicuius naturam, in ipsâ re, rectè
25 aut fœliciter perscrutatur; verùm post laboriosam experimentorum
variationem non acquiescit, sed inuenit quod vlteriùs quærat. Neque
illud imprimis omittendum est, quòd omnis in experiendo industria,
statim ab initio opera quædam destinata, præpropere & intempestiuo
studio captauit; Fructifera (inquam) Experimenta, non Lucifera,
30 quæsiuit; nec ordinem diuinum imitata est, qui primo die lucem tantùm
creauit, eique vnum diem integrum attribuit; neque illo die quicquam
materiati operis produxit, verùm sequentibus diebus ad ea descendit.

.....
pg 18

At, qui summas Dialecticæ partes tribuerunt, atque indè fidissima
Scientijs præsidia comparari putarunt, verissimè & optimè viderunt,
intellectum humanum sibi permissum, meritò suspectum esse debere.
Verùm infirmior omninò est malo medicina; nec ipsa mali experts.
5 Siquidè Dialectica quæ recepta est, licèt ad Ciuilia & Artes, quæ in ser-
mone & opinione positæ sunt, rectissimè adhibeatur; Naturæ tamen
subtilitatem longo interuallo non attingit; & prensando quod non capit,
ad errores potiùs stabiliendos, & quasi figendos, quàm ad viam veritati
aperiendam valuit.

10 Quarè, vt quæ dicta sunt complectamur, non videtur hominibus aut
aliena fides, aut industria propria, circa Scientias hactenùs fœlicitèr
illuxisse; præsertim quùm & in demonstrationibus, & in experimentis
adhuc cognitis, parùm sit præsidij. Ædificium autem huius Vniuersi,
15 structurâ suâ, intellectui humano con^ltemplanti, instar labyrinthi est;
vbi tot ambigua viarum, tàm fallaces rerum & signorum similitudines,
tàm obliquæ & implexæ Naturarum spiræ & nodi, vndequaue se
ostendunt. Iter autem, sub incerto sensûs lumine, interdum affulgente,
interdum se condente, per experientiæ & rerum particularium syluas,
20 perpetuò faciendum est. Quin etiam duces itineris (vt dictum est) qui se
offerunt, et ipsi implicantur, atque errorum, et errantium numerum
augent. In rebus tàm duris, de iudicio hominum ex vi propriâ, aut etiam
de fœlicitate fortuitâ, desperandum est. Neque enim Ingeniorum quan-
tacunque excellentia, neque experiendi alea sæpiùs repetita, ista vincere
25 quea. Vestigia filo regenda sunt: omnisque via vsque à primis ipsis
sensuum perceptionibus, certâ ratione munienda. Neque hæc ità
accipienda sunt, ac si nihil omninò tot sæculis, tantis laboribus actum
sit. Neque enim eorum quæ inuenta sunt, nos pœnitent. Atque antiqui
certè in ijs, quæ in ingenio et meditatione abstracta posita sunt,
30 mirabiles se viros præstitere. Verùm, quemadmodùm sæculis prioribus
cùm homines in nauigando per stellarum tantùm obseruationes cursum
dirigebant, veteris sanè Continentis oras legere potuerunt, aut maria
aliqua minora, et mediterranea trajcere; priusquàm autem Oceanus
trajceretur, et noui Orbis regiones detegerentur, necesse fuit vsum acûs
35 nauticæ, vt duces viæ magis fidum, et certum, innotuisse: simili
prorsus ratione, quæ hucusque in Artibus et Scientijs inuenta sunt, ea
huiusmodi sunt, vt vsu, meditatione, obseruando, argumentando,

[A4^v]

reperiri potuerint; vtpotè quæ sensibus propiora sint, & communibus

[A5^r]

pg 20

notionibus ferè subiaceant. Antequàm ver` ad remotiora, & occultiora
Naturæ liceat appellere, necessariò requiritur, vt melior & perfectior
mentis & Intellectus humani vsus & adoperatio introducatur.

Nos certè æterno Veritatis amore deuicti, viarum incertis, & arduis, &
5 solitudinibus, nos commisimus; & Diuino auxilio freti & innixi,
mentem nostram, & contra opinionum violentias, & quasi instructas
acies, & contra proprias & internas hæsitaciones & scrupulos, & contra

rerum caligines, & nubes, & vndequaque volantes phantasias,
sustinuimus; vt tandem magis fida & segura indicia, viuentibus &
10 posteris comparare possemus. Quâ in re si quid profecerimus, non alia
sanè ratio nobis viam aperuit, quàm vera & legitima spiritus humani
humiliatio. Omnes enim ante nos, qui ad artes inueniendas se
applicuerunt, coniectis paulispèr in res, & exempla, & experientiam
oculis, statim, quasi inuentio nil aliud esset, quàm quædam excogitatio,
15 spiritus proprios, vt sibi Oracula exhiberent, quodammodò inuocârunt.
Nos verò inter res castè & perpetuò versantes, Intellectum longiùs à
Rebus non abstrahimus, quàm vt rerum imagines, & radij (vt in sensu
fit) coire possint; vndè fit, vt Ingenij viribus & excellentiæ non multum
relinquatur. Atque quam in inueniendo adhibemus humilitatem,
20 eandem & in docendo sequuti sumus. Neque enim aut confutationum
triumphis, aut antiquitatis aduocationibus, aut authoritatis vsurpatione

[A5^y]

quâdam, aut etiam obscuritatis velo, aliquam his^l nostris inuentis
maiestatem imponere, aut conciliare conamur; qualia reperire non
difficile esset ei, qui nomini suo, non animis aliorum lumen affundere
25 conaretur. Non (inquam) vllam aut vim, aut insidias hominum iudicijs
fecimus, aut paramus; verùm eos ad res ipsas, & rerum fœdera
adducimus; vt ipsi videant, quid habeant, quid arguant, quid addant,
atque in commune conferant. Nos autem si quâ in re, vel malè
credidimus, vel obdormiuimus, & minùs attendimus, vel defecimus in
30 viâ, & inquisitionem abruptimus; nihilominùs iis modis, res nudas &
apertas exhibemus, vt errores nostri, antequàm Scientiæ massam altiùs
inficiant, notari & separari possint; atque etiàm vt facilis & expedita sit
laborum nostrorum continuatio. Atque hoc modo, inter Empiricam &
Rationalem facultatem (quarum morosa & inauspicata diuortia, &
35 repudia, omnia in humanâ familiâ turbauere) coniugium verum
& legitimum, in perpetuùm, nos firmasse existimamus.

Quamobrem, quùm hæc arbitrij nostri non sint; in principio Operis,
ad Deum Patrem, Deum Verbum, Deum Spiritum, preces fundimus

.....
pg 22

humillimas, & ardentissimas, vt humani generis ærumnarum memores,
& peregrinationis istius vitæ, in quâ dies paucos & malos terimus; nouis
suis Eleemosynis, per manus nostras, familiam humanam dotare
dignentur. Atque illud insuper supplices rogamus, ne humana diuinis
5 officiant; néue ex reseratione viarum sensûs, & accensione maiore

luminis naturalis, aliquid incredulitatis & noctis, animis nostris, erga

[A6^r]

Diuina mysteria oboriatur: ^l sed potiùs, vt ab intellectu puro, à phantasiis
& vanitate repurgato, & diuinis oraculis nihilominùs subdito, & prorsus
deditio, fidei dentur, quæ fidei sunt. Postremò, vt Scientiæ veneno à
10 serpente infuso, quo animus humanus tumet & inflatur, deposito, nec
altum sapiamus, nec vltra sobrium, sed veritatem in charitate colamus.

Peractis autem votis, ad homines conuersi, quædam & salutaria
monemus, & æqua postulamus. Monemus primùm (quod etiam precati
sumus) vt homines sensum in officio, quoad Diuina, contineant. Sensus
15 enim (instar Solis) Globi terrestris faciem aperit, cœlestis claudit, &
obsignat. Rursus, ne huiusce mali fugâ, in contrarium peccent; quod
certè fiet, si naturæ Inquisitionem vlla ex parte veluti Interdicto,
separatam putant. Neque enim pura illa & immaculata Scientia
naturalis, per quam *Adam* nomina ex proprietate rebus imposuit,
20 principium aut occasionem lapsui dedit. Sed ambitiosa illa &
Imperatiua Scientiæ Moralis, de Bono & Malo diiudicantis, cupiditas,
ad hoc vt Homo à Deo deficeret, & sibi ipsi leges daret, ea demùm ratio
atque modus tentationis fuit. De Scientiis autem quæ Naturam
contemplantur, Sanctus ille Philosophus pronuntiat, *Gloriam Dei esse*
25 *celare rem; gloriam Regis autem rem inuenire*: non aliter, ac si Diuina
Natura, innocenti & beneuolo puerorum ludo delectaretur, qui ideò se
abscondunt vt inueniantur; atque animam humanam sibi collusorem in
hoc ludo, pro suâ in homines indulgentiâ, & bonitate cooptauerit.

[A6^v]

Postremò omnes in vniuersum monitos volumus, vt Scientiæ veros fies
30 cogitent; nec eam aut animi causâ petant, aut ad contentionem, aut vt
alios despiciant, aut ad commodum, aut ad famam, aut ad potentiam,
aut huiusmodi inferiora, sed ad meritum, & vsus vitæ, eamque in
Charitate perficiant, & regant. Ex appetitu enim Potentiæ, Angeli lapsi
sunt; ex appetitu Scientiæ, homines; sed Charitatis non est excessus;
35 neque Angelus, aut Homo, per eam vnquam in periculum venit.

Postulata autem nostra, quæ afferimus, talia sunt. De nobis ipsis
silemus; de re autem quæ agitur, petimus; vt homines eam non

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Opinionem, sed Opus esse cogitent; ac pro certo habeant, non Sectæ nos
alicuius, aut Placiti, sed vtilitatis, & amplitudinis humanæ fundamenta

moliri. Deinde, vt suis commodis æqui, exutis opinionum zelis & præiudiciis, in commune consulant, ac ab erroribus viarum atque
5 impedimentis, nostris præsiidiis & auxiliis liberati & muniti, laborum qui restant, & ipsi in partem veniant. Prætereà, vt benè sperent, neque *Instaurationem* nostram, vt quiddam infinitum, & vltra mortale, ingant, & animo concipiant; quùm reuera sit infiniti erroris finis, & terminus legitimus; mortalitatis autem, & humanitatis, non sit immemor, quùm
10 rem non intra vnus ætatis curriculum omninò perfici posse confidat, sed successioni destinet; denique Scientias, non per arrogantiam in humani Ingenij cellulis, sed submissè in mundo maiore quærat. Vasta verò, vt plurimùm solent esse, quæ inania: solida contrahuntur maximè, & in

[B1¹]

paruo sita sunt. Postremò etiam pe^ltendum videtur (ne fortè quis rei
15 ipsius periculo nobis iniquus esse velit) vt videant homines, quatenus ex eo quod nobis asserere necesse sit (si modò nobis ipsi constare velimus) de his nostris opinandi, aut sententiam ferendi, sibi ius permissum putent: quùm nos omnem istam rationem humanam præmaturam, anticipantem, & à rebus temerè, & citiùs quàm oportuit, abstractam,
20 (quatenus ad inquisitionem Naturæ) vt rem variam, & perturbatam, & malè extractam, reijciamus. Neque postulandum est, vt eius iudicio stetur, quæ ipsa in iudicium vocatur.

**I FRANCIS
OF VERULAM
REASONING THUS WITH HIMSELF
CONCLUDED THAT
IT WOULD BE IN THE INTEREST OF THE LIVING
AND OF THOSE YET TO COME
TO HEAR HIS WORDS**

Since he knew for a fact that the human intellect was the author of its own difficulties by not applying calmly and opportunely the right remedies which lie within man's power—whence comes manifold ignorance of things and from that ignorance countless disadvantages—he thought that every effort should be directed to seeing how the commerce between the Mind and Things (to which scarcely anything on Earth or, at any rate, earthly things can compare) could be entirely restored, or at least put on a better footing. Now there never was the slightest hope that the errors which have flourished and will forever flourish would (if the mind were left to itself) put themselves right one after another either by native force of intellect or the help and^l support of dialectic. And why? Because the primary notions of things (whence all other notions flow) which a slack mind effortlessly absorbs, lays up, and accumulates are corrupt, disordered, and recklessly abstracted from things; and there is no less arbitrariness and instability in secondary and other notions. The result is that, taken as a whole, human reasoning as applied to the investigation of nature is not at all well sorted and set up, but like some stately pile with no foundations. For while men admire and celebrate the mind's imaginary powers they ignore and miss the real ones which they could exert (if proper helps were applied to it, and if it were receptive to things instead of impotently abusing them). Thus the only course left was to try to do everything again with better assistance, and undertake a wholesale Instauration of the sciences, arts and all human learning, raised on proper foundations. But while this may seem to be an endless task from the outset, and beyond the powers of mere mortals, yet when taken in

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hand, it may be found to be more reasonable and moderate than those proposals acted on hitherto. For this matter can come to a conclusion whereas the proposals already implemented in the sciences leave men forever spinning in dizzying circles. Nor did he fail to see that this experiment of his might be a solitary undertaking, and how desperately difficult it may be to get others to put their trust in it. Yet did he not think to fail it or himself but determined to try and set out on the only way open to the human mind. For it is better to

start on an undertaking with the possibility of an outcome than on one of those which only ends entangled in incessant argument and effort. For the contemplative ways pretty well resemble the two celebrated active ones: the first, arduous and difficult at the beginning, ends up in open country; the other, at first sight free and easy, leads into the mountainous wilds. Now since—on the grounds that he so far finds no one else who has put his mind to similar thoughts—he was uncertain when these things might come into the mind of anyone else, he decided to make them public as soon as he was able to finish them. And his haste was born not of ambition but of concern that, if the fate of all humans should overtake him, there would still remain some plan and¹ specification of what his soul has grasped, and so that there would also remain some sign of his sincere concern for the well-being of the human race. And for sure he held any other ambition in lower esteem than the work to which he had set his hand. For the issue at stake is either worthless or so great that it ought to be content with its own desert, and to seek no reward beyond that.

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pg 7

**¹ TO OUR MOST SERENE
AND MIGHTY
LORD AND MASTER
JAMES,
BY THE GRACE OF GOD
KING OF GREAT BRITAIN,
France, & Ireland,
Defender of the FAITH, &c.**

Most Serene and Mighty King,

Your Majesty may perhaps accuse me of theft on the grounds that I have stolen from government business the time that I have taken to write this work. And I have no defence to offer, for time past cannot be recovered, unless it happen that the time taken from your affairs can—if such things have any worth—redound to the memory of your name and the honour¹ of your age. And the things I speak of are certainly quite new in their very kind, but are framed on an extremely ancient archetype, i.e. the very world itself, and the nature

of things and of the mind. And I frankly admit that I myself am certainly inclined to regard this work more as the birth of time than of talent. For the only remarkable thing in it is that its beginnings and such deep suspicions about received doctrines should have entered anyone's head. All the rest follows naturally enough. And doubtless there is an element of chance (as I say) and an accidental quality no less in what men think as in what they do or say. But I wish the element of chance I speak of to be understood to mean that if there be any good in what I propose it should be attributed to God's infinite mercy and goodness, and to the blessedness of Your Majesty's times; and that, as I have served you in life with wholehearted devotion, so after death I may perhaps bring it to pass that your times may blaze forth to future generations with this flame new kindled in the dark recesses of philosophy. Deservedly does this Regeneration and Instauration of the sciences belong to the times of the wisest and most learned of kings. It remains for me to submit a petition not unworthy of Your Majesty, and one absolutely essential to the matter in hand, which is that as you stand comparison with Solomon in many things—in weightiness of

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judgement, the peace of your realm, largeness of heart, and, indeed, the noble variety of books you have written—you would rival that same king by putting in hand the collecting and perfecting of a true and rigorous¹ natural and experimental history which (stripped of philological matters) may be designed for the building up of philosophy, and which I shall describe in its proper place, so that at last, after so many ages of the world, philosophy and the sciences may be no longer an airy and floating fabric but a solid construction resting on the firm foundations of well weighed experience of every kind. As for me, I have supplied the Organum but its material must be sought in the things themselves. May God, the Great and the Good, long keep Your Majesty in safety.

Your Most Serene Majesty's
Most Bounden
and
Devoted Servant,

FRANCIS VERULAM,
CHANCELLOR.

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pg 11

**1 FRANCIS
OF VERULAM'S**

GREAT INSTAURATION

PREFACE

***Concerning the condition of the sciences: that it is unprosperous,
nor much improved; and that a way completely different
from the one known before should be opened for
the human intellect, and other helps devised
to let the mind exert its proper authority
over the nature of things.***

In my view men properly appraise neither their assets nor their strength, but place too much faith in the former and too little in the latter. The consequence of wildly overvaluing the received arts is that men do not look beyond them; the consequence of undervaluing their own strength is that they waste it on trivia and do not try to test it on^l business of real weight. These things are then like baleful pillars set up against the sciences, as men are not encouraged by the desire or hope of getting beyond them. Moreover, as opinion of plenty is among the greatest causes of poverty, and as faith in the present leads us to neglect true helps in the future, it is useful and actually necessary on the very threshold of our work to rid ourselves of excessive respect and admiration for things discovered already (and to do that briskly and without pretence), with a wholesome warning to men not to exaggerate their abundance or overpraise their utility. For if anyone looks more closely at all that variety of books in which the arts and sciences rejoice, he will find everywhere endless repetition of the same old stuff, put in different ways but lacking in originality, so that the whole lot, at first glance impressive, turns out on closer inspection to be paltry. And as for its utility, I must openly declare that this wisdom, derived mainly from the Greeks, is what might be called the boyhood of science and, as with boys, it is all prattle and no procreation. For productive of controversies, it is barren in works; so that the fable of Scylla seems to catch the present condition of letters to the life for she had the face and countenance of a virgin but a womb

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begirt with barking monsters. Thus the sciences we ate accustomed to have certain charming and plausible generalities at their disposal; but when they get down to particulars, as if to the procreative parts, to bring forth fruit and works, they give rise instead to quarrels and barking disputations; and this is where they end up, and^l these are their sole offspring. Besides, if sciences of this kind were not evidently moribund, it seems that the situation which has prevailed for so many ages would not have come about, i.e. that they are almost dead in their tracks and do not grow in a manner worthy of the human race, to the extent that very often a claim not only remains a mere claim but a question remains a mere

question, unresolved by disputations but only entrenched and kept alive; and all handing down and passing on of the disciplines is practised and embodied in the relationship of master and pupil, not of discoverer and improver of discoveries. In the mechanical arts, however, we see that the opposite happens—which, as if they were partaking of a certain breath of life, grow and get better by the day, and with their first authors they mostly seem primitive, burdensome as a rule, and ugly, but afterwards they acquire new virtues and a certain handiness, even to the extent that men's preoccupations and desires shift and subside more quickly than these arts reach the peak of their perfection. Philosophy, on the other hand, and the intellectual sciences are, like statues, admired and praised but not pushed forward. Moreover, they sometimes flourish most with their first author and afterwards deteriorate. For once men have surrendered their judgements and (like the Pederian senators) concurred in supporting one man's opinion, they do not enlarge the actual sciences but discharge the servile function of furnishing a guard of honour for certain authors. And let no one hold that the sciences have gradually grown up, and have at last reached a certain condition, and now come (as if they had run their proper course) to a standstill in the works of just a few authorities; ¹ and that afterwards nothing better could be discovered but that it remains only to elaborate and cultivate what has been discovered. Now I wish that this were in fact the case. But it would be more truthful and accurate to point out that this enslavement of the sciences has arisen from nothing more than the audacity of the few, and the idle slackness of the rest. For once perhaps the sciences had been carefully cultivated and handled bit by bit, someone chanced to come along who, famed and celebrated for intellectual daring and for the shortcuts of his method, established things as an art in its outward appearance but in reality ruined the work of his predecessors. Yet this is what his successors come to like because it makes their work easier and

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spares them the boredom and weariness of new investigation. But if anyone is persuaded by this long-standing consensus, as if it were by Time's verdict, let him know that his reasoning is extremely flawed and ineffectual. For we do not know for the most part what has become known and made public in the sciences and arts in different times and places; much less do we know what individuals have attempted and pursued in private. Thus neither the births nor miscarriages of time appear in the public record. Nor should we rate that very consensus and its longevity very highly. For however the kinds of political system may vary, the government of the sciences stays the same: it always has been and always will be popular. And with the populace the doctrines which flourish most are either contentious and aggressive, or bland and vacuous, and such as either ensnare assent or entrance it. The greatest wits of every single age have doubtless felt their force; while men with more than ordinary intellectual grasp, looking out ¹ for their reputation just the same, have given in to the verdict of time and the multitude. For this reason if exalted thoughts happen to have flashed forth anywhere they have soon after been shaken by the blasts of popular

opinion and extinguished, so that time (like a river) has carried down to us matter light and full of wind, while making the heavier and solid stuff sink. Even those very authors who have elbowed their way into a kind of dictatorship in the sciences and have laid down the law with such assurance, when after a while they come to their senses again, they take to whining about the subtlety of nature, the inaccessibility of truth, the obscurity of things, the intricacy of causes, and the weakness of human wit. But in this they are not the least bit more modest, seeing that they put the blame on the common condition of men and matter rather than confess to faults which are all their own. In fact their way is that when any art fails to achieve something, they insist that such achievement is impossible on the authority of that same art. But an art cannot be condemned when it pleads and judges in its own cause. So the object of the exercise is to let ignorance off without ignominy. Now the condition of the knowledge handed down and received is pretty much this: it is barren in works, and bloated with questions, its rate of growth is slow and sluggish, it simulates perfection in the whole but is poorly developed in its parts, it is popular in its distinctions and distrusted by its own authors, and, therefore it is fortified and tricked out with all sorts of cunning devices. And even those who have tried to learn from experience and bring themselves to the sciences and advance their frontiers have shrunk from cutting themselves completely free of received ideas to seek out the sources of things.

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But they imagine that they have done something great by adding or introducing anything of their own, supposing in their wisdom that they can preserve their modesty by¹ assenting to tradition, and their freedom by adding to it. But while they defer to received and customary opinions, these much praised balancing acts are very damaging to the sciences. For it is hard to admire authors and surpass them at the same time. As with water, you cannot rise higher than the point from which you fell. Thus men of this kind patch things up but hardly push them forward, and make them more gracious without making them greater. Nevertheless we have not been short of men who, with greater daring, have taken everything on themselves and, by sheer force of wit, flattened and razed all earlier knowledge and made way for themselves and their own dogmas; but they have done little good with their turbulence since they have not increased philosophy and the arts in fact and in works but only rung the dogmatic changes and fought to deliver the realm of opinion into their own hands—and with scant result since errors can be diametrically opposed but their causes be almost the same. However, if any men, not in thrall to their own or anyone else's dogmas but loving liberty, have had the nerve to want others to join with them in their search, these men, though honest in intention, have been ineffective in their efforts. For they seem to have followed probable reasons alone, and they are flung round in a whirlwind of arguments, and have deprived their investigation of its sinew and rigour by the indiscriminate licence of their questioning. We find no one who has devoted a proper period of time to the things themselves and to experience. Then again some have

committed themselves to the waves of experience, and pretty well become mechanics, yet these pursue in that very experience a drifting kind of investigation, and act on no certain principle. Indeed, they have mostly set themselves certain small-scale tasks, and take it for a mighty act if they can dig up just one single¹ discovery—a habit as shallow as it is unskilful. For no one thoroughly and successfully investigates the nature of anything just by looking at the thing itself; indeed, after laborious variation of experiments he finds no peace but only more to look into. And we should not, above all, overlook the fact that all the effort given to trying things out has from the very start inquired into certain works set for it in advance, and has chased after these with premature and untimely zeal; it has looked (I say) for fruit-bearing and not light-bearing experiments, without imitating God's order which created light alone on the first day, giving the whole day to that and not to producing any of the material works which He turned to on the days following. But

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those who have assigned the highest functions to dialectic, believing that it furnished the most trustworthy aid to the sciences, have seen all too truly and well that the human intellect left to itself rightly deserves to be treated with suspicion. Indeed, the medicine just cannot cope with the disease, and is not even free of disease itself. For the dialectic in current use, though it be very properly applied to civil affairs and the arts which rest on conversation and opinion, still falls far short of the subtlety of nature and, snatching at what it cannot grasp, has done more to establish and shore up errors than open the way to truth.

To sum up then, it does not seem that men's trust in their own or others' efforts in the matter of the sciences has been brilliantly successful so far, especially since the help afforded by the demonstrations and experiments known hitherto has been slight. Now to the human intellect reflecting on it, the fabric of the universe looks¹ in its construction like a labyrinth, where we find everywhere so many blind alleys, such deceptions and misleading signs and such oblique and intricate convolutions and knots of nature. But the journey has always to be made through the woods of experience and of things particular, guided by the uncertain light of the sense which sometimes flares up and at others dies down. Even those who (as I have said) present themselves as our guides on the journey are themselves ensnared in the thickets, and add to the number of errors and errant souls. In such difficult circumstances we must then lose faith both in the naked force of human judgement and even in chance success. For these difficulties cannot be overcome by any amount of genius or repeated gambling on the results of experience. No, our tracks must be guided by a clue, and a sound policy must secure every step of the way right from the very perceptions of the senses. But this should not be taken to mean that absolutely nothing has been accomplished during so many ages and with so much work. For I do not complain about things already discovered. And the ancients showed themselves to be marvellous men in things which rest on wit and abstract meditation. But as in earlier times when men only had the stars

to sail by, they could indeed coast along the shores of the Old World or cross lesser and mediterranean seas; but before they could cross the oceans and discover the regions of the New World, the use of the mariner' s compass, as a more trustworthy and certain guide, had first to be found out. By the same token what has so far been discovered in the arts and sciences are of the sort that could have been discovered by use, meditation, observation and ^l argument; for they lay pretty close to the senses and to common notions. But before we can get at the

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more distant and hidden aspects of nature, we are necessarily obliged to bring in means of bettering and perfecting the exercise and practice of the human mind and intellect.

Now I, in thrall to an undying love of truth, have committed myself to the hazards, hardships and loneliness of the open road and, trusting for support to the Lord' s help, I have kept my mind proof against the shock and marshalled ranks of opinion, against my own inner hesitations and misgivings, and against obscurity and darkness of things, and the disembodied imaginings that beset us round, so that at last I can bring to generations present and future guidance more reliable and sure. Now if I have made any progress in this business, the reason why the way was opened to me rested in nothing other than a true and legitimate abasement of the human spirit. For before me all who put their minds to the discovery of arts, having briefly glanced at things, examples and experiences, as if discovery were nothing more than an intellectual exercise, instantly summoned up their own spirits as to show them oracles. But I, engaging purely and unceasingly with things, do not abstract my intellect further from them than to allow (as with sight) their images and rays to come into focus; whence it happens that not much is left to the superior force of sheer wit. And the same humility that I use in discovering, I also use in teaching. For I do not seek either by victory in debate, appeals to antiquity, any arbitrary claim to authority, or even by cloaking myself in obscurity, to dignify ^l or commend any of my discoveries with any majesty; which is the sort of thing anyone could easily do if he were trying to aggrandise himself rather than enlighten the souls of others. I have not (I say) sought nor do I plan to ensnare men' s judgements by force or fraud; instead I want to lead them to the things themselves and their interconnections, so that they can see for themselves what they possess, what they may assert, and what they may add and contribute to the common good. For my own part, if I have wrongly given credit to anything, or grown sleepy and inattentive, or become weary on my way and left the investigation unfinished, I nevertheless make the things plain for all to see, so that my mistakes can be spotted and separated out before the body of science is further infected by them, and also so that my labours can be carried on easily and expeditiously. And in this way I believe that I have solemnised a true, lawful and enduring marriage between the empirical and rational faculties (whose protracted and inauspicious divorce and mutual rejection has caused so much upset in the human family).

Now because these things are not ours to command, at the beginning of the work, I pour forth most humble and hearty prayers to God the

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pg 23

Father, God the Word, and God the Holy Ghost that, having in mind the afflictions of the human race and the pilgrimage of this our life in which we wear out days short and evil, they will think fit through my hands to endow the human family with new mercies. I also humbly pray that things human stand not in the way of things divine; and that with the pathways of the sense made accessible, and the natural light burning brighter, nothing of the night or unbelief arises in our souls respecting the divine mysteries, ^l but rather that, from a clear intellect, stripped of fantasies and vanity but still subject and wholly dedicated to divine oracles, we give to faith that which is faith' s. Lastly I pray that, with the sciences discharged of the serpent' s poison which swells and puffs up the human soul, we do not aspire to know what is too exalted or beyond the bounds of discretion, but cultivate the truth in charity.

My prayers said, I turn my attention to men to offer some wholesome advice and make some fair requests. First (and I have already prayed for this) I advise men to restrict the sense to its proper sphere in divine matters. For the sense (like the Sun) illuminates the face of the terrestrial globe but blots out and closes up the face of the celestial. But again, men must be careful that in flying from this evil they do not fall into the opposite one, as they certainly will if they think that any aspect of the inquiry into nature is forbidden as if by decree. For it was not that pure and unstained knowledge of nature, the knowledge by which *Adam* gave names to things according to their kind that prompted or occasioned the Fall, but that ambitious and importunate craving for moral knowledge to judge of good and evil so that man might revolt from God and give laws to himself was the ground and measure of temptation. But of the sciences that contemplate nature the divine philosopher declared: *the Glory of God is to conceal a thing; but the glory of a king is to find it out*, just as if the Divine Nature, delighting in an innocent friendly children' s game of hide and seek chose, out of his favour and goodwill towards men, the human soul as his playmate in that game. Lastly, I desire every last one of us ^l be admonished to think on the true ends of knowledge; that we seek it not for personal gratification, or for contention, or to look down on others, or for convenience, reputation, or power, or any such inferior motive, but for the benefit and use of life, and that it be perfected and regulated in charity. For from desire for power the angels fell, and from desire for knowledge men; but there is no excess of charity, and neither angel nor man was ever imperilled by it.

I come now to my requests, which are as follows. I keep silent concerning myself, but for the business in hand I ask men to think of it not

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pg 25

as a question of opinion but as a job to be done, and to know for certain that I am not laying foundations of sect or dogma but of utility and human greatness. Next I ask men fairly to consult their own good and, stripping off the bonds of zealous preconception and opinion, take counsel together and, freed and protected by my guarantees and helps from the errors and obstacles in their way, come and play a part themselves in the work that remains. Then again I ask them to be of good hope, and not imagine or suppose that my *Instauration* is limitless and beyond the capacity of mere mortals, when in fact it is really a lawful end and termination of limitless error; but it makes allowances for mortality and human frailty, seeing that its completion is not confided entirely to a single age but to a succession of them.

Finally¹ I ask that the sciences be sought not arrogantly in the narrow cells of human wit but humbly in the wider world. But it is empty things which generally take up most room, whereas the solid, being far denser, take up little. Lastly (in case anyone out of injustice to me puts the thing itself in danger), it seems that I should also ask men to see, from what I am obliged to claim (if I am to be consistent with myself), how far they believe they have a right to pass an opinion or deliver a verdict on my proposals, given that (as far as the investigation of nature goes) I reject all unseasonable human reasoning which anticipates time by abstracting from things more recklessly and hastily than it should as something giddy, unstable, and badly constructed. For a tribunal cannot expect to pass judgement on some thing when the tribunal itself is being prosecuted.

NOTES

Page 2, ll. 1–7: *FRANCISCVS DE VERVLAMIO, SIC COGITAVIT*—see Introduction, sect. I (d), p. xlvi above. In this exordium Bacon represents himself very much as a lone voice but one possessed of inner certainty and resolution. Accordingly, the exordium is directly comparable to the opening lines of *ANN (OFB, XIII, p. 172)* and prepares for Bacon's turning his isolation to advantage later in *NO*; see, for example, p. 170 above. The crucial phrase 'apud se' occurs with these senses in the New Testament; see for instance John 6: 62, and 2 Corinthians 10: 7—'Quæ secundum faciem sunt, videte. Si quis confidit sibi Christi se esse, hoc cogitet iterum apud se: quia sicut ipse Christi est, ita et nos'. The vatic third person is also used in *CV*, fos. 245 ff. (*SEH*, III, pp. 591 ff.).

Page 2, l. 8–p. 4, l. 27: *Cvm Illi pro comperto*—the main themes of this introductory third-person address are developed *in extenso* in what follows; see for instance *cmts* (p. 492 below) on p. 10, l. 6–p. 11, l. 5 above.

16 *propria*,] / with semicolon in some copies (e.g. Harry Ransom QB 1165 1620a)

Page 2, ll. 18–24: *Notiones Rerum Primæ*—primary notions seem to be abstractions (often undisciplined) derived from sensory impressions; secondary notions are ones derived from such abstractions; see p. 32, ll. 12–22 above.

20 *abstractæ*,] ~:

25 *celebrant*,] ~;

32 *lineas*,] ~;

8 *possit*,] ~;

Page 4, ll. 9–10: *Viæ autem Contemplatiuæ*—probably alludes to Hesiod, see *Works and Days*, trans. A. W. Mair, Clarendon: Oxford, 1908, p. II: 'Evil one may attain easily and in abundance: smooth is the way and it dwelleth very nigh. But in front of virtue have the deathless gods set sweat: long is the way thereto and steep and rough at first. But when one hath reached the top, easy is it thereafter despite its hardness.' Also see Xenophon, *Memorabilia and oeconomicus* (Loeb Classical Library), trans. E. C. Marchant, Cambridge, Mass., and London, 1923, pp. 95–103: the 'choice of Heracles'. Xenophon says that when Heracles was passing from boyhood to youth, 'wherein the young, now becoming their own masters, show whether they will approach life by the path of virtue or the path of vice', he pondered which road to take. And two women of great stature came along: one beautiful, pure and modest; the other seductive and vain. The latter said, "Heracles, I see that you are in doubt which path to take towards life. Make me your friend;

follow me, and I will lead you along the pleasantest and easiest road. You shall taste all the sweets of life; and hardship you shall never know" ...

Now when Heracles heard this, he asked, "Lady, pray what is your name?"

"My friends call me Happiness," she said, "but among those that hate me I am nicknamed Vice." The other woman then approached, saying, "I hope that, if you take the road that leads to me, you will turn out a right good doer of high and noble deeds, and I shall be yet more highly honoured and more illustrious for the blessings I bestow. But I will not deceive you by a pleasant prelude: I will rather tell you truly the things that are, as the gods have ordained them. For of all things good and fair, the gods give nothing to man without toil and effort" ... And Vice, as Prodicus tells, answered and said: "Heracles, mark you how hard and long is that road to joy, of which this woman tells? but I will lead you by a short and easy road to happiness."

And Virtue said: "What good thing is thine, poor wretch, or what pleasant thing dost thou know, if thou wilt do nought to win them? Thou dost not even tarry for the desire of pleasant things, but fillest thyself with all things before thou desirest them ... I company with gods and good men, and no fair deed of god or man is done without my aid ... O Heracles, thou son of goodly parents, if thou wilt labour earnestly on this wise, thou mayest have for thine own the most blessed happiness."

Page 6, ll. 7-9: *MAGNÆ BRITANNIÆ, Franciæ, & Hiberniæ Regi, FIDEI Defensori, &c.*—for the special and contemporary resonance of 'Great Britain', see *DAS*, N4^{r-v} (*SEH*, I, pp. 508-9): 'non possum non apud Maiestatem tuam conqueri, de Historiæ Angliæ, quæ; nunc habetur, Vilitate & Indignitate, quatenùs ad Corpus eius integrum; nec-non Historiæ Scotiæ Iniquitate & Obliquitate, quatenùs ad Auctorem eius recentissimum & vberrimum: Reputans mecum, honorificum admodùm Maiestati tuæ futurum, atque Opus Posteritati gratissimum; si quemadmodùm Insula hæc Magnæ Britanniæ, se nunc in vnam Monarchiam coalitam, ad sequentes Ætates transmittit; ita in vnâ Historiâ descripta, à præteriris Seculis tepeteretur; eodem modo, quo Historiam decem Tribuum Regni Israelis; & duarum Tribuum Regni Iudæ, ranquam gemellam, Sacra Pagina deducit. Quod si moles huiusmodi Historiæ, (magna certè & ardua,) quo minùs exactè & pro dignitate perscribatur, videatur obfutura, ecce tibi memorabilem multò angustioris Temporis Periodum, quatenùs ad Historiam Angliæ; nimirùm ab Vnionem Rosarum, ad Vnionem Regnorum; Spatium temporis, quod meo quidem iudicio, maiorem recipit Euentuum (quæ rarò se ostendunt) varietatem, quam in pari Successionum numero, vsquam in Regno Hæreditario, deprehendere licet'. As for *Fidei defensor*, that was originally a papal title bestowed on Henry VIII for writing the anti-Luthetan treatise *Assertio septem sacramentorum aduersus Mart. Lutherum*, Pynson: London, 1521; it descended along with othet royal titles and nice historical irony to James who, as Supreme Governor of

the Church of England, was a moderate Calvinist in theology, and acknowledged no papal authority.

Page 6, l. 11–p. 8, l. 13: *Poterit fortasse Maiestas Tua*—for Bacon's work as a birth of time rather than talent, and truth as a daughter of time see *cmts* (p. 523 below) on p. 122, l. 21–p. 124, l. 8. Also see p. 132, ll. 4–34 above. For Bacon's view of the special nature of his and James's own age see *cmts* (pp. 489–90 above) on π^r above. For the comparison of James with Solomon, and the business of collecting a natural history see Introduction, sect. 1 (*d*), p. xlvii above, and p. 168, l. 31–p. 170, l. 4 above. For the need for natural history without philological matter see *PAH*, p. 456, ll. 11–28 above.

15 *modò*] *modò* / some copies (e.g. St John's College Oxford) *modò* (e.g. Lambeth)

32 *indigna,*] ~;

2 *varietate,*] ~:

11 *Opt.*] / with colon in some copies (e.g. Liverpool)

Page 10, l. 5–p. 12, l. 5: *PRÆFATION*—the sheet concentration of themes developed later is important here. For the fact that men do not know their own powers see p. 132, ll. 8–20, p. 170, ll. 19–32 above. The fatal columns: Bacon is thinking of the pillars of Hercules; see *AL*, *OFB*, IV, pp. 55, 249–50, and cf. *DAS*, KI^V (*SEH*, I, p. 485); also see *cmts* (p. 489 above) on π^r above. For the quantity of books disguising the paucity of matter see p. 136, ll. 1–8 above, and *PAH*, p. 470, l. 27–p. 472, l. 2 above. For the Greeks as childish prattlers see *cmts* (pp. 521–2 below) on p. 114, l. 26–p. 116, l. 10 above. For Scylla's barking womb see *AL*, *OFB*, IV, pp. 25, 226–7; cf. *DAS*, $E3^r$ (*SEH*, I, pp. 454–5). For controversy as a plague of science see p. 92, ll. 10–26 above.

28 *est:*] ~;

Page 12, ll. 5–22: *Prætereà, si huiusmodi Scientiæ*—cf. p. 118, ll. 6–16 above and *cmts* thereon (p. 522 below).

14 *videmus—quæ*] *videmus. Quæ*

ll. 23–4: *pedarij Senatotes*—their noteworthy feature was that they had voting rights but were not allowed to speak. *OCD* is silent on this, but see *Oxford Latin Dictionary*, ed. P. G. W. Glare, Clarendon: Oxford, 1982.

26 *paulatim*] / *nld* in *SEH* (I, p. 126) as *paullatim*

31 verius:] ~;

Page 12, l. 33–p. 14, l. 19: Postquàm enim Scientiæ—when Bacon remarks that even when the sciences do grow someone appears with a compendious method and dating wit and mins the wotk of predecessors, he is thinking of both Aristotle (*ingenio audax*) and Ramus; see *DAS*, F2^r (*SEH*, I, p. 460): 'Alius Error à reliquis diuersus, est ptæmatura atque protetua Reductio Doctrinarum in Artes, & Methodos; quod cùm fit, pletunque Scientia aut parùm, aut nihil proficit. Nimirùm vt Ephebi, postquam Membta & Lineamenta corporis ipsorum, perfectè efformata sunt, vix ampliùs crescunt: sic Scientia quamdiù in Aphotismos, & Obseruationes spargitur, crescere potest, & exurgere; sed Methodis semel circumscripta, & conclusa, expoliri rorsan & illustrari, aut ad Vsus Humanos edolari potest, non autem porrò mole augeri'. See also *DAS*. 202^v–203^r (*SEH*, I, p. 663) on Ramism: 'Itaque *Metbodi* Genera (cùm varia sint,) enumerabimus potiùs, quàm partiemuf. Atque de vniâ *Metbodo*, & Dichotomies perpetuis, nil attinet dicete: Fuit enim Nubecula quædam Docttinæ, quæ cifò ttansijt: Res cettè simul & leuis, & Scientijs damnosissima. Etenim huiusmodi Homines, cùm *Metbodi* suæ Legibus res totqueant; & quæcunque in Dichotomias illas non aptè cadunt, aut omittant, aut præter Naturam inflectant; hoc efficiunt, vt quasi Nuclei & Grana Scientiarum exiliant, ipsi aridas tantùm & desertas Siliquas stringant. Itaque inania Compendia pant hoc genus *Metbodi*, Solida Scientiarum destruit'. For time's births and miscarriages see *cmts* (p. 523 below) on p. 122, ll. 19–28 above. For time as a fiver see p. 114, ll. 6–24 above, and *DAS*, F2^r (*SEH*, I, p. 460).

Page 14, ll. 19–27: illi ipsi authores—see above, p. 118, ll. 18–34 and p. 148, ll. 4–15; and *cmts* thereon (pp. 522, 529 below).

Page 14, ll. 28–p. 16, l. 4: Atque quæ tradita—cf. *AL*, *OFB*, IV, p. 23, l. 32–p. 24, l. 18; p. 28, ll. 11–14; *DAS*, E2^{r-v} F1^r (*SEH*, I, pp. 452–3, 458).

Page 16, l. 6–16: qui ausu maiore—for Bacon, Aristotle was probably the main culprit; see *cmts* (pp. 519–20 below) on p. 106, l. 32–p. 108, l. 2 above.

8 sibi] / with comma in some copies of *c-t* (e.g. Balliol College Oxford)

16 sequuti] / *nld* as secuti in *SEH* (I, p. 128) though *SEH* is not consistent in this; see *ibid.*, I, p. 130, cf. p. 20, l. 20 below

Page 16, l. 16–p. 18, l. 9: Nemo autem reperitur—cf. p. 156, l. 30–p. 158, l. 7 above and *cmts* thereon (p. 530 below). Also see p. 88, l. 29–p. 90, l. 2 above and *cmts* thereon (p. 512 below). For Cardan on experience, see *De subtilitate* in *Opera omnia*, 10 vols., J. A. Hugetan and M. A. Ravaud: Lyon, 1663, III, p. 357: 'Quid de causis dicam? quos omnibus intactas, velut tamen ex Oraculo quodam acceptas, depromere opottet. At Oraculis fides absque

demonstratione habebatur: nobis, si eam addiderimus, nulla dabitur ... Erant & quædam præter hæc ab antiquis non rectè tractata. Sed in his non laboro, cùm nulla sit autoritas aduersus experimenta scribentibus. For the proper sphere of dialectic see p. 190, ll. 24–p. 192, l. 6 above.

20 sunt,] ~;

Page 18, l. 13–p. 20, l. 3: *Ædificium ... instar labyrinthi est*—cf. p. 440, ll. 22–31 above. For logic as a labyrinth see H. C. Agrippa, *Of the vanitie and vncertaintie of artes and sciences*, trans. James Sanford, ed. Catherine M. Dunn, California State University: California, 1974, p. 54. Giordano Bruno, *De umbris idearum*, ed. Rita Sturlese, Olschki: Florence, 1991, p. 9: 'Si vos sentitis aptos effosores, | Et minime non aptos ad volandum, | Expiscandum, venandum, et aucupandum, | Atque idcirco non ind'esse lamenta; | Concaedam vobis, concaedentibus quod | Intrasds labyrinthum sine filo'.

14 structurâ] stricturâ / some copies (e.g. St John's College Oxford); *SEH* (l, p. 129) followed a corrected copy, e.g. Lambeth

20 implicantur,] ~;

33 fuit] ~,

Page 20, ll. 4–36: *Nos certè æterno*—this is one of a number of rather different pieces of self-presentation in *IM*. Here Bacon is not Columbus or Alexander (see p. 150, ll. 7–13; p. 154, ll. 15–28 above) but the lone traveller. For the need for a new marriage between the empirical and rational faculties, cf. p. 152, ll. 24–9 above.

Page 20, l. 37–p. 22, l. 11: *Quamobrem, quùm hæc arbitrij*—in *Scōn* verso (*2^V) of the printed title, there is a version of this prayer entitled 'TEMPORIS PARTVS MASCVLVS | *Sive* | *Instauratio Magna Imperii humani* | *In* | *VNIVERSVM*. |' This version reads, '*Ad Deum Patrem, Deum Verbum, Deum Spiritum, preces fundimus humillimas & ardentissimas, ut humani Generis ærumnarum memores, & peregrinationis istius vitæ nostræ, in qua dies paucos & malos terimus; nova adhuc refrigeria è fontibus bonitatis suæ ad miseras nostras leniendas aperiant: atque illud insuper, ne humana divinis officiant; neve ex reseratione viarum Sensus, & accensione majore luminis Naturalis, aliquid incredulitatis & noctis animis nostris erga divina mysteria oboriatur. Sed potius ut ab Intellectu à pbantasiis & vanitate puro & repurgato, & divinis oraculis nihilominus subdito & prorsus deditio, Fidei dentur quæ Fidei sunt*'. This version may have been as early (c.1605–c.1612) as many of the other pieces published in *Sc*, see Introduction, sect. 2, pp. cxviii–cxix above. Also see *SEH*, III, p. 4.

Page 22, ll. 12–16: *Peractis autem votis*—cf. *AL*, *OFB*, IV, p. 8, ll. 21–5; *DAS*, B4^r (*SEH*, I, p. 436): '*Contemplatio Creaturarum, quantum ad Creaturas ipsas, producit Scientiam; quantum*

ad Deum, Admirationem tantùm, quæ est quasi abrupta Scientia. Ideoque scitissimè dixit quidam Platonicus: *Sensus humanos solem referre, qui quidem reuelat terrestrem globum, cælestem verò & Stellæ obsignat* sic sensus reserant Naturalia, Diuina occludunt.' The reference is probably a paraphrase of Philo Judæus (c.30 BC—AD 45), *On dreams* (Loeb Classical Library), trans. F. H. Colson and G. H. Whitaker, Cambridge, Mass., and London, 1934, pp. 338–9.

II. 18–23: Neque enim—for the contrast between malign knowledge and Adam's naming of creatures see *DAS*, B3^r (*SEH*, I, p. 434): 'Scientiam quæ Lapsus peperit, non fuisse puram illam, primigeniamque Scientiam Naturalem, cuius lumine Homo Animalibus in Paradiso adductis, Nomina ex Naturâ imposuit, sed superbam illam, *Boni & Mali*, per quam excutere Deum, sibique ipse legem figere ambiuit ...'. Adam's naming the animals (Genesis 2: 19) is, for Bacon, evidence of Adam's innocent power over nature, which power it is the object of *IM* to regain. On Adam and his relationship to nature see, for instance, Jean Calvin, *Sermons sur la Genèse: chapitres I, I-II, 4*, ed. Max Engammare, Neukirchener Verlag: Neukirchen—Vluyn, 2000, pp. 99–101.

Page 22, II. 24–8: *Gloriam Dei*—Proverbs 25: 2 which, in the Vulgate, reads, 'Gloria Dei est celare verbum, Et gloria regum investigare sermonem'. Bacon has 'thing' (rem) for verbum and sermonem. He does the same on p. 194, II. 4–5 above where he gives a slightly different version of the quotation. In fact his versions are based on the Junius and Tremellius Bible, *Testamenti veteris Biblia Sacra, sive, libri canonici ... Latini recens ex Hebræo facti ... ab Immanuele Tremellio & Francisco Junio ... Accesserunt libri ... Apocryphi ... adjunximus Novi Testamenti libros ... Londini, excudebant G. B. R. N. & R. B. An. Dom. 1593*. Here the Latin is: 'Honor Dei est abscondere rem, honor autem regum peruestigare rem'. This is glossed as referring to the inscrutability of God whereas the 'honor' of a king is 'de singulis rebus cognoscere, & in lucem proferre quæcumque ad regiam dignitatis cognitionem pertinent ...'. The next proverb, i.e. 25: 3, is 'Ut cælo altitudine, terræ profunditate; ita animo regum non est peruestigatio'. Bacon also deploys this text and his understanding of it in *CDSH* (*SEH*, III, p. 183) and *CV*, fos. 263^v–263^r (*SEH*, III, p. 610). Also see Durel-Leon, *Francis Bacon & l'émergence d'une nouvelle philosophie de la nature*, III, pp. 731–8, 756–9.

Page 22, II. 29–35: Postremò omnes—on charity and the ends of knowledge see *AL*, *OFB*, IV, pp. 5–9; *DAS*, B2^v–B4^v (*SEH*, I, pp. 433–7).

Page 22, I. 36–p. 24, I. 24: Postulata autem—a statement of major themes developed in Book I of *NO*, which will be commented upon in their proper places. Suffice it to say here that Bacon remarks that the instauration of the sciences will take a 'succession' of generations; but cf. p. 170, II. 13–16. For Bacon's closing strictures cf. p. 76, II. 11–14 above; also see *cmts* (pp. 505–6 below) on p. 74, I. 4–p. 76, I. 14.

37 silemus; de] silemus: De

